CONSTRUCTION SOIL AND WATER MANAGEMENT PLAN

Moorebank Precinct East Stage 2 - SSD 7628

Moorebank Intermodal Precinct – Precinct East Stage 2

SSD 7628

Construction Soil and Water Management Plan

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Revisions

Revision	Date	Description
001	21/12/2018	First draft for ER and client review
002	23/03/2018	Update with ER comments
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004	2/05/2018	Updated with DPE comments
005	11/05/2018	Updated based on meetings with DPE on 7 and 9 May
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009	04/05/2019	Minor updates associated with: • RfMA 006 • RfMA 007 • RfMA 012 • RfMA 015 Also updated with MPW Commonwealth Approvals relevant to Moorebank Avenue upgrade works
010	31/07/2019	Updates to address DotEE comments in response to compliance with EPBC 2011/6086 (RfMA 024)
011	07/08/2019	Updates to address second round DotEE comments in response to compliance with EPBC 2011/6086 (RfMA 024)
012	25/10/2019	Minor updates associated with: • RfMA 02A – Additional construction compounds to support warehouse construction • RfMA 008 – MAUW construction compound • RfMA 012 – Additional temporary construction access points • RfMA 014 – Suitable spoil importation

Revision	Date	Description
		• RfMA 019 – Clarification of definitions for Early Works and Construction Phase A • RfMA 021 – New parking area • RfMA 024 – MPW EPBC (2011/6086) and MPE EPBC (2011/9229) approval requirements for DotEE review and approval
013	20/11/2019	Updated to address ER comments; removal of Construction Phase A updates associated with RfMA 019 and minor updates associated with RfMA 016 – Temporary access time extension.
014	20/12/2019	Updated to address ER comments, and the approved CTAMP-B
015	16/01/202	Updated to address ER comments
016	03/042020	Minor updates to address Archile comments
017	07/08/202	Minor updates associated with: • RfMA-018 – MAUW boundary change • RfMA-028 – MAUW/MADR Stockpile Area • SSD 7628-Mod 2 approval • Periodic review of management plans - Alignment of Environmental Representative approval authority to the CoC
018	19/03/2021	Updates associated with: • RfMA-039 – Corrections and update to Extended Hours Works Plan, and revision to construction program • RfMA-040 – Additional compound for light vehicle parking and break facilities • SSD 7268 – MOD3 • SSD 7628 – MOD4
019	22/07/2022	Updates associated with: • SSD 7628 MOD1 • WH 6&7 amended layout
020	25/09/2023	Updates associated with:

Revision	Date	Description	Prepared by	Approved by
		• RfMA-043 – Inclusion of Moorebank Avenue Realignment early works scope		
021	03/12/2024	Updates associated with: • SSD 7628 MOD5 • RfMA-042 - Figure 1-2 of Moorebank Precinct East (ESR compound) • RFMA-044 - Figure 1-2 of Moorebank Precinct East (MAUW compound) • RfMA-045 - Figure 1-2 of Moorebank Precinct East (Temporary Storage Compound) • Administrative updates to reflect development status	[redacted]	[redacted]

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Acronyms and Definitions

Acronym / Term	Meaning
AHD	Australian Height Datum
ARI	Average recurrence interval
Blue Book	Managing Urban Stormwater: Soils and Construction, published by Landcom in 2004
CEMP	Construction Environmental Management Plan
CESCP	Construction Erosion and Sediment Control Plan
CMM	Commonwealth Mitigation Measures
CoCs	Conditions of Consent
Contractor's CM	Contractor's Construction Manager
Contractor's EM	Contractor's Environmental Manager
Contractor's WM	Contractor's Works package Manager
CDWMP	Construction Demolition and Waste Management Plan
CSMP	Construction Spoil Management Plan
CSWMP	Construction Soil and Water Management Plan
DJLU	Defence Joint Logistics Unit
DPHI	Department of Planning Housing and Infrastructure
Development Personnel	All persons listed in Section 2.2 including sub-contractors working on the Development site.
Development Site / Development footprint	The subject of the MPE Stage 2 EIS, the part of the MPE Site which includes all areas to be disturbed by the Development (including the operational area and construction area).
Development, the	Stage 2 of the MPE Concept Approval (MP 10_0193) approved as the MPE Stage 2 Development (SSD 7628) as consolidated. It involves the construction and operation of warehousing and distribution facilities on the MPE Site and upgrades to approximately 1.5 kilometres of Moorebank Avenue.
Early Works	Site preparation works, including: (a) establishment of site access points; (b) installation of temporary site fencing; (c) remediation, where required, including unexploded ordnance , exploded ordnance and exploded ordnance waste management; (d) survey; acquisitions; or building/ road dilapidation surveys;

Acronym / Term	Meaning
	(e) establishment of site compounds; (f) installation of environmental mitigation measures; (g) heritage archival monitoring and recording; (h) heritage salvage; (i) clearing of non-native vegetation; (j) importation, stockpiling and placement of 60,000m^3 of spoil (k) utilities adjustment and relocation that do not present a significant risk to the environment, as determined by the Environmental Representative; and (l) other activities determined by the Environmental Representative to have minimal environmental impact.
EIS	Environmental Impact Statement
ENM	Excavated natural material
Environmental Incident	A set of circumstances resulting in harm, or potential harm, to the environment. Environmental incidents include pollution incidents and environmental emergencies. Environmental incidents may arise from natural (e.g. storm, wind or bushfire) or human factors.
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	NSW Environment Protection Authority
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection Licence
ER	Environmental Representative
ERSED	Erosion and sedimentation
ESR	the Developer
EWEMP	Early Works Environmental Management Plan
FCMMs	Final Compilation of Mitigation Measures
FERP	Flood Emergency Response Plan
IECA	International Erosion Control Association
IFD	Intensity Frequency Duration
ISCA	Infrastructure Sustainability Council of Australia
ESR	Principal Developer
MARW	Moorebank Avenue Realignment Works

Acronym / Term	Meaning
MPE	Moorebank Precinct East
MPE EPBC Approval	Commonwealth Approval (No. 2011/6229) granted in March 2014 under the Environment Protection and Biodiversity Conservation Act 1999, for the impact of the MPE Development on listed threatened species and communities (sections 18 and 18A of the EPBC Act) and Commonwealth land (sections 26 and 27A of the EPBC Act).
MPW EPBC Approval	Commonwealth Approval (No. 2011/6086) granted under the EPBC Act on September 2016 by the Commonwealth Department of Environment and Energy for the development of the ESR Moorebank Intermodal Terminal Facility at Moorebank.
MPE Development	The MPE Intermodal Terminal Facility as approved under the MPE Concept Approval (MP 10_0193) and the MPE EPBC Approval (2011/6229).
MPE Site	Including the former DSNDC Site and the land owned by ESR which is subject to the MPE Concept Plan Approval (Lot 1 DP1048263). The MPE Site does not include the rail corridor, which relates to the land on which the rail link is to be constructed.
MPE Stage 2 EIS	Moorebank Precinct East Stage 2 Proposal – Environmental Impact Statement publicly exhibited between 13 December 2016 and 24 February 2017.
MPE Stage 2 Development	As approved under SSD 7628, Stage 2 of the MPE Concept Approval (MP 10_0193), and SSD 7628-Mod 2, SSD 7628-Mod 3 and SSD 7628-Mod 4 approvals.
MPW	Moorebank Precinct West
Non-compliance	An occurrence, set of circumstances, or development that results in a non-compliance or is non-compliant with Development Consent SSD 7628 Conditions of Consent or EPBC Act Approval (EPBC 2011/6229) Conditions of Approval but is not an incident
Non-conformance	Observations or actions that are not in strict accordance with the CEMP and the aspect specific sub-plan
NTU	Nephelometric Turbidity Unit
OEH	Office of Environment and Heritage
OSD	On-site detention
PMF	Probable Maximum Flood
POEO Act	Protection of the Environment Operations Act 1997
RSoC	Revised Statement of Commitments
RtS	Response to Submissions
SSD	State significant development

Acronym / Term	Meaning
TSS	Total Suspended Solids
UXO	Unexploded Ordnance
VENM	Virgin excavated natural material
Warehousing Compound	The main construction compound of the Development. The warehousing compound will include: • A site office(s) • Staff amenities • Car parking • Storage and laydown areas • Materials testing facilities • Materials crushing facilities • Concrete batching plant.
WSUD	Water Sensitive Urban Design

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1. Background

Approval for the construction and operation of Stage 2 of the Moorebank Precinct East (MPE) Development, operated by ESR Australia & NZ (formerly), which comprises the second stage of development under the MPE Concept Consent (MP10_0193) was received on 31 January 2018 (State significant development (SSD 7628)) as consolidated.

This Construction Soil and Water Management Plan (CWSMP) has been developed to manage soil and water impacts during the construction phase of Stage 2 of MPE Development (hereafter 'the Development').

Within this plan, a strategy has been established to demonstrate the Construction Contractor's approach to the management of soil and water. This CSWMP addresses the relevant requirements of the Development Consent, including the Environmental Impact Statement (EIS), Response to Submissions (RtS) and Minister's Conditions of Consent (CoCs), and all applicable guidelines and standards specific to the management of soil and water during construction phases of the Development.

1.1. Development Ownership

In 2022, LOGOS joined the ESR group of companies and since August 2024, the LOGOS and ESR operations have been integrated to now operate under the name ESR Australia & NZ (ESR). The applicant/ approval holder entity remains unchanged at this stage until further notice and references to ESR and ESR authored documents and/or plans may continue and remains relevant where LOGOS and ESR are used interchangeably.

1.2. Introduction

The MPE Site is located approximately 27km south-west of the Sydney Central Business District and approximately 26 kms west of Port Botany and includes the former Defence National Storage and Distribution Centre (DNSDC) site. The MPE Site is situated within the Liverpool Local Government Area (LGA), in Sydney's south-west subregion, approximately 2.5 km's from the Liverpool City Centre.

MPE involves the development of an intermodal facility including warehouse and distribution facilities, freight village (ancillary site and operational services), stormwater, landscaping, servicing and associated works on the eastern side of Moorebank Avenue, Moorebank.

Stage 2 of the MPE Development (the Development) involves the construction and operation of warehousing and distribution facilities on the MPE Site. It includes an upgrade of approximately 1.5km's of Moorebank Avenue.

Key components of the Development include:

- Earthworks including the importation of 600,000m^3 of fill and vegetation clearing
- Importation, stockpiling and placement of up to 250,000m^3 of suitable spoil (separate to the 600,000m^3 of imported clean general fill permitted for bulk earthworks)
- Approximately 300,000m^2 gross floor area of warehousing and ancillary offices
- Warehouse fit-out
- Freight village, 8,000m^2 gross floor area of ancillary retail, commercial and light industrial land uses

- Internal road network and hardstand across the site
- Ancillary supporting infrastructure within the site, including:
  - Stormwater, drainage and flooding infrastructure
  - Utilities relocation/installation
  - Fencing, signage, lighting, remediation and landscaping
- Moorebank Avenue upgrade including:
  - Raising by about two metres and some widening
  - Embankments and tie-ins to existing Moorebank Avenue road levels
  - Signalling and intersection works
- Intersection upgrades along Moorebank Avenue including:
  - Moorebank Avenue/MPE Stage 2 access
  - Moorebank Avenue/MPE Stage 1 northern access
  - Moorebank Avenue/MPE Stage 2 central access
  - Moorebank Precinct West (MPW) Southern Access/MPE Stage 2 southern emergency access.

The location of the Development site is provided in Figure 1-1.

Moorebank Avenue Realignment Works (MARW) was approved by the NSW Minister for Planning on 14 October 2021 as State significant infrastructure (SSI-10053) (Infrastructure Approval) under Division 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act). It is also a controlled action under Section 130(1) and 133(1) of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and was approved by the Minister for the Environment on 7 December 2021 (EPBC Approval 2020-8839).

The footprint of MARW, which generally runs along the northern and eastern boundary of the MPE Site, interfaces and encroaches on the MPE Site. In order to allow for progression of construction works for MARW (in particular, the northern carriageway), some early preparatory works are required that are located within the MPE Site (where the project boundaries overlap). These works are undertaken under the MPE CEMP, with the MARW CEMP not being relevant to these works.

Construction Environmental Management Plan

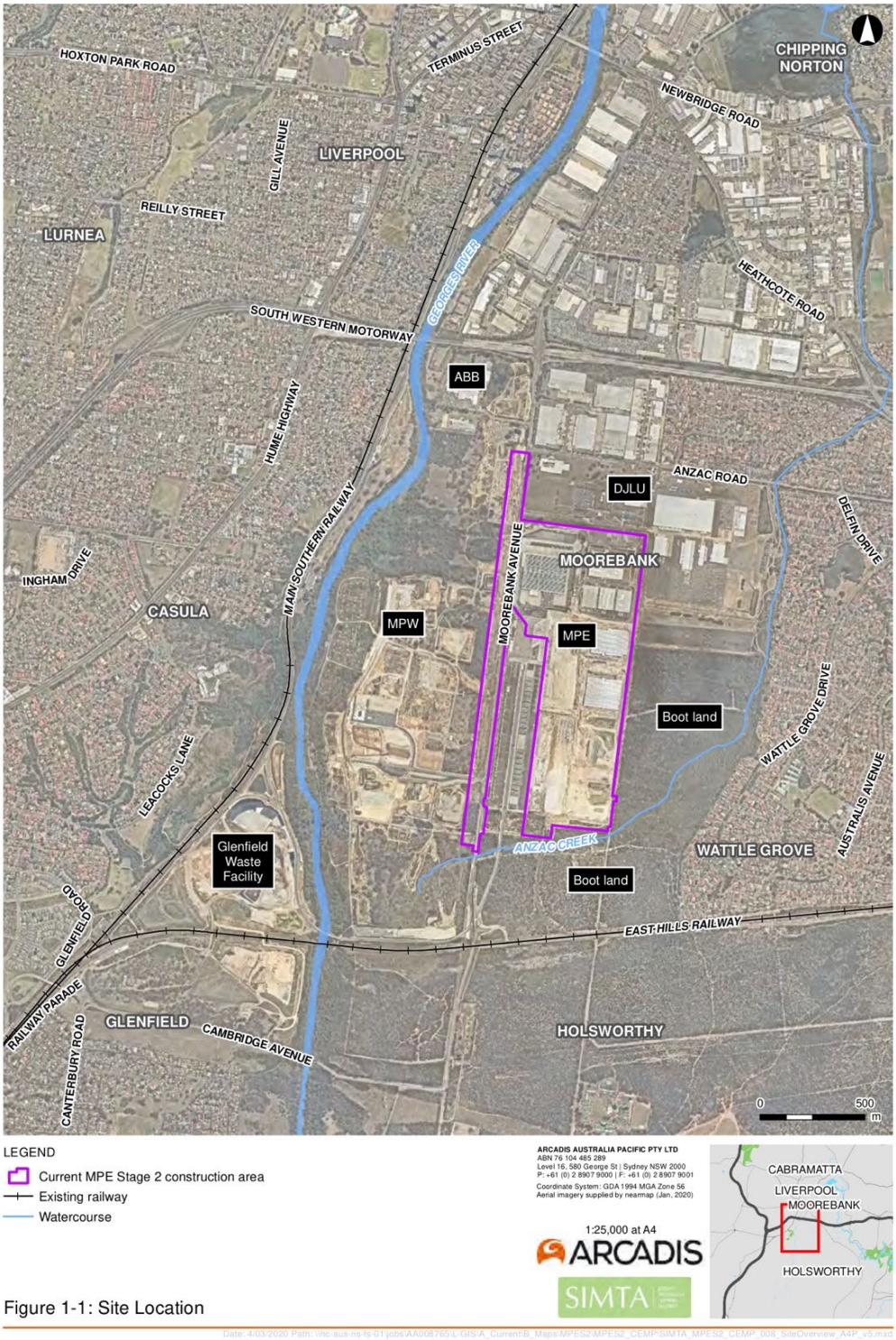

Figure 1-1: Site Location

Figure 1-1 Site Location

1.3. Development Consent

The MPE Stage 2 Development was assessed by Department of Planning, Housing and Infrastructure (DPHI) under Part 4.7 (Division 4.1 prior to 1 March 2018) of the Environmental Planning and Assessment Act 1979 (EP&A Act) as State significant development (SSD). The Planning Assessment Commission granted approval for the MPE Stage 2 Development on 31 January 2018 and is subject to the Minister's CoCs (SSD 7628) as consolidated. The Development has subsequently been modified. The Development, including its potential impacts, consultation and proposed mitigation and management, is documented in the following suite of documents:

- SSD consent SSD 7628, as consolidated
- SSD partial consent (subdivision) SSD 7628, as consolidated
- Moorebank Precinct East – Stage 2 – Environmental Impact Statement (Arcadis Australia Pacific Pty Limited, December 2016)
- Moorebank Precinct East – Stage 2 – Response to Submissions (Arcadis Australia Pacific Pty Limited, July 2017)
- Consolidated assessment clarification responses issued on 10 November 2017 (Arcadis 2017).
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Approval (No. 2011/6229) granted on March 2014

1.4. Development Delivery Phases

The Development construction period is anticipated to be up to five years, which will be generally divided into three works phases.

The terminology for the Development phases or periods were developed from the EIS and RtS documentation in response to the requirements of the CoCs and the need to stage the delivery of the environmental management documentation required by the CoCs. Current terminology, and the equivalent terminology from the CoCs and RtS are included in Table 1-1.

Table 1-1 Development Delivery Phase Terminology

Development Delivery Phase	CoC A18 Phase Equivalent	MPE Stage 2 RtS Works Period Equivalent
Early Works	Early Works Fill importation (to 60,000m^3)	Works Period A: Pre-construction Works Period B: Site preparation
Construction Phase A	Fill importation Construction	Works Period B: Site preparation Works Period E: Bulk Earthworks, drainage and utilities Works Period F: Construction and internal fit out of warehousing Works Period G: Miscellaneous construction works

Development Delivery Phase	CoC A18 Phase Equivalent	MPE Stage 2 RtS Works Period Equivalent
Construction Phase B	Fill importation Construction	Works Period C: Construction of Moorebank Avenue Diversion Road Works Period D: Pavement and intersection works along Moorebank Avenue Works Period E: Bulk Earthworks, drainage and utilities

Additional details for the Development delivery phases are included in the Construction Environmental Management Plan (CEMP).

1.4.1. Early Works

Early Works is generally described as site preparatory works including utilities adjustments and relocations, clearing and stripping of topsoil (top 100 mm of topsoil), heritage salvage and fill importation (including virgin excavated natural material (VENM) and excavated natural material (ENM), up to 60,000m^3), establishment of site access, temporary fencing and compound establishment, asbestos and hazardous material removal and preparation for the demolition of buildings.

The Early Works includes but is not limited to:

- Geotechnical and utilities investigation work including potholing to confirm the location of existing services, disconnection of non-critical services (with retention in place), grout filling of disconnected draining lines, and adjustment and relocation where applicable
- Clearing of non-native vegetation, stripping of topsoil and stockpiling of topsoil on site for later re-use within site landscaping
- Stabilisation of areas where topsoil has been stripped with imported clean hard fill or by other methods determined by the ER to have minimal environmental impact
- Removal of asbestos from heating equipment and fire-resistant building elements (e.g. fire doors) by a licensed asbestos removalist followed by clearance by a certified occupational hygienist
- Hazardous material cleaning and decontamination in Buildings 67, 69, 81 and 83
- Heritage salvage works in Buildings 37, 75 and 80 on the Development site to recover architectural elements for adaptive re-use
- Importation, stockpiling and placement of up to 60,000m^3 (not exceeding a total of 13,000m^3 of material per day) of imported clean general fill material by truck-and-dog and / or semi-trailer (activity complete)
- Establishment of a site access point at the existing MPE Site northern access and construction of associated access road, utilising existing paved areas with minor pavement extensions required, to provide for access and manoeuvrability of vehicles into and through the site in accordance with CoC B10

- Establishment of temporary site fencing, a site compound/s (includes MAUW compound establishment) and temporary car parking areas to support Early Works and construction of the Development in accordance with CoC B10
- Other activities determined by the ER to have minimal environmental impact.

Any of the activities defined in SSD Consent 7628 as 'Early Works' may be undertaken during Early Works, which may overlap the construction works phase and be undertaken concurrently with construction phase activities. All works during Early Works will be undertaken in accordance with the EWEMP and required sub-plans.

Upon the commencement of construction, this CEMP will supersede the EWEMP.

1.4.2. Construction Works Phase A (excluding Moorebank Avenue Upgrade Works)

Construction Works Phase A will include all works described in Early Works in addition to bulk earthworks, drainage and utilities, construction and internal fit-out of warehousing and finishing works. All vegetation clearing, and filling will be completed within the construction boundary. Construction Works Phase A excludes Moorebank Avenue works described in Section 1.3.4 below.

Construction Works Phase A includes, but is not limited to:

Completion of Site Preparation Activities

- Demolition of existing structures in accordance with Australian Standard AS2601-1991 – Demolition of Structures
- Clearing of remaining vegetation
- Adjusting the building formation of the site (to final operational levels) within which the Warehousing Compound will be located
- Establishment of temporary batch plant and materials crushing plant

Bulk Earthworks, Drainage and Utilities

- Importation, stockpiling and placement of up to 600,000m^3 of imported clean general fill for bulk earthworks
- Importation, stockpiling and placement of up to 250,000m^3 of suitable spoil (separate to the 600,000m^3 of imported clean general fill permitted for bulk earthworks)
- Installation of on-site detention (OSD) and drainage infrastructure within the MPE Stage 2 site
- Construction of retaining walls
- Creation of internal road formation by general earthworks (by constructing fill embankments)
- Bulk earthworks and adjusting the building formation of the Development site to final level, including the terminal hardstand
- Utilities relocation and installation
- Establishment of hardstand areas.

Construction and Internal Fit out of Warehousing

- Foundation and floor slab installation
- Erection of framework and structural walls
- Installation of roof
- Internal fit-out of warehouses (racking and associated services).
- Installation of solar panels, rainwater harvesting systems and Green star features as per the recommendations of the UHIMS. This includes helicopter assisted installation.

Miscellaneous Construction and Finishing Works

- Pavement construction (internal transfer roads and perimeter road), including forming of new kerbs, gutters, medians (where required) and other structures
- Line marking, lighting and sign posting
- Installation of road furniture, including traffic signs and pavement markers.
- Miscellaneous structural construction
- Finishing works, including landscaping and general site rehabilitation, where required
- Commissioning of the Development
- Decommissioning/demobilisation of the Development site, including removal of construction compound(s) and temporary construction environmental controls.

1.4.3. Construction Works Phase B

Construction Works Phase B will include all works described in Early Works Phase and Construction Works Phase A, in addition to the Moorebank Avenue upgrade works. Generally, the Moorebank Avenue upgrade works are described as construction of the Moorebank Avenue Diversion Road, bulk earthworks, drainage and utilities, and pavement works.

Construction Works Phase B includes, but is not limited to:

Construction of the Moorebank Avenue Diversion Road

- Stripping of topsoil within footprint of temporary diversion road
- Installation of temporary drainage
- Placement of fill and temporary road pavement (e.g. gravel)
- Construction of interface between temporary diversion road and existing Moorebank Avenue
- Installation of temporary road signage, street lighting and signalling
- Transfer of traffic onto temporary diversion road from Moorebank Avenue.

Bulk Earthworks, Drainage and Utilities

- Removal of existing pavement and stripping of topsoil within Moorebank Avenue
- Importation, stockpiling and placement of approximately 600,000m^3 of imported clean general fill for bulk earthworks

- Importation, stockpiling and placement of up to 250,000m^3 of suitable spoil (separate to the 600,000m^3 of imported clean general fill permitted for bulk earthworks)
- Creation of a road formation for Moorebank Avenue and the Moorebank Avenue Diversion Road by general earthworks (by constructing fill embankments)
- Earthworks, raising the entire footprint equivalent to adjacent areas including construction of embankments and tie-ins to existing Moorebank Avenue pavement level at the southern and northern extents of the Development. (If Moorebank Avenue Realignment (SSI-10053) is delivered, the southern road tie will not be required.)
- Installation of on-site detention (OSD) 10 and drainage infrastructure associated with MAUW
- Utilities relocation and installation.

Pavement Works Along Moorebank Avenue

- Placement of select layer of earthworks material on top of the road formation
- Placing and compacting the pavement later (concrete, or concrete and asphalt) over the select layer (consisting of a sub-base and base) and potential sealing and bitumen sealing as required to suit the various pavement designs (subject to change and TfNSW design approval)
- Where specified, a pavement constructed out of compacted gravel (roadbase) will be used in lieu of concrete sub-base and base (subject to change and TfNSW design approval)
- Installation of new road pavement, or if Moorebank Avenue Realignment (SSI-10053) is delivered, the new road pavement will be installed to the IMEX Terminal main access point only
- Traffic switching from diversion road onto final, upgraded Moorebank Avenue or Moorebank Avenue Realignment (SSI-10053) if delivered
- Removal of construction traffic management and progressive opening of the internal road and warehouse and IMEX access roads to traffic
- Removal of road surface, road signage, street lighting and signalling from temporary diversion road
- Commissioning of Moorebank to the southern extent of site, or if Moorebank Avenue Realignment (SSI-10053) is delivered, then commissioning to IMEX Terminal main access point.

1.4.4. MARW Early Works

The MARW Early Works comprises the following activities, within the scope of the CoC for the MPE Stage 2 Development (SSD 7628):

- At the northern boundary of MPE Stage 2:
  - Property adjustments to Piccolo Me Café and display suite including partial demolition of carpark and reallocation of carparking space
  - Provide adjustments to MPE lead-in services including sewer/water meters, communication pits and electrical kiosk

  - Demolition of shared pathways
  - Establishing shared internal pathways
  - Overhead utilities adjustments as required by internal MARW works
  - Provision of local connection for temporary MARW utilities
  - Demobilisation of equipment from the area
- At the southern boundary of MPE Stage 2:
  - Disconnect and remove 11kV overhead wires to eastern on-site detention (OSD) basin water pump
  - Disconnect and remove pad-mounted substation currently servicing eastern water pump
  - Relocate generator from western to eastern water pump
  - Remove western water pump and associated hoses
- At the eastern boundary of MPE Stage 2:
  - Disconnect and remove 11kV overhead wires to Hansen Yuncken construction compound.

The above listed MARW Early Works, within the MPE 2 construction boundary are to be managed in accordance with MPE 2 CEMP and CEMP sub-plans management and mitigation measures.

The MPE 2 site access, compounds (including crushing and fill sorting) and stockpiling locations are shown in Figure 1-2.

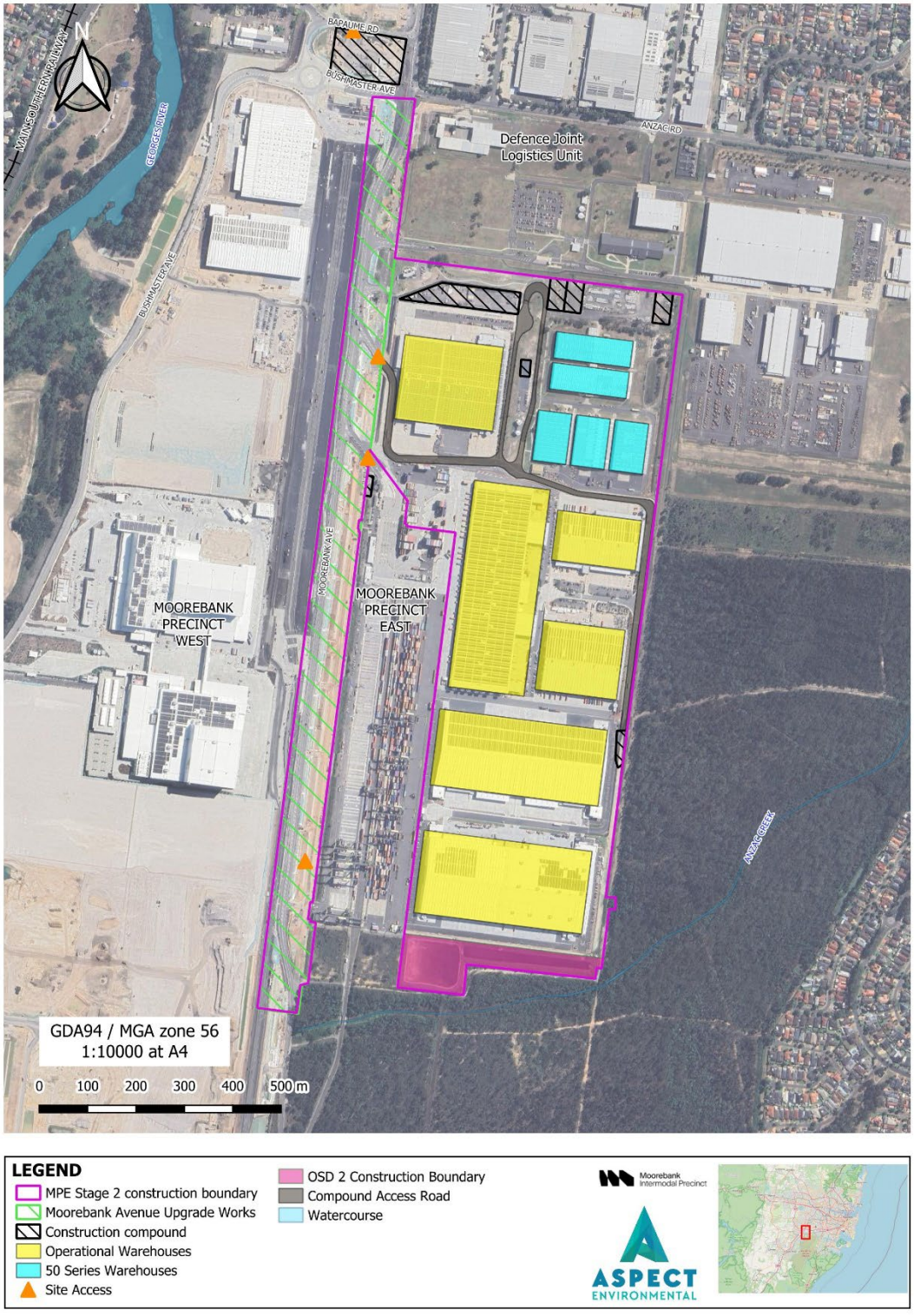

Figure 1-2 Site Access, Compounds and Stockpiling Locations

1.5. Purpose and Application

This CSWMP has been developed to address the CoCs and the final compilation of mitigation measures (FCMMs). This plan aims to demonstrate how soils, water quality and water quantity will be managed during construction of the Development. This plan provides methods to measure and reduce the impact to soils, water quality, and water quantity by the Construction Contractor during construction, including all sub-contractors. The specific requirements of the CoCs for compilation of the CSWMP, as identified in the CoCs and FCMMs are identified in the Compliance Matrices in Appendix A of this CSWMP.

This CSWMP must be reviewed and endorsed by the Development's Environmental Representative (ER). Once ER endorsement is received, CoC C8 requires the CSWMP to be submitted to DPHI for approval by the Secretary no later than one month prior to the commencement of a new phase of the Development. This will also satisfy CoC A18 which requires DPHI to be notified at least one month prior to the commencement of a new phase of the Development. The most recent, approved version of this plan will be implemented to manage the Development activities. Construction is to be undertaken in accordance with the most recent, approved version of this CSWMP.

1.6. Staged Submission of this Plan

Subject to the approval of the Secretary (CoC A14), the Development has elected to stage the submission of a number of strategies, plans and programs that are required by the CoCs based on the Delivery Works Phases identified in Table 1-2

In accordance with CoC A15, Table 1-2 identifies the stage of the development to which this document applies, and the relationship to any future stage. The trigger for updating the document is also identified in Table 1-2. When a document is updated, the most recent version of the document will supersede the previous version(s).

Table 1-2 Staged Documentation and Triggers to Satisfy CoC A15

Delivery Works Phases	General Description of Works	Current Document	Trigger to Update Document
Early Works			
Early Works	Utilities adjustments and relocations, clearing and stripping of topsoil, heritage salvage, fill importation, establishment of site access, temporary fencing and compound establishment, asbestos and hazardous material removal and demolition of buildings	☐ Document prepared to address Early Works only	Prior to the commencement of construction works
Construction			
Construction Phase A	Early Works activities (as described above), bulk earth works, drainage and utilities, construction and internal fit-out of warehousing and finishing works	☐ Document prepared to address Construction Works Phase A only (does not address Moorebank Avenue upgrade works)	Prior to the commencement of Moorebank Avenue upgrade works

Delivery Works Phases	General Description of Works	Current Document	Trigger to Update Document
Construction Phase B	Construction Phase A activities, construction of the Moorebank Avenue Diversion Road, bulk earthworks, drainage and utilities and pavement works	☒ Document prepared to address all construction works (Phase A + Phase B)	

1.7. Development Objectives and Targets

The objectives and targets set out for the Development for the management of soils and water during construction are outlined in Table 1-3.

Table 1-3 Objectives and Targets

Objective	Target	Timeframe	Accountability	Source Reference
Minimised impacts to offsite water quality	Confirm discharges are in accordance with appropriate discharge requirements (pH 6.5-8.5, turbidity 25 NTU and no visible oil and grease).	Duration of construction	Contractor's EM	Moorebank Precinct Environment Protection Licence (EPL) (No. 21054)
Minimal change to flow volumes and flow distribution during construction	The existing site catchment and sub-catchment boundaries would be maintained as far as practicable To the extent practicable, site imperviousness and grades should be limited to the extent of existing imperviousness and grades under existing development conditions.	Duration of construction	Contractor's CM	FCMM 5B
Optimised management and beneficial re-use of topsoil	Topsoil stockpiles to be maintained no higher than 2 m 95% of all topsoil (by volume) retains its productivity and is beneficially re-used on or nearby to the Development or asset.	Duration of construction	Contractor's CM	Blue Book ISCA Target
Establish and maintain awareness of the importance of protecting environmental values (EVs) or water quality objectives	All Development and workforce personnel to complete an environmental induction, which will include information on the importance of minimising impacts on water quality and effectively managing stormwater	Duration of construction	Contractor's CM	MPE Stage 2 CEMP MPW Stage 1 EIS

Objective	Target	Timeframe	Accountability	Source Reference
(WQOs) associated with the Development site				
Avoid the exceedance of water quality goals/criteria during construction	Zero incidents of water quality goals/criteria being exceeded during construction	Duration of construction	Contractor's CM	Moorebank Precinct EPL (No. 21054) MPW Stage 1 EIS
Avoid the exceedance of stormwater management goals/criteria during construction	Zero incidents of stormwater management goals/criteria being exceeded during construction	Duration of construction	Contractor's CM	Moorebank Precinct EPL (No. 21054) MPW Stage 1 EIS
Construction activities do not adversely affect flood water flows and do not exacerbate flooding	Zero incidents whereby construction activities adversely affect flood water flows and exacerbate flooding	Duration of construction	Contractor's CM	MPW Stage 1 EIS

2. Environmental Framework

2.1. Legal and Other Requirements

Table 2-1 below details the legislation and planning instruments considered during development of this plan.

Table 2-1 Legislation, Planning Instruments and Guidelines

Legislation	Description	Relevance to this CSWMP
Environmental Planning and Assessment Act 1979	This Act establishes a system of environmental planning and assessment of development Projects for the State.	The CoCs and obligations issued under Part 4 of the EP&A Act are addressed in this plan.
Protection of the Environmental Operations Act 1997	The objectives of this Act relate to the protection of the environment through pollution prevention and cleaner production, among others.	Relevant sections of the Act, including duties to report pollution incidents and disposal regulations have been incorporated into this plan and incident response procedures. A key legislative requirement applicable to construction soil and water management is Section 120 of the Protection of the Environment Operations Act 1997 which relates to pollution of waters and the need to implement all reasonable and feasible measures to minimise the risk of pollution of waters. Part 5.7 of the Act requires that a pollution incident causing or threatening material harm to the environment be notified to Environment Protection Authority (EPA) and other relevant authorities as outlined in the CEMP. Material harm constitutes actual or potential harm to the health or safety of humans and/or ecosystems that is not trivial, or results in actual or potential loss or property damage of amounts in excess of $10,000 in total.
Contaminated Land Management Act 1979	The general object of this Act is to establish a process for investigating and (where appropriate) remediating land that the EPA considers to be contaminated significantly enough to require regulation under Division 2 of Part 3, and to ensure that contaminated land is managed with regard to the principles of ecologically sustainable development.	Contamination on site must be assessed and managed in accordance with this act. Division 2, Part 3, Section 11-17 of this Act details requirements for the Management of Contaminated Land.
Water Management Act 2000	The objects of this Act are to provide for the sustainable and integrated management of the water sources of	Although it is not envisaged that any construction activities would be undertaken on waterfront land, any waterfront activities

Legislation	Description	Relevance to this CSWMP
	the State for the benefit of both present and future generations.	that do occur would be conducted generally in accordance with the NSW Office of Water's Guidelines for Controlled Activities
Fisheries Management Act 1994	The objectives of this Act seek to conserve fishery resources, fish stocks and key fish habitats	This CSWMP has been prepared to maintain existing flow regimes surrounding the site. No impacts to fisheries are envisaged as a result of Development construction.
Dangerous Goods Regulation (Road and Rail Transport) 2014	The main objects of this Regulation are to give effect to the standards, requirements and procedures of the Code so far as they apply to the transport of dangerous goods by land transport, and to promote consistency between the standards, requirements and procedures applying to the transport of dangerous goods by land transport and other modes of transport.	Provisions relating to the storage and transport of dangerous good, such as fuelling procedures and fuel storage, are incorporated into this plan.
Commonwealth Environmental Protection and Biodiversity Conservation Act 1999	The objectives of this Act seek to promote environmental protection, ecologically sustainable development, biodiversity conservation and the promotion of heritage, among others.	Requirements under EPBC Approval (No. 2011/6086) have been considered during the preparation of this CSWMP.
Water Act 1912	The objects of this Act govern the issue of water licences within all areas not specified by an approved 'water sharing plan'.	Provisions relating to the dewatering of groundwater are incorporated into this plan.

Additional guidelines and standards relating to the management of soil, stormwater and flooding include:

- Managing Urban Stormwater – Soils and Construction Volume 1, 4th Edition (Landcom 2004)
- Managing Urban Stormwater: Soils and Construction − Installation of Services, Volume 2A (OEH 2008)
- Managing Urban Stormwater: Soils and Construction – Main Road Construction, Volume 2D (OEH 2008)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000)
- Guideline for the Preparation of Environmental Management Plans (Dept. of Infrastructure Planning and Natural Resources, 2004)
- Australian Rainfall and Runoff – Volume 1 (2001), Engineers Australia

- AS 1940-2004 The Storage and Handling of Flammable and Combustible Liquids
- Australian Dangerous Goods Code Edition 7.4
- Hazardous and Offensive Development Guidelines Application Guidelines Applying SEPP 33 (January 2011).

2.1.1. Development Consent Compliance Matricies

Development consent compliance matrices are included in Appendix A.

2.2. Roles and Responsibilities

All Development personnel are responsible for the implementation of this CSWMP and have the responsibility to stop works if there is potential for a safety or environmental incident to occur.

The key roles and responsibilities of Development personnel in relation to soil and water management are outlined below in Table 2-2.

Table 2-2 Roles and Responsibilities

Roles	Responsibilities
Contractor's Works package Manager (Contractor's WM)	• Provision of training in erosion and sediment control for personnel directly involved with implementation • Include environmental considerations into all aspects of Development planning • Communicate Development responsibilities and authorities • Attend audit meetings and action results of any audit findings • Allocate Development resources to handle environmental issues • Oversee the implementation and maintenance of the CSWMP • Endorse the CSWMP • Appoint / nominate and provide support for the Contractor's EM • Report to senior management and the Principal's Representative on the performance of the system and environmental breaches • Undergo induction and training in environmental awareness • Take action to resolve environmental non-conformances and incidents • Sign off on all environment and sustainability inspections • Enforce environmental requirements for suppliers and sub-contractors • Report environmental incidents to the Principal's Representative • Authorise expenditure to implement environmental management requirements within limits of authority as defined in the Principal's Representative Development requirements • Undertake ICAM investigations • Review audit corrective actions and take action as necessary to close out of issues • Be contactable 24 hours a day • Direct works to be performed in a more environmentally responsible manner that reduces impacts or stop works if there is a risk of environmental harm.

Roles	Responsibilities
Contractor's Construction Manager (Contractor's CM)	• Communicating with all personnel and sub-contractors regarding conformance and compliance with the CSWMP and site specific environmental issues / Environmental Work Method Statement • Undergo induction and training in environmental awareness as directed by management • Identifying resources required for implementation of the CSWMP • Organise and manage site plant, labour and temporary materials • Record and communicate volumes of spoil brought to the site to the Principal's Representative on a weekly basis • Co-ordinating the implementation and maintenance of site environmental controls and provide support for the Contractor's EM • Report all environmental incidents in accordance with incident reporting protocol • Undertake Incident Cause Analysis Method investigations • Take action to resolve non-conformances and incidents • Be contactable 24 hours a day • Direct works to be performed in a more environmentally responsible manner that reduces impacts or stop works if there is a risk of environmental harm.
Contractor's Environmental Manager (Contractor's EM)	• Assist and guide the respective workers to meet their environmental responsibilities • Check and monitor the implementation of this CSWMP, including completion of weekly inspection checklists • Monitor the rectification / reinstatement of site controls • Development, implementation, monitoring and updating of the CESCPs • Direct works to be performed in a more environmentally responsible manner that reduces impacts or stop works if there is a risk of environmental harm • Cooperate and participate in audits and action results of any audit findings • Allocate resources for the appropriate training of all personnel.
Site Supervisors	• Implement environmental controls on-site • Present and participate in toolbox talks and meetings • Train staff in their obligations under Environmental Work Method Statement and the CESCP • Complete daily inspection checklist for ERSED controls • Meet environmental reporting requirements of the Development • Undergo induction and training in environmental awareness as directed by management • Record and communicate the volumes of spoil brought to the site on a daily basis to the Contractor's CM and the Principal's representative • Direct works to be performed in a more environmentally responsible manner that reduces impacts or stop works if there is a risk of environmental harm.

Roles	Responsibilities
All personnel	• Minimise the potential of pollution of land, air and water • Take all feasible and reasonable steps to conform and comply with the requirements of this CSWMP.
Principal's Representative	• Review the CSWMP to confirm that it meets all relevant regulatory and Development requirements. • Review the Construction Contractor's environmental monitoring reports and compliance documentation to confirm that the CSWMP is being implemented. • Issue a stop work direction immediately where an unacceptable environmental impact may occur • Liaise with relevant regulators if an incident occurs • Allocate resources to conduct independent and internal audits of the system • Review audit outcomes and act as necessary • Review environmental performance through the monthly reporting cycle • Manage all aspects of the contract between ESR and the Construction Contractor • Stop works if required.

2.3. Training

Training is to be undertaken in accordance with Section 2.8 of the CEMP. The Construction Contractor is to provide all employees with suitable environmental induction / training (relevant to this CSWMP) to assist with awareness of their responsibilities and minimum competencies to carry out the work.

Additional training is to be provided if required in response to a review of the CEMP or sub-plans requiring a change in environmental management, following an environmental incident, or due to the results of environmental monitoring.

As a minimum the induction is to include the following:

- Existence and requirements of this CSWMP
- Relevant legislation- penalties, fines
- Roles and responsibilities for soil and water management
- Water quality management and protection measures
- Stockpile management measures
- Spill response
- Dewatering procedures.

Toolbox meetings are also to be undertaken, as and when required.

Personnel directly involved in implementing sediment and erosion control (ERSED) measures on the Development site are to be given specific training in the construction,

operation and maintenance of the various measures to be implemented. Examples of training topics include:

- ERSED control installation methodology
- Water quality monitoring for discharged water
- Working near or in drainage lines or areas of overland flow
- Emergency response measures in high rainfall events
- Preparedness for high rainfall events
- Lessons learnt from incidents and other events (e.g. high rainfall or flooding)
- Mulch and tannin management
- Spill response
- Stockpile location criteria.

Personnel conducting sampling, measuring, monitoring and reporting activities are to be suitably trained or experienced in the activity. Records of all training are to be filed in accordance with the Development's filing system.

It is the Contractor's EM responsibility to confirm all personnel are appropriately trained as outlined above.

Competency training is to be provided by the Construction Contractor as required and may include a certification, vocational qualification or a competency assessment.

Records of all training are to be filed in accordance with the document control system outlined in the CEMP.

3. Implementation

3.1. Existing Environment

3.1.1. Topography and Hydrology

The topography of the Development site is relatively flat, with reduced levels (RLs) ranging between 14 and 16m Australian Height Datum (AHD). The existing MPE Site comprises approximately 70% impervious surfaces, including building rooves and roads.

The site falls within the Georges River Estuary catchment with a receiving environment of Botany Bay. The Botany Bay catchment includes residential, industrial, commercial, recreational and bushland with the main sources of pollution coming from stormwater runoff. Hydrology in the local area surrounding the site is characterised by the Georges River approximately 800 m west and Anzac Creek (a tributary to the Georges River). Both act as receivers for the site's surface water. Figure 3-1 shows the existing catchments and drainage on the MPE Site. Assessment of hydrology across the site as presented in the EIS identified that the site is roughly divided north-south by a catchment boundary, with the eastern portion discharging to Anzac Creek (via outlets in the north-east (Outlet A) and south-east corners (Outlet B) of the site, respectively). The north-eastern portion of the construction footprint currently drains to Anzac Creek via formalised drainage channels and pipes within the MPE Site, which report to a culvert under the Greenhills Road corridor. The south-eastern portion of the MPE Stage 2 site drains under the Greenhills Road corridor via a culvert, before discharging to Anzac Creek, within the proposed biodiversity conservation area.

Stormwater flows on the western portion of the Development is diverted into a formal concrete lined channel parallel to Moorebank Avenue, before being discharged into Georges River via an outlet (culvert) from the Site (running underneath Moorebank Avenue) and through a channel that runs across the adjacent MPW site (Outlet C). Figure 3-3 shows the 100-year flood depth and storage within MPE Georges River Catchment, based on the modelling undertaken for the MPE Stage 2 Response to Submissions (RtS) (Arcadis, 2017).

Figure 3-4 shows the location and extent of existing stormwater infrastructure on the Development site based on recent survey information (CoC B34(h)).

DRAINS software was used during the EIS to generate rainfall runoff models that represent existing stormwater conditions (additional detail regarding the modelling undertaken and additional results is included in EIS Appendix P). A summary of peak flows discharging from the Development site for the existing conditions is included in Table 3-1.

Table 3-1 Existing Peak Flows

Discharge Location	Catchment Area (ha)	Flow (m^3/s)		
		5yr ARI	100yr ARI	Probable Maximum Flood (PMF)
Outlet A (Greenhills Road North)	21.76	3.4	4.1	23
Outlet B (Greenhills Road South)	27.45	0.5	3.0	15

Discharge Location	Catchment Area (ha)	Flow (m^3/s)		
		5yr ARI	100yr ARI	Probable Maximum Flood (PMF)
Outlet C (downstream of Moorebank Ave)	59.95	6.9	12.9	75

The land adjacent to the Development site has been redeveloped for the DJLU site, which included development of a stormwater management plan, in accordance with DWG No. ACR-0367-0000-CI-SK-0050 Issue H 20.07.12, prepared by Acor Consultants for the Australian Government Department of Defence, Defence Support Group. The stormwater plan of the neighbouring development introduced various new channels, culverts and embankments, including scour protection at the point of discharge from the MPE Site.

Modelling undertaken for the MPE Stage 2 RtS (refer RtS, Appendix E) shows that the stormwater infrastructure on the adjacent DJLU land contains the 100-year annual recurrence interval (ARI) flows and therefore that system is adequately designed for the existing case.

Figure 3-2 shows the existing stormwater capacity within the adjacent DJLU site based on the RtS modelling.

Appendix D includes a memorandum outlining the existing easements to drain water from the MPE Site, which includes an easement for the existing channel on the DJLU site. The terms of the easements to be granted in favour of the MPE Site and relevant third-party providers are to make provision for who is responsible for the ongoing maintenance of the drainage facilities and work to maintain the easement at the design capacity is to be undertaken in accordance with the terms of this easement.

The south-eastern portion of the MPE Site drains under the Greenhills Road corridor via a 0.45 m diameter culvert.

The western portion of the MPE Site discharges to the Georges River via a culvert that runs under Moorebank Avenue into twin boxed culverts under the MPW Site that discharges via a riprap shared with OSD 5 outlet into the Georges River. A memorandum outlining the proposed easements and agreements in place between ESR and adjacent landowners (Appendix D), includes the form of easement instrument which provides the wording to be used for future easements for services, support, drainage, access, etc. to be granted, including those to be granted in favour of MPE Site burdening the adjacent MPW site. Information included in Appendix D identifies ESR as the responsible entity for the construction, operation and ongoing maintenance of drainage facilities within the Moorebank Precinct, including over the MPW site. Any works to upgrade drainage infrastructure on the MPW Site are to be undertaken in accordance with the relevant planning approvals.

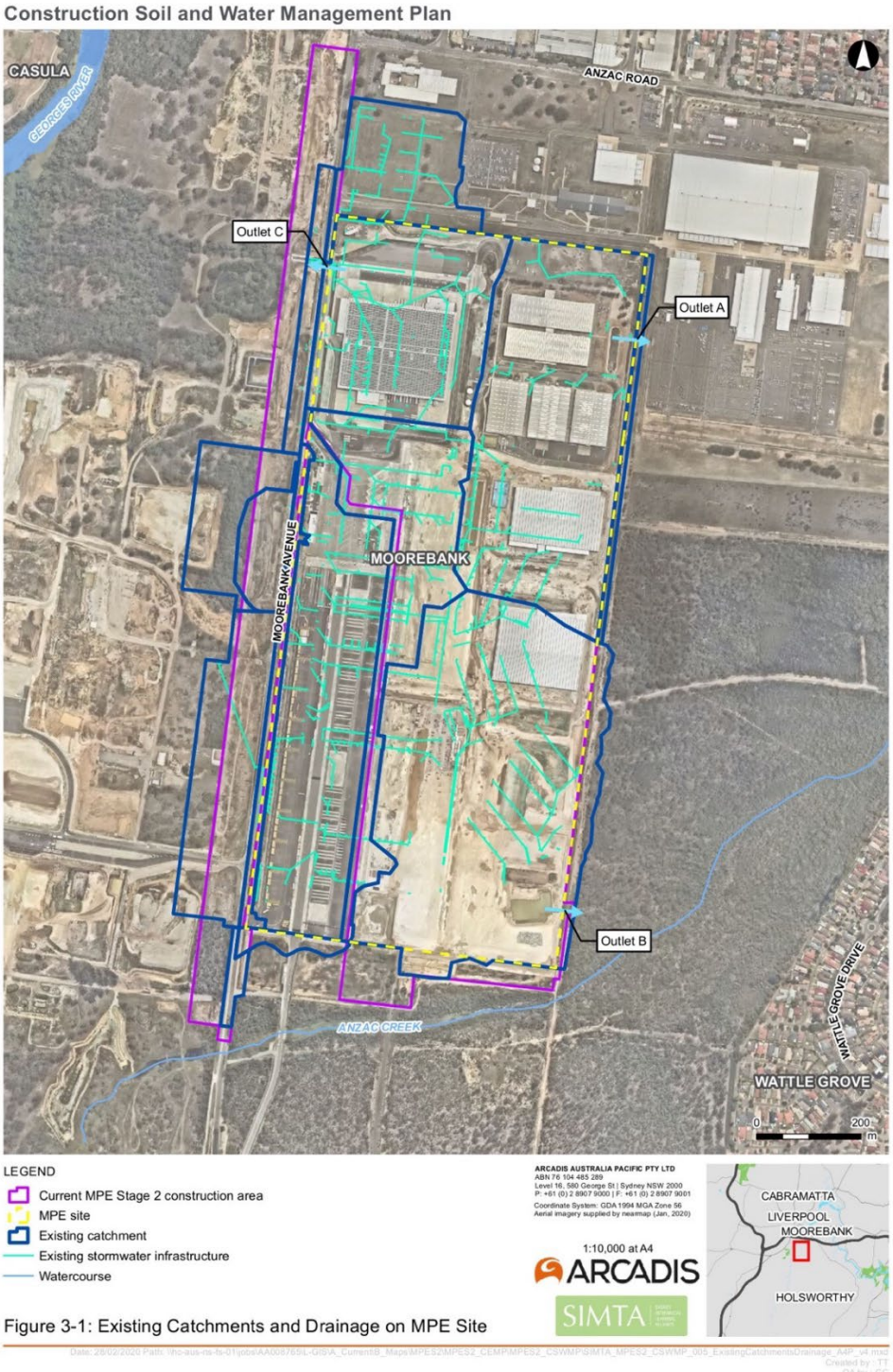

Figure 3-1 Existing Catchments and Drainage on MPE Site

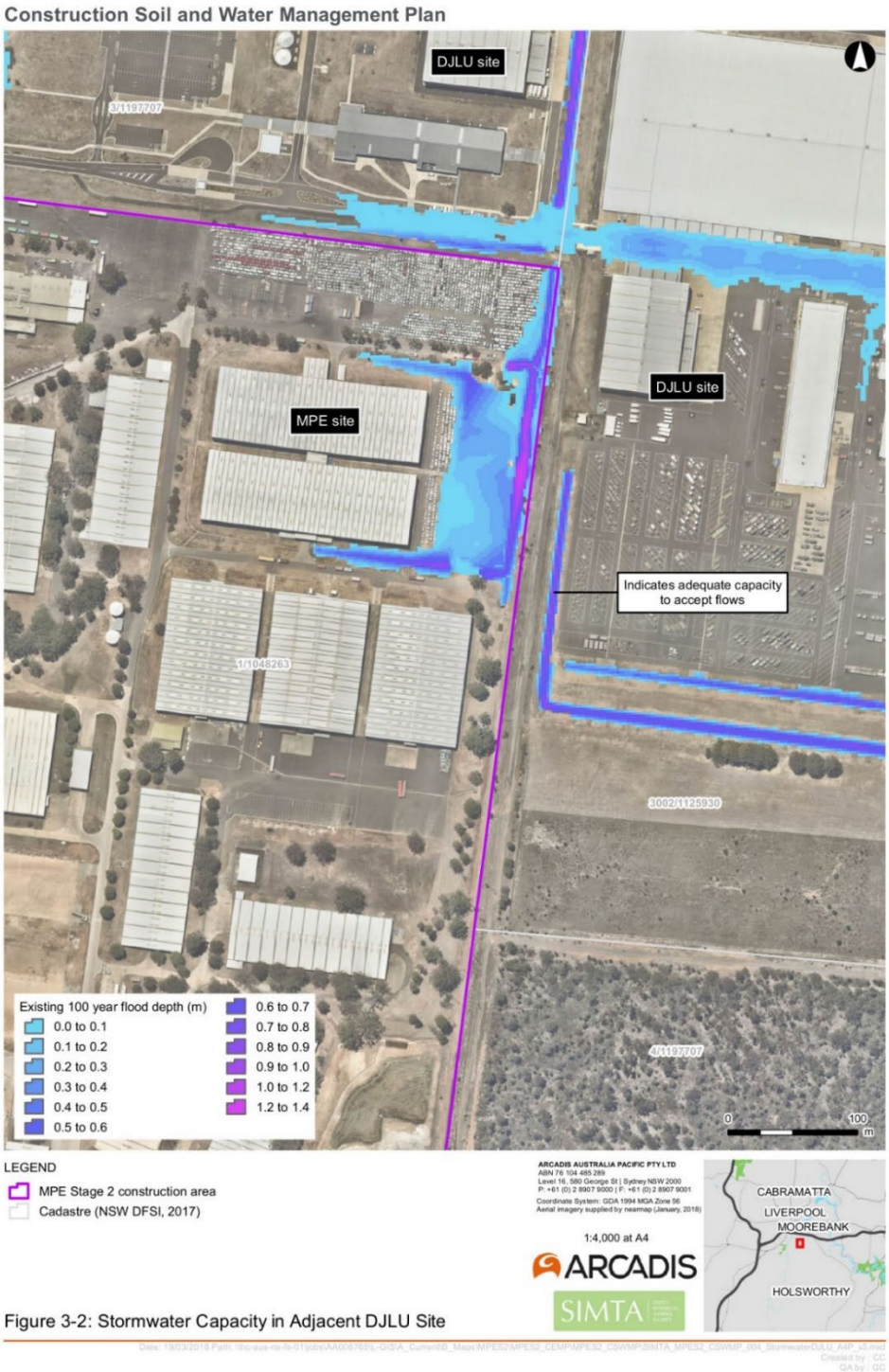

Figure 3-2 Stormwater Capacity in Adjacent DJLU Site

3.1.2. Water Quality

The Georges River and Anzac Creek are classified as lowland aquatic ecosystems of south-eastern Australia. The Development EIS states that water quality parameters were found to be within the guidelines with the exception of pH and dissolved oxygen (DO). Spot measurements within the Georges River and Anzac Creek demonstrated pH 6.06 and 5.62 respectively (guideline value 6.50) and DO below the lower guideline value of 60% saturation in both locations (ALS Water Sciences, 2011).

This was generally supported by baseline monitoring undertaken in Anzac Creek in accordance with CoC B106 in Autumn 2018 which identified a moderate level of stream impairment and poor water quality, with an impoverished macroinvertebrate community (Biosis, 2018). Water quality monitoring identified reduced dissolved oxygen values and elevated Aluminium levels outside of guideline values within areas able to be sampled. The pH values recorded were considered to be nominal.

Further detail of the existing water quality in adjacent waterways can be found in the Baseline Monitoring Report, Biosis 2018, prepared in accordance with CoC B106.

3.1.3. Geology

Geological studies were undertaken to confirm that the underlying geology of the Development site predominantly consists of Tertiary alluvium. A generalised rock and soil profile of the site, prepared for the EIS, is provided below in Table 3-2.

Table 3-2 Geotechnical Model of the Development Site

Unit		Sub-unit	
1	Surficial Soils and Pavement	1A	Topsoil/Fill
		1B	Anthropogenic Fill
		1C	Granular Fill
		1D	Cohesive Fill
		1E	Existing Pavement
2	Recent Alluvium	2A	Sand – not observed in Stage 2 investigations
		2B	Clay – not observed in Stage 2 investigations
3	Older Alluvium	3A	Sand
		3B	Clay
4	Shale	4A	Residual Shale Soil
		4B	Extremely Low to Low Strength Shale
		4C	Shale of medium strength or higher

Unit		Sub-unit	
5	Sandstone	5A	Residual Sandstone Soil – not observed in Stage 2 investigations
		5B	Very Low to Low Strength Sandstone
		5C	Sandstone of medium strength or higher

The studies undertaken for the EIS revealed the following general geological characteristics of the site:

- Away from paved areas, materials generally comprise a layer of topsoil overlying fill, below which tertiary alluvial soils are underlain by residual soil
- Alluvial soils are present extensively across the site and have their greatest depth at the northern, southern and western flanks of the site. Thicker residual soil layers are encountered to the east and over the central portion of the site (i.e. towards the elevated central eastern portion of the site)
- The greater extents of alluvial soils are typically found over the lower lying portions of the site
- Bedrock is typically shale, which is underlain by sandstone; however, towards the south of the site, sandstone was encountered immediately below the soil.

3.1.4. Soils

The Penrith Soils Landscape Map (Soil Conservation Service of NSW, 1989) indicates that the soils within the Development site are of the Berkshire Park Group. These are soils generally produced upon alluvial landscapes, commonly on elevated Tertiary terraces. They are comprised of shallow clayey sand soils, with frequent ironstone nodules. These soils typically are very prone to wind, sheet and rill erosion if exposed.

A topsoil layer is present across most areas of the Development site where pavements or structures are not present. The topsoil has a recorded thickness varying from 0 to 0.4m but was typically 0.1m thick. The topsoil is typically underlain by fill, but in some locations has developed naturally above alluvial or residual soils. The topsoil encountered was typically dry, fine to medium-grained silty sand with fine to medium sub-angular igneous gravel. However, some topsoil of a dominantly clay composition was encountered. Isolated occurrences of man-made waste materials, such as plastic bags and brick, were identified in topsoil.

The majority of fill encountered beneath the topsoil was granular and was typically a dry, silty sand. Where cohesive fill was encountered it was typically a medium to high plasticity clay, dry of the plastic limit and is inferred to have likely been re-worked site won material. The fill layer typically extends to depths of 0.3 to 0.5m. Where investigations extended beneath the Unit 1 fills (as described in Table 3-2), older alluvial soils were typically encountered. The thickness of alluvium recorded varied significantly between locations with the deepest layers occurring at the northern, western and southern flanks of the site. At the northern and southern extent of the Development site, the thickness of alluvium was approximately 20m with a maximum depth of up to 23m. The depth of alluvium recorded reduced to approximately 5m within the central portion of the Development site and less

than 1m thick at the eastern fringe. The alluvium is typically high plasticity clay with some granular and lower plasticity zones, particularly at the southern extent of the site. The alluvial clay contains ironstone nodules and is typically very stiff or hard consistency.

The soils throughout the Development site are generally classed as Type F soils which are fine grained and require a relatively long residence time in sediment basins to achieve the total suspended solids (TSS) concentrations suitable for discharge off the Development site.

3.1.5. Acid Sulfate Soils

Given that regional trends indicate an extremely low to low likelihood of acid sulfate soils and site investigations to date have not identified acid sulfate soils, the overall risk of acid sulfate soils occurring on site is considered negligible.

3.1.6. Groundwater

Two main aquifer systems are present across the MPE Site, a perched system within alluvial soils and a deeper aquifer within the bedrock. Groundwater in the shallow alluvial aquifer is expected to flow towards the Georges River. Groundwater is typically present at approximately 4m to 7m below the existing ground levels across the majority of the Development site with the exception of the region in the south-east of the Development site, near Anzac Creek where groundwater was identified at depths greater than 1.5m.

Groundwater within the deeper aquifer would vary depending on bedrock characteristics. Ashfield Shale has a very low rock mass permeability and may act as an aquitard (barrier to groundwater flow). This unit has the potential to reduce the infiltration of groundwater into the underlying sandstone, although some groundwater may flow within this unit through joints or faults. Groundwater in the Shale unit is typically saline and hard, with salinity levels up to 3100mg/L having been recorded in the region.

Hawkesbury Sandstone generally has a low rock mass permeability with groundwater flow generally controlled by joints, faults and bedding partings. High permeability is also likely along near-vertical dykes, sheared zones or open joints at relatively low cover below valleys and/or paleo channels. Groundwater in sandstone is generally of reasonable quality typically being mildly acidic with high iron content and salinity: between 200 to 2000mg/L.

3.1.7. Contamination

A Site Audit Statement and Site Audit Report developed by JBS&G in September 2016 certified that the MPE Site was suitable for commercial/industrial use. . The report noted that construction works on the MPE Site should be undertaken in accordance with the Environmental Management Plan (EMP) developed for the site (GHD, 2016), including procedures to control exposure to potential human health and environmental receptors from residual contaminated soil, asbestos containing material and potential UXO.

Warehouses 3, 4, 5, 6 & 7 have all been issued with Site Audit Statement and Site Audit Report prior to occupation under CoC B130 as suitable for commercial and industrial use.

Future Warehouse 2A, Warehouse 2B and the Freight Village currently do not have a Site Audit Statement and Site Audit Report for it’s intended use and purposes and will require one prior to occupation.

Refer to the MPE Stage 2 Contamination Management Plan for more information regarding contamination management during construction of the Development.

3.1.8. Rainfall Pattern

Based on historical data recorded since 1968 at Bankstown Airport (Hyder 2015), the region is characterised by moderate rainfall, with a mean annual rainfall of 870mm, and an annual rainfall range between 493mm and 1,398mm. There is significant variation in monthly rainfall throughout the year, with the summer and autumn months typically experiencing higher falls than the remainder of the year. Rainfall data also shows that February is the wettest month with a mean rainfall of 108.5mm over 11.0 rain days.

Table 3-3 contains the intensity, frequency and duration (IFD) chart for the Moorebank site, showing the rainfall depth for durations, exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).

Table 3-3 IFD Design Rainfall Depth (mm) from Bureau of Meteorology

Duration	Annual Exceedance Probability (AEP)						
	63.2%	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	1.98	2.21	2.92	3.40	3.87	4.49	4.96
2 min	3.19	3.51	4.53	5.26	5.98	6.91	7.64
3 min	4.45	4.91	6.38	7.41	8.42	9.74	10.8
4 min	5.63	6.23	8.14	9.46	10.8	12.5	13.8
5 min	6.69	7.42	9.75	11.3	12.9	15	16.6
10 min	10.7	11.9	15.9	18.5	21.1	24.4	27
15 min	13.3	14.9	19.8	23.1	26.3	30.6	33.8
30 min	18	20.1	26.6	30.9	35.2	40.9	45.2
1 hour	22.9	25.4	33.3	38.8	44.1	51.3	56.9
2 hour	28.8	31.8	41.5	48.3	55.2	64.5	71.8
3 hour	33.3	36.7	48	56	64.1	75.2	84
6 hour	43.6	48.4	64.2	75.4	86.9	103	116
12 hour	58.7	66	89.9	107	124	148	167
24 hour	78.9	90.2	127	153	180	215	243
48 hour	102	118	171	209	247	295	332
72 hour	114	433	194	238	282	336	378
96 hour	122	142	207	253	301	358	401
120 hour	127	148	214	261	310	368	412

144 hour	131	152	218	265	313	373	417
168 hour	134	155	220	266	314	374	419

The 50% AEP IFD does not correspond to the 2 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 1.44 ARI.

* The 20% AEP IFD does not correspond to the 5 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 4.48 ARI

3.1.9. Flooding

Existing flooding risk along Anzac Creek corridor has been previously identified by Liverpool City Council through a floodplain risk management study (BTM WBM, 2008). Anzac Creek is a small tributary of the Georges River, which flows to the north, discharging to the Georges River approximately 2.5km to the north-east of the Site.

Modelling for the study identified that upstream of the M5 Motorway flooding for events up to the 100-year ARI is generally confined to the main channel of Anzac Creek, resulting in very little floodplain inundation and no inundation of residential properties within the suburb of Wattle Grove (located adjacent to Anzac Creek).

Flood modelling commissioned by Liverpool City Council (BTM WBM, 2008) indicates that the 100-year ARI and larger events along Anzac Creek would impact on the Development site. However, existing culverts beneath the M5 Motorway could adequately convey flood waters to the downstream reaches of the catchment without significant retention and/or backwater accumulation impacting the Development site. This modelling indicates that there is limited potential impact for flooding to the delineated Construction Works area, as shown in Figure 3-3. The management of flood risk is detailed in the Flood Emergency Response Plan (FERP).

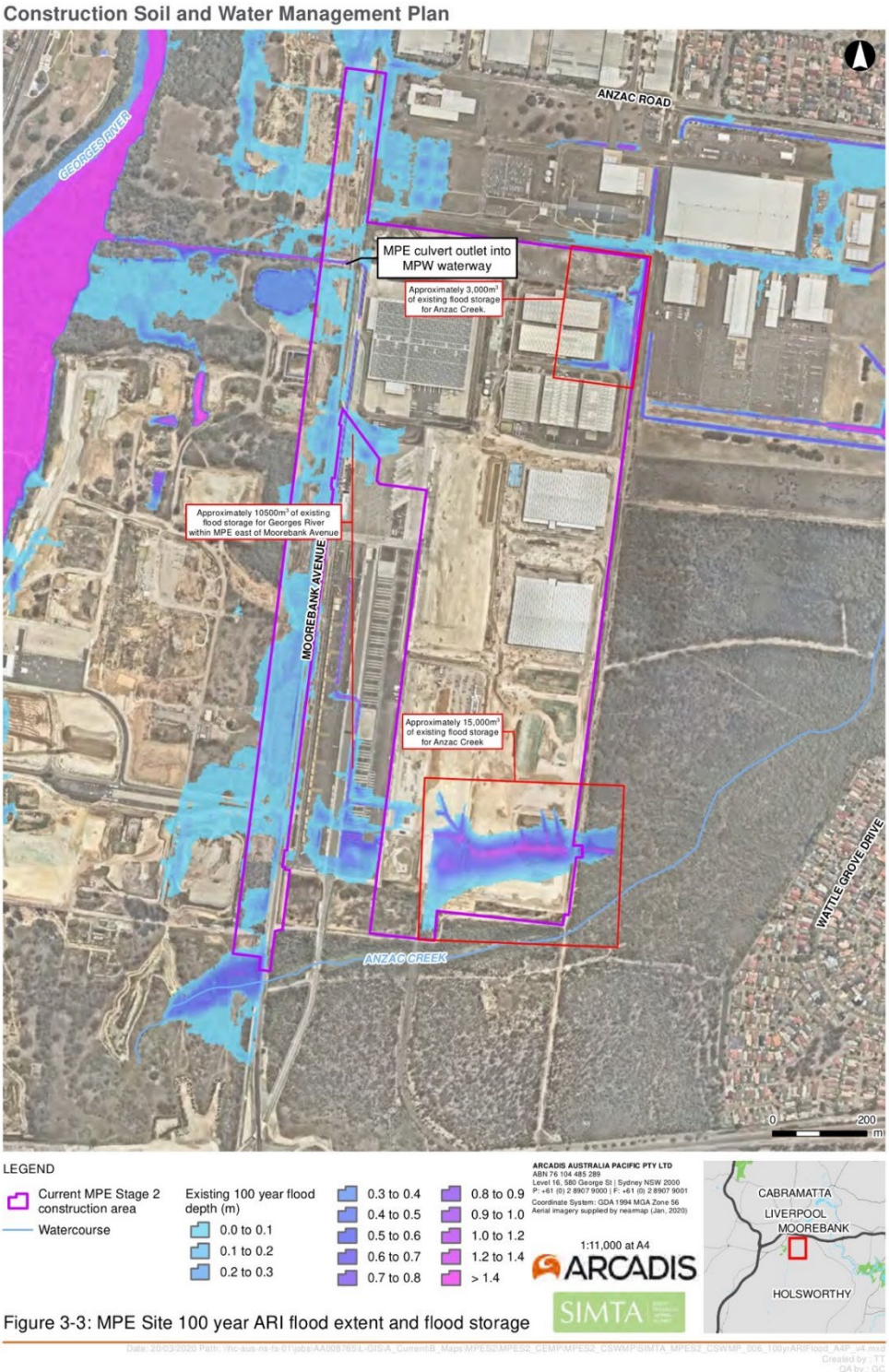

Figure 3-3: MPE Site 100 year ARI flood extent and flood storage

Figure 3-3 MPE Site 100 Year ARI Flood Extent and Flood Storage

3.2. Aspect, Impacts and Risks

3.2.1. EIS Identified Impacts

3.2.1.1. Stormwater Quantity

The removal of existing stormwater management structures during construction, such as pipes and open-lined channels, may result in the increase of surface flow volumes and velocities across the site. This in turn has the potential to increase the mobilisation of debris and sediment offsite, which can degrade surrounding terrestrial and aquatic habitat, and contribute to increased erosion, surface scouring, and scouring of water channels. In accordance with CoC B34(h), Figure 3-4 shows stormwater infrastructure to be decommissioned and retained throughout construction, which includes the removal of all remnant Defence stormwater infrastructure within the construction footprint.

DRAINS software was used during the Development EIS to generate rainfall runoff models that represent existing and the post development stormwater conditions (additional detail regarding the modelling undertaken and additional results is included in EIS Appendix P). A summary of peak flows discharging from the Development site for the existing and post development conditions is included in Table 3-4 and demonstrates that peak discharge from the site is to be reduced or maintained for all storm events other than the PMF.

Table 3-4 Existing and Future (with Development) Peak Flows

Discharge Location	Catchment Area (ha)	Flow (m^3/s)					
		Existing			Post Development		
		5yr ARI	100yr ARI	PMF	5yr ARI	100yr ARI	PMF
Outlet A (Greenhills Road North)	21.76	3.4	4.1	23	1.6##	2##	44##
Outlet B (Greenhills Road South)	27.45	0.5	3	15	0.3	1.8	21
Outlet C (downstream of Moorebank Ave)	59.95	6.9	12.9	75	4.7	6.6	120

The tabulated peak flows are not a comparison of storm to storm durations; for a comparison please refer to Appendix P of the EIS

From RtS (Appendix E)

As discussed in Section 3.1.1, there is adequate capacity in the stormwater infrastructure on adjacent sites that currently receive stormwater from the MPE Site. The EIS Stormwater and Flooding assessment (refer to Appendix P of the EIS) and updated within the RtS, concluded that the proposed drainage systems and OSDs would provide adequate system capacities and mitigate potential adverse flood impacts that may otherwise result from the Development. As such, improvements to the condition of existing drainage infrastructure on the DJLU site, downstream of the MPE Site are not considered necessary as part of the Development and are not to be undertaken under the Development approval.

It was noted that the existing drop structure within the channel on the MPW site that Outlet C reports to has failed resulting in major scouring. While the Development will not result in an increase in peak flows up to the 100year ARI event and the stream erosion index is within acceptable limits at the point of discharge from the MPE Site, it is proposed to undertake rehabilitation works on the MPW site to prevent further scour. A dilapidation survey was undertaken of the channel on the MPW site and the entire structure was replaced with a twin boxed culvert and riprap at its outlet to the Georges River.

Additionally, the culverts under Greenhills Road that Outlet C report to are to be upgraded and scour protection to be provided on the downstream side. The upgrade of the culverts is required to allow for a free-flowing orifice from OSD 2. While the stream erosion index is within acceptable limits and the peak flows from the Development is less than the existing, scour protection is to be provided to assist with the stability of the outlet.

3.2.1.2. Stormwater Quality

Bulk earthworks and vegetation clearing activities during construction of the Development, if not managed properly, have the potential to contribute to increased mobilisation of soil from the MPE Site into nearby waterways or lands, resulting in a decrease in the quality of nearby waterways.

More specifically, processes with potential to impact the water quality of surrounding waterways associated with Development construction, predominantly associated with ground disturbance, include:

- Alteration of the topography and associated water catchment areas of the Proposal site
- Changing of the soil profile on site to expose potentially more reactive soils
- Removal or modification of existing drainage, retention or diversion structures
- Transport of noxious weeds
- Alteration or removal of drainage pathways across the construction area
- Spills or leaks of substances such as oil, hydraulic fluids and fuels.

Stormwater flows through the construction areas are to be directed to sediment basins (see further detail in Section 3.4.2 and discharge procedure outlined in the CESCP) prior to discharge from site.

3.2.1.3. Flooding

Construction of the Proposal, particularly through the adjustment of Development site building formation levels, would have the potential to cause flooding impacts on surrounding properties during a significant rainfall event, in the absence of flood management measures. Flood risk to nearby properties and to the site itself may occur through the failure of existing or temporary water containment measures, or through a rainfall event exceeding that for which the controls for construction activities were designed to protect flood related impacts. Figure 3-3 shows the location and extent of existing 100year ARI flood depths and demonstrates that there is limited flood storage within the Development site.

Modelling undertaken for the Development demonstrated that potential adverse flood impacts have been adequately mitigated along the Anzac Creek floodplain, up to 100year events, as shown in Figure 3-5. Construction of the on-site detention basins that would

mitigate potential flooding impacts would be undertaken early in the construction program to mitigate flooding impacts during construction and operation of the Development.

3.2.2. Construction Impacts

Key construction activities and the associated potential sources of erosion, sedimentation and water pollution related to the Development are described in Table 3-4 and the aspects and impacts register in the CEMP. Cumulative stormwater and flooding impacts associated with the construction of the Development are discussed in Section 3.3.

In accordance with B34(m), appropriate erosion and sediment control measures are to be implemented on-site to reduce the risk of untreated water draining towards the biodiversity offset areas. Management measures in this area will focus on erosion control to minimise the mobilisation of sediments. The Primary Erosion and Sediment Control Drawings included within the CESCP (Appendix B) demonstrates how stormwater flows to the biodiversity offset area will be managed.

Management measures to address identified risks are included in Section 3.4.

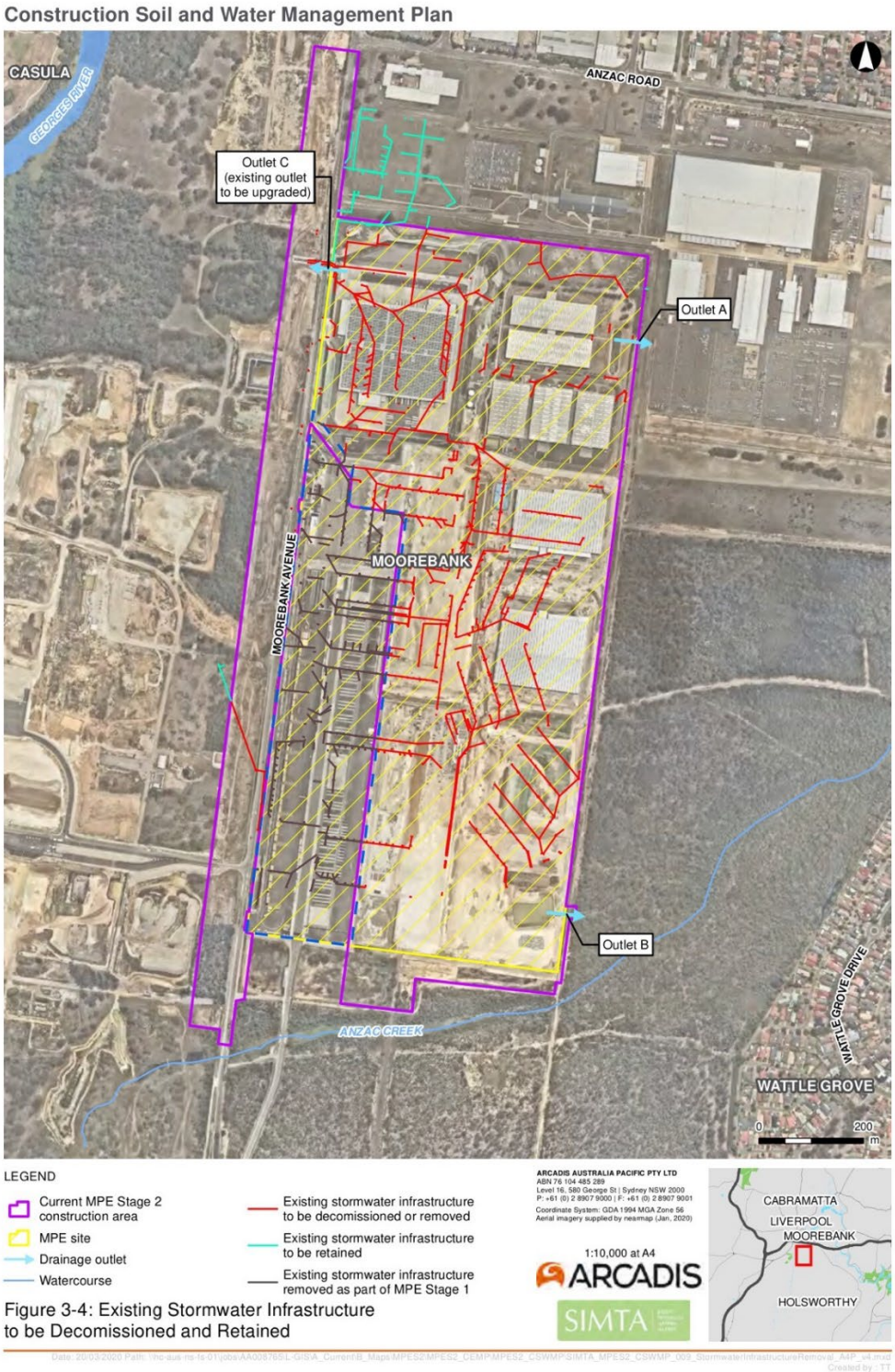

Figure 3-4: Existing Stormwater Infrastructure to be Decomissioned and Retained

Figure 3-4 Existing Stormwater Infrastructure to be Decommissioned and Retained

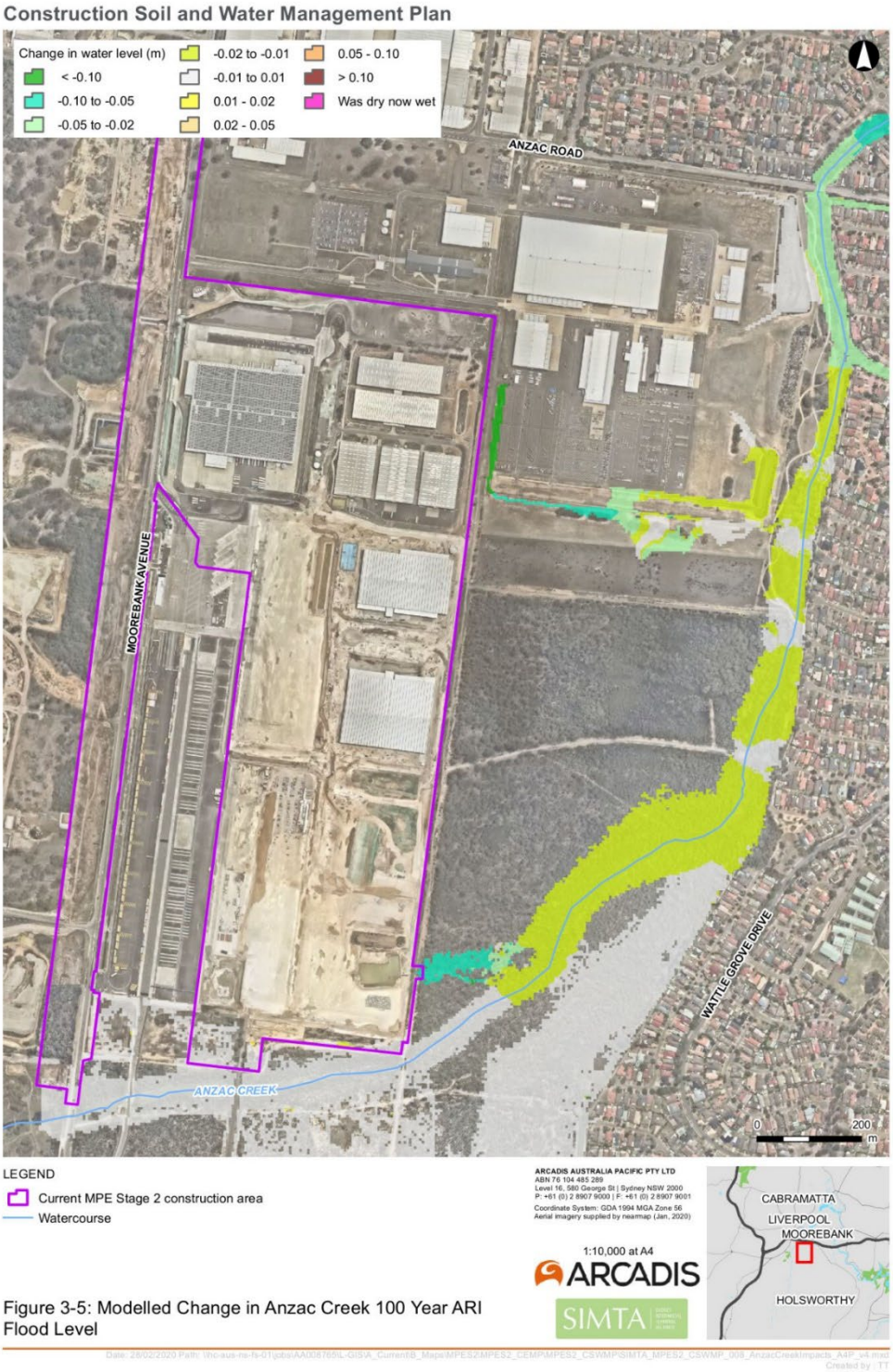

Figure 3-5: Modelled Change in Anzac Creek 100 Year ARI Flood Level

Figure 3-5 Modelling Change in Anzac Creek 100 Year ARI Flood Level

Table 3-5 Potential Construction Impacts to Soil and Water during Construction

Construction Activity	Description of Potential Impact
Demolition / remediation	Removal and offsite disposal of unsuitable materials, if uncontrolled, could potentially result in: • Sedimentation of waterways and degradation of water quality • Mobilisation of sediment and potential pollution of waterways.
Concrete batching	Generation of dirty water onsite, potentially resulting in: • Degradation of water quality to nearby waterways
Earthworks (excavation and placement of fill)	Filling of the site resulting in loss of flood storage and increased flood risk. Increased mobilisation of sediment, potentially resulting in: • Sedimentation of waterways and degradation of water quality • Soil loss • Damage to surrounding flora and fauna habitat.
Stockpiling materials (topsoil, mulch and fill)	• Increased mobilisation of sediment • Release of tannins to waterways • Soil loss • Damage to surrounding flora and fauna habitat.
Vegetation clearing	Increased soil exposure, potentially resulting in: • Sedimentation of waterways and degradation of water quality • Increase surface flow runoff
Movement of vehicles, plant and equipment	Increased materials tracking and sediment mobilisation, potentially resulting in: • Soil loss • Sedimentation of waterways and degradation of water quality • Potential oil spillages from use of plant and equipment • Damage to nearby flora and fauna habitat.
Pavement construction	Installation of pavement could result in: • Increased surface run-off and turbidity of waterways.
Warehousing and freight village construction	Construction of warehousing and the freight village could result in: • Increased surface run-off and turbidity of waterways.
Finishing works (landscaping)	Installation of landscape planting would provide additional ground cover to areas within and surrounding the site, result in:

Construction Activity	Description of Potential Impact
	• Improved bio-filtration of surface flows, improving water quality of nearby waterways. • Reduced exposure of soils and risk of erosion.

3.3. Cumulative Impacts

Assessment of potential cumulative stormwater and flooding impacts was undertaken as part of the EIS preparation (Refer to Section 19 of the EIS).

As both the MPE and MPW sites were already previously developed, it was considered unlikely that construction would result in a change to the overall erosion and sedimentation across the sites. The stormwater controls identified for the Development are expected to be replicated at the MPW site, and the implementation of these controls would reduce the risk of exposed surface sediments being mobilised and deposited in riparian habitats or watercourses during construction and operation phases of the two developments.

Both the MPE and MPW Developments are required to maintain stormwater controls during construction and operation in accordance with local, State and Federal regulations. The cumulative impacts of the Developments are considered to be negligible as stormwater is required to be managed appropriately and management measures (see Section 3.4 and Table 3-6) are to be implemented during construction of both sites.

3.4. Management Measures

This section describes the overall approach to managing and mitigating risks to soil and water during construction of the Development. The management measures in Table 3-6 are based on the FCMMs, provided as part of the RtS report, and the CoCs, as well as the requirements and standards of ESR, the Construction Contractor and industry practice.

3.4.1. Erosion Control

Erosion occurs where land cover is disturbed and /or water is artificially concentrated, leading to the transport of sediment off site. Diversion of clean water flows around disturbed areas minimises the risk of erosion and therefore reduced water quality impact. The ESC Drawings included in Appendix A to this CSWMP show how stormwater is to be diverted around the Development site during construction.

Erosion control is a priority of any erosion and sediment control strategy. Effective and practical erosion control can be achieved through:

- Limiting the area of disturbance and implementing progressive stabilisation to limit the time of disturbance and exposure to erosion potential
- Integrating measures that reduce the volume of water moving over exposed surfaces. These include the diversion of non-site water around the site and the adoption of measures within the Construction area to minimise the size of local catchments and transfer clean water via a stabilised channel (e.g. pipe or lined channel) to stabilised outlets
- Utilising measures that slow the movement of water over exposed areas to velocities which do not lead to scour of the surface. This may be achieved by creating flat

gradients, introducing roughness or installing flow checking measures within channels / on slopes

- Providing additional protection, cover or stability to exposed surfaces so that it is less readily eroded. Options include spray on stabilisers, mulches, blankets temporary vegetation and permanent progressive landscaping.

There approaches should be included in the planning phases for each work activity and integrated with the works at each site.

In areas close to sensitive environment (e.g. the Bootland to the south of the MPE Site) or where there is a lack of available space for sediment control (i.e. sediment basins), temporary and immediate protection is to be prioritised through ground cover methods such as polymer, geotextile fabric or plastic or temporary landscaping.

Areas that are not required to be exposed are to be protected using site mulch, temporary vegetation cover or a soil-binding agent to keep the areas exposed to erosion to a minimum. Requirements for protection are detailed within the progressive ESC Drawings as works are progressively completed.

3.4.2. Sediment Management

Sediment control should be viewed as secondary to erosion control in minimising ground and surface water pollution resulting from construction. The sediment basins have been sized and located to manage sediment concentrations in site runoff to within acceptable limits. Preliminary basin sizes have been calculated in accordance with the Blue Book and are based on Berkshire Park Group soils (‘Type F’). These soils are fine grained and require a relatively long residence time to allow settling.

The sediment basins have generally been located within the lowest point of each catchment boundary to allow water to drain to the basins and are designed to capture any flows that may discharge to the Georges River, Anzac Creek and through the biodiversity offset area. Sediment basins for ‘Type F’ soils are typically wet basins which are pumped out following a rainfall event once discharge criteria have been achieved (refer to Table 17 for discharge criteria). Further detail on the management and maintenance of sediment basins is included in the CESCP (Appendix B). Sediment basins are to remain online until there is 80% groundcover in upstream catchments, at which point, a determination to be made (by the Principal’s Representative and Contractor’s WM and EM) as to whether the sediment basin can be decommissioned and On-Site Detention basins can be utilised for operational stormwater management. This is further detailed in the Stormwater Management Plan. Rainwater gardens installed for the OSDs during construction is to be maintained throughout the remainder of construction and into operations.

Other measures for sediment control to include:

- Use of sandbags, sediment fences or mulch bunds along work area perimeters
- Sweeping of hardstand areas
- Use of inlet traps and inlet protections at existing drainage structures
- Temporary sediment traps
- Stabilised site entries
- Vehicle wash-down bays and / or rumble grids

- Contour controls.

3.4.3. Stockpile Stabilisation

Stockpile stabilisation is required for any imported spoil that will be subject to stockpiling within the site for more than a ten day period without being worked on. Stabilisation requirements will be dependent on the type of material stockpiled as outlined below:

- Coarse grained stockpiles are to incorporate rock armouring
- Less coarse grained stockpiles or stockpiles that have a significant component of fines requiring slope stabilisation may include the following:
  - Application of a polymer to bind material together
  - Application of hydro-seed or hydromulch
  - Covering batters with mulch to provide ground cover
    - Mulch must not be used within 40m of a waterway to minimise the potential for tannins entering the water system. This is a medium-term temporary solution where batters are not to be disturbed.
  - Covering batters with geofabric
  - Use of a simple sprinkler system for temporary stockpiles, including use of radiating sprinkler nozzles to maintain fine spray over exposed surfaces.
  - Other options identified by the Construction Contractor.

3.4.4. Hazardous Materials

Hazardous materials may be transported to and used on the Development site to facilitate construction.

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) links the permissibility of an industrial development proposal to its safety and environmental performance. SEPP 33 is appropriate for the operation phase of the Development, however, threshold values for Dangerous Goods are considered as standard good practice.

The Pollution Incidence Response Management Plan (PIRMP) (required for holders of Environment Protection Licence) sets out the procedure for managing and reporting on the threshold values of pollutants stored on site. In accordance with the PIRMP each contractor is required to provide the following information to ESR:

- Types of potential pollutants to be used
- Maximum quantity to be stored or held on site
- Storage locations (GPS coordinates)
- Storage methods (description and photos)
- Current Material Safety Data Sheet (MSDS), handling methods required, personal protective equipment for handling, emission control equipment and personal protective equipment to be used in the event of a spill
- Spill clean-up method(s).

Condition O4 of the Moorebank EPL requires the Development to handle and store chemicals, fuels and explosives in accordance with relevant Australian Standard and legislative conditions. These requirements are captured in the PIRMP.

An Incident Response procedure is outlined in Section 2.8.1 of the CEMP and is to be referenced for all environmental incidents that occur at the Development site.

3.4.5. Management Measures

The management measures in Table 3-6 are based on the FCMMs, provided as part of the consolidated assessment clarification responses, and the CoC, as well as the requirements and standards of ESR, the Construction Contractor and best practice.

Table 3-6 Management Measures

ID	Management Measure	Timing	Responsibility	Reference
General				
SW1	Install all ERSED controls in accordance with the Construction Erosion and Sediment Control Plan (CESCP), included in Appendix A of this plan prior to commencement of works within the MPE Stage 2 construction boundary. No works to be undertaken, within DJLU.	Construction	Contractor's EM Site Supervisor	CoC B34 and B39 MPE C'th CoA 2B MPE CMM (Hydrology)
SW2	All personnel to participate in induction prior to commencing works on site.	Construction	Contractor's EM Site Supervisor	Best Practice
Site Access				
SW3	All site access points to the construction area are to be stabilised in accordance with SD 6-14 (refer to Appendix A) to minimise mud tracking and dust generation. Exit points to include installation of wheel wash or rumble grid systems.	Construction	Contractor's CM	CoC B36 FCMM 5A
SW4	Construction traffic to be restricted to delineated access tracks to minimise mud tracking and dust generation, which is to be maintained until the completion of construction.	Construction	Contractor's CM Contractor's EM	CoC B34 and B39 MPE CMM (Hydrology) FCMM 5A

ID	Management Measure	Timing	Responsibility	Reference
SW5	All access areas throughout the Development site to be: • Positioned to protect existing vegetation and downstream areas, while being considerate of the needs of efficient works activities. • Limited to a maximum width of 10m.	Construction	Contractor's CM Contractor's EM	CoC B34 and B39 MPE CMM (Hydrology)
Site Preparation				
SW6	Implement appropriate ERSED controls for each section of works in accordance with relevant CESCP, prior to the commencement of any clearing, stripping or earthworks.	Construction	Contractor's EM	CoC B34 and B39
SW7	All appropriate erosion and sediment controls to be implemented prior to soil disturbance within relevant phases of construction. Water carts are to be made available to provide dust suppression for exposed areas.	Construction	Contractor's EM	FCMM 5A
SW8	Delineate vegetation clearing boundaries, sensitive areas and vegetation within vicinity of the construction footprint that is to be retained, using high visibility barrier tape (or equivalent) prior to construction, clearing or stripping works commencing, as per construction plans.	Construction	Contractor's CM Site Supervisor	CoC B34 and B39 CFFMP
SW9	Ancillary site features (e.g. site offices, construction stockpile locations and equipment laydown areas) and hazardous materials to be located within existing cleared/disturbed areas. These features are located above the design flood level and outside of flow paths where possible.	Construction	Contractor's CM	CoC B34 and B39 MPW C'th CoA 9 b)

ID	Management Measure	Timing	Responsibility	Reference
SW10	Pre-start checks, as well as maintenance in accordance with manufacturers requirements, will be undertaken on plant and equipment to minimise potential for leaks and spills from vehicles.	Construction	Contractor's EM	CoC A32 MPW C'th CoA 9 b)
Erosion and Sediment Control				
SW11	Update the ESCP to reflect the changing nature of the site as the construction works progress. ESCPs are to be prepared by the Construction Contractor, reviewed by the Contractor's EM and issued to the Principal's Representative in accordance with the document control procedure outlined in the CEMP to maintain their currency and relevance to current physical works being undertaken.	Construction	Contractor's EM	CoC B34 and B39
SW12	Install hydraulic structures and controls (i.e. clean and dirty water diversion drains/bunds, pipes, swales and culverts) as early as practicable in the construction program. Temporary diversion channels around temporary work obstructions are to be established for low to normal flows to bypass work areas.	Construction	Contractor's EM	CoC B34 and B39 MPW C'th CoA 9 c)
SW13	Sediment fences, bund walls and diversion drains to be located around suitable areas of the site, as indicated in primary ESCP drawings, to assist in preventing untreated runoff from leaving the site and to minimise sediment migration into drainage channels, sediment basins and waterways.	Construction	Contractor's EM Site Supervisor	CoC B34 and B39 RSOC (Stormwater and Flooding) MPE C'th CoA 2B MPE CMM (Hydrology)

ID	Management Measure	Timing	Responsibility	Reference
SW14	Protect exposed batters and disturbed surfaces through progressive revegetation methods, and through application of temporary Reinforced Erosion Control Products (RECPs) where practical (e.g. geotextile fabric, polymers, cover crop, plastic sheeting etc.).	Construction	Contractor's EM	CoC B34 and B39
SW15	Reduce slope lengths to slow runoff flow velocities and enable course sediment to settle through use of check dams. These can be built with various materials, including rocks, logs and sandbags (refer to SD 5-4 for Rock Check Dam, refer to Appendix A). Maintenance program to confirm that check dam and channel integrity is maintained throughout the site.	Construction	Contractor's CM Contractor's EM	CoC B34 and B39
SW16	Place sandbag or sediment socks around stormwater pits prior to decommissioning the stormwater pit.	Construction	Contractor's EM	CoC B34 and B39
SW17	Site mulch, temporary vegetation cover or soil-binding agents is to be used to minimise areas exposed to erosion.	Construction	Site Supervisor Contractor's EM	Best Practice
SW18	Pre-treatment measures to be incorporated into the ESCPs developed by the Construction Contractor, including buffer strips and gross pollutant traps where deemed appropriate.	Design Construction	Design Manager	FCMM 5D MPE CMM (Hydrology) MPW C'th CoA 9 c)
SW19	Conversion of any construction stage sediment and erosion control measures into permanent stormwater quality treatment elements only occur once the civil works (roads and drainage) has been completed, for the site to reduce the risk of the treatment measure being compromised by sediment runoff.	Construction	Site Supervisor Contractor's EM	CoC B45

ID	Management Measure	Timing	Responsibility	Reference
Ground Disturbance				
SW20	Stabilisation / revegetation of disturbed areas is to be undertaken as soon as practicable (in accordance with contractual requirements) progressively throughout the phased works to minimise disturbed areas exposed to the forces of erosion at any one time.	Construction	Contractor's CM	CoC B34 and B39
SW21	Minimise the extent of clearing as much as possible, and do not undertake vegetation clearing during overland flow events	Construction	Contractor's CM	CoC B34 and B39 MPE CMM (Hydrology)
SW22	Phase works where practicable to minimise the amount of exposed ground at any one time.	Construction	Contractor's CM	CoC B34 and B39
SW23	Inspect and confirm all ERSED control measures are kept in a properly functioning condition until all site disturbance works are completed and the site is rehabilitated.	Construction	Contractor's CM	CoC B34 and B39
SW24	Revegetation activities to be monitored during weekly environment and sustainability inspections. Where revegetation activities are unsuccessful, potential reasons for failure are to be investigated, and appropriate, remedial actions are to be undertaken (e.g. replacement of any lost topsoil and re-sowing of the revegetation site).	Construction	Contractor's EM	CoC B34 and B39 RSoC (Stormwater and Flooding)
Construction and Operations of Sediment Basins				
SW25	Construction sediment basins to be sited near the locations of the operational onsite detention basins for the duration of the Development.	Construction	Design Manager	N/A

ID	Management Measure	Timing	Responsibility	Reference
SW26	Where deemed appropriate by the Contractor's EM during development of Progressive ESC drawings, temporary construction sedimentation basins are to be constructed. Temporary construction sedimentation basins are to be incorporated into the progressive ESC Drawings and include details on location, size, access, maintenance and construction material. The design of temporary construction sedimentation basins to be based on erosion hazard assessment and annual soil loss calculations.	Construction	Contractor's CM	CoC B39 FCMM 5H
Topsoil and Stockpile Management				
SW27	Topsoil to be stockpiled to a maximum height of 2m in accordance with this plan and the Construction Spoil Management Plan (CSMP). Topsoil (if suitable) is to be reused on site or within the vicinity of the site. Topsoil is to be stripped when moist (not wet or dry) and stripped separately from underlying subsoils. In addition, where practicable subsoils are not to be worked when wet.	Construction	Contractor's CM	CoC B36
SW28	Volumes of topsoil stripped, stockpiled and reused will be reported in accordance with the requirements of the Principal's Representative Development requirements	Construction	Contractor's CM	CoC B36
SW29	Stockpiles will be located at least 5m outside the dripline of existing vegetation, concentrated water flows, roads and other hazardous areas.	Construction	Contractor's EM Site Supervisor	CoC B34 and B39
SW30	Where practicable, stockpiles will be placed more than 50m away from a waterway.	Construction	Contractor's EM	CoC B36

ID	Management Measure	Timing	Responsibility	Reference
SW31	Where they are to remain in situ for a period longer than 10 days, topsoil stockpiles will be stabilised with seeded polymer (grass/ legume or nitrogen fixing species (such as acacia) to assist erosion control and reduce loss of beneficial soil micro-organisms and nutrients). Where applicable, other stockpiles will be stabilised with vegetation, polymer, geofabric or plastic etc.	Construction	Contractor's CM	CoC B34 and B39 ISCA Lan-2
SW32	Stockpiles will be located and managed in accordance with the Stockpile Management Protocol and the Construction Spoil Management Plan.	Construction	Contractor's CM	CoC B34 and B39 ISCA Lan-2
SW33	Total volume of spoil to be imported during construction, including early works, will not exceed 600,000m^3. An additional 250,000m^3 of suitable spoil that is separate to the 600,000m^3 of general fill will be imported. All spoil material received on the Development site will be handled in accordance with the CSMP. The Site Supervisor will be responsible for reporting the daily volumes of fill transported to the site (no more than 13,000m^3) and reporting these to the Contractor's CM and the Principal's Representative. The Contractor's CM will report the total volume of fill imported and confirm the amount does not exceed 600,000m^3 for construction.	Construction	Contractor's EM Site Supervisor Contractor's CM	CoC A6 'Construction' definition

ID	Management Measure	Timing	Responsibility	Reference
Site Drainage				
SW34	Maximise the separation of 'clean' water (offsite) and 'dirty' (onsite) water. Site boundary controls (e.g. sediment fencing, earth banks, mulch bunds, swales and table/diversion drains) around the perimeter of the site, will be implemented as early in the construction process as possible, and as approved by the Design Manager	Construction	Design Manager Contractor's CM	CoC B34 and B39 RsoC (Stormwater and Flooding) MPE CMM (Hydrology)
SW35	All drains will be constructed with a circular, trapezoidal or parabolic cross-section,	Construction	Contractor's CM	CoC B34 and B39 RsoC (Stormwater and Flooding)
SW36	All 'clean' and 'dirty' water diversion drains must be stabilised to minimise channel erosion. 'Clean' water will be discharged to stabilised areas via level spreaders. 'Dirty' water will be diverted to construction sedimentation basins for settling, testing and treatment (if required).	Construction	Contractor's CM	CoC B34 and B39 RsoC (Stormwater and Flooding) MPE CMM (Hydrology)
SW37	Formation runoff will be diverted into inlet pits and the stormwater drainage system as soon as practicable to reduce surface flow lengths and avoid/minimise erosion.	Construction	Contractor's EM	CoC B34 and B39 RsoC (Stormwater and Flooding) MPE CMM (Hydrology)

ID	Management Measure	Timing	Responsibility	Reference
SW38	Where practicable, construct inlet pits to link to subsurface drainage progressively across the site as construction is completed. Inspect and confirm sediment controls are installed upslope of inlet pits until upslope areas are stabilised and not generating sediment laden runoff.	Construction	Contractor's CM Contractor's EM	CoC B34 and B39
SW39	Bio-retention systems, including raingardens and bioswales, will be included in progressive ESC Drawings developed by the Construction Contractor once civil works have been completed for the site and it has been determined by the Contractor's EM that the treatment measures would not be compromised by sediment run off, i.e. at least 80% groundcover in upstream catchments. These structures are to be designed to assist in achieving pollution reduction targets set out within the Liverpool DCP and the Stormwater Management Plan.	Design Construction	Design Manager Contractor's EM	CoC B45 MPE CMM (Hydrology)
Tannin Management				
SW40	Mulch and retain weed-free vegetation. Respread mulched vegetative material to provide soil stability on bare areas and particularly on those areas where landscape tree planting or bushland is to be established after works are complete. Mulch will not be used within 40m of a waterway to minimise the potential for tannins entering the water system.	Construction	Site Supervisor	Best Practice
Contamination and Spill Management				
SW41	Management of existing contamination onsite will be undertaken in accordance with the procedures outlined within the site audit report prepared for the Development (by JBS&G, 2016), accompanying Environmental Management Plan (GHD, 2016) and Contamination Management Plan, included as Appendix N to the CEMP.	Construction	Contamination Consultant Contractor's CM	CoC B138 MPW C'th CoA 9 b)

ID	Management Measure	Timing	Responsibility	Reference
			Contractor's EM	
SW42	Concrete washout will occur within a designated lined and bunded area. Concrete washout will be undertaken at a minimum of 40m away from surface water features.	Construction	Site Supervisor Contractor's EM	MPW C'th CoA 9 b) Best practice
SW43	All spills will be promptly reported to the Contractor's EM. Spills will be managed in accordance with the Emergency Spill Response Procedure (refer to Appendix B) and the Environment Protection Manual for Authorised Officers: Bunding and Spill Management – technical bulletin (EPA, 1997).	Construction	Construction Personnel	MIP EPL No. 21054 CoC B113 MPW C'th CoA 9 b) ESR Standard Operating Procedures
SW44	Emergency spill clean-up kits will be maintained on-site in agreed locations that are accessible and known to all site workers. Spill kits will be used in the event of inadvertent spills of fuels, oils, hydraulic fluids and other hazardous wastes, to contain the spill and avoid contamination of waters. Workers will be trained in the use of spill kits.	Construction	Contamination Consultant Contractor's CM Contractor's EM	MIP EPL No. 21054 MPW C'th CoA 9 b) MPW C'th CoA 9 c)ESR Standard Operating Procedures
SW45	Fuels, oils, lubricants, chemicals and Dangerous Goods (as defined in the Australian Code for the Transport of Dangerous Goods by Road & Rail) and similar products will be stored in accordance with AS 1940-2004, within designated secondary containment areas (e.g. internally bunded shipping containers or purpose-built structures) and the NSW EPA's Storage and Handling of Liquids: Environmental Protection – Participants Handbook.	Construction	Contractor's EM	MIP EPL No. 21054 CoC B112 and B113 FCMM 5G

ID	Management Measure	Timing	Responsibility	Reference
	Bulk storage areas for fuels, oils and chemicals used during construction will be contained within an impervious bund to retain any spills of more than 110% of the volume of the largest container in the bunded area			MPW C'th CoA 9 b) MPW C'th CoA 9 c)
SW46	Trade waste receptacles will be provided for the safe and efficient capture and storage of all construction and miscellaneous wastes (including oily wastes). Recyclable materials will be separated and recycled where possible. Otherwise, disposable wastes will be removed from site regularly and disposed of at a licensed waste facility. Further information regarding waste separation and disposal procedures are provided within the CDWMP, included as an appendix in the CEMP.	Construction	Contractor's EM	MIP EPL No. 21054 FCMM 5G MPW C'th CoA 9 b)
SW47	The quantities of Dangerous Goods present at the Site or transported from and to must be kept below the screening threshold quantities listed in the NSW Department of Planning, Industry and Environment's Hazardous and Offensive Development Guidelines Application Guidelines Applying SEPP 33 (January 2011).	Construction	Contractor's CM	CoC B112 and B114 MPW C'th CoA 9 b)
Water Quality, Dewatering and Discharge				
SW48	Water quality monitoring will be conducted monthly (post rainfall or sediment basin discharge) 100 m upstream and downstream of the Development site at nominated locations in Anzac Creek (locations to be confirmed based on the Baseline Monitoring Program prepared in accordance with CoC B106).	Construction	Contractor's EM	CoC B49 and C21
SW49	Surface waters will not be discharged to the receiving environment without a signed permit to discharge.	Construction	Contractor's EM	MPW C'th CoA 9 c)

<table>
<tr><th>ID</th><th>Management Measure</th><th>Timing</th><th>Responsibility</th><th>Reference</th></tr>
<tr><td></td><td></td><td></td><td></td><td>Best practice</td></tr>
<tr><td>SW50</td><td>Sediment basins will be tested, treated (if necessary) and discharged within 5 days of rainfall causing runoff once discharge criteria are satisfied (refer to Appendix A for the dewatering protocol).</td><td>Construction</td><td>Contractor’s EM</td><td>MIP EPL No. 21054
Blue Book
Best practice</td></tr>
<tr><td>SW51</td><td>Prior to discharge, water quality will be tested to demonstrate conformance and compliance, in accordance with the following dewatering discharge criteria, based on the Blue Book (Volume 2 Main Roads) and EPL requirements:<table><tr><th>Analyte</th><th>Criteria</th></tr><tr><td>pH</td><td>6.5-8.5</td></tr><tr><td>Oil and Grease</td><td>No visible sheen</td></tr><tr><td>Turbidity</td><td>25 NTU</td></tr></table></td><td>Construction</td><td>Contractor’s EM
Contractor’s CM</td><td>MIP EPL No. 21054
CoC B39 and B44
MPW C’th CoA 9 c)</td></tr>
<tr><td>SW52</td><td>Records of dewatering activities will be maintained. Details will include:
Date, time and estimated volume released at each discharge location
Water quality test results for each discharge
Personnel approving the dewatering activities
Evidence of discharge monitoring, or risk assessment and mitigation measures used to eliminate the risks of pollution.</td><td>Construction</td><td>Contractor’s CM
Contractor’s EM
Site Supervisor</td><td>CoC B39</td></tr>
</table>

ID	Management Measure	Timing	Responsibility	Reference
SW53	Discharge of water and wastewater to land will be limited to dust suppression, owing to limitations on infiltration rates associated with clay soils underlying the site and groundwater salinity. Spray from wastewater application will be limited to areas that avoid spray drifting beyond the site boundary.	Construction	Site Supervisor Contractor's EM Contractor's CM	MIP EPL No. 21054 CoC B34 MPW C'th CoA 9 b)
Inspections, Records and Reporting				
SW54	Weather conditions and forecasts will be monitored daily and reported to the Site Supervisor to support appropriate planning for significant rain events.	Construction	Contractor's EM	CoC B34 and B39
SW55	Licensed water discharge locations will be clearly marked by signage that indicates the point identification number as close as practicable to the point and will meet the requirements of the Development EPL.	Construction	Site Supervisor	MIP EPL No. 21054
SW56	Erosion and sediment controls will be inspected as follows: • Daily in accordance with the Daily Inspection Checklist (refer to CESCP) • Weekly in accordance with the Weekly Inspection Checklist (refer to CESCP) • Within 24 hours of expected rainfall • During rainfall • Within 18 hours after a heavy rainfall event (i.e. one which results in the generation of runoff onsite) • Prior to a Rostered Day Off (RDO), long weekends or other periods of extended closure.	Construction	Contractor's CM Contractor's EM Site Supervisor	CoC B39 FCMM 5A RsoC (Stormwater and Flooding)

ID	Management Measure	Timing	Responsibility	Reference
Flood Mitigation				
SW57	In the event of flood impacts, implement the FERP emergency response procedures, emergency assembly point and evacuation routes, precautions and monitoring requirements.	Construction	Site Supervisor Contractor's EM Contractor's CM	FCMM 5C RsoC (Stormwater and Flooding)
SW58	On-site stormwater detention will be constructed as designed to achieve flood management in accordance with the flood modelling results outlined in the Flood Study and Stormwater Management report prepared by Hyder Consulting (Hyder Consulting, 2012a) and as updated within the Stormwater and Flooding Assessment (Hyder Consulting, 2012b).	Design Construction	Design Manager	MPE CMM (Hydrology) MPW C'th CoA 9 b)
Maintenance				
SW59	Permanent and temporary sediment control structures which become blocked or overloaded with sediments will be cleaned out using appropriate methods such as an excavator, backhoe or by manual means. Cleaning shall be performed prior to or when the accumulated sediment has reduced the capacity of the structure to less than 60%, based on a visual assessment.	Construction	Contractor's CM	CoC B39 RsoC (Stormwater and Flooding)
SW60	Refuelling and maintenance of mobile plant will be within a designated lined and bunded area. Refuelling and maintenance will be undertaken at a minimum of 50 m away from surface water features such as creeks, rivers, drains, swales, stormwater pit inlets etc. Plant nappies/drip trays will be utilised for all refuelling operations.	Construction	Contractor's EM	ESR Standard Operating Procedures MPW S1 REMM 9S

ID	Management Measure	Timing	Responsibility	Reference
				MPW C'th CoA 9 b)
SW61	Maintenance of sediment basins will be undertaken in accordance with the following procedure: • A marker will be installed inside the basin to mark the sediment storage capacity limit. Once this marker is reached and/or where there is a large build-up of sediment at the basin inlet, sediment will be removed. • Sediment that is removed from basins will be temporarily stockpiled until suitable for reuse on site at locations as approved by the Contractor's EM, where it will not flow off site without proceeding through appropriate ERSED controls. • The results of maintenance inspections shall be recorded on the Weekly Inspection checklist.	Construction	Contractor's CM Contractor's EM Site Supervisor	ESR Standard Operating Procedure
Dust Control				
SW63	Refer to Early Work Air Quality Management Plan for specific management measures for dust. However, as a minimum, exposed areas will be watered regularly to minimise dust and water carts to be made readily available. Additional watering may be required on windy days.	Construction	Contractor's CM Contractor's EM	CoC B54 CoC B56

4. Monitoring and Review

4.1. Environmental Monitoring

4.1.1. Baseline Monitoring

Water quality monitoring has been undertaken in accordance with CoC B106 prior to the commencement of Construction; the results of which will be used to assess the impacts of future construction discharges.

Monitoring will continue to be undertaken four times a year at the beginning and end of spring and beginning and end of autumn. The full details of the monitoring program are included in the MPE Stage 2 Baseline Aquatic Ecological Monitoring Program prepared in accordance with CoC B106.

4.1.2. Monitoring and Inspections

The Daily and Weekly Environmental Inspection Checklists, will be used to maintain compliance and effectiveness of controls. Items that require action will be documented during environmental inspection and notified to the Site Supervisor in their site diaries. The Site Supervisor will be responsible for providing appropriate resources in terms of labour, plant and equipment to enable the items to be rectified in the nominated timeframes. Monitoring under this plan will be undertaken by the Contractor's EM during weekly inspections of construction activities to monitor compliance with the requirements of the CoCs and this plan. Weekly inspections will focus on the following key issues:

- Integrity, capacity and performance of construction site water quality, sedimentation and flood control measures (e.g. sediment fences, drainage protection, temporary check dams/sumps, diversion bunds, drain protection devices)
- Rehabilitation works.

Weekly inspections are also to occur prior to Rostered Day Off weekends and other times where the Development site will be closed or inactive for an extended period.

In addition, the implementation and record keeping of inspection and monitoring initiatives listed in Table 4-1and Table 4-2below will allow the Contractor's EM to determine compliance with the CoCs, EPL and best practice. Table 4-1 details the types of inspections to be undertaken during Early Works and construction.

Table 4-1 Summary of Inspections

Focus	Area/Location	Responsibility	Frequency
Supervisor daily inspections	Entire Development site	Site Supervisor	Daily
Rainfall inspections (pre, post and during)	All water quality control and sediment control structures	Contractor's EM	Inspection of the site drainage and ERSED control measures should be undertaken: • During dry conditions within 24 hours of expected rainfall of a 60% chance of 70 mm • Within 18 hours following a rainfall event of sufficient

Focus	Area/Location	Responsibility	Frequency
			intensity and duration to cause runoff onsite OR where 70 mm of rain has fallen in 24 hours.
Weekly environment and sustainability inspections	All water quality control and sediment control structures	Contractor's EM	Weekly inspections to check on erosion and sediment control devices (as well as other environmental aspects).

Table 4-2 details the monitoring requirements to be fulfilled during construction. The ESCP and Primary ESCP details the indicative locations of erosion and sediment control devices to direct runoff generated from site through a sediment control device prior to leaving site. Runoff diverted to sediment basins will be treated (as described within the ESCP) to confirm that it is within water quality parameters (as defined in Table 3-5, SW45) prior to discharge (see below "discharge water quality"). As per Condition L2.6 of the Moorebank EPL, the EPA must be advised within three working days of the completion of TSS testing if any results are above the license limit.

The aquatic ecological monitoring program will identify any changes to the receiving water quality as a consequence of early works, construction and operation activities. Discharge water quality will be compared to water quality monitoring results from implementing the aquatic ecological monitoring to determine if further treatment is required that licence conditions are met, and the receiving water quality is not degraded as a result of planned discharges.

In the event that rainfall is of sufficient duration and intensity to cause runoff, a visual inspection of receiving waters will be undertaken, as well as inspection (as described above) of the adequacy of the erosion and sediment controls. If a potential non-compliance or non-conformance is identified, additional monitoring of the receiving waters will be undertaken and corrective actions and incident response (if necessary) will be implemented to reduce the potential for further impact on receiving waters, (see Section 4.3).

Table 4-2 Summary of Monitoring

Focus	Location	Responsibility	Frequency
Weather	Nearest Bureau of Meteorology weather station observations	Contractor's EM	Daily
Pre-start checks on plant and equipment	Entire Project site	Site Supervisors	Pre-start checks on plant and equipment
Discharge water quality	Sediment basins	Contractor's EM	Prior to discharge of basin, monitoring to be undertaken for TSS, turbidity, pH and visible oil and grease. Monthly during discharge at each discharge point, monitoring must be

Focus	Location	Responsibility	Frequency
			undertaken for pH, TSS and turbidity using grab samples. Licensed discharge points for the MPE Site are identified within the Moorebank Precinct EPL.
Receiving water quality	Anzac Creek 100 m upstream and 100 m downstream of Project site	Contractor's EM	Visual inspection during rainfall event of sufficient intensity and duration to cause runoff onsite. If a potential non-compliance or non-conformance is determined and is attributed to the Project, a sample will be taken to determine TSS (or turbidity if correlation undertaken), pH and visible oil and grease and incident measures implemented.
Aquatic Ecological Monitoring	Various locations on Anzac Creek	Principal's Representative	Aquatic ecological monitoring will be undertaken in accordance with CoC B106 and includes water and sediment, invertebrate and fish assemblages. Monitoring will be undertaken four times a year, at the beginning and end of Autumn, and the beginning and of Spring. See Biodiversity Monitoring Strategy for more information (Section 5 of the Baseline Aquatic Ecological Monitoring Report and Biodiversity Monitoring Strategy).

4.2. Environmental Auditing and Reporting

Auditing and reporting will be undertaken in accordance with the CEMP.

Spoil imported to the Development site will be tracked via an Imported Spoil Tracking Register (refer to the CSMP), and the Fill Importation Management Protocol (refer to Appendix E). Details of waste types, volumes and destinations will be recorded in the Waste Management Register, or similar (refer CDWMP).

4.3. Non-compliance, Non-conformance and Actions

It is the responsibility of all site personnel to report non-compliances and non-conformances to the Site Supervisor and/or the Contractor's EM.

Non-compliances, non-conformances and corrective and preventative actions will be managed in accordance with Section 4.4 of the CEMP.

4.4. Review and Improvement

Review and improvement of this plan (including the CESCP contained in Appendix A) will be undertaken in accordance with the CoCs and Section 4.5 of the CEMP. Continuous improvement will be achieved by the ongoing evaluation of environmental management

performance and effectiveness of this plan against environmental policies, objectives and targets.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure. Construction will be undertaken in accordance with the most recent, approved version of this CSWMP.

4.5. Complaints Handling

Complaints handling will be undertaken in accordance with the CEMP and Construction Community Communication Strategy. A complaints register will be maintained, and the following information will be recorded:

- Name of complainant
- Address of complainant
- Form of complaint
- Date and time of complaint
- The nature of the complaint (i.e. fugitive dust, smoky vehicle)
- Allocation of complaint to the relevant Construction Contractor
- Details of the investigation into the complaint
- Actions taken to address complaint
- Results of action taken to address complaint
- Any follow up contact with complainant or further action undertaken.

APPENDIX A COMPLIANCE MATRICES

State Approvals

The Development is being delivered under Part 4, Division 4.7 (previously Division 4.1 prior to 1 March 2018) of the EP&A Act. The CoCs include requirements to be addressed in this plan and delivered during the Development. These requirements and how they are addressed along with division of responsibilities is provided in Table A-1 below.

Table A-1 Conditions of Consent

CoC	Requirements	Document Reference	How Addressed
A1	In addition to meeting the specific performance measures and criteria established under this consent all reasonable measures must be implemented to prevent, and if prevention is not reasonable, minimise, any harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	Section 3.4 Section 4.1	Section 3.4 of this Construction Soil and Water Management Plan (CSWMP) identifies the management measures to be implemented to prevent and minimise environmental harm. Section 4.1 sets out the processes for monitoring and review of the effectiveness of these measures. Opportunities to further minimise environmental harm would be identified through the ongoing evaluation of environmental management performance and effectiveness of this plan.
A2	The development may only be carried out: (a) in compliance with the conditions of this consent; (b) in accordance with all written directions of the Secretary in relation to this consent; (c) in accordance with the EIS, Submissions Report, Consolidated assessment clarification responses, and updated Biodiversity Assessment Report; (d) in accordance with the amended Development Layout Plans and Design Plans, amended WSUD plans and amended architectural plans to be submitted for the Secretary's approval as part of this consent; and (e) in accordance with the management and mitigation measures at APPENDIX B of this consent; and (f) in accordance with modification application SSD-7628-Mod-2 and supporting documentation.	This Plan	This CSWMP has been developed to comply with the CoCs, amended development layout and management and mitigation measures outlined in Appendix B of the CoCs. Refer to the following sections that confirm the Development and this plan will be carried out in accordance with prescribed documentation: (a) Appendix A and Table A-1 demonstrate how the Development will comply with the CoCs. (b) N/A (c) Appendix A demonstrates how the Development will be carried out in accordance with the EIS, consolidated assessment clarification responses and updated Biodiversity Assessment Report (d) N/A (e) Appendix A demonstrates how this plan has been developed in accordance with management and mitigation measures.

CoC	Requirements	Document Reference	How Addressed
A6	The total volume of spoil to be imported, including fill required to raise Moorebank Avenue and spoil imported during early works must not exceed 600,000m^3.	Section 1.4.1 Section 1.4.3 Construction Spoil Management Plan (CSMP) Appendix E	The total volume of spoil to be imported, including fill required to raise Moorebank Avenue and Early Works will not exceed 600,000m^3. An additional 250,000m^3 of suitable spoil that is separate to the 600,000m^3 of general fill will be imported. Total volumes of spoil will be tracked via the Imported Spoil Tracking Register (refer to CSMP) and the Fill Importation Management Protocol (Appendix E) to operate within daily limits.
A7	No works are permitted within the Defence Joint Logistics Unit site under this approval.	Noted	No works are required on the Defence Joint Logistics Unit (DJLU) site. Section 3.2.1, Table 3-6, SW1
A15	If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program	Section 1.5	This CSWMP outlines the proposed staged delivery of this plan. No further staging of this document is expected.
A20	All licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits, approvals and consents.	CEMP - Section 2.5.2 Section 2.1	All applicable licences, permits and approvals will be obtained as required. Approvals, permits and licences required for the Development are discussed in the CEMP in Section 2.5.2. An Environmental Protection Licence (EPL) (No. 21054) was issued by the EPA on 4 June 2018. The licence applies to the Moorebank Precinct areas identified in condition A22 Scheduled activities include crushing, grinding or separating, and contaminated soil treatment. The licence enables the importation of material classified under a Resource Recovery

CoC	Requirements	Document Reference	How Addressed
			Order where the onsite use (approved land use) is consistent with the applicable Resource Recovery Exemption.
A32	All plant and equipment used at the site or to monitor the performance of the development must be: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Section 3.4	a) Management measure SW10 in Table 3-6 indicates that plant and equipment will be maintained in accordance with manufacturer's requirements. b) All plant and equipment used on site will be operated in a proper and efficient manner per ESR Standard Operating Procedures.
B1	The Applicant must: (a) prepare each plan, program and other documents in consultation with the specified stakeholders;	N/A	No consultation requirements are specified for the CSWMP.
	(b) not commence each phase of the Development until the plans, programs and other documents required under this consent are approved by or, where not required to be approved, submitted to the Secretary specified within the timeframes; and	Section 1.4	Section 1.4 confirms that construction will not commence until the CSWMP has been submitted and is to the satisfaction of the Secretary.
	(c) implement the most recent version of the required plans and programs approved by the Secretary for the duration of the development	Section 1.4	Section 1.4 confirms that the most recent version of the CSWMP will be implemented for the duration of construction.
B32	A Site Specific Earthworks Specification must be prepared by a suitably qualified and experienced person(s) in accordance with the Geotechnical Interpretative report, dated 11 November 2016.	Site Specific Earthworks Specification	A site specific earthworks specification has been prepared separately to address the requirements of these conditions
B34	Prior to early works, fill importation or any other surface disturbance, the Applicant must prepare a Soil and Water Management Plan (SWMP) to the satisfaction of the	This plan Appendix E	This CSWMP has been developed to meet the requirements of the CoCs.

CoC	Requirements	Document Reference	How Addressed
	Secretary. The plan must form part of the CEMP required by condition C1 and must include: (a) measures to verify the properties of fill imported to the site (see condition (b));		Measures to verify the properties of fill include at source assessment, on site certification and visual checks of trucks, and assurance testing. Refer also to the Fill Importation Management Protocol in Appendix D
	(b) plans showing limits of clearing, filling and other earthworks and vegetation to be retained and protected;	Section 1.3	Figure 1-1 and Figure 1-2 limits of fill and clearing. Refer to ECMS in the CEMP for detail on retained vegetation. All clearing and fill will be completed with the construction boundary. Refer to Section 1.3.
	(c) plans showing temporary access points and haul roads within the site for fill stockpiling and placement;	Section 1.3	Figure 1-1 and Figure 1-2 have been prepared and will be updated as site conditions change. Refer to Section 1.3.
	(d) plans showing the location of stockpiled fill and other materials and storage areas (see condition (c));	Section 1.3	Figure 1-1 and Figure 1-2 have been prepared and will be updated where necessary to address this condition. Refer to Section 1.3.
	(e) an Erosion and Sedimentation Control Plan (see condition B39);	Appendix B	A Construction Erosion and Sediment Control Plan (CESCP) (0) has been prepared to address the specific requirements of this condition
	(f) measures to minimise dust, erosion and prevent migration of soil off site and migration into constructed and natural drainage lines (see condition B39);	Section 3.4 Construction Air Quality Management Plan (CAQMP)	Section 3.4 includes management measures to minimise dust, erosion and offsite migration of sediment. Further detail on dust management measures is provided in the CAQMP
	(g) details on design and maintenance of temporary stormwater drainage infrastructure including sediment basins and temporary diversion channels around temporary work obstructions to allow low and normal flows to safely bypass the work areas and to separate clean and dirty water flows (see condition B40);	Section 3.4 Appendix B	A CESCP (0) has been prepared to address the specific requirements of this condition. Refer specifically to Table 8 in the EWESCP – Dewatering Procedure. Erosion and sediment control management measures are also detailed in Table 3-6.

CoC	Requirements	Document Reference	How Addressed
	(h) details of existing stormwater infrastructure to be retained, including upgrades to meet design criteria, and design and maintenance of proposed new infrastructure (see condition B40);	Section 3.1	Details of existing stormwater infrastructure are included in Section 3.1 and shown in Figure 3-4.
	(i) evidence that legal agreement has been obtained: (i) to discharge stormwater through adjacent sites; (ii) for any necessary upgrade works to be constructed; (iii) for undertaking maintenance activities; and (iv) use of OSD basins on other sites, such as the MPW site, for this development, and; (v) evidence that an easement has been obtained or is currently in place to discharge and detain water through adjacent sites;	Section 3.1.1 Appendix D	Refer to Appendix D for evidence that the legal agreements have been obtained.
	(j) evidence that a drainage easement is in place to discharge stormwater through the MPW site, and to provide OSD basins within the MPW site, for this development, and that drainage infrastructure within the MPW site to the Georges River has been repaired or upgraded to the satisfaction of the Secretary prior to completion of construction of the temporary MPE Stage 2 sediment basins.	Section 3.2.1 Section 3.4.5 Table 3-6, SW39 and SW40 SMP – W1P	A dilapidation survey was conducted of the channel on the MPW Site, the entire structure was replaced with a twin boxed culvert and riprap at its outlet to the Georges River.
	(k) confirmation that the stormwater drainage systems in adjacent sites are designed, or can be upgraded to accept flows from the MPE site, including provision of scour protection at discharge points;	Section 3.2.1	Stormwater infrastructure on the adjacent DJLU has recently been upgraded and has been designed to accommodate flows from the MPE Site.
	(l) demonstrate no impact on Anzac Creek flood levels or flood extents due to filling of the MPE site;	Section 3.2.1.3 SMP – W1P Section 3	Construction site runoff would be temporarily detained in sediment basins (refer Appendix A – CESCP) so as to mitigate

CoC	Requirements	Document Reference	How Addressed
			impacts on Anzac Creek flood levels and extents during construction. Following construction, and the placement of fill, impacts on Anzac Creek flood levels and extents are expected to be limited to events larger than the 100 year Annual Recurrence Interval (ARI) and would be consistent with the findings of the MPE Stage 2 EIS. Section 3 of the SMP – W1P further details flood studies and impacts associated with the Development and details that the DRAINS and TUFLOW analysis undertaken for MPE Stage 2 as part of the EIS and RtS indicated that the proposed drainage systems and OSDs would provide adequate system capacities and mitigate potential adverse flood impacts that may otherwise result from the Development.
	(m) demonstrate no change to stormwater flows directly entering proposed biodiversity offset areas;	Section 3.2.1	Construction site runoff would be temporarily detained in sediment basins to maintain existing condition flow regimes and distributions leaving the construction area.
	(n) demonstrate no deterioration in the quality of stormwater discharged from the site into proposed biodiversity offset areas; and	Section 3.2.1 Section 3.4	Sediment basins have been sized and located to keep sediment concentrations in site runoff are within acceptable limits. Stormwater leaving the MPE Site needs to meet the requirements set out and explained in Section 3.4.
	(o) demonstrate that stormwater leaving the site meets the design water flow and water quality criteria (see condition B44 water quality monitoring).	Section 3.1.1 Section 3.4, Table 3-6, Item SW52 and SW53 Section 4.11	CoC B44 relates to an operational stormwater monitoring requirement. Stormwater leaving the MPE Site will meet the requirements set out and is explained in Section 3.4.

CoC	Requirements	Document Reference	How Addressed
			Appropriate construction discharge limits have been adopted and are included in Table 3-6 (SW52). Records to be maintained (and assessed in the Stormwater Monitoring Program required in CoC B43 and B44) are addressed in Table 3-6 (SW53). A Baseline Monitoring Programme has been developed in consultation with DPI and OEH, results of which will be used to inform the Baseline Monitoring Strategy and Stormwater Monitoring Programme. Monitoring requirements are summarised in Section 4.1.
B35	The Applicant must ensure that only VENM or ENM, or other material approved in writing by EPA is brought onto the site.	CSMP	Only VENM, ENM or other material approved in writing by the EPA will be brought onto the Development site. All imported spoil entering the Development site will be accompanied by a waste classification form. QA/QC will be undertaken to confirm imported spoil meets the appropriate standards outlined in the CSMP.
B36	Prior to commencement of importation of spoil, the Applicant must prepare a Spoil Management Plan to the satisfaction of the Secretary. The Spoil Management Plan must incorporate detailed information on the handling and transport of spoil, including stockpile management. The Spoil Management Plan must be approved by the NSW EPA Accredited Site Auditor prior to submission to the Secretary to ensure that imported material will be assessed including with regard to the waste classification and site suitability. The Spoil Management Plan is to be prepared separate to, but consistent with the CEMP required by conditions C1 and must: (a) be prepared by a suitably qualified and experienced person(s);	CSMP	The CSMP has been prepared to manage the importation of spoil for the Development. The plan has been submitted for the approval of a NSW EPA Accredited Site Auditor prior to submission to the Secretary. Approval of this plan by the Site Auditor was received 1 March 2018 (Ref: IA 0301-1613-4_07). The Contamination Management Plan details the management of contaminated spoil identified on site. No contaminated spoil will knowingly be imported to site.

CoC	Requirements	Document Reference	How Addressed
	(b) include: (i) a protocol for recording the volume, type and source of fill imported to site and vehicle registrations on a daily basis; (ii) quality assurance and quality control measures to ensure compliance with condition B35; (iii) a protocol for dealing with unexpected finds including material contamination; and (iv) independent auditing by a suitably qualified and experienced specialist.	CSMP	A CSMP has been prepared separately to address the requirements of these conditions.
	(c) be consistent with Volume 1 of Managing Urban Stormwater: Soils and Construction ('the Blue Book') (Landcom 2004) and include: (i) Details on and the location of fill sorting, crushing and stockpiling; (ii) Plans and details on the progressive formation of stockpiles, placement and stabilisation of placed fill; (iii) Stockpiles not to exceed 10 m in height with stockpiles over 4 m in height to be benched, with maximum of 1V:3H slopes; (iv) Monitoring of stockpile moisture content and stockpile watering; (v) Stabilisation of stockpiles if not worked on for more than 10 days; and (vi) Stabilisation of placed fill if construction does not commence within 10 days.	CSMP	A CSMP has been prepared separately to address the requirements of this conditions.

CoC	Requirements	Document Reference	How Addressed
B37	The handling of spoil during construction of the development is to be conducted in accordance with the Spoil Management Plan	CSMP	A CSMP has been prepared separately to include the handling of spoil.
B38	Permanent fill batters to adjacent lands to be a maximum of 1V:4H and details to be provided on methods of slope stabilisation.	SMP – W1P (Section 5.3.1) SMP – Remainder of the Site	This condition is detailed in the SMP – W1P Section 5.3.1 and will be further detailed in the SMP – Remainder of the Site
B39	Prior to commencement of Early Works and fill importation the Erosion and Sediment Control Plan required as part of the Soil and Water Management Plan must: (a) be prepared by a suitably qualified person;	Appendix B	The CESCP (0) has been prepared to address the requirements of this condition. The plan has been prepared by a suitably qualified person.
	(b) be prepared in accordance with Volume 1 of Managing Urban Stormwater: Soils and Construction ('the Blue Book') (Landcom 2004), Managing Urban Stormwater: Soils and Construction − Installation of Services, Volume 2A (OEH 2008) and Managing Urban Stormwater: Soils and Construction – Main Road Construction, Volume 2D (OEH 2008). The plan must consider likely stages of the works and provide for appropriate control of sediment and erosion for each stage. The plan must show: (i) location and extent of all necessary sediment and erosion control measures for the site; (ii) catchment plan; (iii) sediment basin(s) locations including details showing how runoff from the entire site will be directed to the sediment basin(s);	Appendix B	The CESCP (0) has been prepared to address the requirements of this condition. The plan has been prepared by a suitably qualified person.

CoC	Requirements	Document Reference	How Addressed
	(iv) all relevant details and calculations of the sediment basins including sizes, depths, flocculation, outlet design, all relevant sections, pump out systems, and depths; (v) all details of basement and other excavation pump out and dewatering treatment systems including flocculation and any proposed discharge from the site from dewatering and pump out systems; (vi) identification and management of any stormwater run-on to the site from adjacent sites; (vii) location of any temporary stockpiles (soil, spoil, topsoil or otherwise) and accompanying sediment and erosion control measures; (viii) location and details of all vehicle wash down bays and associated erosion and sediment control measures such as earthen bunds; and (ix) a daily and weekly site inspection checklist consistent with IECA Best Practice Erosion and Sediment Control documents.		
	(c) be implemented prior to commencement of Early Works, fill importation and construction (and any substages of these phases) and be updated as relevant to changing Early Works; fill importation, stockpiling and placement, and construction activities.	Appendix B	The CESCP (Appendix B) has been prepared and included in this plan.
B40	Prior to commencement of early works and fill importation, an amended Stormwater Management Plan must be submitted and approved by the Secretary. The plans must be prepared by a suitably qualified person, and independently reviewed, to ensure it meets the following criteria for:	This Plan	This plan and the CESCP have been prepared by suitably qualified persons and reviewed by the Environmental Representative. The person preparing the written plans and drawings is identified on the cover page and Current Issue Signatures section in the CESCP (Appendix A -Primary ESC Drawings).

CoC	Requirements	Document Reference	How Addressed
	(a) Drainage		
	(i) convey flows from low order events (up to and including the 10% AEP event from the main part of the site within the formal drainage system, with flows from rarer events (up to the 1% AEP event) conveyed in controlled overland flow paths;	Appendix B Primary ESC Drawings (Appendix A in CESCP)	This condition is for the operational phase of the Development and is addressed in the Stormwater Management Plan. Low flow and high flow channel designs for conveyance of construction water will be in accordance with the Blue Book. Low flow earth banks and associated check dams have been located to divert water to sediment basins. Low flow banks will be constructed in accordance with the Blue Book Standard Drawing (SD) 5-5 and high flow channels will be constructed in accordance with SD 5-6.
	(ii) show the location and width of controlled overland flow paths; and	Primary ESC Drawings (Appendix A in CESCP)	Refer to the Primary ESC Drawings (Appendix A in the CESCP) for the location and width of controlled overland flow paths.
	(iii) provide levels to AHD confirming building floor levels are a minimum of 150 mm above the maximum design flow path levels	SMP – W1P Section 5.3.6 SMP – Remainder of the Site	This condition is for the operational phase of the Development only and is addressed in the SMP – W1P.
	(iii) provide levels to AHD confirming building floor levels are a minimum of 150 mm above the maximum design flow path levels	SMP – W1P Section 5.3.6 SMP – Remainder of the Site	This condition is for the operational phase of the Development only and is addressed in the SMP – W1P.
	(b) Water Sensitive Urban Design (i) incorporate water sensitive urban design principles, be generally in accordance with relevant Council policies, plans and specifications	Section 3.4.5, Table 3-6, SW39 SMP – W1P Section 6 SMP – Remainder of the Site	Table 3-6 SW39 details that the Progressive ESC drawings will include provision for Water Sensitive Urban Design (WSUD) once construction works have progressed to allow for a minimum of 80% upstream groundcover.

CoC	Requirements	Document Reference	How Addressed
	(ii) ensure that adequate overland flow paths have been provided in the event of stormwater system blockages and flows in excess of the 1% ARI rainfall event; (iii) ensure on site detention basins are visually unobtrusive and ensure public safety; (iv) ensure rainwater harvesting is provided for each warehouse; (v) ensure adequate site area has been provided for stormwater treatment; (vi) ensure design of stormwater treatment systems minimises the risk of failure; and (vii) develop concept options for how 20% of the average annual volume of stormwater from the site can be reused via rainwater capture and reuse for activities including but not limited to: • irrigation, • all internal non-potable uses, • washdown, • cooling towers, • heating, ventilation, and air conditioning, and • ground source heat exchange. The Applicant is to brief the Department on how these initiatives will be implemented prior to the completion of the Stormwater Management Plan.		Full details of WSUD elements are included within the SMP – W1P Section 6 and within the SMP – Remainder of the Site.
	(c) Water Quantity		

CoC	Requirements	Document Reference	How Addressed
	(i) on site detention is to be provided to attenuate peak flows from the development such that both the: • 1 in 1 year ARI event post development peak discharge rate is equivalent to the pre-development (un-developed catchment) 1 in 1 year ARI event • 1 in 100 year ARI event post development peak discharge rate is equivalent to the pre- development (un-developed catchment) 1 in 100 year ARI event.	SMP- W1P Section 5.3.1 and within the SMP – Remainder of the Site	Design, sizing and locations of the OSD basins is discussed within the SMP- W1P Section 5.3.1 and within the SMP – Remainder of the Site Sediment basins are proposed to manage stormwater flows during the construction phase. Sediment basins have been designed and located in accordance with the Blue Book, as described in the CESCP and the Primary ESC Drawings (Appendix A of the CESCP).
	(ii) no new drainage infrastructure work within the Defence Joint Logistics Unit (DJLU) site	Section 3.1.1	No new drainage infrastructure work will occur within the DJLU site as addressed in Section 3.1.1.
	(iii) all on site detention basins to have maximum batter slopes of 1V:4H or, for works immediately adjacent to the Moorebank Avenue upgrade, an alternate slope gradient agreed to by RMS	SMP- W1P Section 5.3.1 and within the SMP – Remainder of the Site	Design, sizing and locations of the OSD basins is discussed within the Stormwater Management Plan Sediment basins are proposed to manage stormwater flows during the construction phase and have been designed and located in accordance with the Blue Book, as described in the CESCP and the Primary ESC Drawings (Appendix A of the CESCP). Sediment basins will be constructed in accordance with SD 6-4.
	(iv) siting and design of onsite detention basins to eliminate/ minimise excavation within the southern ordinance burial pits; and	Contamination Management Plan Section 11	Design, sizing and locations of the OSD basins is discussed within the Stormwater Management Plan It is noted that two sediment basins fall partially within the area identified as the ‘southern ordinance burial pits’. This area, however, has been surveyed and a clearance certificate provided. Any Unexpected Ordinance identified during construction of the sediment basins will be managed in accordance with the Unexpected Finds Procedure detailed within Section 11 of the Contamination Management Plan prepared as part of the CEMP.

CoC	Requirements	Document Reference	How Addressed
	(v) maintenance access to be provided to each on site detention basin	SMP- W1P Section 5.3.1 and within the SMP – Remainder of the Site	Design, sizing, locations and provision for maintenance access is discussed within the Stormwater Management Plan. Sediment basins have been designed and located in accordance with the Blue Book, as described in the CESCP and the Primary ESC Drawings (Appendix A of the CESCP).
	(d) Connection to natural creek lines (i) on site detention basin outlets to natural drainage lines must be constructed of natural materials to facilitate natural geomorphic processes and to include vegetation as necessary (gabion baskets and gabion mattresses are not acceptable).	Stormwater Management Plan	The connection of OSDs to the natural creek lines is discussed in the Stormwater Management Plan. As per the Stormwater Management Plan, OSD basin outlets will be constructed with natural materials. No sediment basins proposed for construction connect directly to natural creek lines (re EWESC Drawings).
	(e) Stormwater Quality i) have a stormwater quality treatment train comprised of gross pollutant traps and biofiltration/ bioretention systems designed to meet the following criteria compared to a base case if there were no treatment systems in place: • reduce the average annual load of total nitrogen by 45%; • reduce the average annual load of total phosphorus by 65%; and • reduce the average annual load of total suspended solids by 85%. ii) all stormwater quality elements are to be modelled in MUSIC as per the NSW MUSIC Modelling Guide. iii) all stormwater quality elements are to be installed upstream of stormwater detention basins, unless it can be demonstrated that biofiltration/ bioretention systems within the OSD basins	SMP- W1P Section 6 and within the SMP – Remainder of the Site	Sediment basins for construction will be designed and located in accordance with the Blue Book, which is considered more appropriate for modelling the pollutant removal capacity of construction phase sediment basins. Appropriate construction discharge limits have been adopted and are included in Section 3.4 of this plan. Construction stormwater management elements are described in the CESCP and shown in the Primary ESC Drawings. Stormwater quality management for operational elements i.e. OSDs, are described in Section 6 of the SMP – W1P and will be further detailed in the SMP – Remainder of the Site

CoC	Requirements	Document Reference	How Addressed
	will not suffer damage from design flows and can be maintained to achieve the water quality criteria. iv) the area of biofiltration / bioretention systems is to be at least 1% of the catchment draining to the system, to ensure there is no short-circuiting of the system. v) bioretention systems which are greater than 1,000m2 in area, are to be divided into cells with no individual cell greater than1,000m2. vi) all filter media used in stormwater treatment measures must: • be loamy sand with an appropriately high permeability under compaction and must be free of rubbish, deleterious material, toxicants, declared plants and local weeds, and must not be hydrophobic; • have a hydraulic conductivity = 100-300 mm/hr, as measured using the ASTM F1815-06 method • have an organic matter content less than 5% (w/w) vii) be provided adequate solar access, considering the design and orientation of OSD basins.		
	A copy of the independent review must be submitted with the Plan. A statement from the reviewer confirming their independence and declaring any actual, potential or perceived conflicts of interest must be provided as part of the reporting of the findings and recommendations of the review. Note: The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters.	N/A	A copy of the independent review was submitted with the SMP-W1P, and an additional independent review will be undertaken prior to submission of the SMP – Remainder of the Site. the review will be submitted with the plan. - .

CoC	Requirements	Document Reference	How Addressed
B40A	OSD 9 as described in the modification application SSD-7628-Mod-2 must comply with the conditions of this consent, including B40, except for Condition B40(c)(iii).	N/A	Noted
B44	The Stormwater Monitoring Program must: (a) assess water quality and quantity performance for operation discharges and ongoing stormwater discharges from the development to ensure protection of the desired ecological values of Anzac Creek; and (b) include sampling locations and the frequency of sampling including wet weather sampling.	Section 3.1.1 Section 3.4.5 Section 4.1	The Stormwater Monitoring Program required by CoC B43 is a pre-operation requirement. Existing water quality conditions have been established and are described in Section 3.1.1. CoC B44 is relevant to this CSWMP in that accurate records are required for water quality discharges during construction so that they can be assessed in the Stormwater Monitoring Program. Records of dewatering activities are addressed in Section 3.4.5 (SW53). On site water, will be directed to sediment basins. Water that meets the discharge criteria (refer Section 3.4.5, SW52), will be discharged into existing stormwater infrastructure. Water quality monitoring of Anzac Creek is being undertaken in accordance with CoC B106.
B45	Conversion of any construction stage sediment and erosion control measures into permanent stormwater quality treatment elements must only occur once the civil works (roads and drainage) have been completed for the site to ensure the treatment measure is not compromised by sediment runoff.	Section 3.4	Section 3.4 (SW19 and SW39) addresses the requirement of this condition.
B112	The Applicant (the operator/occupant of each premises) must store and handle all chemicals, fuels and oils, including Dangerous Goods as defined in the Australian Code for the Transport of Dangerous Goods by Road & Rail, in accordance with: (a) the requirements of all relevant Australian Standards; and	Section 3.4	Requirements for the storage of chemicals, fuels, oil, and Dangerous Goods as defined in the Australian Code for the Transport of Dangerous Goods by Road & Rail are outlined in Section 3.4 (SW46 and SW48).

CoC	Requirements	Document Reference	How Addressed
	(b) the NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Handbook if the chemicals are liquids. In the event of an inconsistency between the requirements listed above, the most stringent requirement shall prevail to the extent of the inconsistency.		
B113	The Applicant (the operator/occupant of each premises) must ensure compliance with the Environment Protection Manual for Authorised Officers: Bunding and Spill Management – technical bulletin (EPA, 1997 and that for liquids, a minimum bund volume of 110% of the volume of the largest single stored volume within the bund is required.	Section 3.4	Management measure (SW44) is outlined in Section 3.4, to meet compliance with the requirements from the Environment Protection Manual for Authorised Officers: Bunding and Spill Management – technical bulletin (EPA, 1997).
B114	The quantities of Dangerous Goods present at any time within each premises or transported from and to the development must be kept below the screening threshold quantities listed in the Department's Hazardous and Offensive Development Guidelines Application Guidelines Applying SEPP 33 (January 2011).	Section 3.4	Quantities of Dangerous Goods must be kept in accordance with the Department's Hazardous and Offensive Development Guidelines Application: Guidelines Applying SEPP 33 (January 2011), as stated in Section 3.4 (SW46 and SW48).
C7	The Applicant must ensure that the environmental management plans required under this consent are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for a particular management plan.	This Plan	Section 3.1 details the existing environment and provides available baseline data for the Site.

CoC	Requirements	Document Reference	How Addressed
	(b) a description of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures/criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	Section 2.1 Sections 1.7 Table 1-3	(i) Section 2.1 lists the environmental obligations for the Development site. (ii) Section 1.7 details the objectives and performance measures. (iii) Table 1-3 under Section 1.7 details the performance indicators.
	(c) a description of the management measures to be implemented to comply with the relevant statutory requirements, limits or performance measures/criteria;	Section 3.4 Table 3-6	Section 3.4 and Table 3-6 stipulates the management measures for construction.
	(d) a program to monitor and report on the: (i) impacts and environmental performance of the development; and (ii) effectiveness of any management measures (see (c) above);	Section 4.1 to Section 4.4	(i) Program on monitoring and reporting of impacts and environmental performance is discussed under Section 4.1 and 4.2. (ii) Section 4.4 states ongoing evaluation on performance and effectiveness will be undertaken against policies, objectives and targets.
	(e) a contingency plan to manage any unpredicted impacts and their consequences;	Appendix C Table 4-1 CEMP – Section 2.8.1	Incidents will be notified and works within the vicinity will stop immediately as per the Emergency Spill Response Procedure in Appendix B for spills which occur at the Development site. Monitoring and inspections in response to rainfall events will be undertaken in accordance with Table 4-1. As described in Section 3.34, an Incident Response procedure is outlined in Section 2.8.1 of the CEMP and is to be referenced for all environmental incidents that occur at the Development site.

CoC	Requirements	Document Reference	How Addressed
	(f) a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 4	Improvement measures are discussed under Section 4.3 through ongoing evaluation and effectiveness of the program.
	(g) a protocol for managing and reporting any: (i) incidents and non-compliances; (ii) complaints; (iii) non-compliances with statutory requirements; and	Section 4.3 CEMP – Section 4.4	Section 4.3 and the CEMP outlines the protocol for managing and reporting complaints, incidents, non-conformances and non-compliances.
	(h) a protocol for periodic review of the plan.	Section 4.4 CEMP – Section 2.8.1	A protocol for periodic review is outlined in Section 4.4. Further detail is provided within the CEMP in Section 2.8.1.

The Final Compilation of Mitigation Measures (FCMMs) were prepared as part of the MPE Stage 2 Submissions Report (Arcadis 2017). A list of the FCMMs as relevant to the Development and how they have been complied with in this plan are provided in Table A-2.

Table A-2 Final Compilation of Mitigation Measures

FCMM	Requirement	Document Reference
5A	A Soil and Water Management Plan (SWMP) and Erosion and Sediment Control Plan (ESCP), or equivalent, would be incorporated into the CEMP for the construction of the Amended Proposal. The SWMP and ESCPs would be developed in accordance with the principles and requirements of Managing Urban Stormwater – Soils & Construction Volume 1 ('Blue Book') (Landcom, 2004) and Volume 2 (DECC 2008) and consider the Preliminary ESCPs (Appendix P of the EIS). The following aspects would be addressed within the SWMP and ESCPs:	This Plan
	• Construction traffic restricted to delineated access tracks, and maintained until construction complete	Section 4.1
	• Appropriate sediment and erosion controls to be implemented prior to soil disturbance	Appendix B

FCMM	Requirement	Document Reference
	• Stormwater management to avoid flow over exposed soils which may result in erosion and impacts to water quality	SMP- W1P and SMP – Remainder of the Site prepared as separate documents to this CSWMP. Appendix B
	• Location of stockpiles outside of flow paths on appropriate impermeable surfaces as well as outside of riparian corridors	Figure 1-2
	• Inspection of all permanent and temporary erosion and sedimentation control works prior to and post rainfall events and prior to closure of the construction area	Section 4.1
	• Wheel wash or rumble grid systems installed at exit points to minimise dirt on roads.	Section 3.3
5B	To minimise potential flood impacts as a result of construction of the Amended Proposal, the following measures would be implemented and documented in the SWMP: • The existing site catchment and sub-catchment boundaries would be maintained as far as practicable • To the extent practicable, site imperviousness and grades should be limited to the extent of existing imperviousness and grades under existing development conditions.	Section 3.3
5C	A Flood Emergency Response and Evacuation Plan, or equivalent, would be prepared and implemented for the construction phase of the Amended Proposal to allow work sites to be safely evacuated and secured in advance of flooding occurring at the Amended construction area.	FERP prepared as a separate document to this CSWMP.
5D	Stormwater quality improvement devices management measures would be designed and installed on site as presented in the stormwater and Flooding Environmental Assessment (Appendix P of the EIS), including: • Gross pollutant traps (GPTs)	Installation of stormwater management Improvement devices would be included within detailed design for the purpose of meeting relevant water quality performance targets during operation. This detail will be provided in the Operational Environmental Management Plan for the Development.

FCMM	Requirement	Document Reference
	• Rain gardens in the base of the OSD channels, as shown in Figure 6-1 of Appendix P of the EIS. Stormwater quality improvement devices would be designed to meet the performance targets identified in Georges River Estuary CZMP.	Refer to SMP- W1P and SMP – Remainder of the Site prepared as separate documents to this CSWMP.
5G	Separated oily wastes would be captured and stored so that they do not enter the stormwater system	Construction Demolition and Waste Management Plan (CDWMP) has been prepared separately to this document, provided as Appendix M of the CEMP. Section 3.4
5H	Measures associated with the OSDs to be developed during the detailed design phase would include: • Security fences – security fencing with locks would keep general public from entering the OSD basins. Only maintenance personnel or other relevant personnel with induction would be allowed into the basins. • Ladders – ladders are to be provided at regular intervals to provide safe access and egress • Access Ramp/ Sloped Driveway – would be provided for maintenance and emergency vehicles. • All OSD basins would have minimum base width of 6.0m. Maintenance access is to be provided along the base of the basin with access points via ramp/ sloped driveway. • Appropriate scour protection and energy dissipation will be provided at drainage outlets to control velocities in the OSD channels to less than 1.0m/s. • Raingarden (bioretention) will be located in areas sufficiently away from drainage outlets to avoid re-suspension of sediments. • The OSD outlets will be protected from blockage via combination of anti-blockage measures, such as palisade fencing, surcharge pit inlet grate and orifice trash screen in accordance with the Australian Rainfall and Runoff 2016 Development 11.	Section 3.4 SMP- W1P and SMP – Remainder of the Site prepared as separate documents to this CSWMP. Sediment basins will be progressively constructed during construction to manage stormwater flows.

FCMM	Requirement	Document Reference
6G	The CEMP would include an Earthworks Specification, which would include details on earthworks material criteria, handling and placement requirements, embankment and cutting formation (including foundation, batter and benching requirements), unsuitable material and bridging layer requirements, conformance testing methods and acceptance criteria (e.g. for material acceptance and compaction control).	Refer to the Site Specific Earthworks Specification prepared separately to this plan.

EPBC Approval

The EPBC Act approval for the MPE Concept was granted by the Department of the Environment in March 2014 (No. 2011/6229). This approval was provided for the impact of the MPE Development on listed threatened species and communities (Sections 18 and 18A of the EPBC Act) and Commonwealth land (Sections 26 and 27A of the EPBC Act).

The EPBC Act approval for the MPW Concept was granted by the Commonwealth Department of Climate Change, Energy, the Environment and Water in September 2016 (No. 2011/6086). This approval was provided for the impact of the MPW Development on listed threatened species and communities (Sections 18 and 18A of the EPBC Act) and Commonwealth land (Sections 26 and 27A of the EPBC Act).

The Moorebank Avenue upgrade works will be performed under the MPE Stage 2 Consent as described in Section 1.1 and 1.3 of the CEMP. Since the western side of the Moorebank Avenue upgrade works construction footprint is located in an existing area of hardstand within the MPW Site, the works must comply with the MPW Commonwealth Approval.

The construction and operation of the Development has been designed to be consistent with the EPBC Act Approval conditions, where relevant. EPBC Act Approval conditions for the Development include specific conditions and commitments that are required to be addressed in this plan. These conditions are identified within the table below, along with where they have been addressed in preparing this plan.

Table A-3 Commonwealth Conditions of Approval

Condition	Requirement	Document Reference
MPE EPBC Approval (2011/6229)		
2B	Implement all feasible and practicable measures that ensure sedimentation and/or erosion (as a result of the proposed action) do not lead to any further reductions in the water quality or degradation of, Macquarie Perch habitat.	Construction activities associated with MPE Stage 2 would not impede directly with any Macquarie Perch habitat in the Georges River. Management measures outlined in Section 3.4. will manage water discharge is in accordance with the appropriate criteria.
7	For the better protection of Commonwealth land, the persons taking the action must engage a suitably qualified expert(s) to prepare a Construction Environment Management Plan (CEMP), for the approval of the Minister. The CEMP must include in relation to construction of the proposed facility: (a) details on the timing of construction works (accompanied by current and detailed maps); (b) identification and quantification of all potential impacts associated with noise, vibration, air quality, traffic, light spill, hydrological changes, contamination and indigenous heritage (including cumulative impacts associated with the DoF's proposed intermodal) upon Commonwealth land. Consideration must be given to people and communities at SME, DNSDC, Defence housing, and the environment more generally in neighbouring bushland areas. Of note, the air quality assessment must quantify all emissions arising from air pollutant sources for which there are established national air quality standards. (c) the results of further investigations with regard to land contamination and indigenous heritage impacts (specifically, PADs two and three). If adverse impacts are identified, details on how such matters will be managed / mitigated must also be provided. Evidence of ongoing consultation with RAPs regarding further investigations for indigenous heritage objects/places must be provided. (d) refined details (including implementation timeframes) for the mitigation measures outlined in the EIS (sections 7.4.2, 7.4.3, 7.4.6, 7.4.7, 7.4.8 and 7.4.9) and summarised in Annexure A;	This plan a) Section 1.4 b) Section 3.1 c) Section 3.1 of the MPE Stage 2 Cultural Heritage Management Plan provides information relating to PADs and implications for the Development. Section 4.7 of the MPE Stage 2 Cultural Heritage Management Plan outlines provisions for ongoing consultation with RAPs. Previous and ongoing investigations associated with contamination are outlined in the MPE Stage 2 Contamination Management Plan.

	(e) a commitment to ensure no lights are installed above the height of 40 metres or, the maximum approved height of the intermodal warehouse buildings (whichever is less); (f) Identification of the trigger values and criteria for all matters mentioned in condition 7(b) (excluding light spill, land contamination and indigenous heritage) and will be adopted for monitoring and managing potential impacts to Commonwealth land; (g) details of a comprehensive monitoring program (including locations, frequency and duration) for: i. Validating the anticipated impacts associated with condition 7(b) ii. Determining the effectiveness of proposed mitigation/management measures; (h) provisions to revise the approved CEMP in response to monitoring associated with condition 7(g) including, details of response / contingency mechanisms to address any exceedances of the relevant trigger values; (i) evidence of consultation with Defence regarding the adequacy of proposed mitigation measures in particular, those measures to mitigate potential light spill impacts upon residential dwellings within SME outside of standard construction hours; and (j) Details of a complaints handling procedure. Commencement of the action may not occur until the CEMP has been approved. The CEMP must be implemented once approved.	d) Section 3.4 and Section 4.1 e) N/A f) Section 1.6 and Section 4.1 (further details of triggers and criteria are presented in Section 3.2 of the Baseline Aquatic Ecological Monitoring Programme and Section 6 of the Baseline Aquatic Ecological Monitoring Report and Biodiversity Monitoring Program) g) Section 4.1 and Table 4-1 h) Section 4.4 i) N/A – School of Military Engineering has relocated from the site j) Section 4.5
MPW EPBC Approval (2011/6086)		
9	Sections of the CEMP and OEMP relating to water must be prepared by a suitably qualified expert and must: a) be consistent with the Water Quality, Storm water and Flooding Provisional Environmental Management Framework (2 July 2014)	This Plan Also see the SMP – W1P

		Section 3.4 excluding 9D, 9G, 9H, 9J and 9T which are not applicable to the MPE Site.
	b) incorporate all measures 9A to 9AG from Table 7.1 of the finalised EIS that are described as 'mandatory'	Section 3.1.6 addresses measures 9AC and 9AG SMP – W1P addresses measures 9F, 9K, 9U-9Y
	c) explain how all measures 9A to 9AG from Table 7.1 of the finalised EIS that are described as 'subject to review' have been addressed	Section 3.4 excluding 9C, 9I and AE which are not applicable to the MPE Site SMP – W1P addresses measures 9Z
	d) be approved by the Minister or a relevant New South Wales regulator.	This plan was approved by DPHI on 8 June 2018

The MPW Commonwealth mitigation measures relevant to this plan are detailed in Table A-4 below. Note that there are no Commonwealth mitigation measures under the MPW EPBC Approval.

Table A-4 MPE Commonwealth Mitigation Measures

MPE Concept Approval	Requirement	Document Reference
Hydrology	The following mitigation measures will be adopted for the SIMTA proposal to mitigate potential impacts on hydrology, water quality and flooding resulting from construction and operation of the SIMTA proposal:	N / A
	Rainwater tanks will be installed to collect roof water from the warehouses on the SIMTA site and will be used for non-potable water demands such as toilet flushing and outdoor use.	SMP- W1P and SMP – Remainder of the Site prepared as separate documents to this CSWMP.

	Pre-treatment measures will be incorporated into the site stormwater design, including buffer strips and gross pollutant traps where deemed appropriate.	SMP- W1P and SMP – Remainder of the Site prepared as separate documents to this CSWMP.
	Bio-retention systems will be incorporated into the site stormwater design, including rain gardens and bioswales, where deemed appropriate. These structures will also act as on-site detention basins, minimising the velocity and volume of flows leaving the site during storm events. Bio-retention systems will be designed to achieve the pollution reduction targets set out in the Liverpool DCP.	SMP- W1P and SMP – Remainder of the Site prepared as separate documents to this CSWMP.
	On-site stormwater detention will be designed to achieve flood management in accordance with the flood modelling results outlined in the Flood Study and Stormwater Management report prepared by Hyder Consulting (Hyder Consulting, 2012a) and as updated within the Stormwater and Flooding Assessment (Hyder Consulting, 2012b).	SMP- W1P and SMP – Remainder of the Site prepared as separate documents to this CSWMP.
	A Soil and Water Management Plan (SWMP) and Erosion and Sediment Control Plan (ESCP) will be implemented for the construction and operation phases of the development, with monitoring and review performance of sediment and water control structures during construction and operation phases. The SWMP and ESCPs will be developed in accordance with the principles and requirements of Managing Urban Stormwater (Landcom, 2004).	This plan Appendix B

Other Approvals

The Revised Statement of Commitments (RSoC) includes the most recent compilation of ESR commitments to mitigate the environmental impacts, monitor the environmental performance and/or achieve a positive environmentally sustainable outcome. These RSoCs (June 2017) were presented in the Moorebank Precinct East – Concept Plan Modification 2 Response to Submissions. The RSoC that are relevant to this plan are identified in table below.

Table A-5 Revised Statement of Conditions

RSoC	Requirement	Document Reference
Stormwater and Flooding	Implementation of management plan strategies prior to commencement of the staged construction phase	This plan and CEMP will be implemented prior to and throughout Construction Phase Table 3-5
	Monitoring and review performance of sediment and water control structures during construction	Table 4-1 Section 4.1
	The Proponent will prepare and update a flood emergency response plan as necessary to address the staged development of the site. Details are to be provided prior to the construction of each of the three major stages of the development	FERP prepared separately to this document

Infrastructure Sustainability Council of Australia (ISCA) requirements relevant to this plan are detailed below.

Table A-6 Infrastructure Sustainability Council of Australia Requirements

ISCA Credit Reference	Requirement	Document Reference
Dis-1 Receiving Water Quality	• Measures to minimise adverse impacts to local receiving water quality during construction are implemented • Monitoring of water discharges and receiving waters is undertaken at appropriate intervals and at times of discharge during construction • Water discharge is managed and reported to meet the requirements of Section 2 of the CEMP.	Table 3-6 Table 4-1 Section 4.1
Lan-2 Conservation of on-site resources	The Construction Contractor must ensure: • Conservation of topsoil and subsoil has been considered • All subsoil and topsoil impacted by the construction works is separated and protected from degradation, erosion or mixing with fill or waste • 95% of all topsoil (by volume) retains its productivity and is beneficially re-used on or nearby to the Development or asset. • Development and maintenance of spoil tracking register.	CDWMP and CSMP have been prepared separately to this document.

APPENDIX B CONSTRUCTION EROSION AND SEDIMENT CONTROL PLAN

APPENDIX C EMERGENCY SPILL RESPONSE PROCEDURE

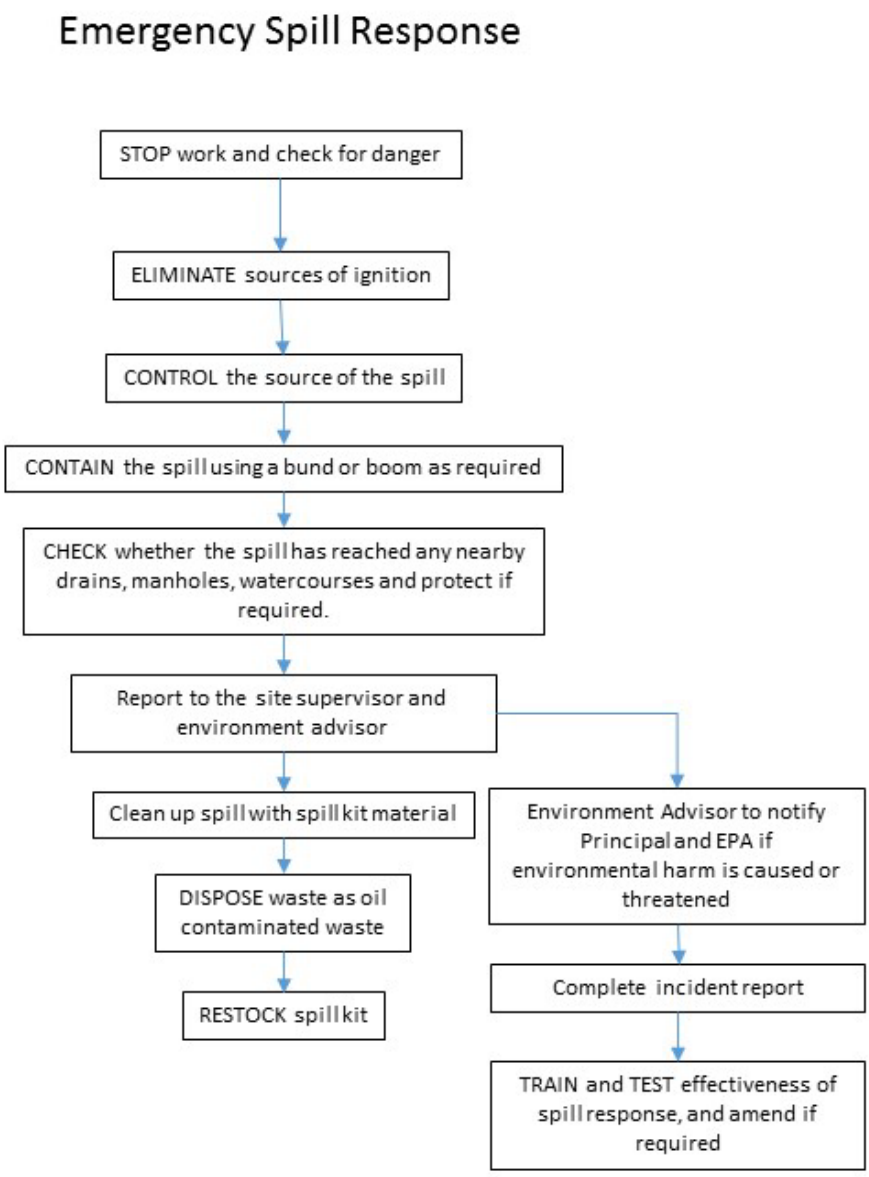

Figure C-1 Emergency Spill Response Procedure

APPENDIX D MEMORANDUM – COC B34 (L)

APPENDIX E FILL IMPORTATION MANAGEMENT PROTOCOL