Western Sydney Airport

Construction Plan – Stage 1 Airport Development

July 2024

Western Sydney Airport

Document Control

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Report Authorisation

Position	Name	Signature	Date
Asset Management General Manager	S. Grant		25/07/2024

Terms and Definitions

Item	Definition
ACM	Asbestos Containing Material
ACP	Airside Civil and Pavements
ACP Contractor	the entity engaged by WSA to deliver the ACP Works for WSI
ACP Works	the physical things and works which the ACP Contractor will design, supply, construct, install, produce, or complete for WSA
AEPR	Airports (Environment Protection) Regulations 1997
AGL	Aeronautical Ground Lighting
AHD	Australian Height Datum
Airport Construction Period	The period from the date of commencement of Main Construction Works in any part of the Airport Site until the date immediately prior to the date on which Airport Operations commence
Airport Lease	An airport lease for the Airport granted under section 13 of the Airports Act
Airport Plan	Means the airport plan for the Airport Site as determined by the Infrastructure Minister under section 96B of the Airports. The latest Airport Plan was determined in September 2021 and authorises Rail Development on the Airport Site.
ASA	Air Services Australia
Airport Site	the site for Sydney West Airport as defined by the Airports Act and as amended from time to time in accordance with the Airports Act, within which the Site is located
Airports Act	*Airports Act 1996* (Commonwealth)
Ancillary Developments	An 'ancillary development' as set out in section 96L of the Airports Act
Approved Plan	Means a plan approved in accordance with the Conditions of Approval
ARFFS	Aviation Rescue and Fire Fighting Service
ASP	Application Service Provider
ASS	Acid Sulphate Soil
ATCT	Air Traffic Control Tower
A-VDGS	Advanced – Visual Docking Guidance System
AWS	Automatic Weather Station
BEC	Bulk Earthworks Contract
BEC Contractor	the entity engaged by WSA to deliver the BEC
Bulk Earthworks	the works to be undertaken by the BEC Contractor as contemplated by the BEC
BBM	Bituminous Bound Material
BoM	Bureau of Meteorology
CAP	Construction Area Plan
CEMP	Means a Construction Environmental Management Plan (CEMP) required under a condition in Section 3.11.2 of the Airport Plan

Item	Definition
Condition	A condition set out in Part 3 of the Airport Plan in accordance with section 96C of the Airports Act.
Construction Impact Zone (CIZ)	The part or parts of the Airport Site or an Associated Site on which Main Construction Works are planned to occur, as detailed in the Construction Plan approved in accordance with Condition 1.
Construction Period	Means the period from date of commencement of Main Construction Works in any part of the Airport Site until the date of commencement of Airport Operations
CSEP	The Community and Stakeholder Engagement Plan (CSEP) required under Condition 15 in Section 3.10.2 of the Airport Plan
CSR	Combined Services Route
CTB	Cement Treated Base
DAFF	Department of Agriculture, Fisheries and Forestry
DICL	Ductile Iron Concrete Lined
DPI	Department of Primary Industries (including Agriculture NSW, Fisheries NSW and NSW Office of Water)
ECZ	Environmental Conservation Zone
ECM	Environmental Control Map
Ecological sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992).
EEW	Early earthworks
Environment Minister	The Minister responsible for the EPBC Act
EIS	The Western Sydney Airport Environmental Impact Statement (EIS - 2016) prepared in relation to the Airport under the EPBC Act
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPA	NSW Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
ERSED	Erosion and Sediment
ESA	Environmentally Sensitive Area
ESCP	Erosion and Sediment Control Plan
ETC	Enterprise Technology Contract
EWMS	Environmental Work Method Statement
FASL	Final Airport Site Layout
FCR	Fine Crushed Rock
FDA	Full Depth Asphalt
FOC	Fibre Optic Cable
GBAS	Ground Based Augmentation System
GPU	Ground Power Unit

Item	Definition
GSE	Ground Service Equipment
HOS	Head of Stand
ICN	integrated communications network
Infrastructure Minister	The Minister responsible for the Airports Act from time to time
ISO 14001	AS/NZS ISO 14001:2016 Environmental management systems
LCB	Landside Civil and Buildings
LCB Contractor	the entity engaged by WSA to deliver the LCB Works for WSI
LCB Works	the physical things and works which the LCB Contractor will design, supply, construct, install, produce, or complete for WSA and inclusive of M12 on-airport works.
LDP	Land Disturbance Permit
M12 on Airport Works	the physical works and infrastructure, including temporary works and infrastructure which the M12 Authority, its contractors and nominees plan, investigate, design, construct, install, commission, test, accept, complete, maintain, operate or repair within the Airport Site
Main Construction Works	Substantial physical works on a particular part of the Airport Site (including large scale vegetation clearance, bulk earthworks and the carrying out of other physical works, and the erection of buildings and structures) described in Part 3 of the Airport Plan, other than TransGrid Relocation Works or Preparatory Activities.
MAP	million annual passengers
MEP	Mechanical Electrical Plumbing
Non-conformance	Failure to conform to the requirements of the Airport Plan including approved plans
OEH	New South Wales Office of Environment and Heritage, or any other agency that has assumed the relevant function(s)
PCC	Portland Cement Concrete
PESCP	Progressive Erosion and Sediment Control Plan
PPE	Personal Protective Equipment
Preparatory Activities	Preparatory Activities, as defined in the Airport Plan, mean the following: • day to day site and property management activities; • site investigations, surveys (including dilapidation surveys), monitoring, and related works (e.g. geotechnical or other investigative drilling, excavation, or salvage); • establishing construction work sites, site offices, plant and equipment, and related site mobilisation activities (including access points, access tracks and other minor access works, and safety and security measures such as fencing but excluding bulk earthworks); • enabling preparatory activities such as: a. demolition or relocation of existing structures (including buildings, services, utilities and roads); b. the disinterment of human remains located in grave sites identified in the European and other heritage technical report in volume 4 of the EIS; c. application of environmental impact mitigation measures; and • any other activities which an Approver determines are Preparatory Activities for this definition
Project, the	Western Sydney Airport – Stage 1 Airport Development

Item	Definition
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Rail Authority	Sydney Metro ABN 12 354 063 515 or such other entity that becomes responsible for the Rail Development from time to time
Rail Development	the physical works and infrastructure, including temporary works and infrastructure which the Rail Authority, its contractors and nominees plan, investigate, design, construct, install, commission, test, accept, complete, maintain, operate and repair on the Rail Land
Rail Land	the land within the Airport Site shown in drawings labelled as "Rail Works Areas".
RAP	WSA Co Limited Western Sydney Airport Remediation Action Plan prepared by GHD dated February 2018
RMS	NSW Roads and Maritime Services
SEMF	Site Environmental Management Framework
SES Officer	a Senior Executive Service-level employee under the *Public Service Act 1999* (Commonwealth)
SIL	Subgrade Improvement Layer
SMZ	Select Material Zone
Stage 1 Airport Development	the Airport development described in Part 3 of the Airport Plan and the Airport CIZ.
Stage 1 Cargo Works	the physical things and works which the Stage 1 Cargo Works Contractor will design, supply, construct, install, produce, or complete for WSA
Standalone Facilities	The physical things and works which include Commonwealth standalone facilities which Contractors will design, supply, construct, install, produce or complete for WSA and any other associated works required by agencies or for the Stage 1 Airport Development.
SWMS	Safe Work Method Statement
TER	Technical Equipment Room
TSS	Terminal and Specialty Services
TSS Contractor	the entity engaged by WSA to deliver the TSS Works for WSI
TSS Works	the physical things and works which the TSS Contractor will design, supply, construct, install, produce, or complete for WSA
TNR	The Northern Road (A9)
ULD	Unitised Load Device
VMS	Variable Message Boards
WSI	Western Sydney International (Nancy-Bird Walton) Airport. The Airport. Note: Under the Airports Act the Airport is referred to as 'Sydney West Airport'
WSA	WSA Co Limited (ACN 618 989 272), the entity responsible for designing, constructing and operating the Airport in accordance with the Airport Plan. For the purposes of the Airports Act, WSA is the "airport-lessee company" for WSI
WSATI	TfNSW Western Sydney Airport Transport Integration

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1 Introduction

This Construction Plan (CP) has been prepared by WSA Limited (WSA) in support of the Stage 1 Airport Development of the Western Sydney International (Nancy-Bird Walton) Airport (WSI) and outlines a range of safety, health, traffic, and environmental considerations. The purpose of this CP is to comply with Condition 1 of the Airport Plan, which is the authorising document for the Stage 1 Airport Development determined by the Infrastructure Minister in September 2021 (refer to Section 1.4 with regards to the compliance of this Construction Plan with the relevant conditions of the Airport Plan). As outlined in section 3.10.2 of the Airport Plan, *"The Site Occupier must not commence Main Construction Works until a Construction Plan for the Airport Site and Associated Sites has been prepared and approved in accordance with this condition."*

The CP seeks to outline processes and controls that can be used to avoid or minimise, to the extent reasonably practicable, impacts on parts of the Airport Site that have important biodiversity values that are outside of the indicative Construction Impact Zone (CIZ). This document sets out:

- The program and timetable for carrying out the Stage 1 Airport Development;
- Details of the construction methodology to be used for carrying out the Stage 1 Airport Development;
- Any proposal to phase commencement of Main Construction Works in different parts of the Airport Site or Associated Sites at different times; and
- Details, of the size and location of the parts of the Airport Site or an Associated Site on which Main Construction Works are planned to occur, are not inconsistent with the Land Use Plan in Part 2 of the Airport Plan.

WSA and its contractors are committed to engaging with the local community, Penrith and Liverpool Councils, NSW and Commonwealth Government agencies, and other stakeholders as the WSI is delivered. The Community and Stakeholder Engagement Plan (CSEP) outlines WSA's commitment to engaging with community stakeholders, and the processes and controls for engaging in an open, inclusive, accessible, and effective manner throughout the planning and delivery of this project.

The Site Environmental Management Framework (SEMF) (refer Section 5 and Appendix A) forms part of the Construction Plan and is WSA's overarching environmental management document to support the implementation of the nine Construction Environmental Management Plans (CEMP) and associated sub plans.

The Main Construction Works will be completed in phases and delivered in works packages (scope of works assigned to a contractor/s) and this CP will be updated to reflect tasks associated with the different phases. The detailed construction methodology associated with Material Importation, Bulk Earthworks, Terminal and Specialty Services Works (TSS Works), Airside Civil and Pavements Works (ACP Works), Landside Civil and Building Works (LCB Works), Stage 1 Cargo Works, M12 on-airport Works (M12 Works) and Utilities phases of the project is covered in Section 6 of this document. In accordance with Condition 49 of the Airport Plan, updates to the CP will be submitted to the appropriate regulatory authority for approval.

1.1 Background

In April 2014 the Australian Government announced that the Commonwealth-owned land at Badgerys Creek would be the site for a second Sydney Airport. The Badgerys Creek airport site was selected following extensive studies completed over a number of decades. The Commonwealth will invest $5.3 billion for the construction of WSI.

In December 2016, the Minister for Urban Infrastructure determined the Airport Plan which sets the environmental and planning authorisation for the development of Stage 1 of the WSI. In May 2017, the Government announced that it would establish WSA to develop and operate WSI. WSA is responsible for constructing and operating WSI in accordance with the Airport Plan. The Airport Plan was varied in September 2021 to authorise a Rail Authority development on the Airport Site. The Rail development does not form part of the WSA Stage 1 Airport Development scope. WSA Limited is wholly owned by the Commonwealth. Further details regarding WSA, including details in relation to the Chairman and Board, can be found online at the WSA website https:// https://westernsydney.com.au/.

An Environmental Impact Statement (EIS) was prepared in accordance with the Commonwealth *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999* and *Airports Act 1996*. The EIS considered potential impacts during construction activities and operation of the Stage 1 Airport Development and long-term development of the proposed airport.

1.2 Stage 1 Airport Development

WSI is expected to be developed in stages to match demand and include planning for services and amenities that are easily expandable over time, providing scalable capacity for aircraft, passengers, cargo and vehicle movements.

Stage 1 Airport Development will provide for an initial operational capacity of approximately 10 million regional, domestic and international passengers per year (MAP). Ultimate capacity is estimated to be 82 MAP by 2063.

The scope of works for the Stage 1 Airport Development is defined in the Airport Plan and will generally include the investigation, design, construction, and commissioning of:

- Bulk earthworks to move and redistribute 26 million cubic metres of material on the Airport Site;
- A single 3.7-kilometre runway;
- Aprons, taxiways, and other airside pavements;
- A multi-user terminal;
- Appropriate airport and aviation support facilities;
- Experience centre and site office;
- Drainage and utilities infrastructure, including an aviation fuel farm; and
- Car parking, on-site roads, and other appropriate landside facilities.

Construction of the Stage 1 Airport Development represents a major greenfield development with complex delivery using multiple contractors working across a range of specialist services. The area that will be directly impacted by construction (the CIZ) covers approximately 1,199 hectares.

Furthermore, a range of existing assets located on the Airport Site were identified as being incompatible with the proposed airport layout and they needed to be removed or relocated. These assets included a section of The Northern Road (TNR), a TransGrid 330 kV transmission line, telecommunication lines, electricity distribution lines, water mains, and existing dams.

The area to the south of the Stage 1 Airport Development construction areas (Figure 3) is reserved for the long-term development of the airport, including the second runway and other associated infrastructure to allow the airport to grow beyond 37 MAP. In the short term this area may be used for purposes that are consistent with the Airport Plan.

1.3 Project Location

WSI will be developed on around 1,800 hectares of Commonwealth-owned land at Badgerys Creek in Western Sydney (Airport Site). The Airport Site is approximately 50 kilometres from Sydney's central business district. Figure 1 shows the location of the Airport Site.

The Airport Site is bounded by Elizabeth Drive to the north, TNR to the south and west, and Badgerys Creek to the east.

Figure 1: Airport Site Location (Commonwealth, 2016)

1.4 Airport Plan Conditions

The Construction Plan has been prepared in accordance with the requirements of Condition 1 of the Airport Plan, which is the authorising document for the Stage 1 Airport Development determined by the Minister for Urban Infrastructure in December 2016.

As outlined in section 3.11.2 of the Airport Plan, "*The Site Occupier must not commence Main Construction Works until a Construction Plan for the Airport Site and Associated Sites has been prepared and approved in accordance with this condition*." Conditions relevant to the Construction Plan during construction of the Stage 1 Airport Development are provided in Table 1.

Table 1: Compliance of the Construction Plan with the Airport Plan Requirements

Condition	Responsibility	Document Reference
The Site Occupier must not commence Main Construction Works until a Construction Plan for the Airport Site and Associated Sites has been prepared and approved in accordance with this condition.	WSA	This document (Construction Plan)
The Site Occupier must: (a) Prepare; and (b) Submit to an Approver for approval;	WSA	This document (Construction Plan)

Condition	Responsibility	Document Reference
a Construction Plan in relation to the carrying out of the developments which are part of the Airport Stage 1 Development.		
(3) The criteria for approval of the Construction Plan are that an Approver is satisfied that the Construction Plan:	Approver	
sets out:		
the program and timetable for carrying out the Airport Stage 1 Development;		Section 2 – Construction Schedule Section 3.1 & Table 2 - Phasing of Works Section 6 Construction Activities
details of the construction methodology to be used for carrying out the Airport Stage 1 Development;		Section 3 – Construction Methodology
any proposal to phase commencement of Main Construction Works in different parts of the Airport Site or Associated Sites at different times; and		Section 3.1 & Table 2 - Phasing of Works
details, not inconsistent with the Land Use Plan in Part 2 of the Airport Plan, of the size and location of the parts of the Airport Site or an Associated Site on which Main Construction Works are planned to occur; and		Section 4 – Land Use Plan Section 4.1 – Airport Site Layout Figure 7 Final Airport Site Layout (FASL)
seeks to avoid or minimise, to the extent reasonably practicable, impacts on parts of the Airport Site that have important biodiversity values that are outside of the indicative Construction Impact Zone shown in Figure 2 in Part 2 of the Airport Plan.		Section 3.5 Construction Impact Zone Figure 6 - Construction Impact Zone Biodiversity CEMP
is otherwise appropriate		This document (Construction Plan)
(4) The Site Occupier must ensure that no CEMP is inconsistent with the approved Construction Plan. *Note: Once the construction plan is approved, the details it sets out of the size and location of the part or parts of the Airport Site or an Associated Site on which Main Construction Works are planned to occur will be the Construction Impact Zone: see the definition of "construction Impact Zone". The details will form part of the Environmental Management Framework and be reflected in the other CEMPs required to be produced.*	WSA	Section 5 – Environmental Management Section 5.2 SEMF and CEMP Focus Areas
(5) The approved Construction Plan may provide for Main Construction Works to be carried out in phases that commence at different times for different parts of the Airport Site or an Associated Site. If it does, the Site Occupier may prepare a CEMP in relation to one or more phases, and the criteria for approval of such a CEMP are taken to exclude any matter irrelevant to the phases for which approval is sought. A variation of the CEMP must be submitted for approval in accordance with condition 49 (Variation of Approved Plans) prior to commencement of any new phase.	WSA	Section 6 SEMF

1.5 Certification and Approval

This Construction Plan has been reviewed and approved for issue by the WSA prior to submission to the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (the Infrastructure Department). Each revision of the Construction Plan is to be sent to the Infrastructure Department for approval as per Airport Plan Condition 2 in Table 1.

1.6 Distribution

All WSA personnel and contractors will have access to this Construction Plan via the Project document control management system. Unless otherwise agreed by the Approver, the Approved Plan, including all revisions, must be published on WSA's website within one month of being approved and be available until the end of the Construction Period. An electronic copy can be found on the Project website https://westernsydney.com.au.

This document is uncontrolled when printed. One controlled hard copy will be maintained by the quality manager at the Project office.

2 Construction Schedule

The indicative construction schedule for the Stage 1 Airport development is summarised Figure 2 and is subject to change. This Construction Plan will apply to any construction works completed as part of the Stage 1 Airport development.

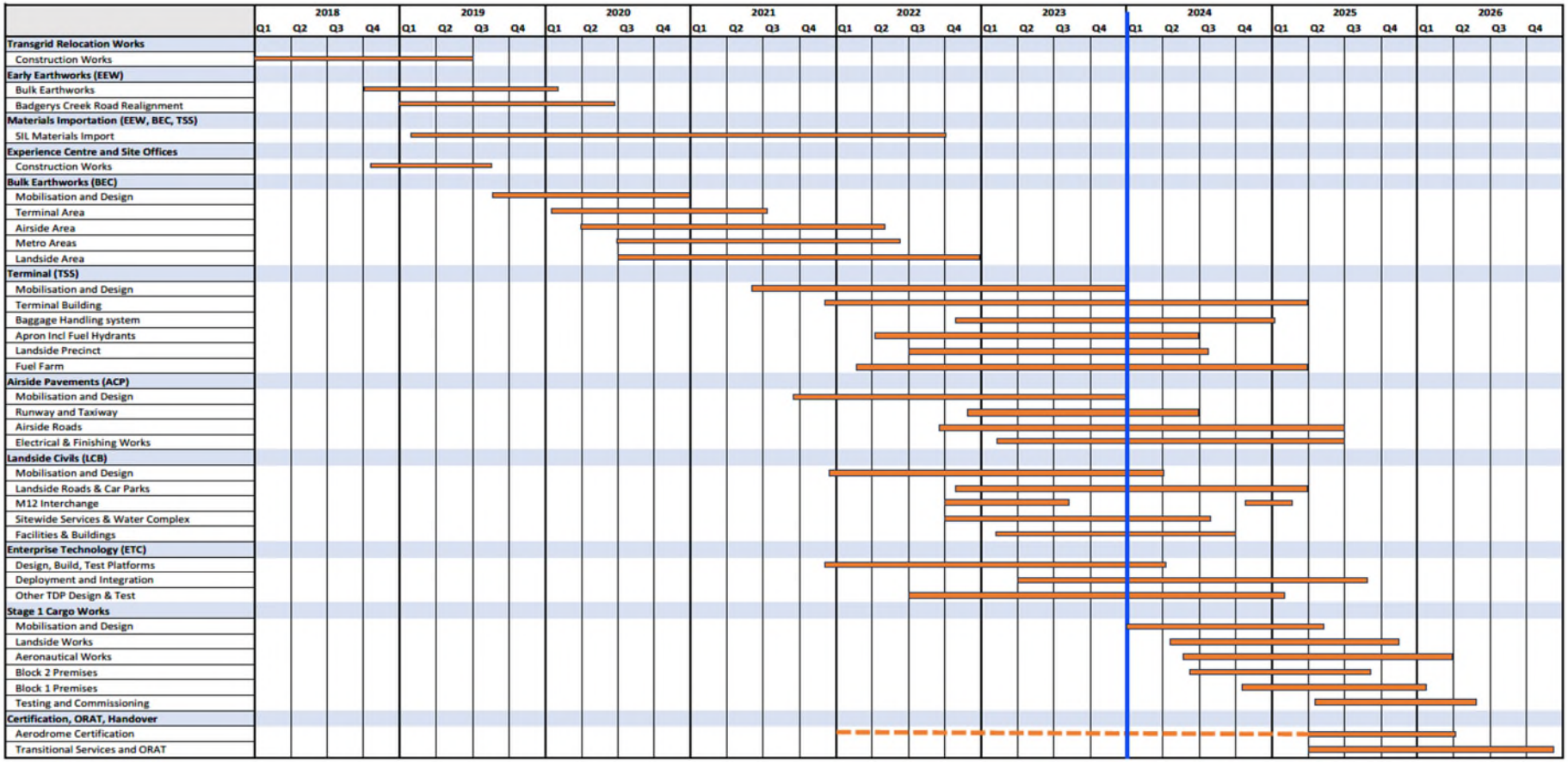

Figure 2: Stage 1 Airport Development Construction Schedule

3 Construction Methodology

3.1 Phasing of Works

WSA's works are generally planned in four primary phases: enabling and earthworks, Main Construction Works, Commercial and Commonwealth Development, and Operational, Readiness, Activation and Transition (ORAT). The earthworks phase comprises major cut and fill operations and drainage network installation to establish a base for the construction of the main airport infrastructure described in Section 1.2.

The Main Construction Works phase subdivides the airport infrastructure scope into three major contract packages that progressively commence work in defined areas of the airport site as portions of the bulk earthworks are completed. These contract packages, referred to as main works construction packages, operate concurrently to construct, test and commission the primary airport infrastructure. The Commercial and Commonwealth Development phase includes additional facilities and infrastructure around the airport site and includes Stage 1 Cargo Works, WSA commercial developments and Standalone facilities. The ORAT phase will focus on preparing WSA personnel and stakeholders for usage of the infrastructure and facilities will run in parallel with the Commercial and Commonwealth Development phase.

The scope of the main works construction works packages are summarised in Section 3.2 below, and further construction planning and methodology of the packages is provided in Section 6. In addition to the works described in Table 2, supplemental construction by external stakeholders that relates to the Stage 1 Airport Development will also take place across the site. This includes works by Commonwealth agencies, state transportation agencies, and utilities, and may include work by contractors constructing commercial developments for WSA. WSA and its contractors will plan and coordinate their activities to accommodate these external stakeholder works.

Table 2: Construction Packages by Phase

Construction Package	Approximate Area (ha.)	Projected Construction Start / Status
Enabling and Earthworks Phase		
Early Earthworks (EEW)	120	*Completed*
Experience Centre and Site Office (EC/SO)	3.2	*Completed*
Bulk Earthworks (BEC)	1,199	*Completed*
Main Construction Works Phase		
Airside Civil and Pavement (ACP) Works	581	In Progress
Terminal and Specialty Systems (TSS) Works	108	In Progress
Landside Civil and Buildings (LCB) Works	354	In Progress
Commercial & Commonwealth Development		
Stage 1 Cargo Works	73	Q1 2024
Standalone Facilities	7	Q2 2024

The indicative definition of site areas for each of the main works contract packages and stakeholder works is provided in Figure 3, which show the division of site areas during the main construction works and Commercial and Commonwealth Development phases, including the location of M12 on Airport works. Definition of these site areas may be refined over time as the design and interface agreements evolve, until works are completed and the sites are handed back to WSA. To date, the Enabling and Earthworks phase has been completed and Main Construction Works are progressing on the ACP,

TSS and LCB work packages. The Stage 1 Cargo Works package will mark the beginning of the Commercial and Commonwealth Development phase, commencing in Q2 2024. The ORAT phase is forecast to commence in 2025.

The packages have been phased to reduce the cumulative impacts of the airport development on the surrounding community and the road network. Strategies to lower the overall construction peak have been developed to further reduce impacts, including early stockpiling of construction materials and construction of multiple auxiliary access and egress points to reduce pressure on key intersections within the local roads network and, where practicable, take advantage of improvements to the road network such as The Northern Road upgrade. Coordination of transport infrastructure works in and around the airport development is coordinated jointly by WSA and Transport for New South Wales (TfNSW), Sydney Metro and local councils to ensure that cumulative impacts of other projects are minimised.

Approvals of all road alterations, closures, and road occupancy will be coordinated through TfNSW and local Councils, with coordination at Traffic and Transport Liaison Group meetings allowing stakeholder consultation to be as seamless as possible. Full details of traffic and access arrangements can be found in the Traffic and Access CEMP.

Additionally, as required by the Airport Plan, a Cumulative Impacts Plan has been developed to manage impacts arising from the concurrent construction of the Stage 1 Airport Development and Sydney Metro Western Sydney Airport (SMWSA) projects.

Scope of the main construction works is summarised in the sections below. For further detail on methodology and planning of the main construction works packages, refer to Section 6.

Figure 3 Indicative Construction Areas Stage 1 Airport Development – Q1 2024 Onward

3.2 Phase Scope

3.2.1 Enabling & Earthworks Phase

3.2.1.1 TransGrid Relocation Works

The Main Construction Works are defined as "*substantial physical works on a particular part of the Airport Site described in Part 3 of the Airport Plan, other than TransGrid Relocation Works or Preparatory Activities*." The TransGrid Relocation Works were authorised by the Airport Plan determined on 5 December 2016, following finalisation of the WSA Project EIS (dated September 2016). The Relocation Works were completed in 2019. Further detail about this activity can be found in the TransGrid Relocation Plan available on TransGrid's website.

3.2.1.2 Experience Centre and Site Office

WSA has constructed an Experience Centre to engage with the community and provide an identity for the airport early in the planning process. WSA also constructed a site office on the same site, to provide office facilities for WSA staff and consultants for the duration of the airport design and construction period. The works associated with the Experience Centre and Site Office were completed in 2019.

3.2.1.3 Early Earthworks (EEW)

The EEW package comprises earthworks on a discreet section at the north of the Airport Site, in order to prepare it for commencement of the Bulk Earthworks in that area. These works were completed in December 2020.

3.2.1.4 Bulk Earthworks

The major earthworks package, the Bulk Earthworks Contract (BEC), included the following phasing of works:

- Remediation of the Airport Site;
- Management of asbestos contaminated soils and other contaminated material in accordance with the Remediation Action Plan (2019);
- Bulk Earthworks, including approximately 26 million cubic metres of cut and fill; and
- Trunk drainage infrastructure to manage rainfall runoff safely and efficiently from the developed parts of the Airport Site; and
- Landscaping and topsoiling in specified areas.

These works were completed in early 2023.

3.2.2 Main Construction Works Phase

3.2.2.1 Terminal and Specialty Services Works (TSS)

The Terminal and Specialty Services (TSS) Works scope includes the construction and commissioning of a multi-storey international and domestic terminal which is integrated with all ground transport and will be located between the Stage 1 runway and future second runway site. Although the Airport Plan allows for a floor area up to 90,000 square metres, the terminal will have approximately 82,000 square metres of floorspace. The construction of the Terminal works will provide for the non-exhaustive listing of items below:

- kiosk, bag drop, security, emigration/immigration (citizen, noncitizen and smart gates), quarantine inspection services, baggage handling facilities, baggage claim (including inbound baggage offload belts), security screening, departure lounges, commercial tenant areas, back of house facilities and car rental facilities;

- capacity for dedicated retail services and currency exchange, including food and beverage services (and the associated infrastructure for storage, back-up facilities, goods delivery access, logistics and security screening); and
- information technology, baggage handling, security and surveillance and all other systems required to effectively support efficient airport processes and operations.

Specialty works include aircraft aprons, fixed link bridges, aerobridges, specialist aviation infrastructure/ equipment, aviation fuel ring main, technical equipment room buildings, and aviation fuel farm (which includes of offloading zones, storage tanks, fuel hydrant mains and return circulations, fuel testing, fuel tanker parking, admin and control buildings, workshops and other supporting infrastructure).

3.2.2.2 Airside Civils and Pavement Works (ACP)

The ACP Works includes the construction and commissioning (where applicable) of:

- Airfield pavements including the 05L/23R runway, associated taxiways, aircraft isolation pad;
- Airfield roads including airside perimeter road, facilities access roads and landside roads in the north west and south west areas of the Airport site;
- Airfield drainage connecting to the trunk drainage system completed by the Bulk Earthworks Contractor (BEC);
- Airfield facilities including airfield lighting equipment room (ALER) buildings;
- Airfield services including sitewide high voltage (HV) power, sitewide fibre optic cable backbone (FOCB) and hydraulic services to Aviation Rescue Fire Fighting Services (ARFFS);
- Airfield systems including aeronautical ground lighting, navigational aids and airfield security (including security cameras, lighting and fencing); and
- Airfield landscaping including placement of final level topsoil across airfield.

3.2.2.3 Landside Civils and Building Works (LCB)

The LCB Works includes the construction and commissioning (where applicable) of:

- Earthworks, including modification to the BEC levels to accommodate the works;
- Stormwater drainage, including connection to trunk drainage systems;
- Road network and signage with the Site, including connections to the terminal precinct, facilities within the site, M12 motorway and Elizabeth Drive, and design of connections to Sydney Metro stations and surrounding infrastructure;
- Building facilities for aviation support functions, including airport operations, emergency operations, maintenance, airfield access, and aircraft liquid waste management;
- Ground transport operation facilities, including car parks, electric vehicle charging stations, bus services and a holding area for point-to-point transport services;
- Sitewide Services, including trunk main networks within the Site for potable water, recycled water, water storage facility and wastewater and gas network safeguarding, as well as the reticulation of LV power and services enabling infrastructure within the site for HV power and the Integrated Communications Network (ICN, which includes the Fiber Optic Cable Backbone (FOCB); and
- Landscaping, including placement of final level topsoil and planting.

3.2.2.4 External Stakeholder Works

Works related to the Stage 1 Airport Development that will be completed by external stakeholders include:

- **M12 On-Airport Works** –ramps, structures, pavements, cycleways, footpaths and related services to connect the airport access road, northwest access road, Badgerys Creek road and other works to connect airport roadways to the external roadway network by TfNSW;
- **Visual Reproduction System (VRS)** – construction of digital air traffic control facilities and infrastructure by Airservices Australia (ASA);
- **NAVAIDS –**specialty equipment, related services and structures related to aerodrome monitoring and control by ASA;
- **ARFFS facilities** – aircraft fire fighting and rescue services facilities by ASA;
- **Weather Station** – specialty weather monitoring equipment and related structures and services by the Bureau of Meteorology;
- **Border control facilities** – integrated facilities within the terminal building constructed by Australian Border Force (ABF) and Australian Federal Police (AFP);
- **Integrated Agency Facilities** – Commonwealth agency facilities integrated in the Terminal building;
- **WSA Commercial Development** – preparation of sites or construction of commercial development facilities as permitted by the Airport Plan; and

  Endeavor Energy Substation: An electrical sub-station constructed by Endeavour Energy to provide electrical power to the airport site.

Rail Development Works do not form part of the Stage 1 Airport Development however are within the WSIA boundary and have a significant interface with Stage 1 Airport Development construction works. Rail Development Works include rail alignment, tunnelling, structures, stations, ancillary facilities and services by Sydney Metro (See the *Sydney Metro Western Sydney Airport Construction (Rail) Plan* for further detail).

3.2.2.5 Enterprise Technology Contract Services (ETC)

The Enterprise Technology Contract (ETC) project was established to present a stable and verified Information and Communications Technology (ICT) environment for WSA, supporting airport operations and business systems for the airport. A key component of the ETC project is the Enabling Platforms component which supports most of the future ICT airport functions. This component is divided into three discrete Enabling Platforms and the ETC project includes three subprojects to implement them. The Enabling Platforms include a Hosting Platform, Cyber Security Platform and Integration Platform.

The implementation of these platforms is largely conducted in a virtual environment, with physical works limited to connection of hardware to cabling installed by the other scopes, primarily TSS. Based on the nature of these works not having any material environmental impacts. the ETC scope has not been included in the WSA CEMPs.

3.2.3 Commercial and Commonwealth Development Phase

3.2.3.1 Stage 1 Cargo Works

The Stage 1 Cargo works includes the following:

- Preparatory Works including site clearance, earthworks, stormwater drainage and temporary fencing;
- Aeronautical works including aircraft pavements, airside roads, airside facilities, airside services, airside systems and airside fencing;
- Precinct works including landside roads, carparking and truck staging area, landside facilities, landside services, precinct systems and precinct fencing; and
- Premises works including cold shell warehouse buildings, warehouse modifications, airside and landside hardstand areas and building services connection points.

- Fit-out of the warehouse buildings by a variety of cargo or other tenants, including catering, maintenance or other airport or commercial services.

3.2.3.2 Standalone Facilities

WSA will construct standalone facilities including three facilities for Commonwealth agencies, intended to provide the required border control functions at the WSI for the AFP, ABF and the Department of Agriculture Fisheries and Forestry (DAFF). The three facilities are:

- Command Centre: an approximately ten storey building located near the Terminal plaza, intended to house the administrative functions for Commonwealth agencies and WSA.
- Canine Facility: a facility that will contain administrative and canine facilities for the three Border Agencies. The Canine Facility will be located adjacent to the Water Complex as shown on the FASL (See Section 4.1).
- Cargo Examination Facility: a building that will contain examination and administration facilities for all three agencies, as well as a large ABF Detained Goods Storage facility, located near the cargo facility.

3.3 Site Management

3.3.1 Management Structure

WSA's Delivery Team will manage a series of contractors in the delivery of the WSI. The roles and responsibilities for WSA Delivery Team members are defined in Table 3.

Table 3: Personnel Roles and Responsibilities

Organisation	Role	Responsibilities
WSA Delivery Team	Project Director	• Development, management and implementation of this Construction Plan • Overall delivery of Stage 1 of the project consistent with the Airport Plan, Airport Deed and all supporting documentation and regulations • Management, coordination and control of contractors delivering Stage 1 of the project.
	Safety and Health Manager	• Safety performance for the Stage 1 Airport Development • Development, management and implementation of an effective work health and safety system • Monitoring, assurance and compliance of the Stage 1 Airport Development with all relevant legislation • Monitoring and assurance of contractors' performance and ensure compliance with the work health and safety system.
	Environment Manager	• Development, management and implementation of CEMPs • Environmental monitoring, assurance and compliance for the Stage 1 Airport Development.
	Sustainability Manager	• Development, management and implementation of the Sustainability Plan • Sustainability monitoring, assurance and compliance for the Stage 1 Airport Development.
	Community and Stakeholder Manager	• Communication, liaison and consultation with all stakeholders • Development, management and implementation of the community and stakeholder management plan.
	Design/Engineering Manager	• Design development of Stage 1 of the project consistent with the Airport Plan, Airport Deed and all supporting documentation and regulations. • Management, coordination and control of contractors designing Stage 1 of the project.

Organisation	Role	Responsibilities
	Package Managers	• Management, coordination and control of individual work packages within the Stage 1 Airport Development.
	Interface Managers	• Coordination of any interfaces between multiple Contractors on the Airport Site • Coordination of any interfaces between external stakeholders and Contractors on the Airport Site.
Contractor	Project Manager	• Execution of the works in accordance with the Construction Plan, CEMPs and sub-plans.
	Safety Manager	• Consult, coordinate and cooperate with the Delivery Partner and other contractors • Management and implementation of contractor's safety systems.
	Environment Manager	• Day to day management and implementation of an effective Environmental Management System • Consult, coordinate and cooperate with the Delivery Partner and other contractors
	Superintendents	• Execution of the works in accordance with the Construction Plan, CEMPs and sub-plans.

3.3.2 Construction Hours

The EIS and the NSW Environmental Protection Authority (EPA) Interim Construction Noise Guideline (DECC 2009a) both list standard construction hours as Monday to Friday 7am – 6pm and Saturday from 8am – 1pm. The NSW guidelines identify a number of categories of works that might be undertaken outside the recommended hours, including:

- deliveries of oversized plant or structures;
- public infrastructure works that shorten the length of the project and are supported by the affected community; and
- works where a proponent demonstrates and justifies a need to operate outside the recommended standard construction hours, for Airport works, examples include concrete pours, pavement placement during summer months to ensure optimum ambient temperatures during pours, or concrete cutting based on curing times post paving.

Other activities that WSA may undertake outside these standard construction hours include:

- works to existing services (if shutdowns are required) or works that relies on third party authorisation;
- deliveries of oversized loads;
- catch-up works if works are delayed by unforeseen circumstances;
- responsive activities to protect people, property and the environment in the event of an emergency such as a fire or structural failure;
- deliveries of materials and stockpiling activities; and
- other activities undertaken in accordance with relevant noise guidelines, or which have no material noise or other impacts on residences.

Where works are required outside of standard construction hours, approval will be requested from the WSA Environment Manager (or delegate) in accordance with the Noise and Vibration Construction Environmental Management Plan (CEMP).

Suitable construction material continues to be imported to the Site and stockpiled. This activity started prior to the commencement of the Bulk Earthworks. WSA plans to allow heavy and light vehicle movements to and from site to occur outside standard work hours in order to reduce congestion for other road users during the day. These movements, and any associated road closures required, must be in accordance with the WSA Traffic and Access CEMP. Where activities will occur outside of standard construction hours, an Out of Hours Work Permit will be issued to the Contractor by the WSA Environment Team in accordance with the Noise and Vibration CEMP.

Refer to the Noise and Vibration CEMP which satisfies the requirements of Section 3.11.2(6) of the Airport Plan and focuses on how mitigation measures identified in Table 28-2 and Table 28-3 in Chapter 28 of the EIS, including community notifications and noise monitoring requirements, are addressed.

3.3.3 Health and Safety Management

WSA is focused on cultivating and implementing the Zero Harm philosophy throughout the workforce which will result in eliminating or reducing harm to the environment, workers or others affected by the works, and inspiring exceptional health and safety performance. This objective can be achieved if WSA and its partners:

- ensure that safety is a core value;
- aspire to provide their people, contractors, stakeholders, and members of the public with the highest level of safety protection;
- demonstrate visible safety leadership and inspire their people, contractors, and stakeholders to value exceptional health and safety performance;
- lead an environment of trust and transparency;
- promote safety innovation and recognise exceptional health and safety performance; and
- monitor, review and achieve continual improvement in health and safety performance.

WSA requires exceptional health and safety management and expects that all health and safety risks are identified and subsequently eliminated or satisfactorily controlled. WSA also expects the development and implementation of safety initiatives to drive continuous improvement of safety performance throughout delivery.

3.3.3.1 Health and Safety Considerations

High risk activities during construction will be managed in accordance with the project Health and Safety Management Plan. Health and safety must be the primary consideration in all construction activities throughout Stage 1 Airport Development. Construction activities that present a particular health and safety risks include:

- Working in and around mobile plant;
- Working at heights;
- Working near live traffic;
- Working with live services;
- Mobile cranes and lifting operations;
- Electrical work;
- Excavation and trenching;
- Working with temporary works
- Working in or near confined space
- Working with stored energy sources i.e. on or near pressurised gas, fuel and refrigerant lines; and
- Tilt-up or precast concrete.

All works will be carried out in accordance with WSA's Critical Risk Protocols.

3.3.3.2 Health and Safety Risk Methodology

Risk workshops have been conducted to identify and assess the risk profile of the project activities. Risk controls and the process of monitoring of these controls has been agreed at the workshops and the cascade of risk controls will be included in contract documents. This cascade allows for the definition of minimum

standards above the legislative requirements with the controls based on lessons learned from previous projects.

Contractors have been evaluated and selected against set criteria, including their ability to commit to adopting the defined risk controls, to allow for the implementation of standards aimed at exceptional health and safety performance. Contractors are required to conduct scope of work risk analyses prior to commencement of construction activities on site. The risk controls from these analyses form the basis of eliminating or mitigating the risks associated with a particular work scope and define the cascade of control to the lower-level risk management processes applied to job and task assessments.

Throughout all stages of the risk management process the hierarchy of controls of elimination, substitution, isolation, engineering, administration and personal protective equipment will be applied. The priority of control application will be through the higher levels of control before the lower levels are considered. Reviews of risk registers will be completed when construction schedules, activities, legislation or standards change.

The Contractor must hold further separate workshops on a monthly basis, which will include representatives of WSA, to address different trades / phases / work areas or processes not covered during the earlier risk assessment workshops, prior to the commencement of the relevant activity, phase or section of work. The Contractor must also hold risk workshops throughout the project to address newly incorporated work methods/processes or project-specific work methods/processes.

The Contractor must update the WHS risk register based on the outcomes of the additional WHS risk workshops and update the WHS management plan based on any changes to the WHS risk register.

The Contractor must establish a WHS review group to meet at least once a month and at any other time at the request of WSA's Representative.

3.4 Traffic and Access

Construction of WSI will generate additional traffic on the regional and local road network (refer to Figure 4). Construction traffic and access will be managed in accordance with the WSA Traffic and Access CEMP and the Cumulative Impacts Plan (CIP). The CIP has been developed to address potential impacts arising from the concurrent construction of the Airport Stage 1 Development and the Rail Development and as such, the impact to the local road networks will be minimised. Key activities that will require management strategies will be materials deliveries, oversize deliveries, workforce access and egress and coordination with other local infrastructure projects. For further detail, refer to the WSA Traffic and Access CEMP which satisfies the requirements of section 3.11.2(9) of the Airport Plan and focuses on how mitigation measures identified in Table 28-8 and Table 28-9 in Chapter 28 of the EIS are addressed.

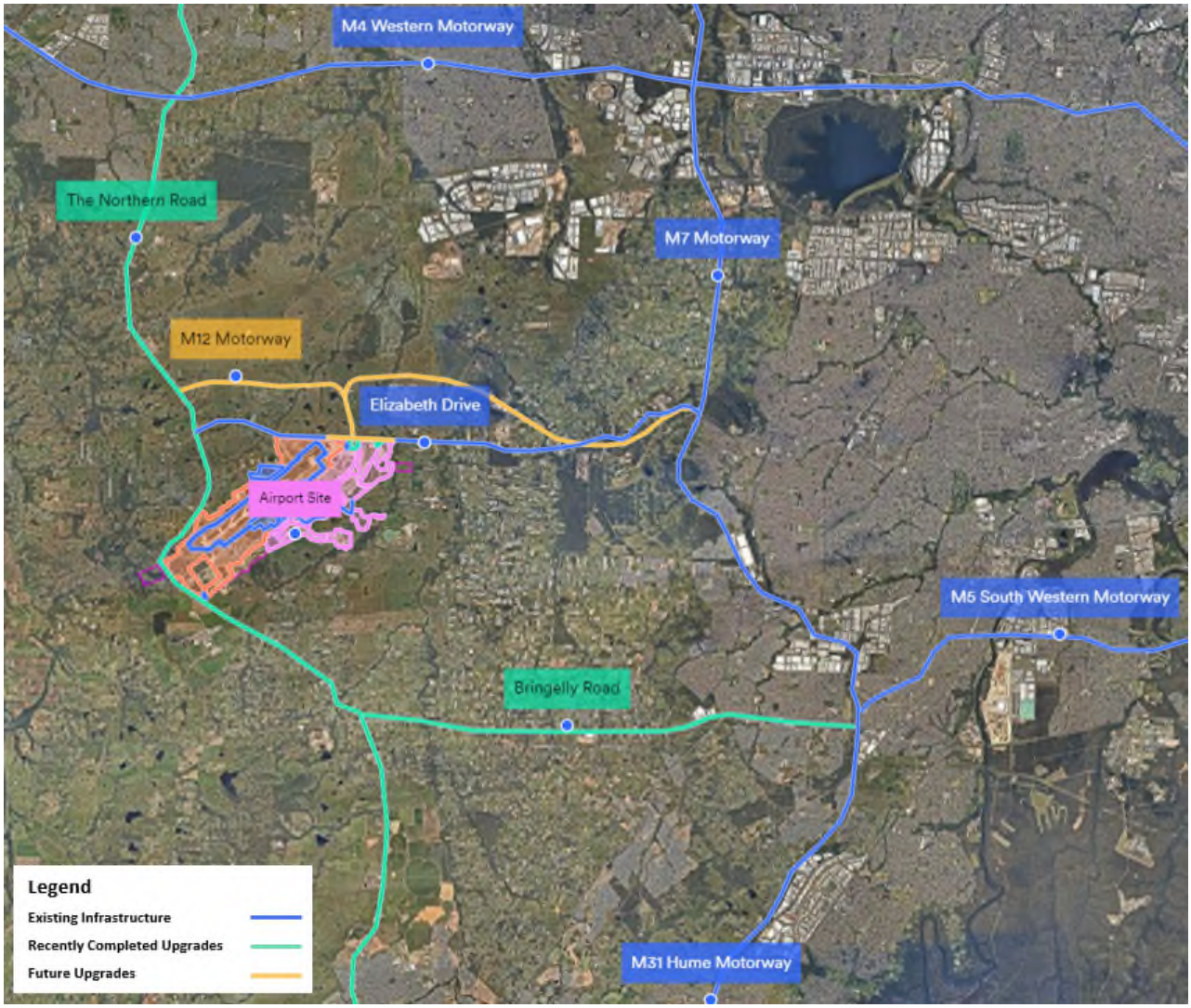

Figure 4: Major Access Routes to the Airport Site

3.4.1 Western Sydney Infrastructure Plan

In addition to the completed TNR Stages 1- 6, there are a number of currently planned road upgrades in Western Sydney that will improve access to the airport and overall transport availability in the region, including the M12 Motorway and Elizabeth Drive overpass. These road upgrades are being undertaken by TfNSW under the Western Sydney Infrastructure Plan, indicatively shown in Figure 4 above.

3.4.2 Existing Road Network

The existing road network can be categorised into four main groups:

- Arterial Roads: controlled by TfNSW, they typically exhibit no limit in flow and are designed to carry vehicles long distances between regional centres;
- Sub-Arterial Roads: can be managed either by council or by TfNSW under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day. Their aim is to carry through-traffic between specific areas in a sub region, or provide connectivity from arterial road routes (regional links);
- Collector Roads: provide connectivity between local sites and the arterial road network, and typically carry between 2,000 and 10,000 vehicles per day; and
- Local Roads: provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

Many of the roads leading to the site are arterial roads, and so the site is well suited to handle the additional traffic which will be generated by the project.

Elizabeth Drive is an arterial road-oriented east-west adjacent to the northern boundary of the Airport. It connects to The Northern Road, west of the site and Badgerys Creek Road to the east of the site. Elizabeth Drive also has a speed limit of 80km/hr and is an undivided road with one lane in each direction. The M12 project will be upgrading a section of Elizabeth Drive as part of their works.

The Northern Road upgrade is approximately 30km long, with a four-lane divided road with central median (allowing for future widening to six lanes, if required) and with a speed limit of 80km/hour. The upgrade is part of the Australian and NSW government's' commitment to fostering growth in Western Sydney. 35km of upgrades, from Narellan to South Penrith at the M4 have now been completed.

Badgerys Creek Road is a collector road which connects The Northern Road to Elizabeth Drive. Few residences are located along the road with most residents located away from the site and closer to The Northern Road. As part of the enabling and early earthworks phase, an upgrade to the road included:

- Construction of new roundabout at Elizabeth Drive and Badgerys Creek Road intersection; replacing previous non-signalised intersection;
- 1.3km upgrade to dual carriageway for the section of Badgerys Creek Road between Pitt Street and Elizabeth Drive; and
- Construction of new roundabout at Badgerys Creek Road and Pitt Street to accommodate separated turn movements into site, with a separate designated lane for straight-through traffic.

As part of the Stage 4 The Northern Road works realigning the road around the airport, TfNSW constructed a short stub with a signalised intersection that serves as an entry point for construction access (described in Section 6 below) and will serve as the future Freight Landside Access connection shown in Figure 6.

Adams Road is a collector road connecting Elizabeth Drive and The Northern Road. Anton Road is a local road extending from Adams Road to the Airport Site boundary. WSA is upgrading a section of Adams Road closest to Northern Road and all of Anton Road. Works have been completed by the BEC contractor. The upgrade will allow for heavy vehicles to access the Airport site during construction and when the airport is in operations, improving safety for motorists travelling along Adams Road.

3.4.3 Site Access

Figure 5 shows the planned site entry points, and the distribution of these entry points between the WSA packages is further explored within the Traffic and Access CEMP.

In summary, the site entry points have been strategically distributed to maintain construction traffic to arterial routes, as much as possible. An objective of the strategy is to minimise construction traffic on Badgerys Creek Road and also minimise construction traffic at points of key interfaces with other major projects; M12 and SMWSA, in particular. The upgraded The Northern Road has allowed the project to distribute traffic away from Elizabeth Drive and Badgerys Creek Road as much as possible. The project has also invested in additional temporary internal road infrastructure to help facilitate the distribution of access points and minimise construction traffic on public roads.

Whilst most traffic is expected to enter and exit the site from The Northern Road, WSA continues to work closely with TfNSW and SMWSA on coordination of construction activities and program delivery on Elizabeth Drive and Badgerys Creek Road. Public and construction safety, and efficient movement of traffic remain key objectives during coordination. Regular ongoing meetings including the WSATI Hub, the TCG and the Elizabeth Drive Construction Coordination meetings facilitate the ongoing coordination of construction traffic and access. Traffic and access points may change as a result of cumulative outcomes or key issues arising from these collaboration forums.

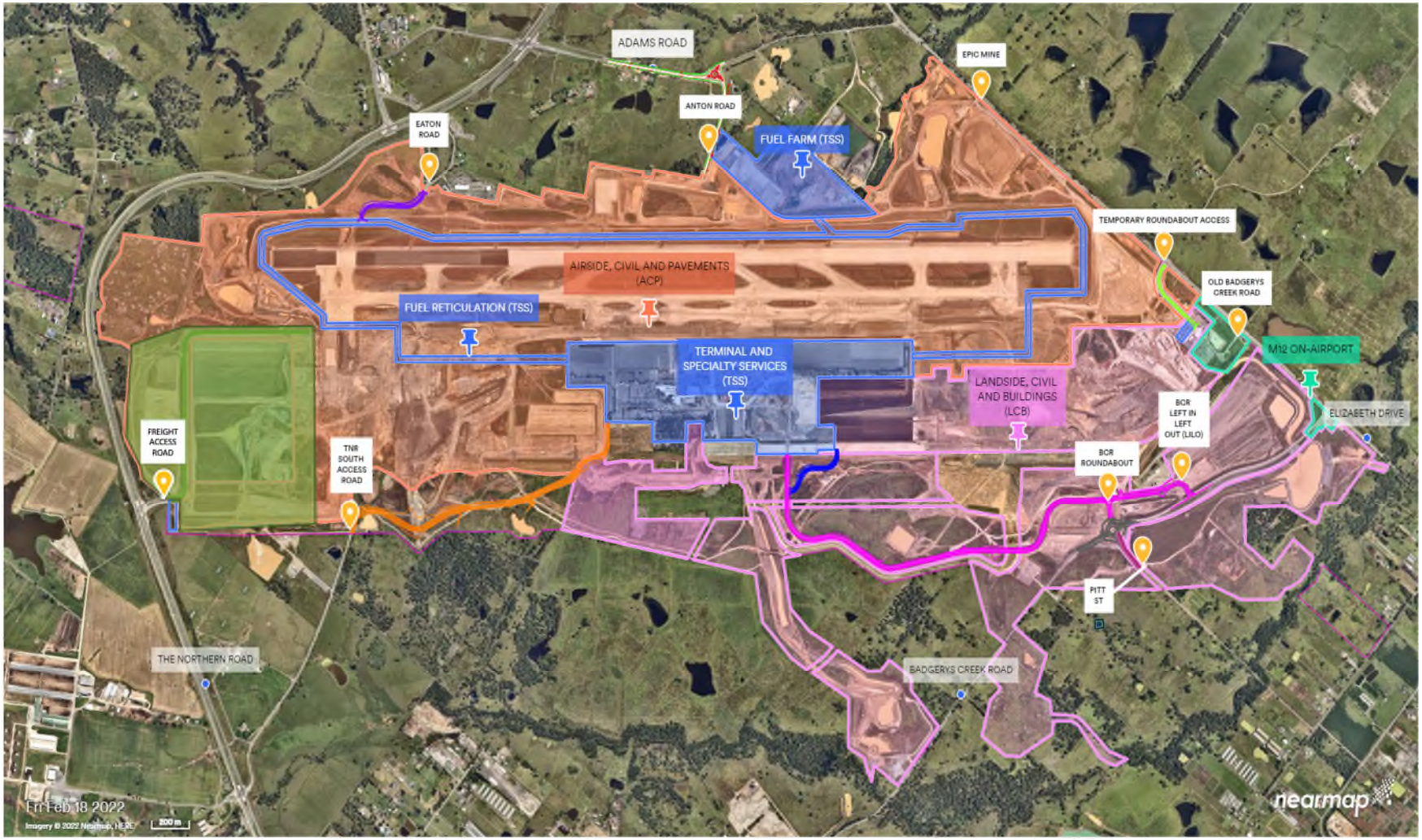

Figure 5: WSA Site Access Plan

3.4.4 Construction Traffic Impacts

During the remaining enabling and earthworks and main construction works phases, the general public will be subject to multiple impacts inherent to construction of large civil works projects. WSA and its contractors will use the CSEP and relevant CEMPs to minimise impacts to stakeholders and the general public.

Table 4 below lists impacts, associated concerns and the relevant plan or CEMP which addresses mitigation measures consistent with the EIS and Airport Plan recommendations.

Table 4: Traffic Impacts

Title	Impact / Concern	Relevant Plan/CEMP
Construction Traffic	Increase in traffic volume due to work force	Traffic and Access CEMP Community and Stakeholder Engagement Plan
Heavy Haulage	Heavy haul equipment to and from the site.	Traffic and Access CEMP Waste and Resources CEMP Community and Stakeholder Engagement Plan
Bulk Earthworks	Access to public roads for decontamination, bulk earthworks, topsoil stripping and associated work by large bulk earth working equipment Blasting works	Traffic and Access CEMP Noise and Vibration CEMP Community and Stakeholder Engagement Plan
Noise	Construction noise	Traffic and Access CEMP Noise and Vibration CEMP Community and Stakeholder Engagement Plan
Dust	Dust generated during construction works.	Air Quality CEMP Soil and Water CEMP Community and Stakeholder Engagement Plan
Property Access	Road closures and temporary detours could impact those living in the area.	Community and Stakeholder Engagement Plan Traffic and Access CEMP
Deliveries	Material deliveries may be outside of standard work hours	Noise and Vibration CEMP Traffic and Access CEMP Waste and Material CEMP Community and Stakeholder Engagement Plan
Parking	Parking of construction vehicles on roadways while waiting to access the site may inconvenience the general public	Traffic and Access CEMP Community and Stakeholder Engagement Plan

3.4.5 Construction Vehicles

Vehicles utilised in the construction of the Stage 1 Airport Development will consist of a combination of light and heavy vehicles and construction machinery. Definitions and expected utilisations of these vehicle types are provided below. Further details of construction vehicles are provided in the Traffic and Access CEMP which satisfies the requirements of section 3.11.2(9) of the Airport Plan.

3.4.5.1 Light Vehicles

Light vehicles are generally defined as cars, utility vehicles and some commercial vehicles with a gross vehicle mass of less than 4.5 tonnes.

Daily light vehicle trips will be carried out primarily by the construction workforce. Most light vehicles will arrive on site prior to 7am outside of the AM peak and begin exiting the site at around 4pm each day until 7pm. The number of light vehicles entering and leaving the Airport Site is estimated to increase steadily to a peak of around 1,800 light vehicles during the Main Construction Works. As

nearby arterial roads already have traffic volumes which are well in excess of construction traffic, it is expected that this will have a negligible impact on those roads.

3.4.5.2 Heavy Vehicles

Heavy vehicles are defined under the Heavy Vehicle National Law 2013 (NSW) as large vehicles with a gross vehicle mass or aggregate trailer mass of more than 4.5 tonnes. Heavy vehicles including trucks and semi-trailers will be required for the delivery of equipment and construction materials, including pavement materials for the runway, taxiways, aprons, roads and carparks which are expected to be imported from predominantly outside of the Airport Site.

Heavy vehicle movements are estimated to increase to around 1,850 vehicle movements per day during Main Construction Works.

Substantial volumes of gravel will be required for the base and sub-base material, while large volumes of asphalt and concrete materials will be used for surfacing. Concrete will also be a major construction material for structures (buildings). WSA envisages that most gravels will be sourced from other major Sydney infrastructure projects, reducing the need for landfill sites to be used from within the Sydney Basin, and lowering the truck kilometres required within the wider road network.

Asphalt batch plants will be established on site which will require raw materials including aggregate, sand, crusher dust, lime filler and bitumen. Aggregate will be imported to the Airport Site from the same quarries supplying the gravel. Concrete batching plants will also be established on site to supply concrete. Raw materials delivered to the concrete batch plant will consist of cement, fly ash, aggregate, sand and admixture.

General building materials such as structural steel, roofing materials, flooring materials and furniture will likely be supplied from various sources within Greater Sydney.

3.4.5.3 Construction Machinery

A range of construction machinery will be used at the Airport Site. This includes, but is not limited to the following:

- Dozers;
- Pad foot rollers;
- Scrapers;
- Loaders;
- Excavators;
- Crushers and screeners
- Gravel pavers;
- Water carts;
- Asphalt pavers;
- Graders;
- Elevated work platforms;
- Compactors;
- Concrete placer spreaders;
- Multi-tyre rollers;
- Concrete slip form pavers;
- Smooth and tandem drum rollers;
- Concrete texture cure machines;
- Dump trucks;
- Mobile and tower cranes;
- Backhoes; and

- Piling rigs.

Plant and equipment used by Sydney Metro for the construction of rail infrastructure, including tunnel boring machines and related equipment, can be found in Section 6 of the *Sydney Metro Western Sydney Airport Construction (Rail) Plan.*

3.5 Construction Impact Zone

The Construction Impact Zone (CIZ) is defined within the Airport Plan as the "*part or parts of the Airport Site or an Associated Site on which Main Construction Works are planned to occur*."

The development of the CIZ involved assessment of the likely construction area required for the Main Construction Works. This is based around the bulk earthwork's footprint required to construct a level platform for development of the airport and extended along flow paths to the detention basins located on the eastern half of the site.

The design and layout of the Airport had been refined since the initial publication of the Airport Plan in 2016. This has necessitated changes to the CIZ defined on the Airport Site Layout provided as shown in Figure 8 within this Construction Plan. The majority of the changes are associated with design development of the detention basins, changes to easements within the Airport Site boundary, and constructability provisioning.

The area of the approved CIZ is now 1,119 ha, with disturbance to 359 ha of native vegetation. This area is 0.1 ha less than the area of the initial CIZ. Changes to the CIZ have been assessed and will not result in any additional impacts on biodiversity values and the impact of other changes have been reduced as far as possible.

Works may be undertaken outside of the CIZ provided the works are supported by the Airport Plan and have been assessed to be consistent with the EIS and the CEMP. The Minor Environmental Assessment procedure included in Section 6 of the SEMF describes the procedure for assessing consistency with the EIS, Airport Plan, CEMPs and this Construction Plan.

The approved CIZ is shown in Figure 6 and has been optimised to minimise environmental impacts wherever possible and complies with the EIS.

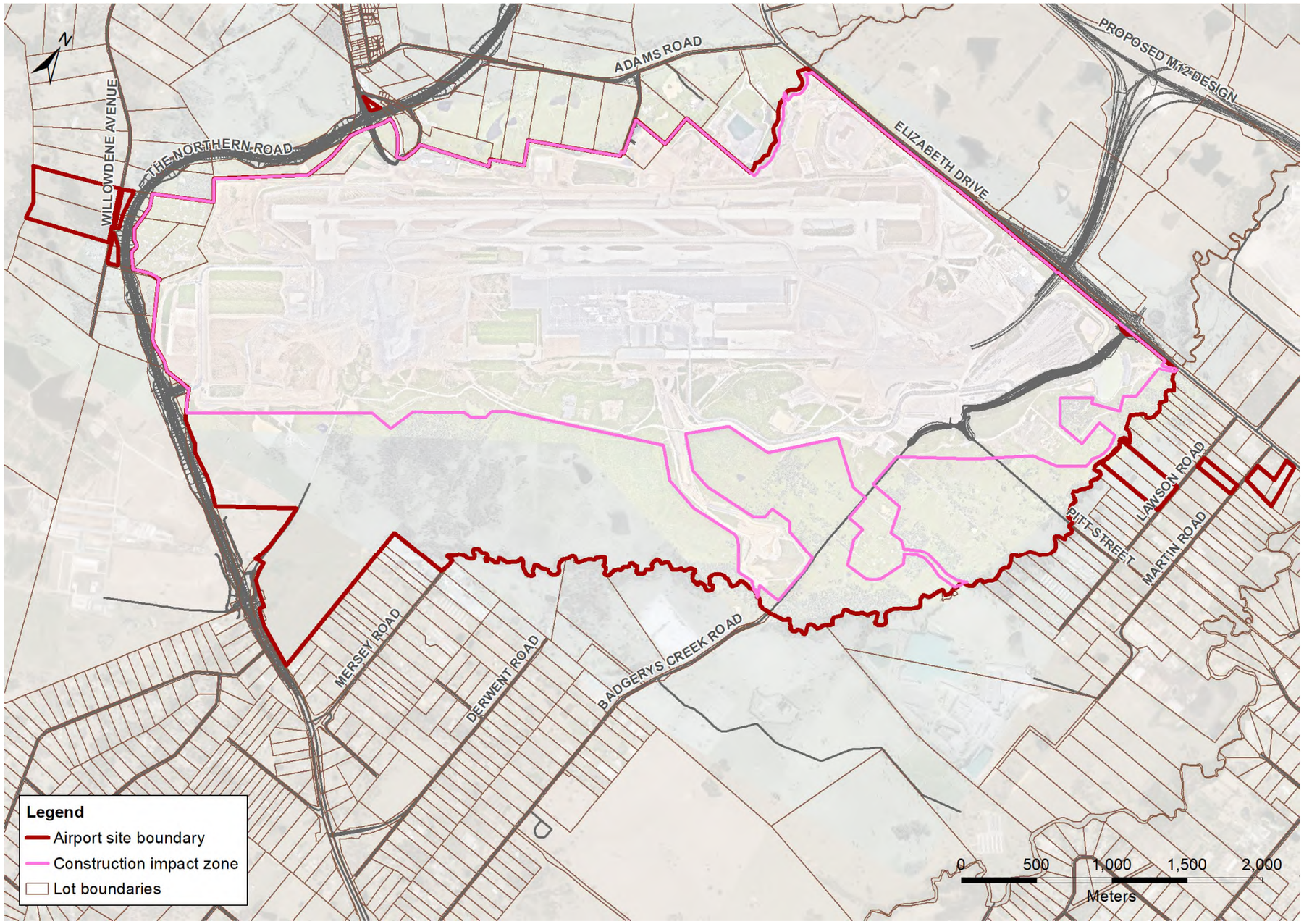

Figure 6: WSA Construction Impact Zone

4 Land Use Plan

According to Section 2.4 of the Airport Plan, "*Developments on the Airport Site will be permitted only where they meet the planning objectives and permitted uses for each land use zone*."

All proposed uses and construction activities are consistent with the permissible uses included in Section 2.4 of the Airport Plan. Table 5 compares the Airport Plan land use zone objectives and permissible uses.

Section 3.6.6 of the Airport Plan which requires the Stage 1 Airport Development to have regard to the provision of rail services. Two rail stations will be constructed on the airport site by Sydney Metro as part of the development by the Rail Authority. The Rail Authority development does not form part of this CP.

Table 5: Airport Site Layout/Land Use Plan Comparison

Land use zone	Objectives	Permissible uses
AD1: Aviation Activity	provide for safe, secure and efficient airfield operations, including aircraft take-off, landing and taxiing; provide for aviation activities and aviation support facilities; and facilitate compatible and ancillary functions within the zone, provided that development does not render the land unfit for aviation activities.	Aviation activity Detention basin Earthworks* Environmental protection works Extractive industry* Liquid fuel depot and distribution facility Navigational aids Public administration facility Public utility undertaking Road Signage (other than an advertisement) Telecommunications facility Temporary structure Works depot*
AD2: Terminal and Support Services	facilitate development of a contemporary passenger terminal and related facilities for the handling, transfer and processing of passengers that is capable of meeting the standards expected by international, domestic and regional travellers, as well as supporting the needs of the Airport's workforce; enable future expansion of the Airport's operations, including associated aviation facilities; encourage airport and aviation-related employment opportunities; facilitate compatible and ancillary functions within the zone, provided that development does not render the land unfit for aviation activities; and provide for aviation activities and support facilities.	Amusement centre Animal boarding Aviation activity Aviation support facility Business premises Car park and parking spaces Childcare centre ** Convenience store Detention basin Earthworks* Environmental protection works Extractive industry* Food and drink premises Freight handling and transport facility Hotel or motel accommodation Kiosks Liquid fuel depot and distribution facility Markets Navigational aids Office premises Passenger transport facility Public utility undertaking Public administration facility Road Shop Signage Telecommunications facility Temporary structure

Land use zone	Objectives	Permissible uses
		Terminal Transfer corridor Vehicle hire premises Works depot*
AD3: Aviation Logistics and Support	facilitate the development of freight services and airport logistics (and ancillary office space); ensure development is compatible, where practicable, with surrounding land uses in this area; and facilitate compatible and ancillary functions within the zone, provided that development does not render the land unfit for aviation activities.	Animal boarding Aviation activity Aviation support facility Business premises Car park and parking spaces Detention basin Earthworks Environmental protection works Extractive industry* Food and drink premises Freight handling and transport facility Light industry Liquid fuel depot and distribution facility Navigational aids Office premises Passenger transport facility Public administration facility Public utility undertaking Retail - low intensity Road Signage Telecommunications facility Temporary structure Transport depot Works depot*
AD4: Aviation Reservation	coordinate the orderly and economic use and development of land until such time as it is required for aviation activities or aviation support facilities; integrate compatible aviation, business and industrial activities in accessible locations; encourage appropriate employment opportunities in accessible locations; and ensure that development will not render the land unfit for aviation activities or aviation support facilities when it is required for these purposes.	Agriculture Animal boarding Aviation activity Aviation support facility Car park and parking spaces Detention basin Earthworks* Environmental protection works Extractive industry* Navigational aids Passenger transport facility Public utility undertaking Public administration facility Retail - low intensity Road Shop Signage Telecommunications facility Temporary structure Terminal Waste or resource management facility Works depot*
BD1: Business Development	enable a mix of business, retail and industrial uses in locations that are close to and that support the functioning of the Airport;	Agriculture Animal boarding Aviation activity

Land use zone	Objectives	Permissible uses
	integrate suitable and compatible land uses in accessible locations so as to maximise public transport patronage and encourage cycling; encourage employment opportunities and promote businesses along main roads; enable a limited range of other land uses that will provide facilities and services to meet the day-to-day needs of the local workforce; and maximise, where possible, the use of existing access and egress points.	Aviation educational facility Aviation support facility Business premises Car park and parking spaces Childcare centre** Detention basin Earthworks* Environmental protection works Extractive industry* Freight handling and transport facility Hotel or motel accommodation Medical Light Industry centre Navigational aids Office premises Passenger transport facility Public administration facility Public utility undertaking Recreation facility (indoor) Retail premises Road Service station Shop Signage Telecommunications facility Temporary structure Vehicle hire premises Warehouse and distribution centre Works depot*
BD2: Business Development (Reservation)	enable a mix of business, retail and industrial uses in locations that are close to and that support the functioning of the Airport; integrate suitable and compatible land uses in accessible locations so as to maximise public transport patronage and encourage cycling; encourage employment opportunities and promote businesses along main roads; enable a limited range of other land uses that will provide facilities and services to meet the day-to-day needs of local workforce; and maximise, where possible, the use of existing access and egress points.	Agriculture Animal boarding Aviation activity Aviation educational facility Aviation support facility Business premises Car park and parking spaces Childcare centre** Detention basin Earthworks* Environmental protection works Extractive industry* Freight handling and transport facility Hotel or motel accommodation Light Industry Medical centre Navigational aids Office premises Passenger transport facility Public administration facility Public utility undertaking Recreation facility (indoor) Retail premises Road Service station Shop Signage

Land use zone	Objectives	Permissible uses
		Telecommunications facility Temporary structure Vehicle hire premises Warehouse and distribution centre Works depot*
EC1: Environmental Conservation	protect the ecological and scenic values of the waterways in this area; maintain the health and natural flows of the waterway; enhance, restore and protect the cultural heritage values of the land; enhance, restore and protect local biota and the ecosystems and habitats of native species; provide for the effective management of remnant native vegetation, including native vegetation regeneration and revegetation, noxious and environmental weed eradication, and bush fire hazard reduction; enable the land to be used as passive open space in a manner that is not inconsistent with the protection of its natural and cultural heritage values; and manage development to minimise impacts that could destroy, degrade, damage or otherwise have an adverse effect on natural and cultural heritage values.	Environmental protection works Heritage conservation works Public utility undertaking

* permissible to the extent that the use relates to the construction, development or operation of the Airport Site as an airport

** A child care centre is not authorised by Part 3 of the Airport Plan and, as a sensitive development (as defined in section 71A of the Airports Act), must comply with section 89A of the Act, which requires approval from the Infrastructure Minister for the preparation of a draft Major Development Plan (MDP) for the sensitive development before the MDP can be prepared.

4.1 Airport Site Layout

A number of changes have been made in successive iterations of the Final Airport Site Layout (FASL) since the Indicative Airport Layout, Figure 2 in the Airport Plan. Figure 7 shows the FASL (TBC 2024) with proposed and actual land uses and remaining construction activities for the first stage of WSI development up to 10 MAP (Planned Activity Level or PAL 1). This update takes account of layout design changes arising from the three main infrastructure packages delivering terminal, airside and landside for airport opening. In addition to assumed minor adjustments to levels (and imported fill volumes), retaining walls and batters, this design work, not yet finalised for opening, covers the most significant variances,

Consistent with the permissible uses indicated in section 2.4 of the Airport Plan, the approved changes are detailed in the following sub-sections.

4.1.1 Airside

Adjustments made to the Airfield layout, primarily delivered under the Airside Main Works Package, include changes made in response to CASA Manual of Standards amendments since the Airport Plan, such as the:

- reduction in the runway width to 45m and provision of shoulders;
- commensurate reduction in the Runway End Safety Area width; and
- reduction in the taxiway widths and shoulders.

Other airside changes include:

- slight changes to the geometry of the rapid exit taxiways and connecting fillets;

- reduction in the High Intensity Approach Lighting (HIAL) array length at each runway end from 900 m to 720 m, meaning HIAL provision entirely within the airport site;
- adjustments to the Rapid Exit Taxiway for smoother aircraft manoeuvring;
- the provision of taxiway loops at the runway ends to improve runway efficiency;
- apron design amendments to incorporate additional taxiway clearances, ensure operational efficiencies, achieve narrow body equivalent gate requirements and contact stand optimisation, and
- colocation of engine run-up with the aircraft isolation pad (and removal of compass calibration need);
- definition and optimisation of airside perimeter roads and fencing alignment to meet security, maintenance and operational access requirements;
- reconfigured and consolidated airside aviation support facilities, road network and airside/landside access in the northern part of the site, including:
    - the fuel farm off Anton Road (supply reticulated to the Terminal stands);
    - relocation of refueller stand points;
    - a revised main access gate layout and approach; and
    - definition of workshops, waste disposal, ground maintenance and fuel dispensing, and related adjustments to the airside/landside boundary and fence to accommodate expanded airside activities, including the shared cargo facilities;
- addition of airport lighting equipment rooms at each runway end; and
- facility provision and adjustments to meet for third-party (government agency) requirements, including:
    - glide path tower and critical area siting adjustments at each runway end;
    - minor reconfiguration of the ARFFS facilities including the addition of navigational aids and digital ATC camera mast; and
    - repositioning of the new automatic weather station (AWS) to meet Bureau of Meteorology (BoM) requirements (replacing the existing AWS on the south-eastern side of the site).

Industry engagement has necessitated a rightsizing (and adjustments to the configuration of) a significantly expanded cargo apron and building footprint at the southern end of the site, to optimise opportunities for staged development of these facilities in response to increased demand.

This dedicated precinct may also result in WSA not constructing the four cargo stands in the multi-user area adjacent to the passenger walk out stands, as identified in the Airport Plan.

A dedicated engine run-up enclosure is not being delivered, while provision for maintenance, repair and overhaul (MRO) facilities within the freight precinct is retained and subject to industry demand.

4.1.2 Landside

Adjustments to the remainder of the site, largely non-secured and primarily delivered under the Terminal Complex and Speciality Services Package (including the Plaza Precinct) and the Landside Civils and Building Package, and requiring only minor adjustments to the construction impact zone (CIZ), include:

Terminal and Precinct:

The Airport Plan identified a requirement for an initial 90,000 m2 terminal with bay-style piers and apron. The terminal and plaza precinct design developed and refined a maximised Terminal footprint with the following features:

- adoption of a straight ‘shoreline’ terminal MARS stands frontage and fixed-link bridges over a head of stand road, permitting simple modular linear expansion,
- progressive airside design refinements of the gates, apron spacing and addition of a tail-of-stand road, for improved safety, traffic circulation and GSE Storage Equipment (GSE) storage and parking,
- definition of the arrivals, departures and ground transport approach roads with subsequent adjustments to layout, access points and car parks for the reduced forecast 5,575 parking

spaces, with the majority of parking provision to be at grade (around half the spaces of the Airport Plan),
- separate basement loading dock road access,
- refinements to the private and public transport infrastructure in the terminal precinct including the provision of the sub-grade rail station 60m closer to the terminal, and
- replacement of the initial bus loop road with the first stage of a plaza road network including connection to a relocated Commonwealth agency administrative building, and
- removal of provision for Airservices' delivery of the air traffic control tower (replaced by a digital mast at the ARFFS).

Landside:

Only indicatively laid out in the Airport Plan, the ground transport network has been refined, including:

- definition of the Main Access Road (MAR),
- an offsite signalised stub connection from The Northern Road (TNR) into the freight precinct,
- a signalised connection of the old TNR at the southern end, retaining entry to the site,
- identification of the rail corridor for two services through the site, the first for SMWSA (under construction) and subsequent relocation, undergrounding from a portal dive structure just south of the Business Park Station and prior to the future Crossfield taxiway,
- revision of the road link between the Terminal and Business Park and Badgerys Creek Road,
- adjustments to align the terminal package and landside package road interfaces,
- establishment of a roundabout at a realigned Badgerys Creek Road and Pitt Street, later repositioned a few metres further west, to enable a (potentially permanent) fourth leg connection into the airport and to permit further change to connect into the Business Park,
- initial provision for at-grade parking in the Business Park on future prime development lots both west and east of the MAR,
- a revised Main Access Gate and approach road design, and
- FASL provision for, then removal of, a diverging diamond interchange within the Business Park over the MAR, which generated revisions of the NSW M12 project (including the addition of the Elizabeth Drive overpass) interfaces with the airport, notably:
  - earlier delivery and utilisation of a bridge south of the Business Park station (Bridge 3),
  - MAR ramp connections from signalised intersections on the Elizabeth Drive M12 overpass,
  - left-in, left-out only connectivity for the North-West Access Road,
  - shared path, active travel connections to the North-West Access Road (not the MAR),
  - a roundabout at the realigned Badgerys Creek Road and Elizabeth Drive, to be replaced by a signalised four-way intersection,
  - replacing south-facing ramps with north-facing ramps connecting Bridge 3 to the MAR,
  - a pedestrian link over the MAR connecting the east and west business park precincts and the SMWSA line Business Park Station, and
  - revision of MAR alignments, including a narrower median and inside-to-out lane staging approach.

Other landside developments and provisions include:

- addition of the Terminal Equipment Rooms (TER) at Freight Access Road and North-West Access Road entry points to the site,
- incorporation of the structure plan for the business park, including the network of streets, blocks, public domain spaces and transport connections including active transport connections,
- relocation of expanded Commonwealth dog handling facilities to Pitt Street, and
- relocation of the water complex from Lawson Drive to adjacent to the roundabout at Pitt Street (in the same block as the Commonwealth Agency dog kennels).

Other potential works identified on the FASL but not being delivered by the main works packages include:

- an area for TfNSW to deliver a bus layover facility opposite the water complex and dog kennels on Pitt Street, and
- provision for a fourth leg entering the airport site on the intersection of TNR and Willmington Road, Luddenham.

Offsite, as an obligation on WSA for connectivity to the fuel farm, Adams Road and Anton Road have been upgrade from the realigned TNR (not Elizabeth Drive).

4.1.3 Site

Bulk earthwork detailed design and delivery plus the revision of the SMWSA rail corridor alignment has required drainage basin amendments, including the:

- removal of basin 2 (it is now shown in revised form on the PAL 3 (37 MAP) and PAL 4 (82 MAP) layouts), as it is not being built as part of Stage 1 Airport Development,
- increase in size and shape of Basin 3, and
- a smaller footprint being required for the drainage tie-ins for Basins 3 and 6, resulting in a smaller are of EC1 land being required.

A containment cell, primarily for safe placement of mainly asbestos-contaminated soil recovered in the bulk earthworks has been established in the north-west corner of the site at Elizabeth Drive.

Additionally, there have been some land acquisitions and disposals:

- acquisition by the Commonwealth of additional land, known as the “Leppington Triangle”, at the southern end of the site for later development (and not yet included as part of the airport site),
- easements in favour of Transgrid for the undergrounding of the 300kV line around the southwestern edge of the Site, and in favour of Endeavour Energy for a major transmission substation on Elizabeth Drive,
- the prospective easement for the SMWSA and future second service rail corridor, and
- minor lot changes to reflect the:
  - acquisition of three easements on land for access to creeks and maintenance, as Ancillary sites under the Airport Plan, and
  - disposal of small parcels of land within the road corridor boundary along Elizabeth Drive in favour of the NSW Government.

Note: Representations of the FASL in this Plan are intended to be indicative. The approved FASL documents can be found at the WSA website: https://westernsydney.com.au/about/documents-reports.

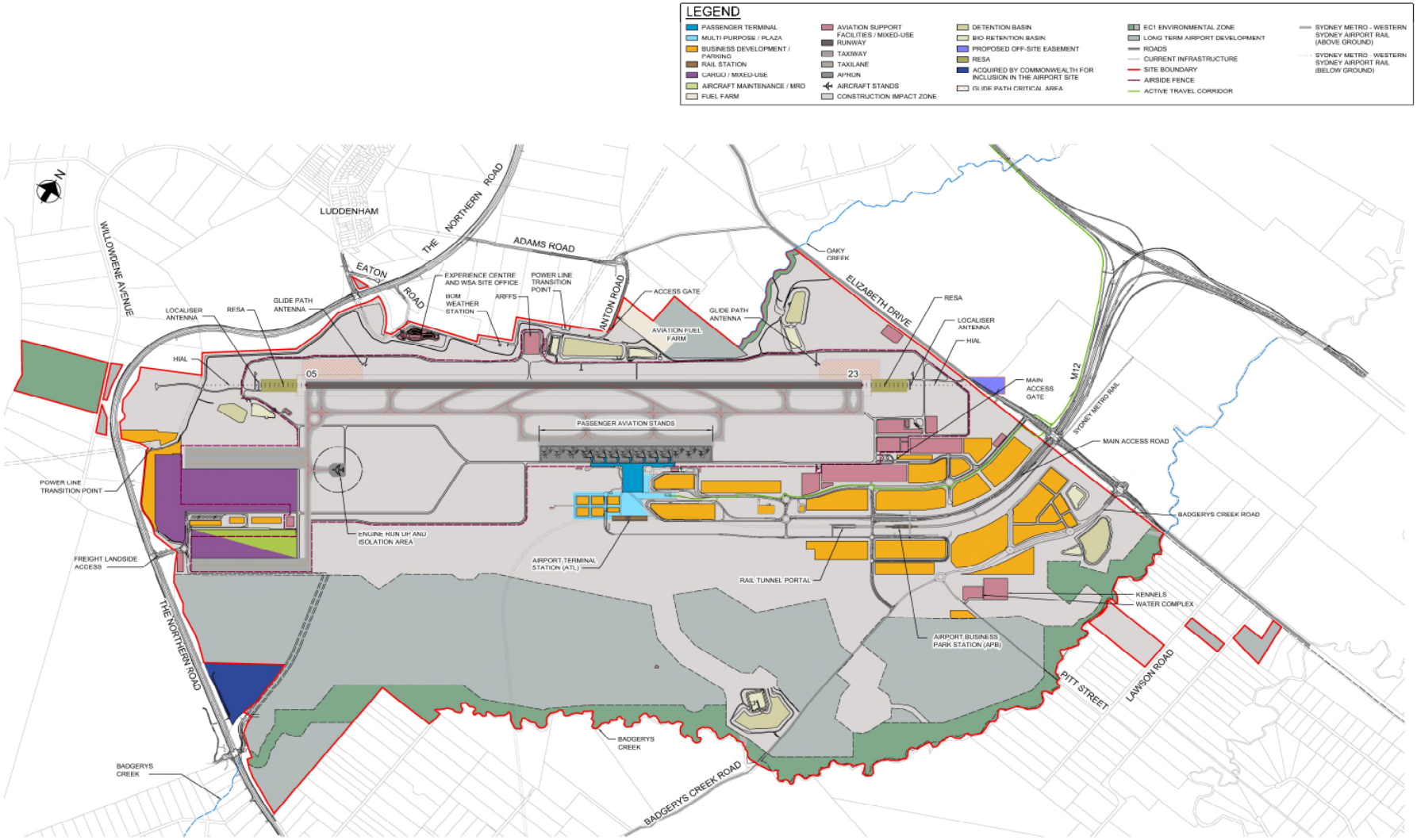

Figure 7: Final Airport Site Layout (FASL) (10MAP) – as approved March 2024

5 Environmental Management

5.1 WSA Site Environmental Management Framework

The SEMF (included as Appendix A to this Plan), describes a systematic approach to manage and control environmental risks associated with the Stage 1 Airport Development construction works. It identifies environmental requirements applicable to the various construction activities to ensure environmental impacts are minimised and legislative and other obligations are fulfilled.

In addition, nine Construction Environmental Management Plans (CEMPs), a Sustainability Plan and a Community and Stakeholder Engagement Plan (CSEP) have been prepared to support the SEMF.

The CEMPs identify requirements and processes applicable to specific environmental impacts or aspects (e.g. air quality, biodiversity and noise) of the proposed construction activities and address Airport Plan conditions and mitigation measures, controls and monitoring requirements defined in the EIS.

The structure of the SEMF and its interaction with corresponding management plans is shown in Figure 8 below. The CEMPs like the CP are living documents and will be updated per Condition 49 of the Airport Plan to address differences in environmental risk between construction activities, packages, and phases.

Figure 8: WSA EMS Structure

5.2 SEMF and CEMP Focus Areas

All CEMPs are consistent with this Construction Plan. The following environmental focus areas have been identified in relation to the construction phase:

- Site discharges during demolition and excavation works;
- Potential effects of noise and vibration on sensitive receptors;
- Potential surface and ground water contamination;
- Exposure to asbestos and hydrocarbon contaminated soils;
- Potential for water discharge and/or spills from worksites to result in pollution of adjacent waterways;
- Potential for impacts to Badgerys and Oaky Creeks and associated Environmental Conservation Zone (ECZ);
- Potential for impacts to Duncans Creek;

- Potential construction traffic impacts on local roads surrounding construction worksites, particularly during peak periods;
- Potential for discovery of previously unidentified contaminated soils;
- Potential for discovery of previously unidentified, endangered flora and fauna;
- Potential impacts on vegetation retained within construction worksites and indirect impacts on surrounding vegetation, threatened flora and fauna species;
- Potential for diminishing air quality through site works and dust generation;
- Potential for fauna to be injured during vegetation clearing works; and
- Potential for discovery of previously unidentified Aboriginal or historic heritage relics.

The SEMF addresses these and other environmental aspects through the CEMPs and other documents. A summary of CEMPs, appendices and other related documents is included below.

- Community and Stakeholder Engagement Plan:
  - Noise and Vibration CEMP
  - Out of hours works procedure
  - Out of hours works permit;
- Traffic and Access CEMP;
- Soil and Water CEMP:
  - Erosion and sediment control plan;
  - Emergency spill response procedure;
  - Unexpected finds protocol;
  - Soil and water monitoring and inspection; and
  - Groundwater quality criteria;
- Waste and Resources CEMP:
  - Spill Prevention Protocol; and
  - Hazardous Material Management;
- Biodiversity CEMP:
  - Vegetation Management Plan - seeks to avoid or minimise, to the extent reasonably practicable, impacts on parts of the Airport Site that have important biodiversity values that are outside of the indicative Construction Impact Zone shown in Figure 2 in Part 2 of the Airport Plan;
  - Biodiversity Management Protocols;
  - Unexpected finds protocol;
  - Weed and Disease Management Plan;
  - Bushfire Management Plan;
  - Threatened Flora Salvage and Translocation Plan; and
  - Unexpected Finds Protocol – Threatened Flora and Fauna;
- Air Quality CEMP:
  - Dust Management, vehicle and equipment emissions plan; and
  - Sensitive receptors;
- Visual and Landscape CEMP:
  - Beaufort Wind Scale;
- Aboriginal Cultural Heritage CEMP:

- Topsoil Management Protocol;
- Unexpected finds protocol;
- Aboriginal Stakeholder Consultation and Engagement Plan;
- Survey and Salvage Plan and Addendum (retained to provide guidance in the event of Unexpected Finds);
- Stories of Country (supersedes Oral History Plan); and
- Identifying Aboriginal objects and site types;

- European and Other Heritage CEMP:
  - Details on assessment and salvage of European heritage items;
  - Unexpected finds protocol; and
  - Cemeteries Relocation Management (works completed prior to Stage 1 Airport Development commencing); and
- Other Supporting Documents:
  - Biodiversity Offset Delivery Plan;
  - Remediation Action Plan;
  - Minor Environmental Assessment Procedure;
  - Environmental Aspects, Impacts and Risk Procedure;
  - Environmental Incident Classification and Reporting Procedure;
  - Legal Register and Other Requirements;
  - Emergency Spill Response Procedure;
  - Waste Classification Procedure;
  - Out of Hours Works Procedure;
  - Material Import Procedure; and
  - Compliance Tracking Matrix Procedure.

5.2.1 Inspection, Monitoring and Continual Improvement

Monitoring, inspection, auditing, and reporting will be undertaken on a regular basis to measure the effectiveness of the environmental management program and to facilitate continuous improvement of environmental controls. If a deficiency is detected, the appropriate corrective action will be taken to resolve the issue. Monitoring requirements specific to particular environmental aspects are included in the relevant CEMPs.

6 Construction Activities

This section describes the construction activities taking place as part of the Stage 1 Airport Development in detail, including general sitewide activities necessary to enable all works and the specific construction activities packaged as part of the enabling and earthworks, and main construction works phases. Figure 4 shows the location of the sites on which construction activities are taking place as part of the main construction works.

6.1 General Sitewide Activities

6.1.1 Preparatory Activities

Preparatory activities will be ongoing across the Airport Site throughout the Stage 1 Airport Development and occur as part of each of package of construction works and as applicable to third party works. The works will be managed in accordance with the Preparatory Activities Plan which is prepared by the relevant Contractor and approved by WSA Environment Manager (or delegate). The activities must be consistent with the Airport Plan definition for Preparatory Activities, refer to SEMF Section 3.3. Refer to Section 6 for details and indicative timing of the preparatory activities in each of the main works construction packages.

If an Approver determines an activity is a Preparatory Activity for paragraph (e) of the definition of '*Preparatory Activities*' as per the Airport Plan and requires that a plan be prepared and submitted, WSA will prepare the necessary plan for consideration and approval in accordance with Condition 5(2) of the Airport Plan. Any Preparatory Activities must not be carried out inconsistently with the approved CEMPs.

Table 6: Typical Preparatory Activities

Typical Preparatory Activities
• Spatial Survey • Service Investigations • Pre-condition Surveys • Traffic Counting • Ecological Pre-Clearance Surveys • Contamination Pre-Clearance Surveys • Aboriginal and European Cultural Heritage Survey and Salvage Works including Topsoil Protocol implementation • Site Security including fencing • Removal of redundant infrastructure including farm fences, power poles, footings/slabs and rubbish • Site compound establishment and roundabout construction • Remediation works including establishment of stockpiles • Construction of temporary sediment basins and installation of erosion and sediment controls • Other activities, which an Approver determines are Preparatory Activities.

6.1.2 Construction Water

Water will be sourced by access to existing water supply pipelines and from stormwater runoff captured in sediment basins or farm dams at the Airport Site or procured from alternate sources.

Swales and detention basins have been delivered as part of the Bulk Earthworks Contract (completed in early 2023) for the management of stormwater. Where possible, and as required, detained water will be use across the site as construction water.

Sediment basins will continue to be used to capture surface run off for use as construction water, where feasible. As the construction phase progresses, basins will convert to operational phase.

The BEC contractor utilised nearby quarry water until December 2022 in accordance with the terms of an agreement between CSR and WSA. Use of CSR water is currently being explored and an extension of the agreement with CSR for water supply may be reviewed as part of the execution of other WSA main contractor works.

6.1.3 Establishment of main access points

The main access points for the project are as follows:

- TSS Contractor – The Terminal Site is accessed from either the Northern Road via a signalised intersection along the Old Northern Road, or via access road connecting the site from Badgerys Creek Road.
- LCB Contractor – access will be via either Badgerys Creek Road or Elizabeth Drive. The main site access point from Badgerys Creek Road will be shared with other Contractors.
- ACP Contractor – access via The Northern Road at the “Freight Access Road” intersection. Alternate access points including Eaton Road, Anton Road and Epic Mine around the northern areas of the site.
- Stage 1 Cargo Works Contractor – As for the ACP Contractor, access will be from the Northern Road via a signalised intersection. The signalised intersection offers queuing capacity for right-turning traffic and minimises the risk to public road users through interface with construction traffic.
- M12 Construction Activities On-Airport - M12 will access the On-Airport site via a temporary roundabout and shared access road located 100m west of the old Taylors Road-Elizabeth Drive intersection. The M12 project, will also utilise a new left in/left out intersection at Elizabeth Drive (when the temporary roundabout and shared access road are no longer available), and also the Elizabeth Drive and Badgerys Creek Road roundabout.
- Rail Development – rail development contractors will access their sites from Elizabeth Drive, Badgerys Creek Road and Pitt Street.

Any access point that needs to be installed on an existing TfNSW road will be done in consultation with TfNSW and approvals gained prior to the access works commencing. Other internal site access roads will be gravel pavement maintained by grader and non-potable water cart and may be bitumen sealed to reduce the maintenance and dust generation. Timing and location of access points may be refined in response to management of traffic impacts and interface management. Main access points are subject to change as some main works packages approaching completion and new activities are commencing.

The Traffic and Access CEMP provides details of measures implemented to minimise disruption of local road networks.

6.1.4 Material Importation

To date, approximately 5.3M tonnes of material has been imported to the Airport Site from other Sydney infrastructure sites as documented in the EIS for use as subbase and capping. Material import commenced in May 2019 and has ensured that valuable Sydney sandstone is re-used in pavement construction, potentially saving millions of tonnes of quarry won materials while diverting material from landfill sites in the Sydney area. Moving forward, all MWC packages will need to import a range of materials as part of their scope. Materials will need to meet engineering specification requirements as well as being assessed under the Material Import Procedure set out in Appendix V of the WSA SEMF. Imported material management is also included in Section 7.7 of the Waste and Resources CEMP. Any type of imported material will be classified in accordance with the NSW *Protection of the*

Environment Operations Act 1997 (POEO Act), NSW EPA waste classification guidelines (2014) and the Commonwealth *Airports (Environmental Protection) Regulations 1997* (Airports Regulations).

Details specific to importation of material by Packages are captured within the descriptions of the specific construction activities within this plan, as well as the Material Import Procedure, this activity will be carried out in accordance with the Noise and Vibration CEMP, Waste and Resources CEMP and the Traffic and Access CEMP.

6.1.4.1 Stockpile Management

The site may need to receive spoil on a 24 hr a day basis while stockpile management activities will be performed during normal working hours. Key operating risks will be mitigated as per Table 7.

Plant used to build and manage the material import stockpiles will be of a similar nature to the following:

- CAT D6 Bulldozer
- CAT 816K/*26K Compactor
- CAT 533 Smooth Drum Roller
- Water Carts
- CAT 14M Motor Grader
- CAT 330 Excavator

Table 7: Key operating risks and mitigation measures

Risk Category	Description	Mitigation Measures
Noise	Excessive noise emitted to sensitive receivers	• Implementation of the mitigation measures set out in the Noise and Vibration CEMP, particularly monitoring and assessment of out of hours work. • Monitoring and Inspection will be carried out in accordance with the Noise and Vibration CEMP • Complaints will be addressed in accordance with the CSEP.
Light Spill	Excessive light spill from night operations	• Implementation of the mitigation measures set out in Visual and Landscape CEMP. • Complaints will be addressed in accordance with the CSEP.
Water Pollution	Run off from stockpile causes pollution of local watercourse	• Mitigation measures will be implemented in accordance with the Soil and Water CEMP. • Monitoring and Inspection will be carried out in accordance with the Soil and Water CEMP. • Only material which meets the requirements outlined in the RAP as suitable material will be imported. • Erosion and sediment control measures to be implemented in compliance with *"Managing Urban Stormwater: Soils and Construction Vol 1, 4th Edition Landcom 2004"*
Traffic	Increased traffic volumes	• Implementation of the mitigation measures set out in the Traffic and Access CEMP, • Monitoring and Inspection will be carried out in accordance with the Traffic and Access CEMP
Site Contamination	Importation of contaminated material	• Implementation of the mitigation measures set out in the Waste and Resources CEMP and SEMF around ensuring that all material is suitably inspected, tested and certified prior to being approved for importation. • Monitoring and Inspection will be carried out in accordance with the Waste and Resources CEMP.
Dust	Dust generated during placement	• Mitigation measures will be implemented as per the Air Quality CEMP

Risk Category	Description	Mitigation Measures
		• Monitoring and inspection will be undertaken in accordance with the Air Quality CEMP.
Dust	Dust generated from wind interaction with stockpiles	• Mitigation measures will be implemented as per the Air Quality CEMP • Monitoring and inspection will be undertaken in accordance with the Air Quality CEMP

6.1.4.2 Traffic Movements

Materials such as sub-base and fine crushed rock will be imported to the site on a 24 hour 7 days per week basis as documented in the EIS, with daily traffic movements as per Section 6.1 of the Traffic and Access CEMP.

Material will be delivered to site using tipper truck and trailer combinations (truck and dog) typically capable of carrying 33t of spoil each. The main delivery route will be via the motorway and primary/arterial road network to a site access point.

Traffic will be planned, monitored and managed in accordance with the Traffic and Access CEMP.

6.2 Bulk Earthworks

The BEC Works formed the major part of the enabling and earthworks phase and comprised major cut and fill earthworks, installation of truck drainage elements and other associated works described in Section 3.2.1. This package of works was completed in early 2023.

6.2.1 Indicative Program

The Bulk Earthworks construction activities and indicative timing is outlined in Table 8.

Table 8: Bulk Earthworks Indicative Construction Program

Bulk Earthworks Construction activities	Indicative Timing
Stage 1 - Preparatory Activities	Complete
• Spatial Survey • Service Investigations • Pre-condition Surveys • Traffic Counting • Ecological Pre-Clearance Surveys • Contamination Pre-Clearance Surveys • Aboriginal and European Cultural Heritage Survey and Salvage Works including Topsoil Protocol implementation • Site Security, including fencing • Removal of redundant infrastructure including farm fences, power poles, footings/slabs and rubbish • Site compound establishment • Remediation works including establishment of stockpiles • Construction of temporary sediment basins and installation of erosion and sediment controls • Other activities which an Approver determines are Preparatory Activities.	
Stage 2 – Bulk Earthworks	Complete
Involves construction of permanent earthworks to finished surface levels including: • Site clearance of trees, shrubs, fences and any other man-made structures • Implementation of the RAP, including remediation of site from existing contaminants and rubbish.	

Bulk Earthworks Construction activities	Indicative Timing
• Stripping of topsoil to stockpile for future use in finishing works • Earthworks to subgrade level for main runway • Earthworks to subgrade level for the rapid exit taxiways, main taxi ways and aircraft aprons • Earthworks to finished surface levels for fuel farm facility • Earthworks to finished surface level for future cargo terminal • Earthworks to finished surface levels for GTC area • Earthworks to finished surface level for main terminal building • Earthworks to nominal subgrade level for main access road and services corridor • Construction of temporary sediment basins and installation of erosion and sediment controls • Importation of sandstone from other infrastructure projects for use in the bulk earthworks phase and other packages.	
Stage 3 – Drainage	Complete
• Installation of permanent sedimentation, retention and bioretention basins • Excavation of permanent open drain swales • Construction of trunk drainage pipes and culverts, including headwalls, drainage pits and outlet scour protection.	
Stage 4 – Finishing Works including access roads	Complete
• One coat seal to subgrade level of runway, taxiways and apron subgrade levels for erosion protection • Respreading of topsoil to the batters, verges and unpaved areas of the Airport site • Seeding and planting of permanent vegetation to the re topsoiled areas.	

6.2.2 Preparatory Activities

Pre-Construction activities and temporary works included the following:

- Initial Site facilities establishment (completed);
- Cultural heritage survey and salvage (completed);
- Contaminated material survey (completed);
- Biodiversity pre-clearance and threatened species survey (completed);
- Geotechnical Investigations (completed);
- Initial access roads (completed);
- Demolition works (completed); and
- Erosion and sedimentation controls (completed).

6.2.3 Material Importation

Approximately 5.3 million tonnes of sandstone was imported from other infrastructure projects between 2018 and 2023, diverting the sandstone from landfill to be reused beneficially as a high strength improvement layer reducing the need for virgin quarried stone products in the pavement layer. Further importation and stockpiling will continue to support the sustainable construction of pavements into the future.

To optimise opportunities to reuse suitable material generated from other major infrastructure projects in Sydney, material importation may occur both during standard hours and outside of standard construction hours (i.e. out of hours works). As such, the process outlined in Section 10 of the Noise and Vibration CEMP for the assessment and management of these works has been applied.

6.2.4 Remediation

Contaminated areas identified during preparation of the EIS and other site assessments were remediated and verified prior to commencement of bulk earthworks. Following identification and classification of any Asbestos Containing Material (ACM), the material was remediated in accordance with the recommendations of the Remediation Action Plan (RAP). Prior to any remediation works a safe work method statement (SWMS) was prepared and approved. Remediation of known contamination is now complete. As the works are validated, the site will transition to a Long-Term Environmental Management Plan, which is discussed further in the relevant CEMPs.

Any unexpected finds were managed in accordance with the RAP and the Unexpected Finds Protocol.

6.2.5 Environmental Conservation Zone and Heritage Salvage

In accordance with the initial survey salvage plan and EIS recommendations, prior to commencement of construction, areas of known Aboriginal artefacts have been identified. Approximately 166 sites were identified within the Bulk Earthworks footprint. Prior to the commencement of earthworks, the requirements of the Aboriginal Cultural Heritage CEMP were implemented. All known European and other Heritage requirements were completed prior to Early Earthworks commencing. The Aboriginal Cultural Heritage and the European and Other Heritage CEMPs provide detail on the Unexpected Finds Procedure to be followed in the event new items of heritage importance are discovered during construction.

Areas of known Aboriginal, cultural, European and Other Heritage were clearly demarcated in the field and access restricted. No-go signage has been clearly installed on fences. Access to these areas was only allowed under a permit to enter no-go areas issued by WSA to the relevant contractor or employee.

The Environmental Conservation Zone (ECZ) was fenced to prevent access to these areas. Access to these areas is only allowed following induction and approval of the relevant documentation by the Asset Management team and Environment Manager.

6.2.6 Survey and Utility Potholing

As part of the site establishment works, survey control points were established. Existing utility information from “Dial Before You Dig” was also confirmed by potholing using non-destructive digging and manual excavation, as necessary. Where existing underground utilities were impacted by construction vehicular traffic, temporary protection such as steel plates at surface level were used to minimise any impact. An indicative program for these works can be found in Table 8.

6.2.7 Clearing, Grubbing and ERSED Controls

Vegetation requiring removal during Bulk Earthworks was predominantly large scattered mature trees and ground cover. As prescribed by the Biodiversity CEMP, prior to clearing and grubbing activities, a pre-clearance survey was undertaken by ecologists. The aim of these surveys was to identify any habitat features that may harbour fauna, as well as identify threatened species that can be relocated prior to construction activities commencing. Refer to the Biodiversity CEMP for further information on pre-clearance survey requirements. An indicative program for these works can be found in Table 8. As shown, construction and /or installation of Erosion and Sediment controls occurred prior to commencement of clearing.

6.2.8 Rehabilitation

Topsoil that was previously stripped from the site has been spread to areas nominated for landscaping. The topsoil is transported by scrapers and spread by dozers or graders to the nominated depth.

Seeding and/or planting occurs after the spreading of topsoil. Environmental controls relevant to this work are described in the Soil and Water CEMP and erosion sediment control plans.

Topsoiling and seeding shall be undertaken as soon as practicable after completion of the bulk earthworks, to assist with erosion and sedimentation control.

The management of weeds and associated protocols during topsoil stripping and subsequent stockpiling is described in the WSA Biodiversity CEMP.

6.2.9 Earthworks and Demolition

There were approximately 26 million cubic metres of earthworks required as part of the scope of works. The earthworks design resulted, in general, in a balanced earthwork cut to fill. Earthworks were completed in early 2023. A relatively small amount of material was imported from other infrastructure projects from within the Sydney basin. Testing ensured material meets the design requirements for the project and satisfied the requirements of the RAP. An indicative program for these works can be found in Table 8.

6.2.10 Spoil

All unsuitable spoil (from a geotechnical perspective including materials which may be moisture affected) was stockpiled on site. The material dried out, and where required, was treated with other general fill for reuse as backfill into the main embankments. The details, including temporary and permanent stockpile locations and management measures (e.g. soil and water, dust etc.), were detailed on an ECM. Control measures were consistent with the relevant CEMPs for example run off controlled in accordance with the Soil and Water CEMP. An indicative program for these works can be found in Table 8.

Materials and Waste Management

Four strategies are used for managing spoil on the project with a view to minimise the volume of spoil generated, as outlined below:

- Waste Avoidance: Minimise excavation activities – reduce earthworks for drainage and pavements. Onsite classification of natural materials from other waste streams;
- Re-use on site: Where possible, the reuse of excavated materials within the project site is maximised. This will reduce the need to import material onto the site, reduces the need for finding off-site re-use or disposal locations and the associated materials handling and transport issues, reduces fuel use and minimises the project footprint;
- Re-use off site: Beneficial re-uses such as concrete and asphalt recycling, rehabilitating borrow pits, embankment widening/flattening, re-shaping engineered fill, acoustic and visual mound construction, council developments; and
- Disposal: When all other strategies have been exhausted, off-site disposal is the last and least preferable management option to be considered. At all times, offsite disposal must be to a facility licenced to receive the material in accordance with the EPA's guidelines.

Refer to the Waste and Resources CEMP for detailed guidance on procedures to be implemented during construction.

6.2.11 Drainage Works

Final stormwater management at the Airport Site involved a series of grassed swales to convey runoff from the developed areas within the Airport Site, and a series of bio-retention and flood detention basins to manage flow quality and quantity prior to discharge to receiving waters.

Five detention basins with capacities of between 39,000 and 140,000 kilolitres have been established on the periphery of the Airport Site as part of the Stage 1 Airport Development. Each basin incorporates

a smaller forebay area for the provision of a bio-retention system for the treatment of low flows prior to discharge to the environment. The locations of the basins have been selected to allow discharge points consistent with existing drainage lines and the basins will be sized to manage post-development flows to maintain pre-development levels.

Flow control structures and scour protection are installed where required at discharge points and other areas of high velocity flows to mitigate erosion. The precise location and dimensions of the basins were confirmed as part of detailed design of the earthworks and drainage solution.

The basins and their associated drains were constructed early in the indicative construction schedule to direct runoff for treatment before discharge from the Airport Site. The basin forebay could include provision for flocculant to assist with settling of dispersive sediments, improving water quality before discharge to receiving waters, however during construction it has been more effective to use spray methods to apply flocculant. Depending on final earthworks levels, some amendment to the inlet structures may be required to divert runoff into the ponds at the completion of the earthworks. Installation of pipe and/or box culverts have occurred progressively as the earthworks were completed. Environmental controls relevant to this work are described in the Soil and Water CEMP and erosion sediment control plans.

Materials such as precast concrete products (for example, pipes, box culverts and headwalls) as well as bedding sand and any select backfill were delivered to the Airport Site progressively. Where possible, the materials were delivered directly to their final position. Where this was not possible, they were delivered to the laydown area and then moved at an appropriate time to their final position using onsite cranes and heavy vehicles.

The BEC scope included the construction of a trunk drainage system that will facilitate the conveyance of stormwater runoff from the future buildings, paved and unpaved areas to the various discharge points into the existing Badgerys, Oaky and Duncans Creeks. The new drainage infrastructure consists of precast concrete pits, pipes, box culverts and open drains. These drainage lines will initially discharge into detention basins, bio retention basins before being discharged into the existing watercourses adjacent to the airport site. WSA has an ongoing water quality monitoring program for on and off site receiving water locations. An operational environmental management plan will also be produced to define an operational water quality testing regime. The operational trunk drainage system including all basins has been designed for the 100-year ARI storm event.

All planned drainage works are consistent with permissible land uses outlined on the Airport Plan.

6.2.12 Utilities and Service Works

Temporary utilities including power and communications were installed for Contractor site facilities. Wastewater and potable water are trucked to and from the site facilities dependent upon the availability of existing connections for these services.

The BEC scope included the removal of redundant utilities, including:

- Sydney Water supply;
- Telstra communications; and
- Endeavour Energy overhead power lines.

Where unknown underground services were uncovered during earthworks, these services were confirmed as redundant and removed.

6.3 Terminal and Specialty Services Works

The TSS Works form part of the main construction works phase and comprise construction and commissioning of the passenger terminal building, specialty systems, landside infrastructure, passenger apron and aviation fuel system. These works have been packaged as one of the main construction works packages to be performed by a single contractor. Timing, planning and methodology of the TSS works is included in the sections below.

The TSS Works construction site (the TSS Site) is located centrally to the CIZ, with interfaces adjoining Stage 1 delivery of the Bulk Earthworks, ACP Works, LCB Works, and the development works by the Rail Authority.

The TSS Works includes the delivery of a multi-storey international and domestic terminal, which is integrated with all ground transport and will be located between the Stage 1 runway and future second runway site.

The terminal complex will have approximately 82,000 square metres of floorspace and will include:

- Kiosk, bag drop, security, emigration/immigration (citizen, noncitizen and smart gates), quarantine inspection services, baggage handling facilities, baggage claim (including inbound baggage offload belts), security screening, departure lounges, commercial tenant areas, back of house facilities and car rental facilities;
- Capacity for dedicated retail services and currency exchange, including food and beverage services (and the associated infrastructure for storage, back-up facilities, goods delivery access, logistics and security screening); and
- Information technology, baggage handling, security and surveillance and all other systems required to effectively support efficient airport processes and operations.

In addition to the terminal complex, the remaining TSS Works are divided into two categories, generally as airside and landside elements:

- TSS Airside Works construction elements include apron areas, fixed link bridges, aerobridges, aviation fuel ring mains and fuel farm, specialist aviation infrastructure and equipment; and
- TSS Landside Works construction elements include internal roads, carparks, landscaping areas and Technical Equipment Rooms (TER) buildings.

The area impacted by the TSS Works is shown in Figure 3. Further details with regards to the timing of the TSS construction activities and the individual components / activities associated with the TSS works are included in the sections below.

6.3.1 Indicative Program

The TSS Works consist of four distinct workface areas as outlined in Table 9.

Table 9: TSS Works Indicative Construction Timetable

TSS Works Construction activities	Indicative Timing
Stage 1 - Preparatory Activities	Completed
• Site investigations • Surveys (including dilapidation and topographical features survey) • Geotechnical investigations and testing • Temporary Access Ramp • Temporary access/egress roads • Temporary car parking • Establishing construction work sites, site offices, first aid facilities, amenities, accommodation and related site mobilisation activities • Establishing temporary services to enable construction activities and site amenities • Site fencing, safety and security provisions, boom gates, access and egress points • Sediment and erosion control measures	
Stage 2 – Terminal Construction	Q4 2021 – Q4 2024
• Bulk fill to Terminal Basement • Foundation piling • Detailed excavation, trenching and reticulation for in-ground services and tanks	

TSS Works Construction activities	Indicative Timing
• Formwork, reinforcement and concrete placement for suspended slab on grade • Formwork, reinforcement and concrete placement for basement retaining walls. • Precast for basement retaining walls • Establish self-climbing jump-form for vertical core construction. • Formwork, reinforcement and concrete placement for core and column construction. • Formwork, reinforcement, PT and concrete placement for suspended slabs • Structural steel composite structure for suspended slabs • Erection of structural steel roof and fixed link bridges • Façade cladding and glazing • Roof insulation and sheeting • Internal services rough-in and reticulation • Internal finishes and fit out • Baggage handling system • Specialist services and Technology • Testing and commissioning	
Stage 3 – Airside Specialty Works	Q4 2021 – Q2 2024
• Trenching and reticulation for in-ground services • Apron concrete pavement construction • Aviation infrastructure, aerobridges and utilities • Aviation fuel ring main reticulation	
Stage 4 – Landside Specialty Works	Q2 2022 – Q2 2024
• Trenching and reticulation for in-ground services • Internal road pavements and carparks • Earthworks to finished surface levels • Soft and Hard landscaping • Covered walkways	
Stage 5 – TER	Q3 2022 – Q1 2024
• Earthwork to TER • Foundation piling • Detailed excavation to services • Formwork, reinforcement and concrete placement of slab and walls • Fitout • FF&E • External works • Testing and commissioning	
Stage 6 – Fuel Farm	Q4 2022 – Q1 2025
• Trenching and reticulation for in-ground services • Aviation fuel farm buildings • Aviation fuel farm- process mechanical • Fuel dispensing station building • Fuel dispensing station – process mechanical • Commissioning and testing of Fuel Farm • Commissioning and testing of fuel dispensing station	

6.3.2 Preparatory Activities

Upon being granted site access, the TSS Contractor has commenced, and will continue to, undertake pre-construction preparatory activities and temporary works detailed in this section.

6.3.2.1 Survey and Geotechnical Investigations

Specialist consultants have been engaged to carry out investigation and validation of existing site conditions.

A Dilapidation Survey is photographically recording the status of the TSS Works Construction Site road network prior to construction. This process will capture the existing condition of The Northern Road, Badgerys Creek Road and Elizabeth Drive within the immediate vicinity of the site.

A registered Land Surveyor is recording the existing site topography and in-ground services prior to construction. This survey will be performed in a grid pattern and will indicate the surface levels, features and landforms as completed by the BEC. In ground services identification will be carried out by means of services scanning, reviewing of “dial before you dig” and previous contractor documentation (if applicable, as it is not anticipated that there are any live inground services). Minimal services infrastructure is expected to be encountered, generally only stormwater pits and pipework as installed prior by the BEC Contractor.

The Surveyor is also establishing the project coordinate controls and provide boundary definition, setouts, gridlines, benchmark datum points and all other necessary survey information as required to complete the works.

A Geotechnical Consultant is performing onsite investigations and testing for the purpose of validating the performance of BEC installed subgrade conditions. This involves establishing geotechnical rigs and auguring into the subgrade profile. A number of soil samples will be collected and analysed by a NATA accredited laboratory. The geotechnical results of these validation works will be broadcast to the wider engineering design team to be considered into the final design development for the TSS Works.

A copy of these will be submitted to WSA for record keeping.

6.3.2.2 Site Accommodation and Amenities

Site offices, lunchrooms and amenities have been designed according to the NSW Work Cover Code of Practice titled “Managing the Work Environment and Facilities.”

The layouts and plans for the site amenities have been positioned to minimise the impact on construction and minimise the worker interface with high-risk construction activities. Site accommodation and amenities will increase progressively throughout construction to meet the demands of the site.

6.3.2.3 Temporary Vehicular and Pedestrian Access Roads

Consistent with the Traffic and Access CEMP, a qualified traffic consultant will be engaged to prepare a detailed Construction Pedestrian Traffic Management Plan (CPTMP). The CPTMP will identify the required personnel, traffic controls and signage to manage vehicular and pedestrian traffic movements throughout the works.

The CPTMP will be reviewed and updated as required as works progress. The CPTMP will be issued to WSA’s representative for information.

6.3.2.4 Vehicular Access and Parking

Access to and from the site will be conducted in phases to allow for the various construction interfaces with adjoining BEC, ACP and Sydney Metro Rail Development works. Access points are shown in Figure 5.

The first two phases propose a dedicated access via Badgerys Creek Road. To permit construction of the Sydney Metro Rail Development works, a dedicated Phase 3 access will be provided via The Northern Road. The Phase 1 and 2 construction accesses will be retained for use by Sydney Metro contractors.

Internal site access roads will be gravel pavement and may be bitumen sealed to reduce maintenance and dust generation. Where required, ongoing maintenance will be carried out by grader, non-potable water cart and smooth drum rollers. Speed limits will be established for internal ring roads, to allow for safe vehicular movement around the site.

To minimise parking related impact to the surrounding neighbours, dedicated car parking areas will be provided for construction workers and staff. Car parking will be provided as close as possible to site amenities, accommodation, and facilities to minimise the distance for walking and interface with high-risk construction activities.

6.3.2.5 Pedestrian Access

The proposed pedestrian access around the site will be designed to minimise contact with vehicles and high-risk construction activities.

Primary thoroughfares will be rigid concrete pavement allowing for safe access, maintain housekeeping, durability and to minimise environmental impact. Wayfinding and safety signage will assist and alert people to safely navigate their way around the site compound.

A variety of hoardings, fencing, crash barriers, etc. will be used throughout the project to delineate between pedestrian, vehicular access and varying work faces to provide a safe and secured site. These hoardings will be modified at different phases of the project. Hoarding types will consist of but not be limited to:

- Chain wire fencing – to delineate construction works zone and prevent unauthorized access;
- Temporary fencing – to delineate construction works zone for short-term and interim staging works; and
- Jersey kerb – where these is a danger of deep excavation or areas adjacent to high traffic volume

All construction vehicles, including concrete agitator trucks, semi-trailers and vehicles involved in construction related activities are required to arrive at the site within the approved construction hours. Out-of-hours-works (OOHW) permits are to be applied for through WSA for all out of hours works.

6.3.2.6 Temporary Site Services

During the site establishment preparatory activities period, the project will be established with the required temporary services infrastructure to enable the main construction works to commence and until permanent services are in place and commissioned ready for use. These temporary services include:

- Water & fire services, including holding tanks and booster pumps;
- Power & telecommunications services, including diesel generators and IP-rated switchboards; and
- Sewer services, including holding tanks that will be pumped out for offset treatment, and grease arrestors. Sewer infrastructure will be located to minimise the risk of contaminating potable water.

6.3.2.7 Sediment and Erosion Control

As part of the Bulk Earthworks, the site is being recontoured with the construction of sediment basins and swales, designed for an 80th Percentile 5-Day rain event (27.6mm).

Considering the requirements of the Soil and Water CEMP, the TSS Contractor will utilise these stormwater swales and sediment basins to manage and minimise site flooding and surface water runoff impacts. Intermediate stormwater and sediment erosion controls within TSS work fronts will also be used will be designed and constructed in accordance with the Blue Book for an 80th Percentile 5-Day rain event (27.6mm). Where practicable, rainwater harvested and collected in sediment basins is intended for reuse as dust suppression to the wider site.

As the construction of the terminal and other structures progresses, connection of temporary drainage services within slabs and from roof structures will mitigate large down pours of water and allow water to be dispersed in a controlled manner via downpipes and water spreaders into the permanent reticulation.

The sealing and maintenance of all roads around the site will also ensure that access ways are able to be used after rain events upon an initial inspection after major rain events.

6.3.3 Materials Handling

6.3.3.1 Construction Materials and Deliveries

Construction materials and deliveries including concrete materials, precast concrete, structural steel, roofing, flooring and internal finishes will be delivered to the works zone progressively, consistent with the Traffic and Access CEMP, Sustainability Plan and Noise and Vibration CEMP.

Where possible, the materials are to be delivered directly to their final position. If this is not possible, they are to be delivered to dedicated materials laydown areas and then moved at an appropriate time to their final position using onsite cranes, hoists, lifts and/or heavy vehicles.

6.3.3.2 Cranes

Both tower and mobile cranes will be utilised by the TSS Contractor.

Cranes will be used to handle materials associated with the construction of the super structure and will assist in the construction of the external envelope, finishes, and plant installation. Cranes will have the ability to set pre-programmed restrictions within areas. This special function allows drivers to establish boundaries for the cranes, ensuring that no crane clashes occur whilst lifting.

Cranes will be established between Q4 2021 and Q1 2023.

The position of the tower cranes will be located to support the construction of the main terminal building with the necessary penetrations/openings designed to allow the crane through the structure as required. The position also allows the crane radius to have sufficient coverage of the main terminal structure considering the large footprint of the building, and various liftings and material handling areas. The positions of the cranes have taken into consideration site constraints such as existing inground conditions, noise, and vibration.

The tower cranes will be erected using mobile cranes located within the main TSS Site boundary. Traffic impacts will be negligible as erection of tower cranes will be undertaken within the site. Lifting studies have been conducted, and erection of the cranes will have dedicated High-Risk Workshops prior to works commencing.

The tower crane will be removed using mobile cranes located within the main TSS Site boundary. A varying range of mobile crane sizes will be utilised for the construction of the Northern pier and fixed link bridges. For all mobile crane setups, a detailed lifting analysis will be carried out with the objective to ensure safe lifting and handling of materials. The lifting study is to identify the magnitude of loads imposed, the bearing capacity of the supporting ground or structure, and the required controls to be implemented.

Mobile cranes will be used throughout the project for:

- Pier Construction;
- Coverage of areas that tower cranes cannot reach;
- Coverage of areas where the tower cranes have inadequate capacity;
- The erection and dismantling of tower cranes; and
- Site establishment and decommissioning.

Mobile cranes will also be utilised movement and placement of materials for construction of the fuel tanks, admin buildings and workshops associated with the Fuel Farm and Fuel Ring Main.

6.3.3.3 Hoists

Multiple construction hoists will be positioned around the main terminal structure to provide safe access for both labour and materials to the various construction workfaces from basement to the roof.

The hoists will be sized accordingly to handle all materials including the structure, façade, internal services, and finishes works. Hoist locations will be positioned along the façade line, or through internal voids and slab penetrations, whilst providing the least impact to subsequent construction trades.

Hoist masts are typically assembled horizontally on the ground and then lifted in as multiple sections. Hoist cars are then attached to the mast, pulleys and ropes assembled, and then landing platforms and gates configured. Testing, commissioning, and a final engineering installation signoff will be required prior to the safe use and operation of the hoists. As the structural slabs progress, additional hoist mast tower sections are craned and bolted into position to allow increased verticality and servicing of the upper terminal levels.

As internal passenger lifts come online, external construction hoists will be decommissioned and dismantled using mobile and tower cranes.

Construction hoists and other lifting equipment will be inspected, maintained, and operated in accordance with the manufacturer's instructions, and routinely inspected by engineers to ensure ongoing safe operation.

6.3.3.4 Concrete Batching and Pavement Construction

A concrete batch plant will be established on site to supply concrete for the apron pavements. Raw materials delivered to the concrete batch plant will consist of cement, fly ash, aggregate, sand and admixture. A dedicated wastewater holding tank will be provided for the disposal of batching plant water.

The apron pavement will be constructed using concrete typically placed and compacted either by a slipform concrete paving machine or by traditional formwork and pump placement. The slipform paving machine option will be fed by a material transfer vehicle (typically a covered tipper truck), which in turn is supplied by the above on-site concrete batching plant. The compacted concrete will be finished and sprayed with a curing compound. Joints in the concrete pavement will be formed either by saw cutting the surface after initial setting of the concrete or by crack inducers placed in the pavement lanes, or a combination of both methods. Infill panels and interface concrete pours will be placed by hand using a more traditional approach for concrete placement, finishing, and curing.

Local offsite concrete batching plants will provide the concrete supply for all other concrete elements on the project including the terminal structure. A combination of mobile boom pumps and static tower booms will be utilised to assist with the placement of concrete for the main terminal complex. Tower and mobile booms will be fed by means of agitator trucks. Dedicated setup locations for the mobile concrete boom pumps will consider site logistics and access to adjoining workfaces. For each mobile boom pump setup, a geotechnical engineer will review the magnitude of loads imposed, the bearing capacity of the supporting ground or structure, and the required controls to be implemented.

For fuel farm associated structures, local offsite concrete batching plants will be utilised and installed with mobile boom pumps and concrete line pumps.

All water originating from the nominated pavement concrete batching area will be tested and categorised the following categories:

- Alkaline water (High pH) – water that has contacted alkaline materials used in batching or has originated from surface water flow across alkaline areas on-site and has become alkaline. Alkaline areas include those areas used for the handling, storage and mixing stablemen, mixers, hoppers, washing/cleaning areas, slurry waste storage areas, first flush collection pits and contaminated

water storage areas. All process water is to be considered contaminated water. Contaminated water will be contained and transferred to a holding tank. The holding tank will be sufficiently sized to freeboard the first 30mm of rainfall in a rain event whilst maintaining operational capacity during dry weather. Tank sizing will be calculated following confirmation of batch plant provider, location, layout and subsequent 'contaminated water' catchment area. This design will be based on the rainfall design parameters from the five days, 80% rain event from the Blue Book "*Managing Urban Stormwater, Soils and construction*." Water from the tank will then be pumped through self-contained mobile treatment equipment which neutralises high pH levels to an acceptable level for re-application;

- Dirty water – water that has contacted particulate materials and contains suspended solids or has originated from dirty areas. Dirty areas include aggregate storage areas which are not affected by any alkaline materials and sediment settling areas. Dirty water will be captured in a holding tank. Terminal will maintain a separate drainage system that allows dirty water to discharge separately. The extent of the areas that generate dirty stormwater will be minimised using natural grades, bunds / rock-checks, coir logs, etc. Dirty water held on-site will be tested and reused whenever possible; and
- Clean water – water originating from areas not impacted by alkaline or dirty materials.

Water generated from batching/ affected by surface water flow will be in a closed loop and either reused in the batching process or disposed offsite in accordance with the Waste and Resources CEMP.

6.3.4 Piling and Footings

A piling mat subgrade will be imported, rolled and compacted to provide adequate bearing capacity to support multiple piling rigs to carry out the extensive foundation piling works.

Piles range from 750mm to 1500mm in diameter will be constructed using either a bore pile method or continuous flight auger pile (CFA) method. The technique involves the piling rig drilling into the soil and/or rock to the design depth. Once the design depth and socket has been achieved, the pile will be filled with concrete with the reinforcing steel either placed prior to concrete (Bore) or vibrated and lowered into the wet column of concrete (CFA). Pile risings will be segregated as General Solid Waste (GSW) and, where possible, stockpiled for reuse as backfill material to the basement retaining walls.

Detailed excavation for core raft footings will be undertaken immediately following the piling works. Core raft footings range from 600mm to 2300mm in depth and will require safe access provisions to be maintained for steelworkers, form workers and concreters. Where required, slope stability of deep excavations through benching, battering or shoring boxes will be implemented.

Upon completion, these piles and footings will provide structural support for the terminal complex, concourse piers, fixed link bridges, aerobridges, and ancillary structures.

Piles will be utilised for portions of the Fuel Farm under the fuel tanks and other structures. Footings will be used for other lightweight structures. There will also be ground improvements for pavements.

6.3.5 Cores and Columns

The vertical components from the basement to the roof will be poured upwards and progress prior to the slab construction. This is to allow the structural steel framing for the roof to commence promptly.

The cores will be constructed using a mixture of internal formwork boxes, crane-liftable steel shutters and self-climbing jumpform systems.

For traditional formwork boxes, access will be provided using scaffold for steel reinforcement and concrete placement trades.

Self-climbing jumpform systems will be assembled on grade in a dedicated laydown area prior to being constructed in situ with the tower cranes. Once established, all steel reinforcement will be delivered and craned to the leading deck of the jumpform for installation. Concrete placement will be via the

terminal tower booms. Adequate trailing deck and access stairs will be provided to the jumpform in case of emergency.

Columns will be constructed using preformed proprietary shutters, prefabricated reinforcement cages, with all works to be carried out using elevated work platforms and tower cranes.

6.3.6 In-Ground Services

As areas become available following the piling works, in ground services will commence with the detailed excavation, trenching and installation of in-ground service pits, tanks, grease arrestors, pipework and conduit reticulation.

Excavators will be utilised for services trenching, with spoil risings reused as services trench backfill or stockpiled and retained for reuse as backfill to the basement retaining walls. Granular aggregate material will also be imported for use as backfill to various services.

Most of the major services are located in the northern and southern area of the main terminal building and will require multiple crews for trenching, forming, and laying of services.

In-ground Services for the Fuel Farm will involve detailed excavation and installation of services for support buildings and pipelines connecting to the fuel reticulation ring main. This will comprise a stainless-steel lined pipe work system approximately 10km in length.

6.3.7 Suspended Slab on Grade

The basement suspended slab on ground comprises a 400mm thick flat plate slab supported on piles.

Reactive clay is expected to be encountered onsite, which may lead to heaving and uplift from the soil pressures acting onto the basement slab. Sacrificial formwork in the form of degradable cardboard will be placed beneath the slab. An impermeable membrane layer will then be placed over the cardboard, prior to steel reinforcement being laid, and then traditional formwork edge boards and concrete placement. Joints in the concrete will be formed either by saw cutting the surface after initial setting of the concrete or by installation of proprietary keyed or dowelled joints, or a combination of both methods.

6.3.8 Basement Retaining Walls

The retaining structure located within the terminal basement comprises a combination of in-situ and precast concrete wall construction.

Precast panels will have engineered certified lifting lugs, and a detailed lifting study is to be carried out prior to the installation of panels.

In-situ concrete walls vary from 250mm-400mm and will be poured using project specific formwork shutters.

Access to walls will be provided in the form of scaffold and working platforms to allow the safe installation of steel reinforcement, formwork shutters and concrete placement.

6.3.9 Suspended Slabs

A combination of both suspended post-tensioned concrete slabs and structural steel composite concrete slabs will be constructed in a ‘bottom up’ sequence from the Basement to Level 3.

The main terminal floor plate has been broken down into multiple pour breaks in accordance with the Structural Engineer’s temporary movement and construction joint positions. Individual pour breaks will be staggered and edge protection provided to mitigate fall from heights risks.

A specialist formwork engineer will design and certify the construction of temporary formwork decking prior to the installation of steel reinforcement, post-tensioned tendons and concrete placement activities.

PT tendons are to be safely tensioned, grouted, and sealed in accordance with the Structural Engineers design criteria.

Structural steel structure will be Engineered and safely erected in accordance with the Australian Steel Institute 'Practical Guide to Planning the Safe Erection of Steel Structures.' The purpose of this guide is to define the planning processes and controls necessary to help support best practice outcomes, which mitigate health and safety risks for all stakeholders associated with the erection of steel structures.

During the planning phase, a detailed Erection Sequence Methodology (ESM) is to be developed with the Temporary Works Engineer outlining the sequential erection order of all steel members, indicating all required complex lifting points, temporary propping, bracing and hold points to ensure 'end-of-day' temporary structural stability.

Structural steel will be delivered to site via semi-trailers, with steel being neatly packed on open stillages or within closed shipping containers. Stillages or containers will then be unloaded via the site tower cranes for unpacking and sorting in a dedicated laydown area. The ESM will then be followed strictly for the safe erection of structural steel, prior to Structural Engineering signoff.

6.3.10 Structural Steel and Roofing

Construction of the roof involves erection of primary and secondary structural steel framing, installation of the insulated roof build-up, roof sheeting, roof access maintenance systems and skylight glazing.

Once post tensioned suspended slabs are completed, the general sequence of activities for the roof construction will be:

- Erect roof steel starting from core for temporary stability;
- Install catwalks;
- Install skylight framing;
- Commence roof panels/sheeting;
- Install skylights, mechanical ventilation and pop up plant;
- Install smoke baffles in ceiling framing; and
- Install feature ceiling.

Structural steel will be safely erected in accordance with the Australian Steel Institute '*Practical Guide to Planning the Safe Erection of Steel Structures*.' The purpose of this guide is to define the planning processes and controls necessary to help support best practice outcomes, which mitigate health and safety risks for all stakeholders associated with the erection of steel structures.

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Completion of the roof works will assist in providing a watertight building along with the façade installation.

6.3.11 Façade and Cladding

The façade design comprises a combination of glazing, cladding, louvres and precast panels. To ensure the successful completion of a high-quality façade, extensive design and coordination workshops will be carried out with the design and construction teams prior to and during installation of the façade.

Installation of the precast panels will be carried out progressively throughout the structure phase as to provide edge protection to the lower floors and limit the impact on the roof installation.

Panelised façade elements will be installed using a combination of mobile cranes, tower cranes and EWP's, with handrails used for edge protection. Dedicated façade work zones will be established once overhead roof installation in the corresponding zone have been completed.

6.3.12 Services and Internal Finishes

Service and internal finishes activities will commence closely after the stripping of formwork and façade installation and will progress 'bottom up' sequence.

The major works involved in services reticulation are the installation, testing and commissioning of:

- Mechanical systems;
- Operational lifts servicing Basement to Level 3;
- Multiple escalators and travelators;
- Electrical lighting, data and security systems;
- Hydraulic systems;
- Wet and dry fire systems; and
- Specialist aviation systems.

The internal finishes works for the project will consist of:

- Sheeted ceilings & feature ceilings;
- Internal balustrades and glazing;
- Wet area fit out and commissioning;
- Floor finishes such as tiling, carpets and terrazzo flooring;
- Joinery units;
- Internal painting; and
- Furniture, fixtures and equipment fitout.

The main terminal ceiling is the unifying design feature and possess a complex challenge to construct. The distinctly wavy ceiling is built using straight slats mounted to continuous curved rails suspended from the roof structure and comprises of smoke baffles, secondary steel framing and services.

The ceiling will be installed in stages following the installation of roof steel, catwalks and external glazing. Due to the location and position of the ceiling, access and construction of the ceiling works will be via scaffold, cherry picker boom lifts and EWPs.

6.3.13 TSS - Airside Works

The TSS - Airside Works are generally defined as North of the terminal and pier complex, in particular the Apron pavement and Head of Stand service road.

The underlying subgrade layers have been constructed by the Bulk Earthworks Contractor and generally include for fill areas raised and compacted to achieve the minimum civil and geotechnical criteria for aviation.

Works will commence with trenching for in ground services including the stormwater drainage installation, followed by the subsequent electrical, fibre, data/comms and specialist aviation reticulation.

These services also include the trenching and installation of the aviation fuel line ring main. The aviation fuel ring main will be staged progressively into six zone breakups. Upon completion, the fuel main will be tested and commissioned, which will require the supply of aviation fuel to the site. The fuel will then be used in the system and, upon completion of testing and commissioning activities, will be removed from the system and disposed of off-site. A multi-functional team (construction, safety, environmental) will be engaged in a focused planning effort, including detailed risk assessments, method statements and testing plans, will be established amongst to mitigate risks and safely complete the works.

The overlying subbase and base apron pavement layers will commence progressively as areas of in-ground works are completed. Construction of the rigid apron concrete paving will be undertaken by a slip-form paving machine (or similar) and serviced by a batch plant to be established at the east of the site. The paving will be appropriately sequenced, generally working in West to East direction and towards the terminal. A portion of pavement between the fixed link bridges and to the terminal (ie. the Terminal Construction Zone) will be programmed until such times as the terminal façade and finishing works are complete, after which a series of traditional formwork and concrete placement pour infills will be undertaken to complete the Airside works.

More broadly, the Airside works will also be sequenced with consideration for the various construction interfaces with the adjacent runway/airside package.

Upon completion of the Apron rigid pavements, specialist aviation plant, equipment and furniture will be installed, tested and commissioned. This includes aviation lighting, Advanced Visual Docking Guidance System (AVDGS), installation of aerobridges, line marking, signage, and the like.

6.3.14 TSS - Landside Works

The TSS - Landside Works are the external works that fall to the east, west and south of the terminal complex, and include the following scope elements:

- In-ground services reticulation;
- Roads;
- Carparks;
- Covered walkways; and
- Soft and hard landscaping.

The final reticulation of in-ground services will commence upon receipt of the relevant project approvals and continue progressively with consideration for adjacent construction activities and demobilisation of site provisions.

Final surface levels are to be raised utilising site won material stockpiled by the Bulk Earthworks Contractor, and import of suitable soil and topsoil for vegetation, planting and spray grass.

Civil road and carpark asphalting will be undertaken prior to the hard and soft landscaping of elements. Final restoration and surface treatments will follow to the remainder of site, as temporary construction provisions are decommissioned and demobilised.

6.3.15 Aviation Fuel Farm

The Terminal and Specialty Services –Fuel Farm works will include construction and commissioning of the aviation fuel farm, which includes the following scope elements:

- Administration building;
- Offloading area;

- Dispensary hydrant and fuel tanks;
- Fuel tank storage;
- Fuel transfer and product recovery;
- Fuel hydrant main return and reticulation;
- Fuel testing and sampling;
- Tanker parking;
- Admin and control functions;
- Workshop; and
- Supporting infrastructure (e.g. fire systems, compression and drainage).

Installation of in-ground services and construction of Fuel Farm infrastructure will be completed by WSI TSS contractor.

Elements of main structures will include concrete pavement for the delivery of fuel tankers, structural steel concrete composites with lightweight roofing and steel fuel tanks.

Commissioning of the fuel farm will take place in coordination with the hydrant main, described further in Section 6.3.13 above.

6.4 Airside Civil and Pavements Works

The ACP Works are part of the main construction works phase and comprise construction and commissioning of aviation pavements, systems and services as summarised in Section 3.2.2 above. These works have been packaged as one of the main construction works packages to be performed by a single contractor. Timing, planning and methodology of the ACP works is included in the sections below.

6.4.1 Indicative Program

Table 10: ACP Works Indicative Construction Timetable

Construction Staging	Indicative Timing
Stage 1 - Preparatory Activities / Site Mobilisation	Q2 2022 to Q3 2022
• Establishing temporary site offices and facilities • Mobilising and installing batch plants and paving equipment • Geotechnical and investigative testing of batch plant products to commission the plant & equipment • Heavy plant mobilisation • Pavement subgrade and geotechnical testing • Contamination/heritage investigations and management • Works outside of Airport land investigations • Installation of erosion and sediment (ERSED) controls • Surveying control station installation • Potholing/utility locations and relocations • Site access and temporary site security establishment works	
Stage 2a – Construction of: Aircraft Pavements, Airfield Roads, Drainage & Landscaping	Q3-2022 to Q2-2024
• Aircraft pavements including the 05L/23R runway, associated taxiways, aircraft isolation pad • Airfield landscaping including placement of final level topsoil across airfield	

Construction Staging	Indicative Timing
Stage 2b – Airfield Roads, Drainage & Landscaping	Q3-2022 to Q1-2024
• Airfield roads including airside perimeter road, facilities access roads and landside roads in the north west and south west areas of the Airport site • Airfield drainage connecting to the trunk drainage system completed by the Bulk Earthworks Contractor (BEC) • Lining and finishing of bio-retention ponds • Airside landscaping including placement of final level topsoil across airfield	
Stage 2c – Airfield Infrastructure, facilities, services & systems	Q3-2022 to Q1-2024
• Airfield facilities and associated infrastructure and fire systems, including airfield lighting equipment room (ALER) buildings • Building & Infrastructure systems, security systems and network & telecommunications systems, including sitewide high voltage (HV) power, sitewide fibre optic cable backbone (FOCB) and hydraulic services to ARFF and aviation fuel farm sites • Airfield systems including aeronautical ground lighting (AGL), navigational aids and airfield security (including security cameras, lighting and fencing) • Airfield infrastructure in support of the above services and systems including trenching, ducts, conduits and pits within the site	
Stage 3 – Testing, Commissioning & Systems Integration	Q2-2024 to Q1-2025
• Completion of activities required for the integration of Airport site wide systems such as: o Network and telecommunication systems o Security systems o Fire systems o Building & infrastructure systems o Airfield Systems	

6.4.2 Preparatory Activities

Upon being granted site access, the ACP Contractor will undertake pre-construction preparatory activities and temporary works detailed in this section.

6.4.2.1 Survey and Geotechnical Investigation

Pre-condition surveys are required to establish a baseline for the condition of land and housing which may be impacted by the works. These works are carried out on foot and may involve some light vehicle access.

Spatial survey includes GPS and cadastral set out, installation of control and checking of existing markers. Survey will be required to initially delineate set out of establishment activities. Works to be undertaken can involve light tools, vehicles, timber pegs, star pickets, flagging and marking ribbons / paint.

Contamination pre-clearance may be required to establish if previously unidentified areas of contamination which may be present on the site. The works may involve some tinning of the topsoil, localised pits and visual inspection of the soil strata using earthmoving machinery.

If required a selective archaeological salvage program will be conducted of surface artefacts across known Aboriginal artefact occurrences in the construction impact zone, with the aim of avoiding damage from activities related to the Main Construction Works. The works will likely involve light tools and vehicles.

Services investigation allows the site team to accurately determine the location of utilities to enable there are no clashes with the permanent and temporary works. Investigation can either be completed through use of vacuum excavator trucks or using an electronic wand.

Clearance surveys are required as per the EIS to establish a number of aspects of the site such as weed mapping etc. These works will likely involve light tools, vehicles, flagging and spray paint. Refer to the Biodiversity CEMP.

In order to validate the BEC subgrade works and to progress the phase 2 ACP pavement designs, the ACP Contractor is required to undertake geotechnical testing in the pavement locations. This will require mobilisation and operation of geotechnical plant and tools to test and record subgrade geotechnical properties.

6.4.2.2 Site Accommodation and Amenities

Site Compound establishment works are required as part of the program to enable the site team to be based onsite. This will also allow the site establishment of the Principal's Representative office.

Before commencing works in this scope, other preparatory works may need to be completed within the limit of works for these works. These works will be identified in other Preparatory Activities Approval Forms and include service investigations, decontamination and pre-clearance surveys, as needed.

The following details step-by-step how the work is to be completed and only applies to the limit of works identified for this work. The general sequencing of activities under this proposal is as follows:

- Accesses, driveways and car park construction;
- Access gate construction;
- Compound fencing installation;
- Minor localised earthworks and hardstand construction;
- Site offices and facilities installation;
- Connection of services (electricity, water, sewer and communications);
- Awnings, decking and pathways construction; and
- Offices and amenities fit-out.

6.4.2.3 Temporary Vehicular and Pedestrian Access Roads

Traffic counting may be required for the development of Traffic and Access CEMP and for the design of temporary works. The works which will be undertaken involve light tools, vehicles, and ground pins.

6.4.2.4 Site Security

Site security is required as per the contract to ensure that no unlawful acts are committed within the airport site and to ensure the site is secured against public entry. The works includes monitoring the site using light vehicles.

6.4.2.5 Groundwater Monitoring

Relocation of existing or installation of additional monitoring stations may be required in order to conduct additional monitoring for the works. The locations and requirement for these works has been set out in the Soil and Water CEMP. The works will involve drilling boreholes at a number of locations and installation of probes into the well/settlement points.

6.4.2.6 Sediment and Erosion Control

Sediment basins are to be constructed at various locations on the site to act as an erosion and sediment control measure for areas where the ground has been disturbed. If required, channels or

open drains will be constructed to ensure all dirty water is captured by the basins for treatment prior to discharge.

To operate effectively and protect the environment, and to comply with the requirements of the EIS, sediment basins require ongoing management and maintenance. This will also ensure that the integrity and water capturing capacity of the basins is maintained during construction.

The construction of the sediment basins includes excavation of the basin, and stabilising batters with topsoil and vegetating as required. Fencing, both temporary and permanent, will be erected to make safe for the public and workers. Outlet treatment will also be installed for each basin.

Sediment basin maintenance works include the flocking of dirty water to ensure compliance with discharge criteria and dewatering procedures in the Soil and Water CEMP.

The proposed location of sediment basins within the site will be determined by Erosion and Sediment Control Plans (ESCP).

Preparatory works such as site establishment, site access construction and establishment of erosion and sediment controls will cause disturbance to the ground surface which may be contaminated. Therefore, decontamination works may be required to be carried out to enable the safe construction of preparatory activities.

Installation of ERSED controls in areas requiring soil disturbance for preparatory works, including the setup of environmental controls required around disturbed areas e.g. site compound, batch plant etc. The environmental controls required include:

- Installation of open drains and basins for water retention;
- Stripping of topsoil over the footprint of the temporary works areas;
- Installing mulch bunds, silt fence and other ERSED controls;
- Excavation of basins, stabilising batters with topsoil and vegetating batters as required;
- Installation of scour protection including rip rap, reno mattress, gabions and channel linings; and
- Installation of associated stormwater structures including headwalls and low-flow outlets.

Fencing both temporary and permanent to make safe for public and workers, and installation of outlet treatment to each basin.

6.4.3 Materials Handling

6.4.3.1 Concrete Batching and Paving Plant

A concrete batch plant and pugmills are required to be established onsite as part of the program of works. Once installed, the plant items are required to be tested and commissioned. This involves minor operational activities to ensure the equipment is working safely and in accordance with the manufacturer's recommendations, and to ensure the plant is producing material to the required specifications. This will require minor quantities of constituent material to be imported to site, processed and tested. This may take more than one iteration to achieve compliance.

The general sequencing of activities includes but is not limited to:

- Installation of environmental and security controls around the batch plant area;
- Constructing access roads, hardstand and heavy vehicle movement controls to/from the batch plant locations to the site entry points;
- Mobilising and erecting batch plant and testing equipment;
- Connection of services (power and water); and
- Testing and commissioning of batch plant and paving equipment.

Note this final step will require operation of the paving plant in minor, localised runs to test & configure the plant and the constituent materials for compliance.

6.4.4 Aircraft Pavements

Aircraft paving works form the major construction activity of the ACP Works. Sequencing the paving works with the interfacing aeronautical ground lighting (AGL) works has proven to be a critical activity.

Following approval to commence aircraft paving works, pavement layers will be constructed by the LCB Contractor using ACP Contractor fleets of paving plant and equipment. The sequencing of activities is detailed below. The batch plants and pugmills established during Stage 1 will operate to support paving works.

6.4.4.1 Flexible Aircraft Pavements

The flexible pavement profile consists of a thick base of fine crushed rock (FCR) overlayed with asphalt. The construction sequence of this pavement in the runway and taxiways is as follows:

- Rip and recompact the seal placed by the BEC Contractor;
- Place select gravel layer to lift the Subgrade Improvement Layer (SIL), install subsoil drains and place bitumen seal;
- Gravel pave the first FCR layer in six paving runs (maximum 200mm thick and 7.5m wide);
- Place select layers in the shoulders next to the FCR;
- Trench and install AGL bases and conduits;
- Complete remaining layers of FCR (two layers) and select/base courses in the shoulders;
- Core through the FCR to install AGL cans and cover plates;
- Place seal on the FCR and lay asphalt; and
- Core through the asphalt and install AGL cables and lights.

6.4.4.2 Rigid Aircraft Pavements

The rigid pavement profile consists of a layer of cement treated base (CTB) overlayed with a thicker layer of plain concrete pavement. This is currently planned to be installed at the slow aircraft movement stacking areas at the ends of the runway and in Taxiway Charlie. The sequencing of this pavement construction is as follows:

- Rip and recompact the seal placed by the BEC Contractor;
- Place select gravel layer to lift the SIL;
- Install subsoil drains and seal the SIL;
- Gravel pave the CTB layer;
- Excavate and lay AGL bases, cans and conduits;
- Machine pave the concrete base in 5-6m wide paving runs;
- Place remaining select layers in the shoulders;
- Seal and asphalt the shoulders; and
- Recover AGL cans by coring through the concrete and install AGL cabling and lights.

6.4.5 Non-Aircraft Pavement, Drainage, and Landscaping

6.4.5.1 Non-Aircraft Pavement

Airfield roads including airside perimeter road, facilities access roads and landside roads in the northwest and southwest areas of the Airport site. For each section of roads, the works activities will be generally sequenced to the following activities:

- Earthworks to cut/fill road formation to underside of pavement;
- Subgrade improvement works e.g. lime stabilisation, rip & recompact or remove and replace foundation layers;

- Installation of drainage infrastructure e.g. stormwater pipes, culverts or subsoil drains;
- Importation and placement of selected pavement layers e.g. select fill material, base material, asphalt, sprayed seals, lean and base concrete; and
- Installation of road furniture e.g. W-beam, guideposts, signage, line-marking, street lighting, etc.

6.4.5.2 Airfield drainage

Airfield drainage connecting to the trunk drainage system completed by the BEC Contractor will require the installation and construction of concrete structures. Construction will generally require the following activities:

- Earthworks to excavate to the foundation of drainage structures;
- Ground improvement works to the foundation;
- Placement and compaction of bedding layers;
- Installation of precast or in situ concrete drainage elements;
- Backfilling and compaction of granular material around concrete elements; and
- Finishing works such as rock or grassed landscaping as per design requirements.

6.4.5.3 Airfield Landscaping

Airfield landscaping including placement of final level topsoil across airfield.

Topsoil that was previously stripped from the site have been spread to areas nominated for landscaping and/or grassing. Topsoil will generally be transported by scrapers and spread by dozers or graders to the nominated depth. Seeding and/or planting occurs after the spreading of topsoil.

Landscaping will be completed as soon as practicable after completion of other ACP works, to assist with erosion and sedimentation control.

6.4.6 Services, Systems & Facilities

6.4.6.1 Services

Airfield services includes sitewide high voltage (HV) power, sitewide fibre optic cable backbone (FOCB) and hydraulic services to ARFF and aviation fuel farm sites.

The HV, LV and Communication cables will be installed in underground trenches of conduits connected by precast pits, by crews of teams working on multiple work fronts. Conduits and cables will be installed from the Endeavour Energy interim 33kV 10 MVA supply that will be utilised for initial testing & commissioning. Conduits will also be installed from Endeavour Energy or TransGrid supply point for the permanent 33kV supply and for the Business Park ring. Once the permanent supply is commissioned the interim supply will be de-commissioned. Commissioning of the permanent supply will be carried out in sequence starting with the main incoming 33kV permanent supply at in the North A substation and finishing at the ALER East or vice versa in this way the down time for the change-over from the interim to the permanent supply is minimised.

The 33kV main switchboards for the ACP sites are proposed to be installed in air-conditioned and ventilated, prefabricated switch rooms complete with their associated equipment, including protection systems, tariff metering, HV Power Management Control System, DC 48 volts system and the relevant dry type AN transformers. The TSS 33kV main switchboards will be installed directly into switch rooms built by the TSS Contractor minimising interfaces and improving safety. The prefabricated rooms will be delivered to site and lifted into their final positions with a mobile crane.

The HV, LV and AGL equipment for the Airfield Lighting Equipment Rooms (ALER) will be housed in purpose-built rooms on site. Standby 400V diesel generators to support the AGL system are also provided within the ALER west and east switch rooms in separate ventilated rooms complete with vibration separation from the electrical rooms.

All switch rooms are supplied with architectural façades to match the overall site building aesthetics. The use of prefabricated switch rooms where possible maximises work off site in a controlled factory environment that is not constrained by site activities.

All assembly, inter-equipment cabling, and combined Factory Acceptance Testing will be performed at the switch room factory for the prefabricated rooms, thus minimising site work and rework.

The prefabricated switch rooms will be packed for transport to minimise transport damage, transported to site, and offloaded onto prepared masonry support bases. The masonry support bases comprise of raised support foundations approximately 1m above ground and 1.5m below ground, allowing a 2.5m clearance below the switch house for external cables and cableways access to the cable basement.

Site works will comprise removal of transport packing materials, assembling sections of the prefabricated rooms, fixing any façade or similar items removed for transport, connection to the external cable network, pretesting and pre-commissioning, followed by energisation and placing into service and final service testing. This minimises site construction activities, maximises quality control and is an excellent example of our commitment to driving safety-in-design initiatives.

6.4.6.2 Systems

Airfield systems includes aeronautical ground lighting (AGL), navigational aids (NAVAIDs)and airfield security systems (including security cameras, lighting and fencing).

The majority of AGL sits within the aircraft pavements and is constructed sequentially between pavement layers. AGL Activities include the following tasks:

- Trenching works through aircraft pavement subgrade layers;
- Bed lay and fill AGL conduits with concrete backfill;
- Minor concrete works to construct AGL cannister footings (incl High Intensity Approach Lighting (HIAL) and Precision approach Path Indicator (PAPI) footings);
- Coring through aircraft pavement layers to recover cannister footings;
- Installation and grouting of cannister risers within pavements;
- Installation of AGL cables, transformers, and lights; and
- Testing and commissioning of the AGL systems.

6.4.6.3 Facilities

Airfield facilities including airfield lighting equipment room (ALER) buildings and security restricted area (SRA) facilities. These facilities consist of minor building structures with internal and external finishes.

Activities include:

- Minor earthworks for foundation preparation;
- Installation of underground building services (conduits, pits and pipes);
- Construction of structural foundations (e.g. concrete slabs, footings);
- Construction of building structure (blockwork walls, structural framing);
- Fit out of internal building elements;
- Construction of external civil support facilities (pavement for access roads, carpark, drainage, fencing, landscaping etc); and
- Fit out of internal systems and equipment.

6.4.7 Systems Integration

Completion of activities required for the integration of Airport's site wide systems such as:

- Network and telecommunication systems;

- Security systems;
- Fire systems; and
- Building & infrastructure systems.

These activities require non-destructive testing of systems using computer software. Operatives will be required to operate and test the systems in various areas of the Site to ensure the systems can be operated in various areas under various conditions and connected to the overall sitewide ICN.

6.5 Landside Civil and Building Works

The LCB Works construction site (the LCB Site) is located in the eastern portion of the CIZ, with interfaces with the adjoining Stage 1 delivery of the Bulk Earthworks, ACP Works, TSS Works, Cargo Works, developments by the Rail Authority, and M12 Works.

The LCB Works includes the delivery and commissioning of a road network to provide external and internal connectivity, stormwater infrastructure, site services, carpark and ground transport holding facilities, building facilities for aviation support functions and landscaping.

6.5.1 Indicative Program

The LCB Works construction staging was influenced by the staged handover of the site from the BEC. As such many of the construction activities that are undertaken within each stage are common.

Refer to Table 11 for the indicative construction schedule. The sequencing of the construction activities is typically per the below:

- Earthworks;
- Stormwater;
- Services;
- Pavement Works;
- Structures;
- Buildings; then
- Landscaping.

Table 11: LCB Works Indicative Construction Timetable

Construction staging	Indicative Timing
Preparatory Activities	Q4 2023 (Complete)
• Site Investigations • Surveys • Temporary Roads • Temporary Utilities • Establishing temporary site compound s (temporary offices, carparks, facilities and hardstand) • Site fencing • Sediment and erosion control measures	
Initial BEC Handover Area	Q2-2022 to Q4-024
• Earthworks • Stormwater • Services • Pavement Works • Structures • Buildings • Landscaping	

Construction staging	Indicative Timing
Site Compound and Water Complex Area	Q4-2022 to Q4-2024
• Establishing temporary site compound s (temporary offices, carparks, facilities and hardstand) • Temporary Utilities • Earthworks • Stormwater • Services • Pavement Works • Building • Landscaping	
Balance of the Site	Q4-2022 to Q1-2025
• Earthworks • Stormwater • Services • Pavement Works • Structures • Buildings • Landscaping	

6.5.2 Preparatory Activities

The LCB Contractor's main site compound will consist of temporary office buildings, lunch sheds and other amenities together with light vehicle parking and a laydown area for deliveries. Smaller satellite site compounds with crib sheds and amenities together with laydown areas for containers and underground utility materials such as pipe, fittings, pits, etc. will be made available in pre-approved dedicated locations around the LCB Site to allow for flexibility and safe, efficient production. Temporary site roads will supplement the existing internal road network as required.

6.5.3 Earthworks

Most of the earthworks activities have been completed as part of the BEC works. However, there are some earthworks modifications required to the finished BEC levels to accommodate the works. The earthworks design has resulted in a balance cut to fill. Should importation of fill be required, it will satisfy the requirements of the RAP and any other project requirements. In situ subgrade stabilisation will also be required in some roads to achieve the design CBR.

6.5.4 Pavement Works

Pavement works include the installation of granular sub-layers as well as the final asphalt wearing course. The granular sub-layers will require a combination of approximately 840,000 tonnes of quarry material or granulated blast furnace slag to be imported. All asphalt for the LCB Works will be imported from an offsite batch plant. Pavement works include the installation of roads, carparks, holding areas, footpaths and cycleways.

6.5.5 Stormwater

Stormwater works include the installation of drainage infrastructure that connects drainage from roads, buildings, and facilities within the site to the trunk drainage network installed by other Project Contractors. Stormwater works also include the fit-out of bio-retention basins BB1N, BB1S and BB3 which were installed during the BEC works.

6.5.6 Services

Services works include the installation of:

- LV distribution networks within the Site;
- HV network enabling infrastructure within the Site;
- ICN enabling infrastructure, which includes FOCB enabling infrastructure within the Site;
- sitewide hydraulic services (potable, recycled and sewer);
- sitewide gas services; and
- Sewerage Pumping Station

6.5.7 Structures

Structures works include the construction of bridges that:

- enable the main access road to span the drainage channel at the north-east Site boundary; and
- enable road network connectivity to span the main access road.

A bridge from the Sydney Metro railway station to the north-west boundary of the main access corridor may also be built, however at this stage, the LCB scope is limited to design.

6.5.8 Buildings

Building works involve the construction of single storey facilities for the following:

- Airport Operations and Control Centre and Emergency Operations Centre Facility;
- Airport Operations and Maintenance Facility;
- Main Access Gate;
- Pedestrian airside access point;
- Water Complex; and
- Aircraft liquid waste receival facility.

6.5.9 Landscaping

The landscaping works will be completed to all exposed or disturbed surfaces within the site that are not paved or previously landscaped by BEC. There will be some areas of enhanced landscaping, which comprise grass, shrub, and tree planting while the remaining areas will be hydromulched. Temporary erosion and sediment controls will be implemented until such time as the LCB landscape areas have established.

6.6 Stage 1 Cargo Works

The Stage 1 Cargo works is located on the eastern portion of the CIZ, and interfaces with the adjoining Stage 1 delivery of the ACP Works, TSS works and LCB works. The Stage 1 Cargo works includes aeronautical, precinct and premises works and includes fit-out of the warehouses.

Table 12: Cargo Works Indicative Construction Timetable

Construction staging	Indicative Timing
Stage 1 - Preparatory Activities	Q1-2024 to Q3-2024
• Site Compound Establishment • Mobilisation • Commissioning of batch plant • Geotechnical testing	

Construction staging	Indicative Timing
• Pre-clearance Surveys • Salvage works • Spatial Surveys • Services Investigation • Traffic counting • Site Security • Sediment and erosion control measures	
Stage 2 - Bulk Earthworks	Q2-2024 to Q2-2025
• Strip and stockpile topsoil across Phase 1 & 2 areas • Commence bulk earthworks site wide • Commence import and placement of the SIL sandstone as SMZ foundations obtained using existing and or / new access route as appropriate • Progressively place topsoil and revegetate as areas become completed and monitor and maintain	
Stage 3 - Trunk Drainage/ service installations	Q3-2024 to Q3-2025
• Landside Trunk Drainage and installation and will include ring road and parking areas • Airside Trunk Drainage and will include taxiway standing area interface • Preliminary foundation and lower pavement layers including emergency access roads	
Stage 4 - Building Construction	Q3-2024 to Q4-2025
• Detailed excavation and building construction • Detailed dock retaining wall structures, hardstand and infills • Façade classing • Perimeter access roads	
Stage 5 - Rigid Pavement Construction	Q1-2025 to Q2-2026
• Installation of AGL conduits • Install Apron services • Install nominated rigid pavement layers • Construction of pavement structural layers • Placement of CTB layers and pavers • Install inner Taxiway Flexible shoulders • Saw cutting of slabs • Install flexible connection to Taxiway K • AGL risers ad boxout infills • Drilled and epoxied singles posts • Raise technical services islands and island elements • Undertake construction of ULD storage areas and Truck Staging area Completed construction of perimeters road, facilities and road fire access	
Stage 6 - Access roads completion	Q1-2025 to Q3-2025
• Stagged completion of access roads, internal ring road • Progressively place topsoil and revegetate area after access roads are completed • Install security fencing as areas become available. • Install security gate houses sign posting • Install final layers and line marking	
Completion / commissioning of site wide systems	Q2-2025 to Q4-2025
• Installation of :Network and telecommunication systems • Installation of Security systems • Installation of Fire systems • Testing and commissioning of the infrastructure and facilities • Building & infrastructure systems	

6.6.1 Preparatory Activities

6.6.1.1 Site Compound Establishment including site access roads

Site Compound establishment works are required as part of the program to enable the site team to be based onsite.

Before commencing works in this scope, other preparatory works must be completed within the limit of works for these works. These works have been identified in other Preparatory Activities Approval Forms and include service investigations, decontamination, and pre-clearance surveys.

The following details the step-by-step how the work is to be completed and only applies to the limit of works for identified for this work. The general sequencing of activities under this proposal is as follows:

- Access, driveways and carpark construction:
  - New access gate construction,
  - Install roadworks traffic signage,
  - Install safety traffic barriers,
  - Construction temporary pavements,
  - Install new line marking.
- Compound fencing installation;
- Minor localised earthworks and hardstand construction
- Site offices and facilities installation:
  - Survey set-out,
  - Placement of concrete blocks to support buildings,
  - Delivery and unloading of site offices (including containers),
  - Placement and levelling of offices with crane,
  - Connection and sealing of offices modules;
- Connection of services (electricity, water, sewer and communications);
- Awnings, decking and pathways construction; and
- Offices and amenities fit-out.

6.6.1.2 Mobilise, install and commission batch plants, pugmills and paving equipment

A concrete batch plant and pugmills are required to be established onsite as part of the program of works. Once installed, the plant items are required to be tested and commissioned. This involves minor operational activities to ensure the equipment is working safely and in accordance with the manufacturer's recommendations. Furthermore, to ensure the plant is producing material to the required specifications. This will require minor quantities of constituent material to be imported to site, processed and tested. This may take more than one iteration to achieve compliance.

The general sequencing of activities includes but is not limited to:

- Installation of environmental and security controls around the batch plant area;
- Constructing access roads, hardstands and heavy vehicle movement controls to/from the batch plant locations to the site entry points;
- Mobilising and erecting batch plant and testing equipment;
- Connection of services (power and water); and
- Testing and commissioning of batch plant and paving equipment.

Note this final step will require operation of the batch plant in minor, localised runs to test & configure the plant and the constituent materials for compliance.

6.6.1.3 Geotechnical testing of pavement subgrade

In order to validate the previously completed subgrade works and to progress the Cargo pavement designs, the Cargo Contractor is required to undertake geotechnical testing in the pavement locations. This will require mobilisation and operation of geotechnical plant and tools to test and record subgrade geotechnical properties.

6.6.1.4 Contamination pre-clearance survey (unexpected finds)

Contamination pre-clearance may be required to establish if previously unidentified areas of contamination which may be present on the site. The works may involve some tinning of the topsoil, localised pits and visual inspection of the soil strata using earthmoving machinery.

6.6.1.5 Aboriginal and European heritage salvage works (unexpected finds)

If required a selective archaeological salvage programme will be conducted of surface artefacts across known Aboriginal artefact occurrences in the construction impact zone, with the aim of avoiding damage from activities related to the Main Construction Works. The works will likely involve light tools and vehicles.

6.6.1.6 Spatial Survey

Spatial survey includes GPS and cadastral set out, installation of control and checking of existing markers. Survey will be required to initially delineate set out of establishment activities. Works to be undertaken can involve light tools, vehicles, timber pegs, star pickets, flagging and marking ribbons / paint.

6.6.1.7 Services Investigation

Services investigation allows the site team to accurately determine the location of utilities to enable there are no clashes with the permanent and temporary works. Investigation can either be completed through use of vacuum excavator trucks or using an electronic wand.

6.6.1.8 Pre-condition surveys

Pre-condition surveys are required to establish a baseline for the condition of land and housing which may be impacted by the works. These works are carried out on foot and may involve some light vehicle access.

6.6.1.9 Traffic Counting

Traffic counting may be required for the development of traffic management plan and for the design of temporary works. The works which will be undertaken involve light tools, vehicles and ground pins.

6.6.1.10 Site Security

Site security is required as per the contract to ensure that no unlawful acts are committed within the airport site and to ensure the site is secured against public entry. The works includes monitoring the site using light vehicles.

6.6.1.11 Removal of redundant infrastructure and rubbish (unexpected finds)

Removal of redundant infrastructure is required prior to works commencing. The works can involve small machinery such as excavator, backhoe or EWP including small hand tools and trucks.

6.6.1.12 Temporary Sediment Basins Construction, Operation and Maintenance

Sediment basins are to be constructed at locations on the site to act as an erosion and sediment control measure for areas where the ground has been disturbed. If required, channels or open drains will be constructed to ensure all dirty water is captured by the basins for treatment prior to discharge.

To operate effectively and protect the environment, comply with the requirements of the EIS, sediment basins require ongoing management and maintenance. This will also ensure that the integrity and water capturing capacity of the basin is maintained during construction.

The construction of the sediment basins includes excavation of the basin, stabilising batters with topsoil, vegetating batters as required. Fencing both temporary and permanent to make safe for public and workers, and installation of outlet treatment to each basin.

The maintenance works for the basin include flocking water, so it is compliant with discharge criteria and dewatering.

The proposed location of sedimentation basins within the site will be determined by the final Erosion and Sediment Control Plans (ESCP).

6.6.1.13 Implementation of the RAP/LTEMP in areas required for preparatory works

Preparatory works such as site establishment, site access construction and establishment of erosion and sediment controls will cause disturbance to the ground surface which may be contaminated. Therefore, decontamination works may be required to be carried to enable the safe construction of preparatory activities. In the event of an unexpected find the RAP/LTEMP will be implemented.

6.6.1.14 Installation of ERSED controls in areas requiring soil disturbance for preparatory works

This includes the setup of the environmental controls required around disturbed areas e.g. compound, batch plant etc. The environmental controls required include:

- Installation of open drains and basins for water retention;
- Stripping of topsoil over the footprint of the temporary works areas;
- Installing mulch bunds, silt fence and other erosion and sediment controls;
- Excavation of basins, stabilising batters with topsoil and vegetating batters as required;
- Installation of scour protection including rip rap, reno mattress, gabions and channel linings;
- Installation of associated stormwater structures including headwalls and low-flow outlets; and
- Fencing both temporary and permanent to make safe for public and workers, and installation of outlet treatment to each basin.

6.6.2 Earthworks and Paving works

Earthworks to establish foundations for the Land side and Airside paving works and the building foundations forms the major construction activity on this Project. Sequencing each of the elements paving with the interfacing services such as Drainage, AGL works, Fuel systems power, communications and building services such as fire services has proven to be a critical activity in the scope of the Project.

Following approval to commence works, the contractor will use our fleets of plant and equipment to construct the embankments and pavement layers along with installation of these elements. The

sequencing of activities is detailed below. The batch plants and pugmills established during stage 1 will operate to support paving works.

6.6.2.1 Flexible aircraft pavements

The flexible pavement profile consists of a thick base of FCR overlayed with asphalt. The construction sequence of this pavement connection to taxiway K to the Cargo facility taxiways is as follows:

- Install earthworks and SIL layers;
- Place select gravel layer to lift the Subgrade Improvement Layer (SIL), install subsoil drains and place bitumen seal;
- Place the first FCR layer;
- Trench and install AGL bases and conduits including connection into the existing taxiway;
- Complete remaining layers of FCR (two layers) and select/base courses in the shoulders;
- Core through the FCR to install AGL cans and cover plates;
- Place seal on the FCR and lay asphalt; and
- Core through the asphalt and install AGL cables and lights.

6.6.2.2 Rigid aircraft pavements

The rigid pavement profile consists of a layer of CTB overlayed with a thicker layer of plain concrete pavement. This is currently planned to be installed across the Taxiway and the Aircraft standing area. The sequencing of this pavement construction is as follows:

- Rip and recompact the Bulk Earthworks Package seal;
- Place select gravel layer to lift the SIL;
- Install subsoil drains and seal the SIL;
- Gravel pave the CTB layer;
- Excavate and lay AGL bases, cans and conduits;
- Machine pave the concrete base in 4-5m wide paving runs;
- Place remaining select layers in the shoulders;
- Seal and asphalt the shoulders; and
- Recover AGL cans by coring through the concrete and install AGL cabling and lights.

6.6.3 Airside Roads, Drainage and Landscaping

6.6.3.1 Roads

Airfield roads including airside perimeter road, Cargo facilities access ring roads and landside roads for each section of roads, the works activities will be generally sequenced to the following activities:

- Earthworks to cut/fill road formation to underside of pavement;
- Subgrade improvement works e.g. lime stabilisation, material importation, rip & recompact or remove and replace foundation layers;
- Installation of drainage infrastructure e.g. stormwater pipes, culverts or subsoil drains;
- Importation and placement of selected pavement layers e.g. SMZ, Densley Graded Base (DBG), asphalt, sprayed seals and base concrete in Standing areas; and
- Installation of road furniture e.g. W-beam, guideposts, signage, line-marking, street lighting, etc.

6.6.3.2 Drainage

Drainage connecting to the trunk drainage system completed by the Bulk Earthworks Contractor (BEC) will require the installation and construction of concrete structures. Construction will generally require the following activities:

- Earthworks to excavate to the foundation of drainage structures;
- Ground improvement works to the foundation;
- Placement and compaction of bedding layers;
- Installation of precast or insitu concrete drainage elements;
- Backfilling and compaction of granular material around concrete elements; and
- Finishing works such as rock or grassed landscaping as per design requirements.

6.6.3.3 Landscaping

Landscaping including placement of final level topsoil around the cargo facilities.

Topsoil that was previously stripped from the site have been spread to areas nominated for landscaping and/or grassing. Topsoil will generally be transported by scrapers and spread by dozers or graders to the nominated depth. Seeding and/or planting occurs after the spreading of topsoil.

Landscaping will be completed as soon as practicable after completion of other Cargo works, to assist with erosion and sedimentation control.

6.6.3.4 Buildings

Steps in the scope of Stage 1 Cargo building works include:

- Commence Building 2 with temporary drainage arrangements during footing installation.
- Undertake detailed excavation and building construction within the nominated building working zones.
- Install Landside service corridors following drainage installation as governed by depth of installation. This will include the primary service route along the front of building 2 and upon completion of landside Facades excavate loading docks install roof and dock drainage connections to trunk drainage. Install individual tenant service connections to building tenancies from the primary service route.
- Complete dock retaining wall structures, depressed loading dock hardstand infills and adjacent on grade infills as tenancy working areas are made available.
- On completion of Airside Facades in individual tenancy zones install drainage connections to trunk drainage. Install service connections from the main services route on the south edge of the HOS road to the Aircraft standing areas as tenancy's zones are made available. This will require staged connection across the HOS road to maintain access around the building. Install Rigid pavement in the 30m GSE areas out from the building as tenancy's become available including foundations across the available area and hand placed 10m strips of rigid pavement running out from the building towards the HOS road.
- Undertake construction of Building 1 in the same order as described for building 2 with nominated working zone and access provisions provided from the north-west corner. This element will not impact the commencement of the following Stage 5 Rigid pavement and is represented within this stage as a continuity in the same construction process.
- Completion of the Western Façade will initiate the installation of rigid pavement surrounds and installations will be in the stages as described in the Building 1 staged completion model commencing at the Southern - eastern corner.
- Drainage and service trunk lines and connections are primally located along the Eastern face of the building and connections will occur as zones become available and installation of Hardstands and loading docks to follow these connections.

Completion of these works also provides access to complete the adjacent Airside perimeter access road.

6.6.4 Services and Systems

6.6.4.1 Aeronautical ground lighting

Airfield systems includes aeronautical ground lighting, navigational aids and airfield security systems (including security cameras, lighting and fencing).

The majority of AGL sits within the aircraft pavements and is constructed sequentially between pavement layers. AGL Activities include the following tasks:

- Trenching works through aircraft pavement subgrade layers;
- Bed lay and fill AGL conduits with concrete backfill;
- Minor concrete works to construct AGL cannister (CAN) footings (including High Intensity Approach Lighting and Precision footings);
- Coring through aircraft pavement layers to recover CAN footings;
- Installation and grouting of CAN risers within pavements;
- Installation of AGL cables, transformers and lights; and
- Testing and commissioning of the AGL systems.

6.6.4.2 Apron Services

Apron services works includes the construction and commissioning of the following features;

- Advanced visual docking guidance system;
- Illuminated stand identification signs;
- Ground power units;
- General electric vehicle charging points;
- Storm warning system;
- General apron services including emergency stop buttons, compressed air, emergency telephones, ancillary equipment, obstacle warning lights, general power outlets, equipment steel columns and gantry and stand signage; and
- Technical service islands.

6.6.4.3 Fuel Systems

Fuel systems works includes the construction and commissioning of the following features;

- Cargo fuel hydrant pipeline;
- Valve chambers;
- Hydrant pits;
- High point vents and low point drains;
- Valves;
- Control panel; and
- Leak detection system, cable conduit and ducts, earthing system and lightning protection.

6.6.4.4 Security

Security systems works includes the construction and commissioning of closed-circuit television (CCTV), Screening Equipment and Access control. The scope includes:

- Airside and landside fencing;
- Cargo precinct entry gate and gatehouse;
- Security restricted area entry gate and gatehouse;
- ULD entry gate and gatehouse;
- Airside crash gate;

- Airside boundary entry;
- Combined services building;
- Carpark; and
- Roads and intersections.

6.6.4.5 Water and Wastewater

Construction and commissioning of water and wastewater systems including:

- Potable water connection and storage;
- Flow control and meters;
- Potable water booster pump station;
- Sewer connection, collection and pump station; and
- Recycled water system.

6.6.4.6 High and low voltage systems

Supply, install, test and commissioning of high voltage and low voltage systems including:

- 33kV cabling;
- Integrated outdoor kiosk substations;
- High voltage power management control systems;
- Buried earthing systems;
- Low Voltage distribution boards;
- Low Voltage power cabling; and
- Substation and switchgear panels.

6.6.4.7 Communications

Communications works includes construction and commissioning of the following:

- Integrated Communications Network, including telecommunications distribution system passive and fibre optical cabling backbone and associated cabling;
- Cable containment including pits and pipes, cable trays, ladders and baskets;
- Outdoor enclosures;
- Termination equipment;
- Dome splicing enclosures; Wi-Fi Access Points; and
- Unified Communications Systems Provisions.

6.6.5 Cargo “Fitout” Works

“Fitout” includes various tenant works within the envelope and structure constructed as described in Section 6.6, including but not limited to catering facilities and logistics. Due to the nature of these works, within the building footprint, potential impacts will be limited.

6.7 TfNSW M12 On Airport Construction

The TfNSW M12 Project is part of the External Stakeholder works that takes place on the Airport Site. As the Airport Site is on Commonwealth land, NSW State planning instruments and environmental legislation for the TfNSW M12 Works within the Airport Site do not apply but are still considered.

The TfNSW M12 Works on the Airport Site will be carried out under the provisions of this Construction Plan and the WSA CEMPs. All other M12 works which fall on NSW State land do not form part of this Construction Plan.

TfNSW M12 Works scheduled between Q4 2021 and Q3 2022 on the Airport Site include the following:

- Stub for connection to the temporary construction access roundabout adjacent to the future North West access road; to be constructed as part of the M12 early works and should occur between Q3 2021 and Q3 2022. The stub would be 3-5m inside WSA land and would include minor earthworks and pavement works;
- North West Access Road connection to the realigned Elizabeth Drive. M12 will build the earthworks and pavements a few meters inside WSA land;
- Main Access Road (MAR) connection to the M12. M12 will build the earthworks and pavements a few meters inside WSA land; and
- North East Intersection. The M12 will connect the new Elizabeth Drive intersection with the new Badgerys Creek Road.

Summary scope of works to be performed on WSA Land are:

- Access road to WSI from a left-in/left-out intersection at Elizabeth Drive, west of Airport Access Road, and shared user path;
- Airport Access Road;
- South facing ramp structures from a grade-separated interchange, referred to as the WSIA interchange, above Airport Access Road at Elizabeth Drive; and
- Southern leg tie-in works with new Badgerys Creek Road of a four-way signalised intersection east of Airport Access Road.

Construction works will be planned and coordinated to minimise interfaces, in accordance with governance of the WSA and TfNSW Interface Agreement.

The M12 Works outlined above on WSA land consist of seven intersection zones as, with the location of the shown in Figure 9. Refer to Table 13 for additional detail.

Table 13: M12 Works Indicative Construction Timetable

M12 Works	Indicative Timing
Preparatory Activities (Site Establishment)	**Completed**
• Spatial Survey • Service Investigations • Pre-condition Surveys • Site compound establishment • Construction of temporary ERSED controls • Temporary access/egress roads • Temporary car parking • Establishing construction work sites and related site mobilisation activities • Establishing temporary services to enable construction activities and site amenities • Site fencing, safety and security provisions • Other activities which an Approver determines are Preparatory Activities (as required)	
Zone 1 - Site setup and western Ramp Structures	**Q3 2023 – Q4 2024**
• Preparatory Activities (see above) • Adjustment to land formation (earthworks) to enable construction of western ramp structures • Foundation piling for western ramp • Detailed excavation and trenching • Formwork, reinforcement and concrete placement for pile caps • Formwork, reinforcement and concrete placement for piers • Erection and installation of bridge beams • Formwork, reinforcement and concrete placement for ramp retaining walls • Structural backfill for retaining wall (ramp) • Pavement works including line marking and road furniture and barriers	

M12 Works	Indicative Timing
• Installation of architectural finishes to the ramps • Installation of road lighting • Reinstatement of land formation and drainage	
Zone 2A - South Facing Ramp structures and Airport Access Road	**Q3 2023 - Q4 2024**
• Adjustment to land formation (earthworks) to enable construction of eastern ramp structures • Foundation piling for eastern ramp • Detailed excavation and trenching (inground services and drainage) • Formwork, reinforcement and concrete placement for pile caps • Formwork, reinforcement and concrete placement for piers • Erection and installation of bridge beams • Formwork, reinforcement and concrete placement for ramp retaining walls • Structural backfill for retaining wall (ramp) • Pavement works including line marking and road furniture and barriers • Installation of architectural finishes to the ramps • Installation of road lighting • Soft and hard landscaping • Reinstatement of disturbed land formation and drainage	
Zone 2B - South Facing Ramp structures next to Metro area (Extension to Zone 2A)	**Q3 2023 – Q2 2024**
• As per Zone 2A	
Zone 3 - Western intersection southern leg tie-in and shared user path works	**Q2 2024 – Q1 2025**
• Earthworks and finished surface levels • Detailed excavation and trenching (inground services and drainage) • Road pavement works including line marking and road furniture • Installation of road lighting • Soft and hard landscaping • Pedestrian pathway – Pavement works including line marking and road furniture • Permanent fencing • Reinstatement of disturbed land formation and drainage	
Zone 4 - South Facing Ramps finishing works	**Q4 2024 – Q4 2024**
• Pavement works including line marking and road furniture and barriers • Installation of architectural finishes to the ramps	
Zone 5 - Eastern intersection southern leg tie-in works	**Q1 2024 – Q1 2025**
• Demolition and removal of existing pavement and road furniture • Relocation of existing utilities • Traffic controls • Earthworks and finished surface levels • Detailed excavation and trenching (inground services and drainage) • Road pavement works including line marking and road furniture (BCR) • Installation of road lighting • Soft and hard landscaping • Pedestrian pathway – Pavement works including line marking and road furniture • Reinstatement of disturbed land formation and drainage	

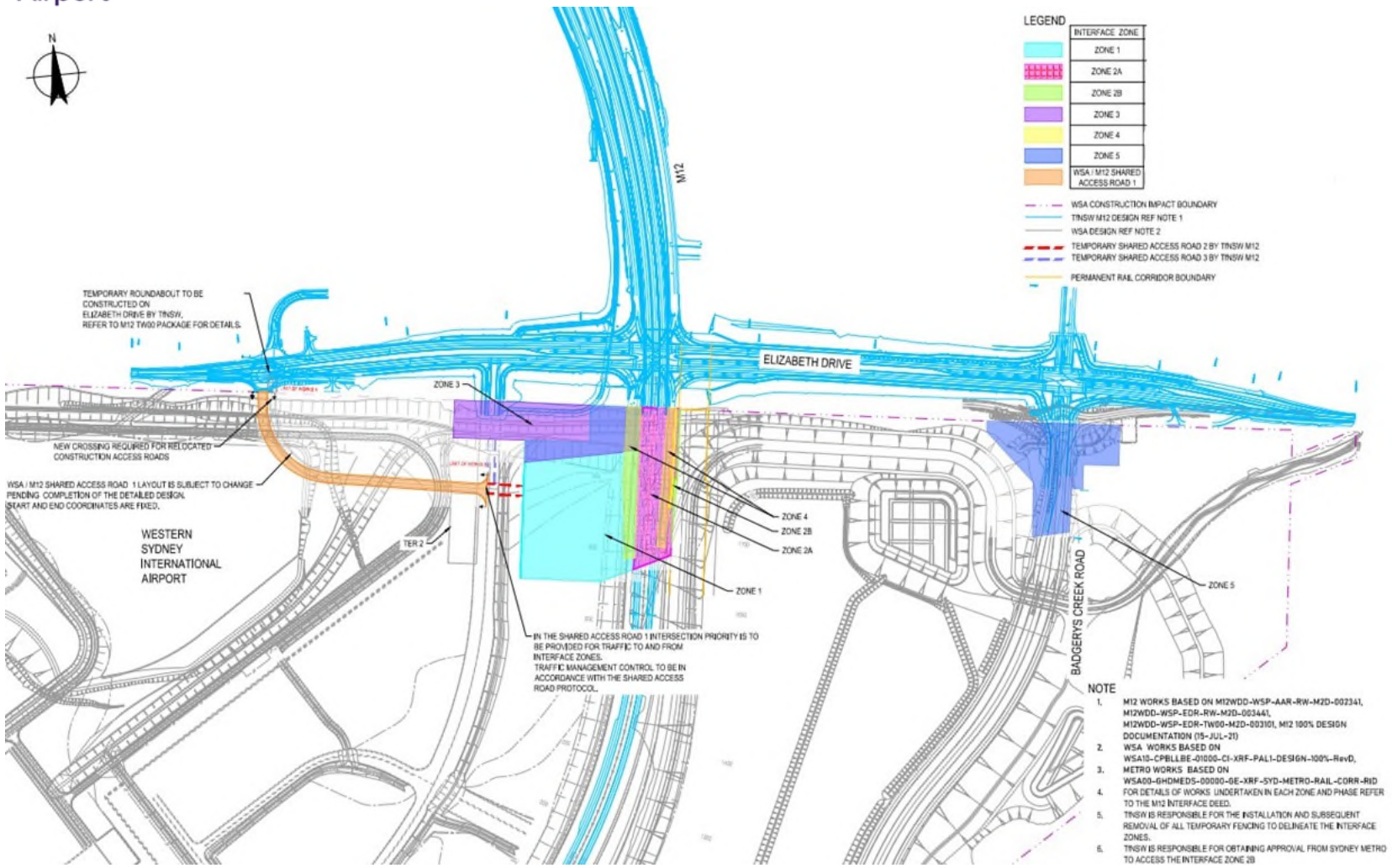

Figure 9: M12 On-Airport Works

6.8 Standalone Facilities

As described in Section 3.2.3, WSA will construct standalone facilities for Commonwealth Agencies at the airport. These works will be designed and procured in early 2024, with construction commencing later in 2024. Construction methodology has not yet been defined for the agency facilities however will largely involve the same activities undertaken by the existing main works contractors in delivering buildings across the airport site.

6.9 External Stakeholder Works and Other Activities on the Airport Site

In conjunction with the enabling and earthworks and main construction works activities, other miscellaneous works related to the Stage 1 Airport Development will take place on the airport site to support the construction of the airport infrastructure.

Prior to any construction taking place, an environmental review will be completed to ensure that the activity is not inconsistent with the CEMPs and that appropriate mitigation measures are implemented. The environmental review will be approved by the WSA Environment Manager prior to implementation, refer to the SEMF for further information regarding approvals.

6.9.1 Initiatives outside the CIZ

The development of the Airport Site may require the use of areas located outside of the CIZ, identified in the Airport Plan Section 2.4.2.4 as the 'Aviation Reservation' (AD4) zone. The non-aviation land uses identified in this zone are permitted in the short to medium term, until the land is required for aviation purposes.

A reticulation system to supply recycled, non-potable, water from the adjacent CSR (PGH Bricks) property to the south of the site has been completed. This installation includes a temporary pipeline to cross the AD4 area into the CIZ at the Basin 2 area south of Badgerys Creek Road (BCR) and then remain within the CIZ to reticulate construction water through the site.

As part of Bulk Earthworks, the following works were constructed within the AD4 zone:

- Installation of an access road from the farm dam to the west of the old TNR alignment to the South of the CIZ, this haul road allowed water carts to use the dams non-potable water supply as construction water; and
- Construction of a temporary maintenance facility to the west of the old TNR alignment of the southern edge of the CIZ. This facility enhanced the farm infrastructure and access roads to enable commencement of bulk earthworks to the west of the existing TNR prior to the re-alignment of the TNR.

The above initiatives were developed to reduce overall environmental impact by accessing non-potable and recycled water sources for construction use minimising the use of potable water or by maximising the use of existing infrastructure. Such initiatives are expected to deliver substantial environmental and sustainability benefits while the existing CEMPs provide all safeguards necessary to limit any negative impacts. Both items listed above were removed and reinstated as part of Bulk Earthworks contract completion.

6.9.2 Utilities Works

The following sections outline the utilities scope to be completed on Airport Land.

6.9.2.1 Power Supply - Temporary

Endeavour Energy timeframes for delivery of a new 132KV network for the wider WSI area, including supply to the airport, means that a reliable temporary power supply is required to provide the airport with supply during commissioning and operational readiness and testing.

A supply licence has been executed between WSA and Endeavour Energy for the provision of a temporary power supply to provide WSA with power during commissioning and early operations. The scope involves an adjustment to the existing Endeavour Energy network and installation of new infrastructure within the Airport Site. The infrastructure will be located on the northern boundary of the Airport Site, adjacent to Elizabeth Drive (refer Figure 10).

The temporary supply scope has installed 12 new poles with pole mounted electrical infrastructure, adjoined by new overhead lines, within Airport Land. Additional installation of a temporary all-weather access road for access during construction, operation and maintenance has been completed. New gates been installed on the perimeter fence to enable direct access from Elizabeth Drive for Endeavour Energy. Additional adjustments and overhead line and pole removals will occur on Elizabeth Drive outside of Airport Land.

The scope was completed in Q2 2022 and is currently operational. The temporary power supply will be redundant upon completion of the permanent power supply. From an environmental perspective, this scope of work has been managed as Preparatory Activity, with associated sub-permits (e.g. Land Disturbance Permit).

Figure 10: Temporary power supply works on WSA land

6.9.2.2 Power Supply - Permanent

Endeavour Energy has been selected as the supplier for WSA's permanent power supply required to service WSI in operation. A new substation is being constructed on Airport Land within a 120m x 90m Endeavour Energy area, located adjacent to the WSA boundary on Elizabeth Drive, between Adams Road and the proposed North West Access Road.

The substation connects via underground cables to the proposed new 132KV network to be constructed on Elizabeth Drive and in the wider WSI area. The substation steps-down from 132KV to 33KV and connect via underground feeders to the ACP electrical reticulation scope (refer Section 6.8). Additional 33KV underground feeders are installed from the substation to provide power to Sydney Metro and other proposed developments around the WSI area.

The substation location is shown in Figure 11.

New utility connections for potable water and telecommunications are proposed to the substation site. A new entry and exit from Elizabeth Drive is proposed to provide vehicular access during construction, operation and maintenance. Details are subject to change as designs develop.

Early works construction is proposed to commence in Q3 2022. The substation is currently forecast to be operational in 2024, pending further discussions between WSA and Endeavour Energy.

Figure 11: Indicative substation location

6.9.2.3 Recycled Water - Temporary

Installation of 650m length poly pipe and control station at Pitt Street, where Diona completed the recycled water installation as shown in Figure 12 below. This work was completed as Preparatory Activity in Q1 2022,and has now been decommissioned as a temporary water supply. Remaining pipe will be converted for use as part of the sewage network, connecting to the external Sydney Water sewage network.

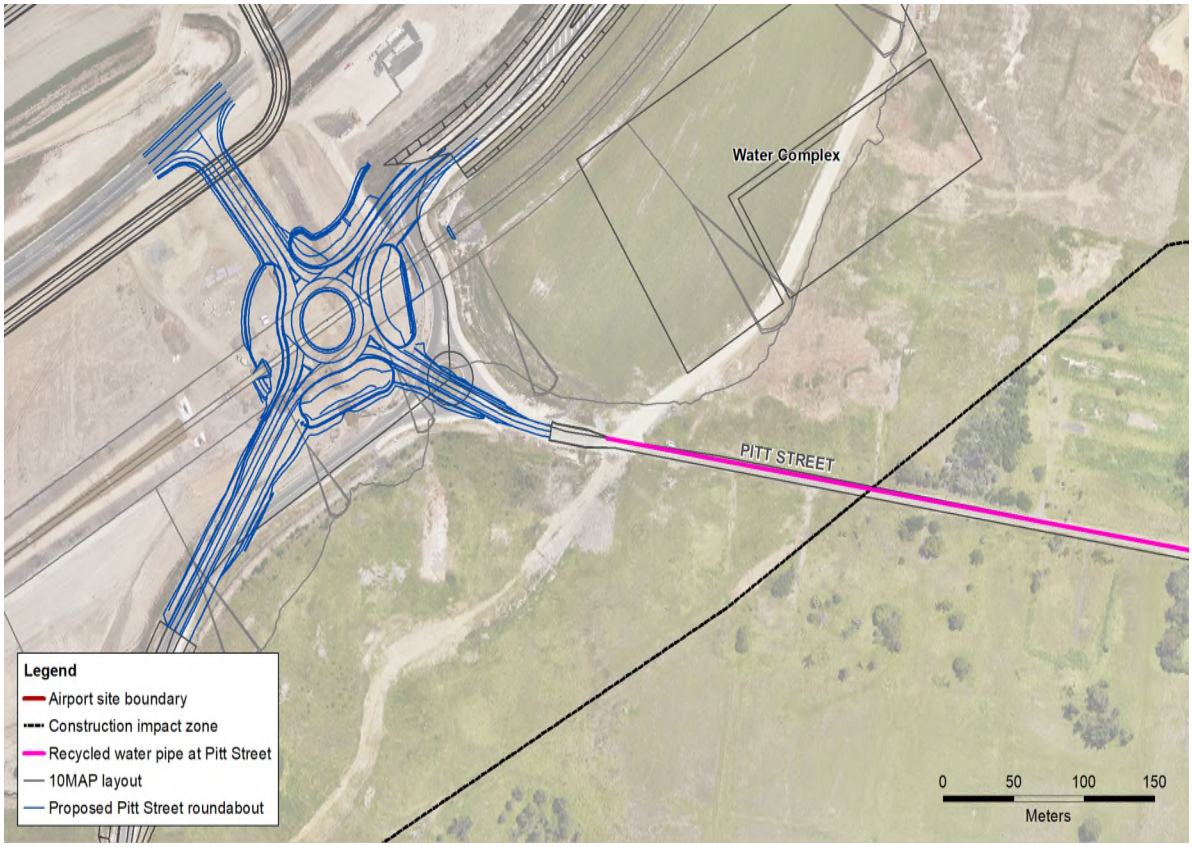

Figure 12: Recycled water pipe at Pitt Street

6.9.2.4 Recycled Water – Permanent Irrigation Trial

Sydney Water are progressing with an irrigation trial on Airport land. The trial will see a new connection to the previously installed recycled water pipe on Pitt Street, with an at-grade pipe connection to be installed from Pitt St south towards Leggo Street on the east of Badgerys Creek Road. The indicative alignment of the primary irrigation pipeline is shown in maroon in Figure 13.

A secondary irrigation network will then be installed to irrigate crops within a trial area. The maximum area is indicated by the yellow boundaries in Figure 13.

Instrumentation and monitoring will be installed to measure ambient temperature and other environmental atmospheric factors.

The trial is expected to be installed for a maximum of two years before being decommissioned.

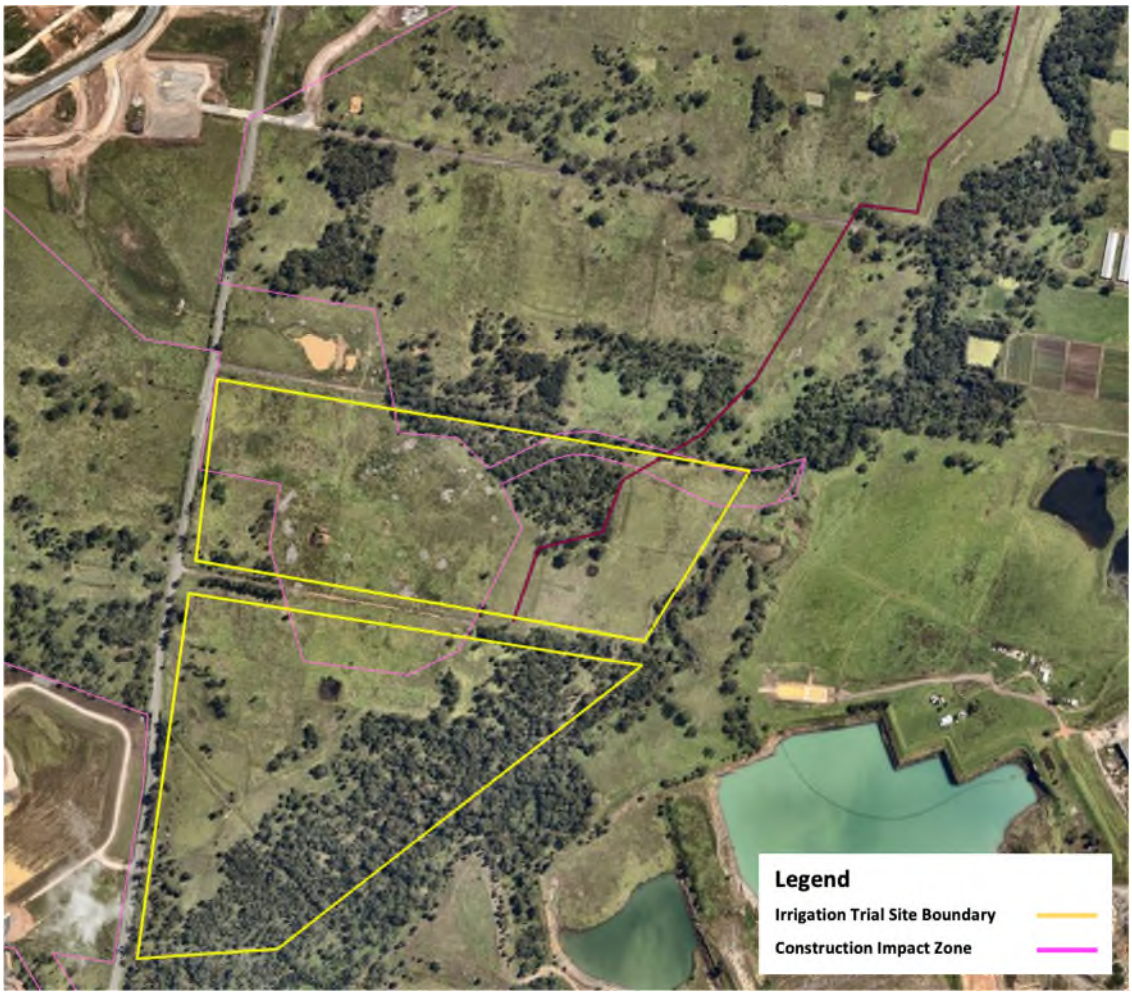

Figure 13: Irrigation Trial pipe and network

6.9.2.5 Telecommunications

The Telecommunication Equipment Rooms (TERs), located near the northern and southern extents of the Airport, will be the point of transition from an external telecommunication providers network to the airport network.

The current proposal for the northern TER is for a telecommunications conduit bank and fibre connection to be extended from boundary at Elizabeth Drive into the TER building following an alignment along the footpath of the Northwest Access Road. The indicative alignment is shown in Figure 14. (NB current infrastructure shown in Figure 14 is the BEC main compound).

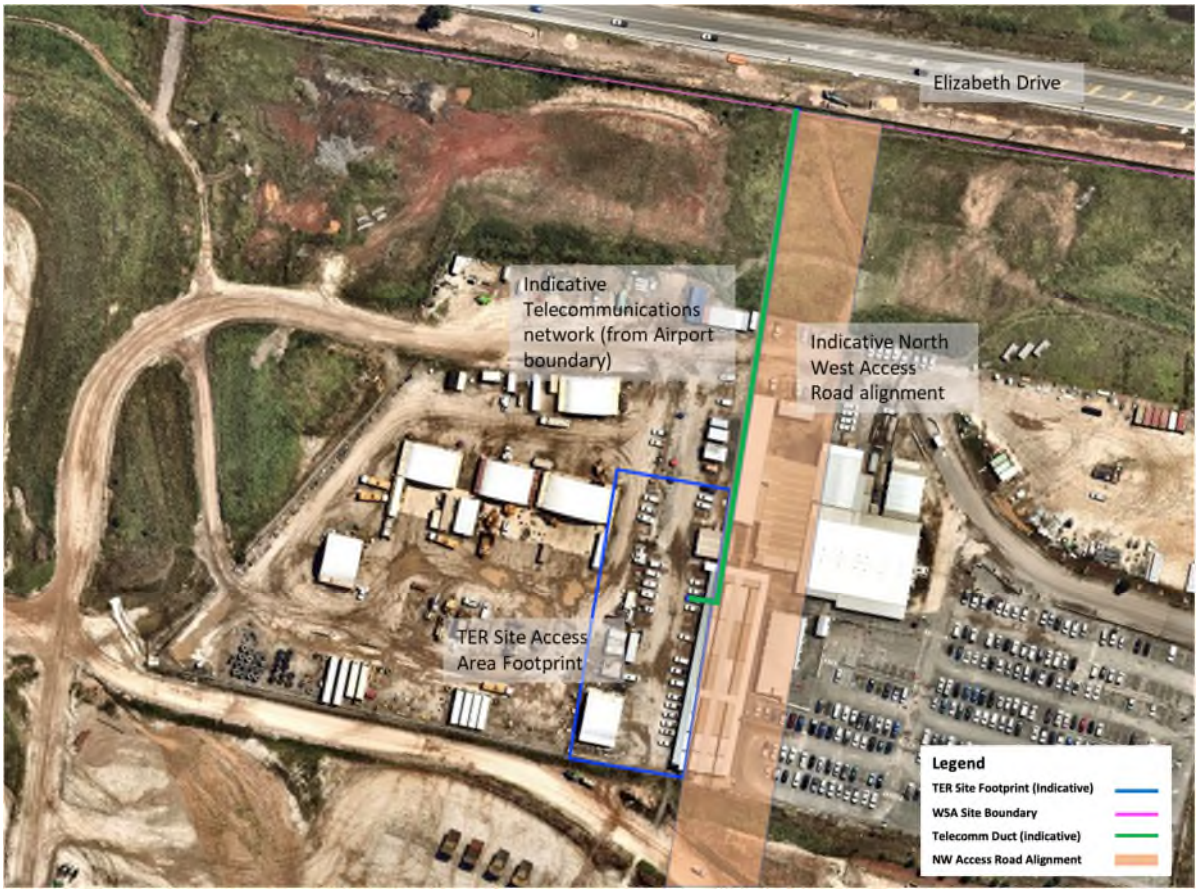

Figure 14: Northern TER - Indicative telecommunication incoming connection

The current proposal for the southern TER is for a telecommunications conduit bank and fibre connection to be extended from the boundary at The Northern Road into the TER building following an alignment along the verge of the future cargo access road and the TER access road. The indicative alignment is shown in Figure 15.

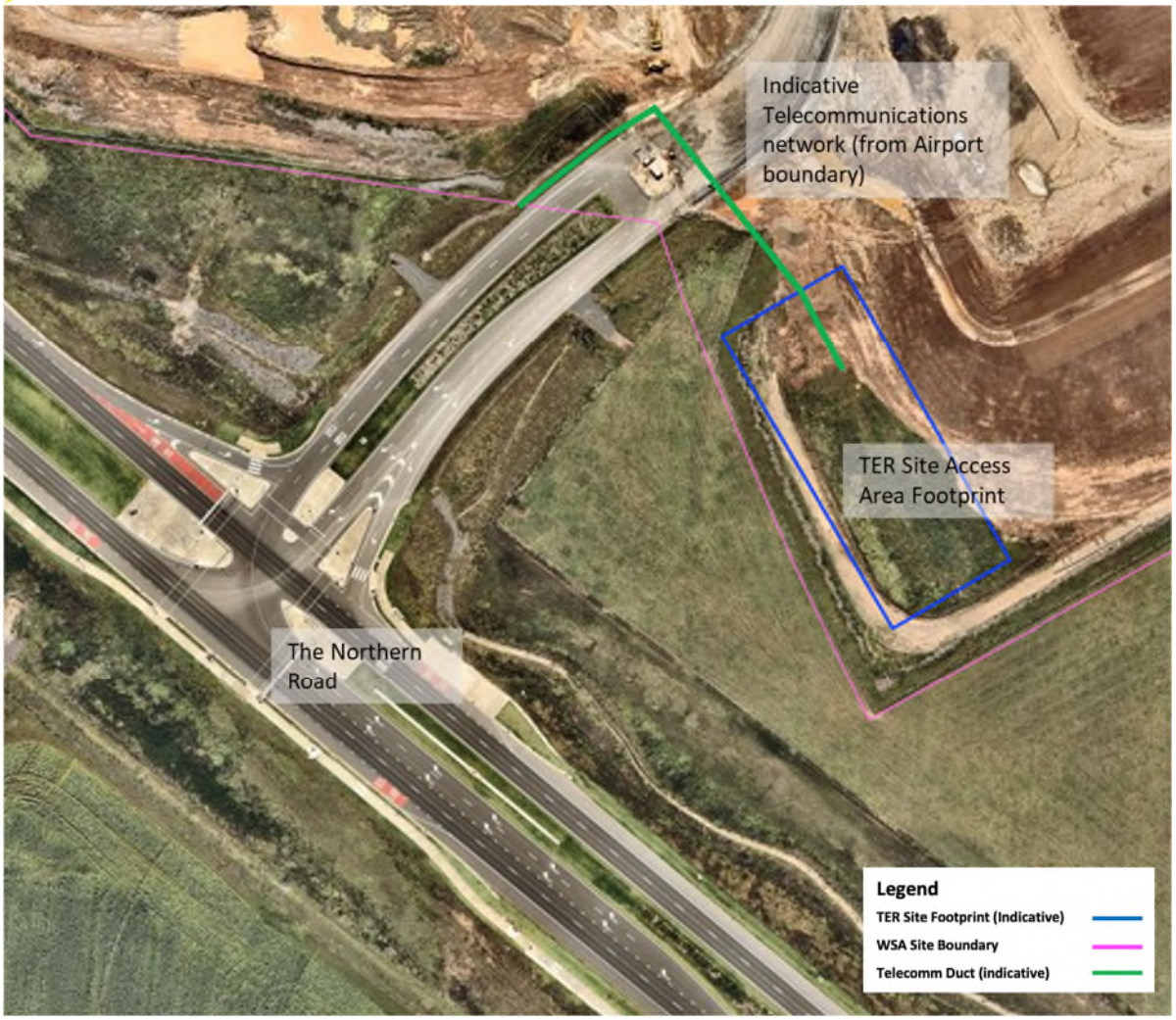

Figure 15: Southern TER - Indicative telecommunication incoming connection

The telecommunications installation from the boundary to the TERs is was completed in late 2023.

6.9.2.6 Gas

The proposed external gas connection involves the installation of a new gas pipe from the site boundary on Elizabeth Drive, along the Northwest Access Road footpath, to a new reducer station located adjacent to the North West Access Road. Refer to Figure 16 (NB current infrastructure shown in Figure 16 is the BEC main compound, this will be decommissioned in Q2 2022). These works will be managed as a Preparatory Activity.

The scope from the downstream side of the reducer station will be completed as part of the LCB scope.

If gas infrastructure is not constructed as part of the currently planned works, space for the infrastructure and a connection to an external gas network will be safeguarded.

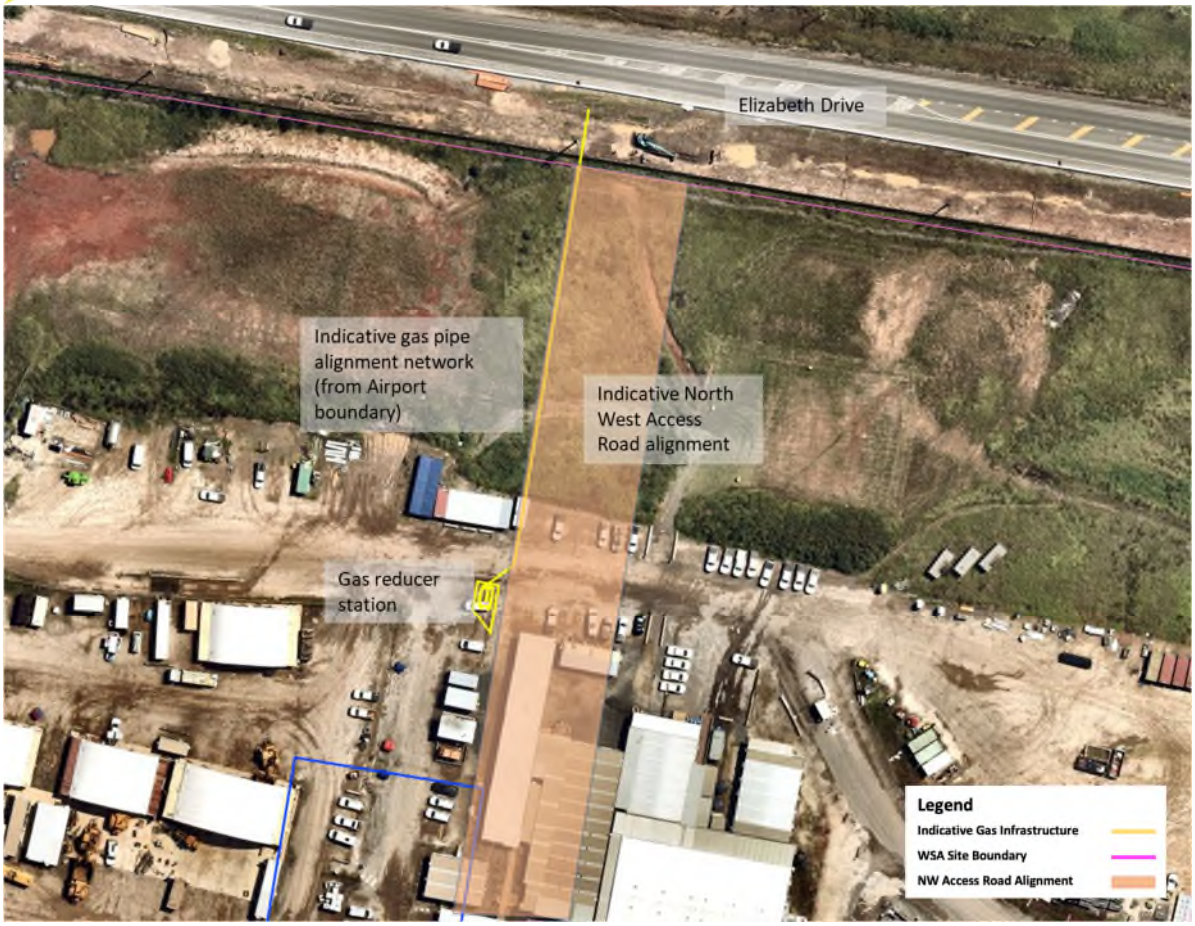

Figure 16: Indicative gas alignment

6.9.2.7 Other Utilities

The utilities scope outlined in the Construction Plan is at a varying degree of maturity. Scope and designs are subject to change as scope and designs are developed in conjunction with the utility providers in order to provide the services required for an operational airport.

6.9.2.8 Visual Reproduction System

ASA have advised WSA that it will be operating a digital tower to provide air traffic control. The digital tower infrastructure on the WSA Site includes the Visual Reproduction System (VRS), a structural mast that will accommodate ASA's active equipment and infrastructure. The VRS will be located north of the runway, opposite the terminal building. As part of the Main Construction Works, services and roadways will be constructed to support the VRS in this location.

6.9.2.9 Navigational Aids System

ASA will install its NAVAIDS at various locations throughout the airport site; the majority being within the ACP site area. Enabling works for the NAVAIDS including power, conduit and other provisions will be constructed as part of the main construction works before access is made available to ASA (or its appointed contractor) to install and commission their works. As the ASA sites are within the main construction works site areas, the responsible WSA contractor is responsible for planning and coordinating access to the respective sites once available.

6.9.2.10 Weather Station

The Bureau of Meteorology (BOM) will construct a weather station facility within the ACP site at a location west of the runway. Enabling works for the facility will be constructed as part of the ACP works before access is made available to BOM (or its appointed contractor). As the BOM site is within the ACP site area, the ACP contractor is responsible for planning and coordinating access to the sites once available.

6.9.2.11 Integrated Border Control Facilities

ABF, DAFF, and the AFP require integrated facilities within the Terminal building. The TSS contractor will construct enabling works for these facilities before making access available to the respective agency spaces for these agencies or their appointed contractors to complete the works.

6.9.3 Commercial Development

A number of areas on the airport site are allocated for commercial development. Planning for such development is currently underway by WSA. In the event that construction works are required for such commercial development, WSA and its contractors will provide the necessary planning, coordination, and access for these works.

6.10 Rail Development Construction Works Interface

The Sydney Metro Airport Line is being partially delivered within the WSIA boundary. The scope of these works was approved through a variation to the Airport Plan in September 2021 and were further defined in the SM Construction Plan. These construction works scheduled in WSA land will primarily include a key interface with LCB and TSS main construction work packages in addition to interface with on airport M12 works.

Construction works will be planned and coordinated to minimise interfaces, in accordance with governance of the Airport Plan and the relevant contractual agreements. and Rail Integration Deed. Rail Construction Works shall occur within the Airport CIZ and the Rail Development and Rail Construction Works will be undertaken in accordance with the Airport Plan (as varied in relation to the Rail Construction Works), which includes (but will not be limited to) a Rail Construction Plan, Rail CEMPs and other approved plans. Locations of SMWSA activities are shown in Figures 3 and 4.

The SMWSA project comprises the following key interface on-airport features include:

- Construction of utility installation;
- Around two kilometres of surface rail alignment within WSI;
- Around 3.3 kilometres of twin rail tunnels (including tunnel portal) within WSI;
- Two new metro stations, Airport Business Park Station and Airport Terminal Station; and
- A concrete batch plant and stockpile area (outside the Stage 1 Airport CIZ).

As agreed, Sydney Metro will be granted Access Licences to undertake Rail Construction Works in the Airport Site. Access Licences shall provide Sydney Metro with segregated construction areas and access roads. Rail activities within the Licensed Areas are to be undertaken in accordance with the Rail Construction Plan, which shall be consistent with this Construction Plan. Each Access Licence shall prescribe specific handback conditions for each area which Sydney Metro must comply with. See the *Sydney Metro Western Sydney Airport Construction (Rail) Plan* for further detail.

As per Condition 42 of Airport Plan (September 2021), a Cumulative Impacts Plan (WSA00-WSA-0400-EN-PLN-000013) has been developed to address cumulative impacts arising from the concurrent construction of the Airport Stage 1 Development and the Rail Development. This plan sets out

- Coordination and consultation requirements between the following stakeholders as relevant to manage the interface of projects under construction at the same time: the ALC, the Rail Authority,

Transport for NSW, Western Parkland City Authority, Sydney Water, emergency service providers and utility providers;

- The responsibility for management of the impacts set out in the Cumulative Impacts Plan;
- The relevant environmental management framework relating to construction of the Airport Stage 1 Development and the Rail Development; and
- The process for proactively identifying and managing cumulative impacts.

Appendix A
Site Environmental Management Framework

Refer to the Site Environmental Management Framework - WSA00-WSA-00400-EN-PLN-000011