

Wickham Transport Interchange Project Construction Environmental Management Plan

Project Name	Wickham Transport Interchange
Location:	Newcastle, NSW
Project Number	G85
Client	Transport for NSW (TfNSW)
LOR Document Number	WTI-LOR-PMP-0014

Issued By:

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Authorised By:

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Signed:

James Pearce

Date:

01 August 2017

Revision	Date of Issue	Details
01	10 Feb 2015	Internal - comment and review
02	16 Feb 2015	Issued to TfNSW for review
03	13 Mar 2015	Issue incorporating TfNSW comments
04	14 Apr 2015	Issue incorporating TfNSW comments
05	21 Oct 2015	Periodic Review
06	25 Nov 2015	Issue incorporating TfNSW comments
07	03 Jun 2016	Periodic Review
08	17 Jan 2017	Periodic Review
09	01 Aug 2017	Periodic Review

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Register of Changes – Rev 09

Page / Reference	Details
Section 3	Distribution Policy
Section 12.3	Pre Operational Compliance Report Added
Appendix 3	Risk Assessment Review
Appendix 5	Environmental Control Maps
Appendix 11	Organisation Chart

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Terms and Definitions

The following terms, abbreviations and definitions are used in this document:

Terms	Explanation
ASRIS	Australian Soil Resources Information System
ASS	Acid Sulphate Soils
BSP	Bulk Supply Point
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CWG	Compliance Working Group
ECM	Environmental Control Map
EIS	Environmental Impact Statement
EMR	Transport for NSW's Environmental Management Representative
EMS	Environment Management System
ENM	Excavated Natural Material
EP and A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection License
ERAPs	Environmental Risk Action Plans
GLT	Ground Level Troughing
GST	Galvanised Steel Troughing
HDD	Horizontal Directional Drilling
ISCA	Infrastructure Sustainability Council of Australia
JSEA	Job Safety Evaluation and Assessment
km	Kilometre
kV	Kilovolt
LEP	Local Environmental Plans
LGA	Local Government Area
LORAC	Laing O'Rourke Australia Construction Pty Limited
m	Metres
NES	National Environmental Significance (Matters of)
NSW OEH	New South Wales Office Of Environment And Heritage
OEH	Office of Environment and Heritage
OHEW	Overhead Earth Wire
OOHW	Out of Hours Works
OOHWAA	Out of Hours Works Assessment and Application
PER	Project Environmental Representative
PER	Project Environmental Representative
PMEM	TfNSW Principal Manger Environmental Management –or Environment and Planning Manager (EPM)
POEO Act	Protection of the Environment Operations Act 1997
PSU	Power Supply Upgrade
REF	Review of Environmental Factors
RMS	Roads And Maritime Services
SDG	TfNSW's Sustainable Design Guidelines
SDS	Safety Data Sheet
SEPP	State Environmental Planning Policy
SoW	Scope of Works
SWMS	Safe Work Method Statement

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Terms	Explanation
TCP	Traffic Control Plan
TfNSW	Transport for New South Wales
TMP	Traffic Management Plan
UG	Underground
ULX	Underline Crossing
VENM	Virgin Excavated Natural Material
VTA	Visual Tree Assessment
WTI	Wickham Transport Interchange

Table of Contents

1	Purpose	7
2	Scope	8
2.1	Construction Hours and Out of Hours Works	12
2.2	Environmental Controls and Mitigation	12
3	Distribution Policy	12
3.1	Issue, Revision and Re-issue	
4	Environmental System	
5	References, Standards, Codes and Regulations	
6	Policy	
7	Objectives and Targets	
-	•	
8	Responsibilities and Authorities	
8.1	Regional General Manager	
8.2	Project Leader	
8.3 8.4	Construction Manager Project Commercial Manager	
8.5		
8.6	Project Environmental Representative Project Sustainability Officer	
8.7	Project Communications Manager	
6. <i>1</i> 8.8	Business Unit Environmental Manager	
8.9	TfNSW Environmental and Planning Manager	
8.10	TfNSW Environmental Management Representative	
8.11	Contractors	
8.12	All Personnel	
9	Legal and Other Requirements	_
9.1	Project Approval and Development Consent	
9.1	Environmental Authority / Licence	
9.2.1	Administrative Conditions	
9.2.2	Limit Conditions	
9.2.3	Operating Conditions	
9.2.4	Monitoring and Recording Conditions	20
9.2.5	Reporting Conditions	20
9.2.6	General Conditions	
9.2.7	Special Conditions	
10	Environmental Risk Assessment and Control	21
11	Training, Awareness and Competence	21
12	Communication and Reporting	21
12.1	External	21
12.2	EPA Specific	22
12.3	Reporting Schedule	
13	System Documentation	22
13.1	Internal	24
14	Document Control and Records	24
14.1	EPL Specific Recording Conditions	24
15	Operational Control	24
15.1	General	24
15.2	Hold Points	24
15.3	Cease Work	26
15.4	Environmental Control Map (ECM)	26
15.5	Erosion and Sediment Control Plans (ESCPs)	26
15.6	Design	27
15.7	Procurement	27
15.8	Handling, Storage, Packaging and Transport	27

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

1 Purpose

Environmental management is a core business value for Transport for New South Wales (TfNSW), Laing O'Rourke Australia (LORAC).

This plan will be used to implement the Environmental Management System (EMS) of Laing O'Rourke, supported by key elements from TfNSW Environmental Management System as detailed in this Construction Environmental Management Plan (CEMP).

LORAC implements its Environmental Management System (EMS) on all projects across the group and the system has been continuously certified to ISO 14001 by SAI Global since 1997.

The LORAC EMS includes risk assessment, stakeholder consultation, operational controls, training and induction, compliance reviews, emergency response and incident management, audit, design risk and opportunities, and legal compliance. These issues are addressed through the development of site specific Construction Environmental Management Plans.

The CEMP includes the necessary systems elements to satisfy the requirements of ISO 14001, with detail on the environmental risks and control measures to address legislation, statutory compliance requirements and TfNSW's specific requirements.

During the development of the CEMP an assessment of TfNSW's requirements, statutory requirements such as review of environmental factors (REF), environmental protection licence (EPL) and statutory permits requirements is undertaken. Where relevant to construction activities, TfNSW requirements are addressed and associated control measures are incorporated into the CEMP and specific mitigation strategies developed.

The REF for the Wickham Transport Interchange Project has been prepared in accordance with the requirements of the Environmental Planning and Assessment Act 1979 (EP&A Act) and the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation). For the purposes of these works, TfNSW was the proponent and a determining authority under Part 5 of EP&A Act.

For the Wickham Transport Interchange Project, this CEMP has been specifically developed to:

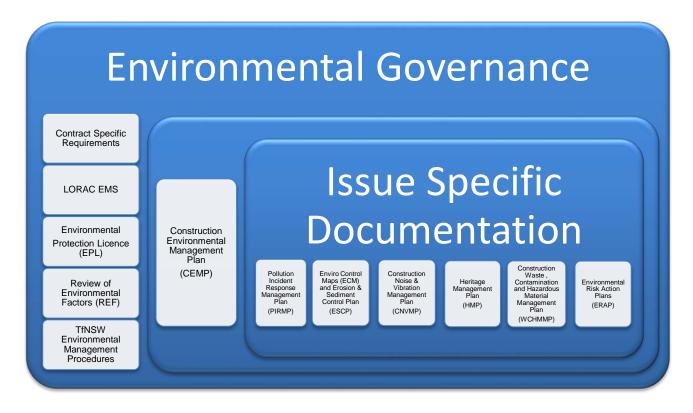
- Ensure that the project meets contractual, legal and other environmental requirements including industry codes of practice.
- Comply with the TfNSW Environmental Management documents and associated procedures.
- · Comply with the relevant requirements of the project REF.
- Develop alignment with TfNSW's environmental objectives and targets for the project and ensure their implementation.
- Ensure that the needs and expectations of TfNSW are addressed.
- Provide a link between the LORAC's corporate Environmental Management System and the Project's Environmental Management System.
- Manage environmental risk through a set of Environmental Risk Management Plans.
- Provide all LORAC personnel with systems, procedures and documentation necessary to undertake the construction of this project with environmental requirements and to minimise the impact on the natural environment.
- Meet the requirements of ISO 14001 including the need for continual improvement.

The CEMP has been developed with careful consideration with existing management plans to set the direction in which the project is moving and support the achievement of other management plans. The CEMP plays a vital role in the achievement of LORAC's wider strategic and operational objectives on the Wickham Transport Interchange Project.

The CEMP provides the high level governance framework for environmental management on the project and is supported by a number of issue specific Sub-plans, Environmental Risk Action Plans (ERAPs) and related documents. The figure below outlines the relationship between the project specific environmental requirements and the CEMP and associated plans and support documentation on the project.

This CEMP and the associated plans are for the environmental management of the Wickham Transport Interchange Project only. Any other works, including the Newcastle Light Rail Project, that occur within the Wickham Transport Interchange Project boundary or on the interface of that boundary must be managed by that other project.

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709



Sub-plan	Location
Environmental Risk Action Plans	Appendix 4 of this document
Environmental Control Maps & Erosion and Sediment control Plan	Appendix 5 of this document
Pollution Incident Response Management Plan	Appendix 6 of this document
Construction Noise and Vibration Management Plan	Appendix 13 of this document
Heritage Management Plan	Appendix 15 of this document
Traffic Management Plan	Appendix 16 of this document
Construction Waste Contamination and Hazardous Material Management Plan	Appendix 17 of this document
Acid Sulphate Soils Management Plan	Appendix 22 of this document
Air Quality Management Plan	Appendix 23 of this document

2 Scope

This plan applies to the construction and commissioning phase (to the extent where LORAC is responsible) of the Wickham Transport Interchange Project (WTI). The Project Site is shown in Figure 1.

This CEMP has been developed in compliance with TfNSW's requirements and LORAC's environmental management system.

This plan applies to the construction phase of the Wickham Transport Interchange project.

The project site is located in the suburbs of Hamilton, Wickham and Islington in the City of Newcastle local government area (LGA). The project site is located on the edge of the Newcastle city centre, about two kilometres to the west of the Hunter Street Mall. The site surrounds the rail corridor and extends from just to the north-west of Hamilton Station to just to the east of Stewart Avenue, Wickham.

This Laing O'Rourke Australia Construction Pty Limited (LORAC) CEMP has been developed for the Construction phase of the project, in compliance with the Client's requirements and LORAC's environmental management system.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

The Laing O'Rourke works comprise of;

- Constructing a new train stabling yard between Hamilton Station and the Maitland Road Bridge.
- Constructing a new station at Wickham and transport interchange for heavy rail, kiss and ride, and taxis to the west of Stewart Avenue.

To continue operating the rail network to the west of the new station at Wickham, a number of modifications to rail infrastructure and services between the new station and Hamilton Station would also be required, including:

- Constructing and operating a new head shunt rail track, about 700 metres in length, between the Maitland Road overbridge and new station at Wickham
- Installing new crossovers and turnouts to facilitate the movement of trains between the three rail tracks
- Ancillary infrastructure, including power supply, signalling and overhead wiring.

Some modifications to the road network would also be required, including works on Station Street to accommodate the third platform of Wickham Interchange together with parking for taxis and a kiss and ride.

The interchange design makes allowance for the future provision of light rail. The Newcastle Light Rail project will be subject to a separate environmental impact assessment/planning approval process and is not considered in this document.

The CEMP must comply with a number of conditions specified in the CoA and the TSR E. The following table indicates where these items have been addressed.

CoA 15 Construction Environmental Management Plan	Addressed in Section			
The Proponent shall prepare a CEMP prior to commencement of construction which addresses the following matters:				
 traffic and pedestrian management (in consultation with the relevant roads authority) 	Traffic Management Plan (Appendix 16) & ERAPs (Appendix 4)			
 noise and vibration management, including TfNSW's Construction Noise Strategy and EPA's Interim Construction Noise Guideline (July 2009) 	Noise and Vibration Monitoring Plan (Appendix 13) & ERAPs (Appendix 4)			
water and soil management including TfNSW's Water Discharge and Reuse Guidelines (7TP-ST-146)	ERAPs (Appendix 4)			
air quality management (including dust suppression)	ERAPs (Appendix 4)			
indigenous and non-indigenous heritage management	Heritage Management Plan (Appendix 15) & ERAPs (Appendix 4)			
flora and fauna management	Bat Management Plan (Appendix 18) & ERAPs (Append 4)			
storage and use of hazardous materials	ERAPs (Appendix 4)			
contaminated land (including acid sulphate soils)	Construction Waste, Contamination and Hazardous Material Management Plan (Appendix 17) & ERAPs (Appendix 4) & Acid Sulphate Soils Management Plan (Appendix 22)			
weed management	ERAPs (Appendix 4)			
waste management	Construction Waste, Contamination and Hazardous Material Management Plan (Appendix 17) & ERAPs (Appendix 4)			
light spill	ERAPs (Appendix 4)			
sustainability initiatives	Pre-construction sustainability Plan & ERAPs (Appendix			
 environmental incident reporting and management procedures including TfNSW's Environmental Incident Classification and Reporting Procedure (9TP-PR-105) 	Pollution Incident Response Management Plan (Append 5) and Section 18.0 Incidents, Complaints, Corrective an Preventative Action			
non-compliance and corrective/preventative action procedures	Section 18.0 Incidents, Complaints, Corrective and Preventative Action			
The CEMP shall:				
 comply with the conditions of approval, conditions of any licences, permits or other approvals issued by government authorities for the Project, all relevant legislation and regulations, and accepted best practice management 	Appendix 2 - Legal and Other Requirements & Appendix Project Permit and Licenses Register			
 be prepared in accordance with the Guideline for Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004) 	Section 5.0 References, Standards, Codes and Regulations			

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

TSR E Item 3.1 CEMP Requirements	Addressed in Section
The Contractor must have submitted to the Principal's Representative for review in accordance with the Contract, maintain and consistently apply until Final Completion a project and site-specific Construction Environmental Management Plan or CEMP that covers all the work necessary for the Contractor to fulfil its environmental obligations under the Contract. The timing for the initial submission of the CEMP to the Principal's Representative for review in accordance with the requirements of the Contract is nominated in Annexure A of the TSR E.	This document
The Contractor must progressively review, monitor, amend, update the CEMP and submit for review in accordance with Annexure A of this TSR E.	Section 3.1 Issue, Revision and Re-issue
The CEMP(s) must comply with the "NSW Government Environmental Management System Guidelines" and be consistent with the requirements of the Contract.	Section 5 References, Standards, Codes and Regulations
The Contractor must regularly review and update the CEMP(s) and implement additional environmental protection measures if the protection measures in the CEMP(s) are not adequate to achieve compliance with the environmental obligations under the Contract.	Section 3.1 Issue, Revision and Re-issue
The CEMP(s) must address, and be consistent with, all Authority Approvals (including the conditions imposed on these) and the Environmental Assessment (being the environmental assessment report, Environmental Impact Statement or Review of Environmental Factors), and must address all aspects and impacts identified in the Environmental Risk Assessment (refer also to clause 3.3).	ERAPs (Appendix 4) and other Management Plans
The CEMP(s) must include a matrix or equivalent outlining how the Contractor's EMS and CEMP address the requirements of this TSR E, the Authority Approvals and any other relevant Contract requirements.	Section 13 System Documentation and this table
The CEMP must:	
 indicate the names, responsibilities and authorities of the site management personnel for implementing the CEMP, monitoring its effectiveness, providing environmental input to design, rectifying any environmental deficiencies and keeping environmental records; and 	Section 8 Responsibilities and Authorities
 nominate a member of the site management team as the Contractor's environmental representative who: 	
 has the responsibility and authority to ensure that an Environmental Management System is established, implemented and maintained in accordance with the Contract; 	Section 8 Responsibilities and Authorities
reports to the Contractor's senior management; and	Section 8 Responsibilities and Authorities
 will be the authorised contact person for the Principal and relevant Authorities for all environment related issues. 	Section 8 Responsibilities and Authorities

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

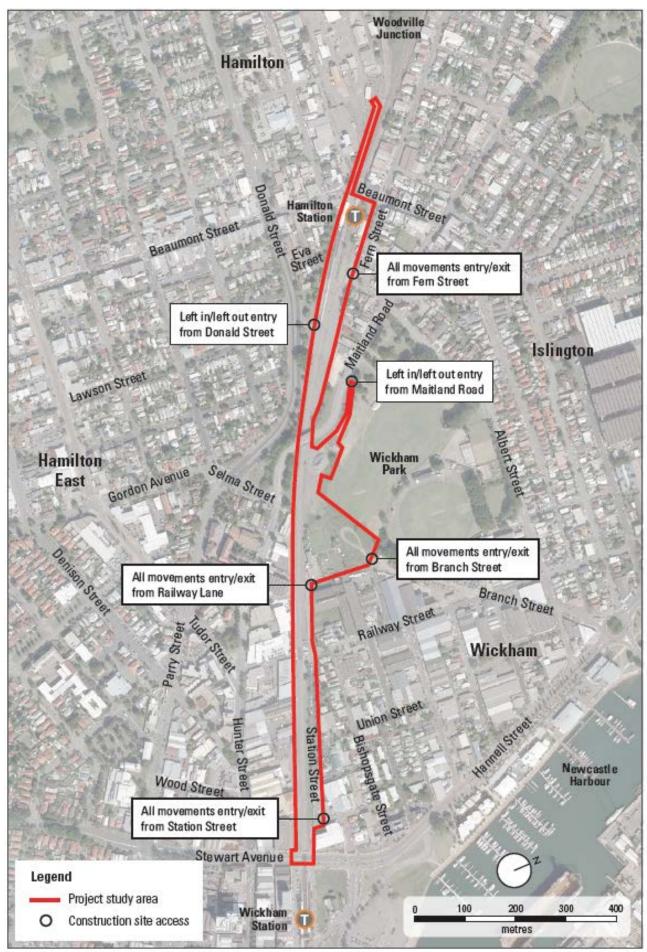


Figure 1 Wickham Transport Interchange Project Area. Source Wickham Transport Interchange REF (GHD, 2014)

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

2.1 Construction Hours and Out of Hours Works

Construction hours as per the CoA and the EPL are;

- 7am to 6pm Monday to Friday
- 8am to1pm Saturdays

Any works outside of these hours must be approved by the PER and PL and, depending on noise levels generated, may require mitigation measures. The Out of Hours Assessment and Application Procedure can be found in Appendix 14.

2.2 Environmental Controls and Mitigation

A number of Environmental Risk Action Plans (ERAPs) and plans have been developed in accordance with the requirements of the Conditions of Approval (CoA) and to manage the significant environmental issues identified for this stage of the Project (Stage 2 - main works):

ERAPs have been developed and included in Appendix 4:

- Noise and Vibration
- Dust and Air Quality
- Waste
- · Water Quality, Site Drainage and Erosion and Sediment Control
- Traffic Management
- Hazardous and Contaminated Land / Soil / Material
- Lighting
- Greenhouse gas emissions
- Advertising and Graffiti
- · Indigenous and Non-indigenous Heritage
- Concrete Washout
- Delivery and Storage of Chemicals and Fuels (including Dangerous Goods)
- · Flora and Fauna Management

3 Distribution Policy

The master 'controlled' CEMP document will be held within the Project's document management system where it can be accessed by personnel as necessary.

All paper copies of this CEMP will be considered as 'uncontrolled' unless they have been allocated a 'copy number' in a colour other than black.

Where required, controlled copies of this CEMP will be published as a hard copy, allocated a copy number (colour other than black), and distributed as follows:

Copy No.	Issued To
01	Project Leader – James Pearce
02	Project Environmental Representative - Daniel Keegan
03	TfNSW Planning and Environment Manager – Timothy Renshaw

The personnel to whom these copies have been issued will be sent amendments as they occur, and it is their responsibility to discard superseded pages and insert new pages.

3.1 Issue, Revision and Re-issue

The initial issue of this plan has been reviewed by the Business Unit Environmental Manager to ensure it meets the requirements of the current Environmental Management System and policy, contract, specifications and standards. The plan is approved for use on the project by the Project Leader. Evidence of initial review and approval is by signatures on the cover sheet.

Revisions of this CEMP may be required throughout the duration of the project to reflect changing circumstances or identified deficiencies.

Revisions may result from:

- · Management Review
- · Audit (either internal or by external parties)
- · Client complaints or non-conformance reports
- Changes to LORAC's standard system
- Changes to legislation or legal requirements

Revisions shall be reviewed and approved by the Project Leader prior to issue. Updates to this plan are numbered consecutively and issued to holders of controlled copies.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

4 Environmental System

Laing O'Rourke Australia Construction Pty Limited operates an environmental system compliant with AS/NZS ISO 14001.

The Company is currently certified (No. C10086) with SAI Global.

All works carried out on the site will be in accordance with:

- TfNSW requirements as detailed in the Contract;
- Laing O'Rourke Australia Construction Pty Limited Environmental System as detailed in Environment on iGATE;
- ISO 14001 Environmental Management System;
- · The Development Conditions of Approval; and
- All legal requirements

This Plan references relevant parts of LORAC's environmental management system and incorporates the additional elements necessary to satisfy TfNSW's environmental system requirements.

5 References, Standards, Codes and Regulations

This CEMP was prepared in accordance with the Guideline for Preparation of Environmental Management Plans (Department of infrastructure, Planning and Natural Resources, 2004).

The CEMP was developed in line with the LORAC Environmental Management System.

The CEMP references the Wickham Transport Interchange Review of Environmental Factors (GHD, 2014).

The project will be constructed in accordance with relevant standards, codes, acts and regulations. Appendix 2 provides a register of applicable legislative instruments relevant to the project.

Access to the latest Australian standards is available via the through iGATE. A link to the website is provided in the Rules and Process – Quality and Process drop down menus.

The works will be undertaken in accordance with relevant TfNSW guidelines, including but not limited to;

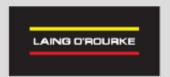
- TfNSW Air Quality Management Guideline 9tp-sd-107
- TfNSW Chemical Storage and Spill Response 9tp-sd-066
- TfNSW Concrete Washout Guideline 3tp-sd-112
- TfNSW Construction Noise Strategy 7tp-st-157
- TfNSW Environmental Incident Reporting Classification and Reporting 9tp-pr-105
- TfNSW Fauna Management Guideline 3tp-sd-113
- TfNSW Greenhouse Gas Inventory Guide for Construction Projects 7tp-st-035
- TfNSW Guide to Environmental Incident Reporting using the IMS 9tp-sd-005
- TfNSW NSW Sustainable Design Guidelines 7tp-st-114
- TfNSW Unexpected Heritage Finds Guideline 3tp-sd-115
- TfNSW Vegetation Management (Protection and Removal) Guideline 9tp-sd-111
- TfNSW Vegetation offset guide 9tp-st-149
- TfNSW Water Discharge and Reuse Guideline 7tp-st-146
- TfNSW Weed Management and Disposal Guideline 3tp-sd-110

6 Policy

Laing O'Rourke maintains an Environmental Policy and a Sustainability Policy, these will be:

- Displayed at prominent locations on the project site
- · Communicated to site personnel during induction and training
- Made accessible to TfNSW and concerned / interested members of the public

All personnel associated with the project including subcontractors must comply with the spirit and intent of the policies.



ENVIRONMENTAL POLICY. EFFECTIVE DECEMBER 2015

1

ENVIRONMENTAL

Laing O'Rourke is committed to the protection and enhancement of the environment. High environmental performance is an ongoing priority and is achieved by our actions in line with this policy. This policy sits alongside our Sustainability policy and Supply Chain policy as part of our global policy framework, underpinned by our Global Code of Conduct.

Our goal is to minimise the negative impacts of our operations and maximise the quality of the built environment for future generations. Through innovation and application of leading practice, we aim to steer the industry to design a sustainable and high-quality built environment with as little environmental impact as possible through the whole asset life-cycle.

Our goal will be realised by:

- Demonstrated leadership of our environmental agenda by senior leaders
- Complying with relevant legislation and other requirements specific to the context of our business and regularly evaluating and reporting compliance
- Preventing polluting emissions or discharges to the environment
- Proactively minimising environmental impacts, including being industry leading in minimising direct and embodied carbon emissions, and providing energy efficient/low carbon assets for our clients
- Continual improvement of the environmental performance of our activities, products and services through clear objectives, targets and programmes
- Exploring opportunities in the sourcing and life cycle aspects of our products, services and supply chain to reduce carbon emissions and demonstrate positive environmental outcomes
- Exploring opportunities for innovative technologies, products and processes that drive improved environmental outcomes/environmental benefits throughout the delivery and operation of the assets we build
- Communicating and addressing the risks and opportunities associated with the impacts of our activities, products and services
- Improving resource efficiency by reducing the use of natural resources and reducing waste, maximising resource recovery and diverting the waste we do produce away from landfill sites
- Reducing our water consumption and improving water efficiency in all of our operations
- Engaging our supply chain partners to improve their environmental performance and responsible sourcing of their materials, products and services
- Proactively protecting, preserving and enhancing biodiversity and land quality
- Enhancing employee understanding of environmental sustainability, through stimulating cultural change and providing clear direction
- Maintaining ISO 14001 certification for our principal businesses and progressing further certifications for our products and services

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 Project:
 Project No:
 Date:
 Rev:

 Wickham Transport Interchange
 G85
 01 August 2017
 09

ENVIRONMENTAL POLICY. EFFECTIVE DECEMBER 2015

2

Our policies are reviewed and updated annually to evolve with the world around us to make Laing O'Rourke the company of first choice for all our stakeholders, whilst challenging and changing the image of construction worldwide.

The Board of Directors of Laing O'Rourke fully endorses this Policy.

I personally commit Laing O'Rourke to this Policy.

Ray O'Rourke Chairman and Chief Executive

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1

SUSTAINABILITY

Sustainability is about maximising our environmental, economic and socio-economic performance in the interests of the business, our stakeholders and our planet.

Laing O'Rourke is uniquely placed through our private ownership to take a long-term approach to sustainability. This policy sits alongside our Health and Safety, Quality, Environmental, Human Capital and Customer Service policies as part of our global policy framework.

As an enduring engineering enterprise we are implementing a strategy which aims to create sustainable growth by meeting the economic, social and environmental challenges of our rapidly changing world.

Achieving sustainability is an integral part of fulfilling our corporate vision. We will continually strive and expect to:

- Create exceptional, long-term sustainable outcomes for all our clients, aligned to their ambitions
- Generate profits to invest in innovation and future success
- Work to the highest ethical, social and environmental standards
- Achieve industry-leading low-carbon performance
- Innovate to develop the industry's ability to address sustainability challenges
- · Develop our people: they are our most important assets
- Attract and retain new people from diverse backgrounds and demographic groups to work in the industry, and for Laing O'Rourke particularly
- Contribute to development of construction skills in our local communities by providing access to apprenticeships and life-long learning aligned to our goals and vision
- Enrich the communities in which we work
- Assess and manage all significant environmental risks
- Engage our supply chain and partners in achieving our sustainability targets and objectives
- Be transparent in reporting on strategic targets

Collaboration with clients, supply chain, industry partners, research organisations and other stakeholders is fundamental to how we develop and implement sustainability strategy.

Our policies are reviewed and updated annually to react to client needs and evolve with the world around us to make Laing O'Rourke the company of first choice for all our stakeholders, while challenging and changing the image of construction worldwide.

The Board of Directors of Laing O'Rourke fully endorses this policy.

I personally commit Laing O'Rourke to this policy.

M ...

Ray O'Rourke Chairman and Chief Executive

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Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

7 Objectives and Targets

High level objectives and targets for this project are as follows:

Objective	Target	Reporting / Monitoring
Effective site environmental controls	 Environmental controls are developed and implemented prior to starting work on site. Achieve alignment with TfNSW's expectations in relation to best practice control measures. Complete a rigorous and effective inspection and maintenance regime, in particular during Local Possessions when most construction takes place. Maintenance issues addressed within specified timeframes. 	Weekly visual supervisory inspections. Targeted inspections and monitoring during Possessions. Weekly Environmental Inspection Checklists by the Environmental Representative. Quantitative environmental monitoring and monthly reporting.
Environmental performance	 Zero major environmental incidents (Class 1 & 2) and no breaches. No infringement notices from the EPA / Newcastle City Council. Any minor incidents, such as minor spillages, dealt with quickly and efficiently. All environmental incidents to be reported to the TfNSW immediately. Incidents with potential or actual material harm must be reported immediately to EPA, and TfNSW. 	 Monthly reports to Regional Management. Monthly reporting to be provided in the Project Progress Meetings. Incident reporting process.
Effective implementation of the environmental system	 Full compliance with the REF requirements and EPL conditions. Compliance with relevant sustainability design guideline initiatives. Closure of CAR's within the nominated timeframes. 	Audit reports (at least quarterly from project member and once annually from a LORAC auditor external to the project) Monthly report PECOMs EPL Annual Return
Community issues carefully managed	Complainant contacted within two hours Matter closed out within one week.	Complaints handling to be handled in accordance with the TSR-C and the Community Liaison Plan. For further details on how this relates to environmental matters see section 20 of this CEMP.

8 Responsibilities and Authorities

Authorities and responsibilities for all positions are defined and communicated in Job Descriptions and project documentation. Reporting lines are shown in the Organisation Chart (available on the project network). Key responsibilities are indicated in the chart in Appendix 11.

Key responsibilities and authorities include:

8.1 Regional General Manager

- Ensure that independent audits of the system are conducted;
- Review audit reports and take action as necessary;
- · Authorise expenditure on environmental and sustainability issues within limits of authority; and
- Resolve major issues which cannot be resolved by the Project Leader.

8.2 Project Leader

- Ensure that project responsibilities and authorities are defined and communicated;
- Provide adequate resources to meet environmental and sustainability objectives;
- Ensure that the CEMP is effectively implemented and maintained;
- Approve this CEMP;
- Appoint/nominate and provide support for the PER;
- Appoint/nominate and provide support for the Sustainability Officer;
- Report to senior management on the performance of the system and environmental breaches;
- Take action to resolve environmental non-conformances and incidents;
- Ensure suppliers and subcontractors comply with requirements;
- Report environmental incidents to the TfNSW / local authorities as required;

8.3 Construction Manager

- Supervise all site construction activities and personnel by ensuring that they meet environmental and other requirements:
- Organise and manage site plant, labour and temporary materials;
- Ensure that site environmental controls are properly maintained and provide support for the PER;
- · Report all environmental incidents; and
- Take action to resolve non-conformances and incidents.
- Provide support for the Sustainability Officer in achieving construction based sustainability objectives

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

8.4 Project Commercial Manager

- · Carefully select suppliers and subcontractors based upon their ability to meet stated requirements;
- · Ensure that purchase orders and agreements include environmental requirements as necessary; and
- Where practical, select materials which are "environmentally friendly".
- Ensure that the sustainability objectives of the Supply Chain Policy are met.
- · Incorporate sustainability into the evaluation of tenders

8.5 Project Environmental Representative

- Act as the "Environmental Representative" under the terms of the contract and in accordance with this CEMP;
- Ensure that the CEMP is effectively established, implemented and maintained at the project level;
- Ensure compliance with all relevant statutes, regulations, rules, procedures, standards and policies;
- Liaise with TfNSW's Environment and Planning Manager or Environmental Management Representative on environmental issues, including the written notification of non-conformances (incidents, emergencies or deviations from the CEMP);
- Ensure that all personnel on site receive appropriate environmental induction and training and are aware of their environmental responsibilities under relevant legislation and the contract;
- · Report to the Project Leader on the performance of the system and improvement opportunities;
- Provide support to the project team to enable them to meet their environmental commitments;
- Ensure that environmental records and files are collected and maintained;
- Regular compliance checking as required by this CEMP;
- Ensure that non-conformances and environmental incidents are recorded and written reports provided to the TfNSW's Environmental Management Representative and Project Leader within 24-hours. Liaise with the required stakeholders to confirm the nature of the corrective action required and comply with the timeframe within which corrective actions must occur; and
- Ensure that environmental controls, materials and equipment are maintained.

8.6 Project Sustainability Officer

- Promote sustainability on the project and take forward any sustainable innovations developed by the project team
- Organise resources to plan and deliver the sustainability objectives
- Monitor and track sustainability targets
- Liaise with the design team to ensure design based sustainability objectives are incorporated into the design
- Liaise with the construction team to ensure construction based sustainability objectives are undertaken during construction.
- Coordinate others to develop their respective deliverables under the sustainability initiatives.

8.7 Project Communications Manager

- Manage the coordination, scheduling and implementation of the communication responsibilities set forth in Communication Liaison Management Plan.
- Ensure that all communications to stakeholders are presented appropriately and are consistent with Communication Liaison Management Plan, and are properly reviewed and approved prior to release.
- Tracking, managing and redirecting stakeholder enquiries to the appropriate person to ensure an appropriate and timely response,
- Ensure that the records of all project communications are documented and correctly filed.
- Assist in the preparation of ministerial responses, responses to parliamentary questions, briefing notes and/or other reports.
- Prepare and produce public information, including newsletters, brochures and reports, presentation materials, articles, information for TfNSW website, and stakeholder correspondence and relevant briefing materials.
- Ensure ongoing compliance of communications with the TfNSW Standard Requirements, Communication (TSR C).
- Assist in the ongoing management of stakeholder relationships and may also assist in the preparation of ministerial responses, responses to parliamentary questions, briefing notes and/or other reports.
- Developing and implementing this Plan and the communication mechanisms for all listed stakeholders, in consultation with the PM.

8.8 Business Unit Environmental Manager

- Environmental support to the project team; and
- Conduct internal audits.

8.9 TfNSW Environmental and Planning Manager

- Manage planning requirements of the Project
- Facilitate Systems Audits (PECOMS)
- · Liaise with the PER and TfNSW's EMR on site issues, non-conformances, audit results and incidents.
- Review incident outcomes within INX reporting system.

8.10 TfNSW Environmental Management Representative

The TfNSW EMR is the independent representative engaged by TfNSW to oversee environmental performance. In particular:

- Monitor compliance with the CEMP and sub-plans
- Interaction between the project environmental representative and TfNSW's EMR is to:

Construction Environmental Management Plan	Copyright © Laing O'Rourke 2017	Page Number
WTLL OR-PMP-0014	All rights reserved	18 of 109

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

- o Facilitate regular site inspections
- o Agree on the site inspection schedule
- o Timeframe for submission of compliance reports
- Be consulted in responding to the community concerning the environmental performance of the Project where the resolution of points of conflict between the Proponent and community is required.

8.11 Contractors

- Comply with all legal and contractual requirements;
- Comply with site environmental requirements;
- · Comply with management / supervisory directions;
- Participate in induction and training as directed; and
- · Report all incidents.
- · Ensure all sustainability initiatives as detailed within the design are constructed as specified

8.12 All Personnel

- · Comply with the relevant Acts, Regulations and Standards;
- Comply with the LORAC environmental policy and procedures;
- · Promptly report to management on any non-conformances, environmental incidents and/or breaches of the system;
- · Undergo induction and training in environmental awareness and sustainability as directed by management;
- · Report all incidents; and
- Act in an environmentally responsible and sustainable manner.
- Where requested, assist the Sustainability Officer in achieving the sustainability objectives.

9 Legal and Other Requirements

All personnel associated with the Project will comply with all relevant requirements including:

- Laws Acts, regulations, policies, etc.;
- Environment Protection Licence and permits as relevant to the Project
- · The Project approval conditions;
- Development consent as relevant to the Project; and
- All Relevant industry standards / codes.

An assessment of the relevant legislative instruments has been conducted and recorded in Appendix 2.

Licences, permits and approvals are outlined in Appendix 8 in the Project Permits and Approvals Register. The register is to be developed, at or prior to, the commencement of the project to outline the full scope of the project's requirements for Government authority approvals.

The register is to be reviewed in conjunction with the 6 monthly management review outlined in Section 21 or where there has been a change to relevant legislation.

The Register is to be reviewed and updated as the project progresses and compliance with the relevant conditions reported. Compliance conditions relating to items listed on the Permits and Licenses Register are incorporated into this Environmental Management Plan. Specific details and controls are included in the associated sub-plans and Environmental Risk Action Plans

The Register is to be issued to the Business Unit Environmental Manager for incorporation in to the Regional Permit and Approval Register.

A copy of relevant Permits, Licences, conditions of approval and any development consent relevant to LORAC's activities will be kept on site.

9.1 Project Approval and Development Consent

The works are to be delivered through Part 5 of the Environmental Planning and Assessment Act 1979. The approval process includes specific planning conditions and commitments that must be addressed in this CEMP and delivered during the project.

A Pre-construction Environmental Compliance Matrix has been established in accordance with CoA 4 (see Appendix 20) to ensure the approval conditions are captured, addressed and closed out. The Matrix includes all conditions relevant to Laing O'Rourke's scope of work and will be updated as the works progress and reviewed on a quarterly basis to verify compliance with each condition. This will also be captured through the TfNSW PECOMs reporting process.

Specific conditions of approval relevant to construction activities are included in the project's Operational Controls in the aspect specific Environmental Risk Action Plans (ERAPs).

In circumstances where works that have not been assessed under the REF must be undertaken, an EIA Checklist will be completed and approved by the TfNSW Planning and Environment Manager before works may commence. In circumstances where works will occur outside the area delineated or described in the REF a Consistency Checklist will be completed and approved by the TfNSW Environment and Planning Manager before works may commence.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Non-compliances with the conditions will be documented and addressed through the project's Corrective Action Register.

9.2 Environmental Authority / Licence

This project includes the following Scheduled Activities:

Railway System Activities

Laing O'Rourke is the licensee for EPL 20514, an Environmental Protection License obtained to undertake Stage 1 WTI Project works. This license will be varied to include Stage 2 WTI Project works.

The environmental protection licence includes specific minimum requirements which are addressed within this CEMP through the Operational Controls and specifically included in Environmental Risk Action Plans (ERAPs) by LORAC as the project progresses. Specific sub-plans and documentation will be prepared such as community notifications or noise and vibration impact assessments by LORAC where required under the EPL.

9.2.1 Administrative Conditions

- The licence authorises and regulates Railway System Activities.
- · All works and activities must be carried out in accordance with the licence proposal, unless specifically stated.
- · Staff must be briefed in the EPL conditions and records will be retained in the training matrix register.

9.2.2 Limit Conditions

- · Pollution of waters in compliance with section 120 of the POEO Act, unless specifically stated.
- · Noise Limits to minimise noise and vibration impacts on sensitive receivers and implement mitigation measures.
- Hours of operation during Standard Hours unless permitted by Out of Hours Work approval (Appendix 14).

9.2.3 Operating Conditions

- All licensed activities on the site must be undertaken in a competent manner.
- Construction hours are 7am-6pm Monday to Friday and 8am-1pm Saturdays unless approved otherwise by PER and PL
- Plant and equipment must be operated and maintained in a proper and efficient manner.
- Dust emissions are to be minimised.
- A Community Information Display is to be provided with project information and construction detail, as well as Community Meetings or Open Forums must be held on issue-specific basis and minutes are to be kept.
- Waste is to be assessed, classified and managed before leaving the site; excavated material suitable for re-use may
 be transported by road subject to conditions; any transported waste or spoil must be covered, vehicles leaving the site
 must be clean and any material on road surfaces from vehicles leaving the premises must be cleaned at the end of
 the day.
- Erosion and Sediment controls are to be implemented, inspected, maintained and repaired (if necessary) to minimise the pollution of waters.

9.2.4 Monitoring and Recording Conditions

- · Recording of monitoring results.
- Recording of weather conditions.
- Recording of pollution complaints.
- Provision of a telephone complaints line; noise and vibration complaints are investigated and results are to be reported back to the complainant; two Authorised Licensee Representatives are to be contactable by the EPA at all times.
- Recording of noise and vibration data from construction work, especially during out of hours.

9.2.5 Reporting Conditions

- Capture and collation of information for the completion of the Licence annual return.
- · Notification of environmental harm.
- Notification of Noise and Vibration complaints
- A written report may be requested by the EPA.
- Any received complaints received in relation to construction activities must be reported to the EPA by 2pm each day.
- A Preliminary Investigation Report in respect to any noise or vibration monitoring undertaken may be requested by the EPA to be supplied by 4.30pm on the next working day; and submit a follow up Investigation Report to the EPA within 5 working days.
- A dust control and management report can be requested by the EPA to be provided by 4.30pm on the second working day after the request.

9.2.6 General Conditions

- A copy of the EPL must be kept at the premises and produced to any officer of the EPA or employee or agent of the licensee working at the premises (if requested).
- All personnel undertaking work on the premises must receive environmental induction training.

9.2.7 Special Conditions

- A Noise and Vibration Assessment is to be undertaken for Out of Hours Works.
- Community Notification is to be undertaken for Out of Hours Works between 7days prior commencement.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Requirements of above licence conditions will be recorded and maintained in the various project registers, including:

- Project training register
- Plant and equipment maintenance records
- · Complaints register
- · Monitoring register and records

A copy of relevant Permits, Licences and REF will be kept on site as controlled documents in the project's Document Management System.

10 Environmental Risk Assessment and Control

Environmental aspects and impacts have been identified and assessed in the Risk Assessment enclosed as Appendix 3.

Significant environmental issues, with a risk ranking of Medium or High, will be controlled to a degree which is commensurate with the level of risk and the level of influence which LORAC have over these issues. These are documented in Environmental Risk Action Plans which are contained in Appendix 4.

If additional risks are encountered on site, these will be addressed either by updating this CEMP or by using separate Environmental Risk Action Plans (E-T-8-1200).

An overview of this process is shown in the CEMP Flow Chart contained in Appendix 10.

11 Training, Awareness and Competence

All employees will receive suitable environmental induction / training to ensure that they are aware of their responsibilities and are competent to carry out the work.

Environmental requirements will be explained to employees during site induction and on-going training via tool box meetings, briefings, notifications and the like.

All employees (including subcontractors) will receive induction / training in the following:

- Environmental Policy
- · Project REF and Conditions of Approval
- · Site environmental objectives and targets
- Understanding individual authorities and responsibilities
- · Site environmental rules
- · Potential consequences of departure from rules
- Emergency procedure and response (e.g. Spill clean-up)
- Required testing and drills as per Pollution Incident Response Management Plan (PIRMP)
- · Basic understanding of their legal obligations
- · ECM, including the location of sensitive receivers likely to be affected by noise or vibration
- · EPL licence requirements to minimise noise and vibration impacts on sensitive receivers
- Review and preparation of ESCPs

Personnel performing tasks which can cause significant environmental impacts will be competent on the basis of appropriate education, training and / or experience, in particular approval authorities in order to be sufficiently qualified to undertake duties in a competent manner (i.e. water testing training for staff authorised to sign Approvals to Pump Construction Water).

Environmental Toolbox talks are held on a regular basis in conjunction with the Safety toolbox session. All training and tool box meetings will be recorded in the Project Training and Competency Matrix (training register). In addition the project will deliver the monthly Mission Zero toolbox talk.

Training requirements are detailed within the Induction and Training Management Plan.

12 Communication and Reporting

With respect to the functioning of the project's environmental system, LORAC employees, TfNSW and other interested parties will be kept informed as necessary.

12.1 External

External communication methods include:

- Site meetings with TfNSW.
- · Regular inspections with the EMR.
- · Monthly Environmental Coordination meetings.
- All significant incidents notified to TfNSW.
- All environmental incidents, inquiries and complaints to be notified to the TfNSW Representative.
- All environmental incidents are to be entered into the TfNSW's INX and LORAC's IMPACT reporting systems.
- Project reports and updates to be provided to TfNSW at progress meetings and in the Monthly Project Report.
- Compliance reporting utilising the TfNSW Planning and Environmental Compliance System (PECOMS) at the designated intervals outlined in TfNSW document Environmental Compliance Reporting Process PE-PR-062/7.0.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

- As per WTI Project CoA 5 Construction Environmental Compliance Report (due every 6 months starting from the 10th of November 2014)
- · Meetings and correspondence with interested parties (e.g. Local council and EPA) as necessary.
- Discussions with adjoining land owners / neighbours and the community who may be affected by the project.
- Noise and Vibration Monitoring Compliance results are published on LORAC project website (http://www.laingorourke.com/our-work/all-projects.aspx).

12.2 EPA Specific

Reporting to the EPA under this EPL includes:

- Records must be produced if requested by an authorised officer of the EPA.
- Environmental Protection Licence Annual Return for the project to be submitted to EPA within the designated timeframes
- Notification of environmental harm to the Environment Line Service by telephone on 131 555 and written detail of the notification within 7 days of the event.
- Written report, if requested on suspected reasonable ground, of an event that has caused material harm to the
 environment.
- Daily reports of complaints received via the telephone complaints line in relation to construction activities by 2pm each day via email to the email address nominated by the EPA.
- A Preliminary Investigation Report on noise and vibration monitoring upon request by an authorised officer of the EPA to be submitted by 4.30pm the next working day following any noise or vibration monitoring.
- A Report concerning dust control and management at the premises if requested by an authorised officer of the EPA.

12.3 Reporting Schedule

Authority	Report	Due date
TfNSW	Construction Environmental Compliance Report	19 December 2015
NSW EPA	EPL Annual Return	30 December 2015
TfNSW	Construction Environmental Compliance Report	19 June 2016
TfNSW	Construction Environmental Compliance Report	19 December 2016
NSW EPA	EPL Annual Return	30 December 2016
TfNSW	Construction Environmental Compliance Report	19 June 2017
TfNSW	Pre Operation Compliance Report	25 August 2017
Heritage Division	Section 60 Final Report	End of Construction
Heritage Division	Section 140 Final Report	End of Construction
TfNSW	Construction Environmental Compliance Report	End of Construction
NSW EPA	EPL Annual Return	End of Construction

It should also be noted that subcontractors will be required to submit a Monthly Environmental Subcontractor Report. The report will include data on material usage, water usage, emissions and waste.

13 System Documentation

The LORAC Environmental Management System (EMS) is part of an integrated management system. The core elements of the project management system are described in this CEMP. A diagram of the EMS is enclosed below:

 Project:
 Project No:
 Date:
 Rev:

 Wickham Transport Interchange
 G85
 01 August 2017
 09

Laing O'Rourke Australia Environmental Management System **Policies** Accreditations Environmental Environmental Risk Operational Resources Environmental Incident Environmental External Emergency Investigation Websites Management Management Assessment Controls Compliance Preparation Training, Plans and Response Induction & Knowledge System Reviews and Complaints Toolbox Talks Overview Library Management Objectives & **EMP** General Corrective and Emergency Preparation Project/ Workplace Target isk Assessmer Risk Action Requirements Preventative Incident Process Action Classification Guidelines Emergency Situation Environmental EMP Standard Design Risk & Responding to a Training Emergency Compliance Environmental Templates Workplace Allocation and Class 1 Incident Response Environmental Reviews Reporting mplementation Competance Websites Preparation Risk Emergency Environmental Resources Toolbox Talks Legal and other Incident and Environmental Preparation Management Assessment Materials Plans and Response Library Management Notification and Reporting Environmental External Stakeholder Incident and Training, Websites Complaint Induction & Knowledge Records Toolbox Talks Library Operational Management xternal Inciden Controls Notification Incident Investigation and Complaints Managemen Environmental Management System Overview

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

13.1 Internal

Internal communication methods include:

- Management reports
- Site inspection reports
- · Audit reports
- · Incident reports
- Noticeboards
- Weekly Possession Readiness meetings
- · Pre-Possession Whiteboard meetings
- · Site meetings
- · Employee induction, training and tool box sessions
- · Briefings, notifications and alerts

14 Document Control and Records

All project documentation, including environmental records, will be controlled in accordance with the requirements described in the LORAC EMS. Environmental records will be:

- Kept as objective evidence of compliance with environmental requirements.
- Filed in accordance with the project records and filing requirements in Asite.

14.1 EPL Specific Recording Conditions

Under EPL requirements, the results of any monitoring required to be conducted by this licence must be recorded and kept as follows:

- In a legible form, or in a form that can readily be reduced to a legible form.
- Kept for at least 4 years after the monitoring or event to which they relate took place.
- · Produced in a legible form to any authorised officer of the EPA who asks to see them.
- Noise and Vibration Monitoring Compliance results will be published on the project website.

The following information must be captured:

- The date(s) on which the sample was taken.
- The time(s) at which the sample was collected.
- · The point at which the sample was taken.
- The name of the person who collected the sample.

15 Operational Control

15.1 General

Specific operational controls to manage environmental issues are defined in either or all of the following:

- Environmental Risk Action Plans (ERAPs) contained in Appendix 4.
- Sub-plans contained in Appendices of the CEMP or as standalone documents.
- SWMS, Inspection and Test Plans / check sheets (as appropriate).
- Work instructions (e.g. refuelling and servicing).
- Environmental Control Maps and progressive Erosion and Sediment Control Plans.

Additional controls and criteria will be established and maintained where the absence of such could result in the environmental policy, objectives and targets not being met.

15.2 Hold Points

The activities outlined in the table below are not to proceed without objective review and approval by the nominated authority. These activities below are considered hold points.

Item	Process Held	Acceptance Criteria	Approval Authority	Hold Point Release
Construction Environmental Management Plan	Site activities	Site specific Environmental Management Plan has been developed, reviewed and approved.	TfNSW EPM & EMR	CEMP and ECM Approval Memorandum
Dewatering	Dewatering / pumping water off the site.	Verification that the water quality criteria have been met and are in accordance with TfNSW Water Discharge and Reuse Guideline 7tp-st-146.	Project Environmental Representative	Dewatering Permit
Sediment and erosion control measures	Construction activities involving ground disturbance.	Sediment and Erosion Control Plan has been developed, reviewed, approved and implemented and are in accordance with the Blue Book	Project Environmental Representative	Approved ESCP (ECM)
Site clearing / vegetation removal	Commencement of site clearing or vegetation removal.	Clearing limits have been verified against the project approval environmental assessment, limits have been set-out and vegetation to be retained has been delineated and or protected. Clearing is to occur in accordance with TfNSW Vegetation Management (Protection and Removal) Guideline 9tp-sd-111	TfNSW Environment and Planning Manager	Removal or Trimming of Vegetation Application

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Item	Process Held	Acceptance Criteria	Approval Authority	Hold Point Release
Plant and Equipment Inspection	Operation of plant / equipment items on site.	Pre-mobilisation inspection completed, no damaged hoses or hydraulic lines identified, service records are up to date.	Site Supervisor	Pre- mobilisation Plant Inspection Form
Construction Methodologies – direct delivery and subcontract works.	Construction process representing potential medium or high impact to the environment.	Construction methodology / SWMS / JSEA have been reviewed by the Project Environmental Representative and address the requirements of the CEMP ERAPs.	Construction Manager	Signed JSEAs
Dangerous Goods	Transport of dangerous goods	Verification that transport vehicles meet the requirements.	Site Manager/Safety Manager	Compliance cert from subcontractor
Dangerous Goods	Storage of dangerous goods	Verification that bunded storage is provided and that offset distances are maintained for the storage area.	Site Manager/Safety Manager	Site inspection upon arrival to site
Controlled/ Hazardous Waste	Transport of Controlled / Hazardous waste from the site	Verification that the waste has been classified in accordance with the guidelines, transport licensing in place and landfill can lawfully receive the waste	Project Environmental Representative	Hazardous Material Transport Certificate
Work outside of standard construction hours (Mon – Fri, 0700 – 1800, Sat 0800 – 1300)	Out of Hours Works	OOHW application prepared in accordance with accepted criteria established with EPA. Community Notification delivered within TfNSW and EPA specified timeframes. Noise and Vibration mitigation measures implemented. Works to occur in accordance with TfNSW Construction Noise Strategy 7tp-st-157.	Project Leader Project Community Manager Project Environmental Representative	Approved Out of Hours Works Assessment and Application form
Spoil Transport	Removal of spoil from site	Verification that the spoil has been classified and the disposal location can lawfully receive the waste.	Project Environmental Representative	Waste Classification report
CoA Item 4 - Pre- Construction Environmental Compliance Matrix	Construction commencing on Site	PECM completed and submitted to EMR	TfNSW EMR	Approved PECM
CoA Item 11 - Property Condition Surveys	Piling, excavation or bulk fill, vibratory Impact works	Register of surveyed properties maintained in Asite	Construction Manager	Verified Property Condition Survey report
CoA Item 12 - Environmental Inductions	Subcontractors commencing construction on-site	All workers have undergone an induction including environmental risks and procedures	Project Safety Manager	Induction Register
CoA Item 16 - Environmental control Maps	Construction commencing on Site	ECMs completed and submitted to EMR for approval. ECMs to be prepared in accordance with TfNSW Guide to Environmental Control Map 3tp-sd-015.	TfNSW EPM & EMR	CEMP and ECM Approval Memorandum
CoA Item 17 - Construction Hours	Works outside of normal construction hours	These may only occur if the conditions of Condition of Approval Item 17 are met.	Project Environmental Representative	Approved Out of Hours Works Assessment and Application form
CoA Item 25 - Piling	Percussive Piling	Submit proposal as to why percussive piling is required for approval of EMR or PMEM	EMR/PMEM	Construction Methodology
CoA Item 27 - Unidentified Contamination	Work in affected area	A report is submitted to the PMEM for consideration of further consultation with council and/or EPA.	PMEM	Event report reviewed by PMEM
CoA Item 28 - Unidentified Asbestos	Work in affected area	An investigation undertaken and report prepared to determine nature, extent and degree of contamination. Consultation with EPA and WorkCover as required.	PMEM	Event report reviewed by PMEM
CoA Item 31 - Road Conditions report	Construction commencing on Site	Prepare a Road Conditions Report to the satisfaction of the infrastructures owner	Construction Manager	Verified Road Conditions Report
CoA Item 34 Removal of Vegetation not assessed by EIA for the Project	Vegetation Clearance	Submit an Application for Removal or Trimming of Vegetation. Clearing is to occur in accordance with TfNSW Vegetation Management (Protection and Removal) Guideline 9tp-sd-111	EMR/PMEM	Removal or Trimming of Vegetation Application
CoA Item 36 - Heritage	Works in immediate area	If unknown heritage items are uncovered during works, all activities in the vicinity are to cease pending consultation with Heritage Consultant or Heritage Council	Heritage Consultant/Heritage Council	Notice from Heritage consultant or heritage Council to continue

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Item	Process Held	Acceptance Criteria	Approval Authority	Hold Point Release
				works, or if required, further approvals
CoA Item 37 - Urban Design and Landscaping Plan	Construction of the Interchange/Station	Prepare a UDLP in consultation with the relevant stakeholders	TfNSW Director of Technical Services	Approved UDLP
CoA Item 38 - Sustainability Officer	Prior to preparation of the Pre-construction Sustainability Report	Details of the Sustainability Officer, including defined responsibilities consistent with the Proponent's sustainability objectives, included in the REF	PMS	Approved CV
CoA Item 39 - Pre- Construction Sustainability report	Construction commencing on Site	A Pre-Construction Sustainability Report is to be prepared in accordance with the Conditions of Approval	PMS	Verified PCSR
CoA Item 44 - Aboriginal Archaeology	Excavation or piling works at the Transport Interchange	Approval under Section 90 of the NPW Act 1974 to be obtained before excavation or piling works occur at the new transport interchange	Project Environmental Representative	Approved Section 90 Aboriginal Heritage Impact Permit

Proceeding past a specified Hold Point without authorisation is a system non-conformance.

15.3 Cease Work

At any point the PER (and any other LORAC staff) has the authority to cease work where necessary to prevent pollution, harm to the environment, adverse environmental impacts, a notifiable event or breach of any Australian law.

As outlined in 5TP-ST-050, the EMR can recommend to TfNSW that works stop immediately. The Stop Work Recommendation may be limited to specific activities or a specific area/location of the site, if the EMR can easily identify those activities. Where a Stop Work Recommendation has been acted on by TfNSW, and a Stop Work Order issued to the Contractor, the EMR is to track the implementation of actions implemented by the Contractor in accordance with the non-compliance management process.

15.4 Environmental Control Map (ECM)

The project Environmental Control Map(s) are prepared to assist in the planning and delivery of the project. It is specific to the site or work area and outlines the location of protection measures, monitoring requirements, conditions of approval and environmentally sensitive areas. It is the practical application of the proposed control measures.

The ECMs are to be developed in accordance with TfNSW Guide to Preparing ECMs (3TP-SD-015) and are to be approved by the EMR prior to the commencement of construction in accordance with CoA 16. The ECMs will be displayed within the site office and crib rooms to ensure information on environmental controls and sensitive areas is readably available.

A hardcopy of the project Environmental Control Maps is provided in Appendix 5 of this CEMP.

The Environmental Control Maps are to be used in project inductions, work site set-up, reviewing ongoing environmental performance, included as information in tender documents to subcontractors and site briefings (including SWMS) were applicable, and in support of ancillary environmental approvals.

The project Environmental Control Maps shall include but not limited to:

- · The worksite layout and boundary, including entry/exit points and internal roads and clearing limits.
- Location of adjoining land-use and nearest noise sensitive receivers.
- · Location of site offices.
- · Location of spill containment and clean-up equipment.
- · Location of worksite waste management facilities.
- Hours of work applicable to the worksite (including deliveries and any restrictions on high noise generating activities).
- Document control and approval details.
- Location of environmentally sensitive areas (e.g. threatened species, critical habitat, contaminated areas, heritage zones, etc.).
- Vegetation and trees to be protected.
- Location of known heritage (indigenous and non-indigenous) items.
- · Specific environmental management requirements from licenses, approvals or permit conditions.
- Key environmental risk issues and the specific mitigation measures (including erosion and sediment controls).
- · Project specific controls for the key risks identified.

15.5 Erosion and Sediment Control Plans (ESCPs)

Erosion and Sediment Control Plans (ESCPs) or other documentation that specify the location of environmental controls on site are to be included in the site ECMs. The ESCPs may also be produced as a separate plan (generally one or more figures showing the location any type of controls) where practical for certain activities or areas. These will not be included in the CEMP as they will be updated regularly to reflect construction progress. These will be kept within Asite. The project Erosion and

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Sediment Control Plans will provide more detailed and site specific information and will be prepared in compliance with the specifications of the Soils and Construction Volume 1 - 4th edition, March 2004 (Blue Book), Measures have been developed to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters during construction activities works are required.

The ESCPs shall include but not limited to:

- Location and type of sediment and erosion control measures.
- Location of stormwater drainage and watercourses leading to / from the worksite.

15.6 Design

LORAC is responsible for providing detailed design functions. The following environmental issues will be considered where possible:

- How to minimise any adverse impacts on the environment including energy efficient operation, incorporation of sustainable or recycled materials.
- How to improve design efficiency to conserve natural resources.
- Address the requirements of LORAC's environmental and sustainability policies.
- How to meet environmental codes, regulations and other requirements.

These issues should be considered, while taking into account the practicalities and economic realities of the project/site.

The Design will also need to meet the requirements of Condition of Approval item 37, developing an Urban Design and Landscaping Plan in consultation with the relevant stakeholders.

The design process is controlled in accordance with the Project Design Management Plan.

15.7 Procurement

The supply of goods and/or services by suppliers and subcontractors will be carefully controlled in accordance with LORAC's Procurement Policy, and as follows:

- Environmental issues and sustainability should be taken into account when selecting subcontractors and suppliers.
- Suppliers of chemicals and hazardous substances will be required to submit SDS's with delivery or prior to chemicals arriving at site. Prior approval to bring hazardous substances to site may need to be obtained from TfNSW.
- Subcontractors will be required to submit an environmental control plan covering work which is likely to have a significant impact on the environment. Alternatively, they will be required to work under this CEMP.
- The environmental performance of subcontractors will be monitored during site inspections.

15.8 Handling, Storage, Packaging and Transport

Dangerous Goods/Hazardous materials will be stored and handled in accordance with Safety Data Sheets and the requirements of the Australian Dangerous Goods Code.

The Dangerous Goods (Road and Rail Transport) Act includes specific requirements in relation to the transport of dangerous goods. Where dangerous goods are to be transported as a result of the project, the requirements of the Act must be complied with by Laing O'Rourke and third parties.

In particular, regardless of the quantity, appropriate transport documentation must be included with each load unless a specific exemption exists.

Transport documentation must include the following:

- Project/workplace name, contact number
- Transporter name, contact number
- Transport date, origin and destination
- Product name, classification, container type, quantity

LORAC form E-T-8-1232 Dangerous Goods Transport Note may be used.

These materials will be stored in a safe area (e.g. bunded and/or store) which will prevent or contain accidental spillage and harm to the environment. Further details are provided in Appendix 4 in the ERAP - Delivery and Storage of Chemicals, Fuels & Oils and including Dangerous Goods requirements.

Safety Data Sheets (SDS's) must be stored along with or at the point where Dangerous Goods/Hazardous materials will be stored. A complete Safety Data Sheets register is available on Asite. The location of the Dangerous Goods/Hazardous materials storage container is also recorded on the ECM and ESCP.

Please refer to the Pollution Incident Response Management Plan (PIRMP) for further details on incident response addressed in Section 15.12 of this CEMP. The PIRMP can be found in Appendix 5.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

15.9 Manufacture, Construction and Fabrication Processes

These processes will be carried out in accordance with LORAs "Quality & Process" Rules and Processes and incorporate the requirements of section 4.5 of TfNSW document TSR-E.

Environmental requirements, relating to manufacture, construction and fabrication processes, are defined in:

- Construction methodologies, Safe Work Method Statements and JSEAs.
- Inspection and Test Plans, Task Complete Checklists and associated documents.
- Contract documents
- Environmental control procedures including daily surveillance and periodic planned inspections (both physical and desktop type reviews) to verify the adequacy of controls for all environmental aspects of the works. These will be documented via inspection records.

15.10 Plant and Equipment

Plant and equipment used on the project will be maintained in a safe and serviceable manner. Monitoring equipment, such as noise monitoring devices and water testing equipment are to be calibrated prior use and maintained in a proper and efficient condition to manufacturers specifications.

A pre-start check will be conducted and generally incorporate the following:

- Plant will be inspected prior to operation on site. In particular fuel lines, hydraulic hoses or other items with the potential to impact the environment are to be inspected. Plant with items found to be worn, damaged or otherwise degraded will not be allowed on site.
- Where possible, plant will be serviced and washed-down only in approved areas where hydrocarbons can be captured and then properly disposed.
- Where possible, re-fuelling will be carried out in clearly marked designated areas that are designed to contain spills and leaks.
- Spill kits available on site to manage any leaks and spills.
- Plant Nappies to be used under petrol and diesel driven equipment (e.g. generators).
- Plant and equipment will be maintained to prevent / fix oil leaks.
- Plant will be driven and operated only in approved areas.
- Plant will have effective pollution control and sound attenuation devices fitted.
- · All pre-start checks are to be recorded on the Inspection Register which can be found on Asite.

Further information on environmental controls is contained in Appendix 4.

15.11 Waste

Any waste generated at the project site is to be assessed, classified and managed in accordance with the Waste Classification Guidelines Part 1: Classifying Waste, November 2014 (Waste Guidelines) prior to disposal. This is in particular applicable to any spoil material from excavations that will be disposed of offsite.

Concrete rinse water is to be collected and managed onsite in accordance with Environmental Best Management Practice Guideline for Concreting Contractors (OEH, 2004) or disposed of to a facility licensed to receive and treat concrete rinse water.

No waste can be received that was generated outside the project site, except for recycled materials from Sydney Trains' rail corridor or Sydney Trains' recycling facility (Chullora) or EPA approved material for engineered fill purposes.

No waste generated at the project site, other than excavated material suitable for re-use, can be disposed of at the project site. Some materials such as waste concrete may be crushed and used as aggregate where deemed appropriate and where properly assessed.

Excavated material that is deemed suitable for re-use within the project site, may be transported from one part of the project site or the Sydney Trains rail corridor or Sydney Trains recycling facility to another part by road only if:

- the body of any vehicle or trailer, used to transport waste or excavation spoil from the project site, is covered before leaving the site to minimise any spill or escape of any dust, waste, or spoil from the vehicle or trailer.
- mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the project site, is removed to the greatest extent practicable before the vehicle, trailer or motorised plant leaves the site.
- road surfaces subject to the tracking of material by vehicles leaving the premises are effectively cleaned at the end of each work day.

Refer to the Construction Waste, Contamination and Hazardous Material Management Plan for further details (Appendix 17).

16 Emergency Preparedness and Response

The types of environmental emergencies which could occur on this site are shown in the Pollution Incident Response Management Plan.

TfNSW and relevant statutory and regulatory authorities (such as the EPA) will also be informed as necessary as outlined in Section 18.0 of this CEMP.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Environmental emergencies will be handled as follows:

- Immediately report all incidents to the Project Leader and / or the Construction Manager and / or the Project Environmental Representative who will assess the situation and manage the following steps:
 - o Immediately take all reasonable steps to contain further damage or danger to personnel and the environment.
 - o Inform relevant authorities in accordance with the regulatory requirements provided in Section 18.0 below.
 - Contact emergency service personnel as per the requirements of the POEO Act Part 5.7 and 5.7A (e.g. fire dept., spill clean-up services, etc.).
 - Provide notification to the PER, who will notify LORAC HSEQ Director and Head of Legal immediately via initial internal incident notification E-T-8-0951A.
 - Inform TfNSW and TfNSW's Environmental Management Representative (EMR) as necessary and in accordance with contractual requirements (nominated in Section 18 below).
 - Complete a detailed report of the incident using LORAC Form "E-T-8-1222 Environmental Incident Complaint Report" and send to TfNSW, TfNSW's Environmental Management Representative and the LORAC Environment Manager to upload to IMPACT.
 - Liaise with TfNSW's Environmental Management Representative regarding corrective and preventive actions required and the timeframes within which these actions must occur.
 - The designated personnel will undertake the corrective and preventive actions.

Information on the handling of hazardous materials is contained on the Safety Data Sheets (SDS's) which must be stored along with or at the point where Dangerous Goods/Hazardous materials will be stored. A complete Safety Data Sheets register is available on Asite. The location of the Dangerous Goods/Hazardous materials storage container is also recorded on the ECM and ESCP.

Emergency Services contact numbers are to be displayed in the main site office together with a copy of the Emergency Response Plan (Flipchart), EPL and this CEMP.

In accordance with the requirements set out in Part 5.7A of the POEO Act, a Pollution Incident Response Management Plan (PIRMP) has been developed and will be implemented on the project. The plan includes;

- · Descriptions and likeliness of hazards to human health or the environment resulting from the project
- · Pre-emptive actions undertaken to minimise or prevent such hazards occurring
- Potential pollutant details
- Emergency response equipment and procedures
- Project contacts
- Other requirements as outlined in the Act.

A hard copy of the Pollution Incident Response Management Plan (PIRMP) is to be located near the entrance door of the site office and an electronic copy is to be made available on Asite, the electronic document management system of the project.

Below is a list of Key Contacts for the Project to be called during an emergency.

Name	Position	Mobile
James Kennedy	Project Leader	0400 310 626
Nick Stephens	Construction Manager	0400 318 640
Daniel Keegan	PER	0435 859 160
Jason Ambler	LORAC Southern Region Environmental Manager	0415 737 750
Kelly Lofberg	Project Communications Manager	0425 715 536
Environment Protection Authority Pollution Line		131 555
Work Cover		131 050
Newcastle City Council		4974 2000
Fire and Rescue NSW Emergency		000
Fire and Rescue NSW Non-emergency		02 9319 7000
Ministry of Health Public Health Unit	- Newcastle - ask for Public Health Officer on call	02 4924 6477(nearest hospital- John Hunter Hospital)

17 Monitoring and Measurement

Key characteristics of the project operations and activities which have a significant impact on the environment will be regularly monitored and measured.

This will include:

- recording of information to track performance (e.g. inspections and maintenance)
- · monitoring operational controls
- level of conformance with objectives and targets

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Aspect	Target	Method	Time-frame	Responsibility
Site Dewatering Water Quality – Reuse Onsite (Discharge to Land)	Minimum: • pH 6.5-8.5, • No visible oil and grease as per TfNSW Water Discharge and Reuse Guideline 7TP-ST- 146 No discharge offsite or to a waterway	Probe/meter Visual Inspection	As required prior to use on site.	PER/ Authorised Water Tester (EPL covers discharge to land only. Dewatered water may not leave site)
Site Dewatering Water Quality – Offsite Discharge (Discharge to Water e.g. into Stormwater systems)	Total Suspended Solids <50mg/l, and at background level for receiving water or better pH 6.5-8.5, No visible oil and grease as per TfNSW Water Discharge and Reuse Guideline TTP-ST- 146	Laboratory analysis initially in conjunction with a turbidity probe/grab sample until a correlation factor can be determined Probe/meter Visual Inspection	As required prior to discharge from site.	PER/ Authorised Water Tester (Note: discharge to waters not currently covered by EPL 20514. TSS/Turbidity correlation to be determined and Background water quality monitoring of receiving waters would need to be established).
Construction Noise	Compliance with EPA construction noise requirements and project approval/EPL criteria. In accordance with TfNSW Construction Noise Strategy (7TP-ST-157/2.0) Compliance with the Construction Noise and Vibration Management Plan Noise Goals	 Attended noise monitoring. Out of hours noise modelling. 	Monitoring will be conducted as PER relevant Possession Construction Noise and Vibration Assessment. Each time out-of-hours operation/s are required. As required in response to complaints. Monitoring will be conducted as per Project specific site construction noise and vibration assessment, requirements of CoA 19 and TfNSW Construction Noise Strategy (7TP-ST-157/2.0)	PER/ External Noise Consultant (if required)
Vibration	Compliance with construction vibration requirements outlined in German Standard DIN4150 and Environmental Noise Management Assessing Vibration: a technical guideline (2006). Compliance with the Construction Noise and Vibration Management Plan Noise Goals	Vibration Monitor during vibration generating activities.	As required during vibration generating activities. As required in response to complaints.	PER/ External Noise Consultant (if required)
Dust	Limit onsite dust generation. 1 Day (24hour) average PM10 = 50µg/m³ Annual Average PM10 = 30µg/m³	Visual inspection. Weekly Inspection Dustrak Unit	During construction and/or onsite vehicle movements. At quarterly periods during construction or in response to dust complaints	Construction Manager PER
Asbestos	The action level of asbestos air monitoring: • < 0.01 fibres per millilitre – Continue with control measures. • > or = 0.01 fibres per millilitre – Review control measures. • > or = 0.02 fibres per millilitre – Stop removal work and find the cause.	Air monitoring and filter analysis undertaken by a qualified occupational hygienist and NATA accredited lab.	During asbestos- contaminated soil removal.	Safety Manager PER Occupational Hygienist
Weather	Temperature Humidity Wind Velocity Rainfall	Record data from nearest BoM weather station or site compound weather station.	hourly values	PER
Erosion and Sediment Control	Minimise pollution of waters. No sediment off-site and in accordance with Blue Book	Check operation of soil and water management works. Initiate all necessary repair and maintenance as required. Inspect after rainfall and daily inspection as per condition of EPL	Regularly during operational hours. More often during wet weather.	PER

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Aspect	Target	Method	Time-frame	Responsibility
		20514		
Heritage (indigenous and non-indigenous)	To comply with the requirements of the site heritage permits, including;	Engage qualified archaeologists and heritage consultants Weekly Inspections	As stipulated within each heritage permit Weekly site inspection	PER
Property Condition Survey	No damage or adverse impacts to Heritage structures or buildings that may be affected by construction. Capture information on building condition pre/post construction	Photo record and report	Before construction commences After construction	Construction Manager PER
Road Condition Survey	Capture information on road condition pre/post construction	Photo record and report	Before construction commencesAfter construction	Construction Manager PER

LORAC's E-T-8-1227 Environmental Inspection Report form will be used to monitor environmental issues on site and issued to the Project Leader. The report will be completed on a weekly basis.

Where deemed necessary by the Project Environmental Representative (PER) and as a result of revisions to project scope or changes to project risks, additional Environmental Risk Action Plans to control potential impacts will be developed.

Non-conformance to Operational Control procedures or to the Environmental Management System that cannot be rectified immediately shall be recorded and addressed by raising a Non-Conformance Report on IMPACT.

17.1 Corrective Action Register

The following environmental issues/non-conformances are to be included on the project's Corrective Action Register (IMPACT):

- Internal inspection outcomes that cannot be rectified immediately.
- · Incidents and associated corrective actions.
- Internal audit observations/non-compliance.
- TfNSW audits or other notice of non-compliance.
- · Notices or action from regulatory authorities.

Issues identified during environmental inspection or PER inspection requiring further action beyond normal practice or maintenance are to be documented IMPACT. Issues are entered into IMPACT by the PER or other qualified person as per environmental inspection report.

17.2 Monthly Environmental Report

The project shall complete on a monthly basis the LORAC Project Monthly Environmental Report C-T-8-1250b. The report is provided in Appendix 21 of this CEMP.

A monthly Project report is submitted to TfNSW which outlines all notable environmental and sustainability issues including incidents, planning requirements and significant audit findings.

The report is to include specific details relating to risks, status of control measures, update to plans, ESCPs and the performance indicators nominated within the report.

18 Incidents, Complaints, Corrective and Preventative Action

18.1 TfNSW Reporting Requirements

LORAC will provide notification of all environmental indents to TfNSW as required and in accordance with TSR-E and 9TP PR-105/10.0 Environmental Incident Classification and Reporting. Additionally notification will be required in accordance with the TSR-C. Refer to the Community Liaison Plan for further information on notification in accordance with the TSR-C.

If an incident occurs the following notification is required:

Notification Type	Requirement
Initial verbal notification	Immediately to the TfNSW EPM and the EMR verbally via telephone.
Environmental Incident Report requirements	Enter incident into TfNSW INX system within 4 hours of occurring or first being observed (if practically possible). Complete incident reporting on INX system within 48 hours (if practically possible).

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

18.2 Laing O'Rourke Reporting Requirements

All incidents and complaints (including potential incidents) must be reported so that they can be investigated and prevented from recurring.

Incident Reporting & Investigation from the project sites is to be recorded in IMPACT by the Environmental Manager.

The Environmental Manager, the LORAC HSEQ Director and Head of Legal and TfNSW shall be notified by telephone as soon as practicable after any Actual or Potential Class 1 & Class 2 Incidents.

Major incidents (actual or potential Class 1 & Class 2 incidents) will require the PIRMP to be initiated. Environmental Incident is classified into three classes:

Class One	Class Two (Including Potential)	Class Three
Class One Environmental Incidents create permanent or long term damage to the environment. This damage will result in the environment taking 12 months or more to return to pre-existing conditions. Major environmental investigation and potential for large prosecution.	Class Two Environmental Incidents create short to medium term damage to the environment. This damage will result in the environment taking up to 12 months to return to pre-existing conditions Potential for prosecution or infringement notice	Class Three Environmental Incidents typically cause short term or nuisance damage. The damage is easily rectified usually within one day. Class 3 incidents do not cause medium or long term damage.

The classifications are explained in detail with examples in LORAC's E-T-8-1204 Environment Incident Classifications document.

Actual or Potential Class 3 Incidents

Where a Class 3 incident has occurred, the LORAC Construction Manager or immediate supervisor and the Project Environmental Representative are to be informed. Class 3 incidents must be logged directly into IMPACT by the Environmental Manager.

Actual or Potential Class 2 Incidents

Where an actual or potential Class 2 incident has occurred, LORAC Group Management is to be informed via the Environmental Manager.

Actual or Potential Class 1 Incidents

Where a Class 1 incident occurs the LORAC HSEQ Director and the Head of Legal are to be informed immediately by the Regional Environmental Manager (or if not available the Project Leader). The requirements of the flow chart in Appendix 1 are to be applied to all actual or potential Class 1 environmental incidents. Class 1 incidents shall be subject to an ICAM investigation.

Where complaints are received at project sites or workplaces involving the media or where Lora's image is likely to be affected, they shall be documented on the LORAC E-T-8-0951A HSE Internal Incident Notification form as provided below.

All Class 1 & Class 2 incidents will be reported to the relevant State & Federal Authorities as required under relevant Acts & Regulations. Further details are provided in the section External Incident Reporting below.

Complaints will be reported to external authorities in accordance with specific licence/permit or approval requirements.

LORAC's E-T-8-0951A HSE Internal Incident Notification shall be completed for all Actual & Potential Class 1 & Class 2 Incidents within 24 hours of the incident occurring and sent (email/fax) to the Distribution List as below:

- Project Environmental Representative
- Project Leader
- Project Communications Manager
- Project Health and Safety Manager
- TfNSW EMP
- TfNSW EMR
- · LORAC HSEQ Manager

18.3 Incident and Complaints Reporting

Environmental incidents and complaints are to be investigated, documented, actioned and closed out as per the details provided in the investigation process above.

The Community Liaison Management Plan will direct community and stakeholder consultation. In this manner it is hoped that informing the community of upcoming works will mitigate the risk of complaints being made. All complaints reports shall be logged on Projects Complaint Report Register or registered in the project correspondence system (Asite). A complaint record

Page Number

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

must be kept for at least 4 years after a complaint was made. All complaints will need to be forwarded to TfNSW, this includes environmental as well as the community complaints.

The objective is to promptly resolve matters at project level, before they potentially become a matter for TfNSWs Communications Team or the subject of a ministerial letter. The aim is to enhance the reputation of TfNSW and LORAC among local external stakeholders.

All project local letter box drops will include a toll free 24 hour 1800 number for recipients with urgent enquiries or complaints to ring and the email address of projects@transport.nsw.gov.au The 1800 775 465 number is either diverted to a mobile phone answered by a member of the TfNSW communications team or answered by a call centre. TfNSW will forward immediately such calls/emails to LORAC to answer. The aim is to respond to complaints within two hours and to respond to enquiries within 24 hours. Emails will be responded to within 24 hours.

LORAC will forward to TfNSW Communications Team information about Project enquiries and complaints and the response each business day or as required to meet the appropriate requirements.

A contact telephone service (TfNSW Projects Info line 1800 684 490) has been established to handle enquiries. TfNSW will delegate the handling of both telephone and written correspondence to an appropriate member of the LORAC communications team. The assistance of TfNSW Project Communications will be sought should significant issues arise during the project.

A Complaints Log will be established, with a verbal response provided to the complainant within two hours. Significant or more serious complaints will be logged, with a detailed written response forwarded to the complainant within seven days if it is requested by the complainant. The REF Conditions of Approval (10) identifies the process which will be followed in the resolution of complaints and enquiries. This includes providing information on all complaints received during the previous 24 hours and response times being forwarded to the EMR each working day.

The EPL 20514 requires LORAC as the Licensee to maintain a complaints register. The EPL also requires that noise and vibration complaints are investigated within 2 hours. A report detailing any complaints must be submitted to the EPA by 2pm on the day which the complaint occurred, unless the complaint was received after 12pm in which case it must be submitted by 2pm the following day.

All incidents will be reported in accordance with TfNSWs Environmental Incident Classification and Reporting Procedure (9TP-PR-105). Furthermore, the LORAC form E-T-8-1222 Environmental Incident and Complaint Report shall be completed for all environmental incidents and complaints within 2 working days of the incident and forwarded to the Project Leader.

Class 1 & Class 2 reportable incidents shall be reviewed by the Environmental Manager, LORAC HSEQ Director and Head of Legal prior to the issue of formal correspondence to external parties or regulatory authorities.

Where an environmental non-conformance or incident is identified, Corrective and preventive actions shall be developed and may include:

- · Review and improve existing environmental controls and job safety analyses/ work method statements
- Site rehabilitation
- Increased site inspections and monitoring
- · Modify construction or installation methods
- · Increase environmental awareness including re-training and tool-box meetings

Each incident shall be sufficiently investigated to allow specific and detailed corrective and preventative actions to be identified, actioned and closed out as outlined on LORAC's Form E-T-8-1222 Environmental Incident and Complaint Form.

If a complaint is received via the telephone complaints line in relation to construction activities regulated by the EPL, details of the complaint are to be reported to the EPA by 2:00 pm via email if the complaint was received within a 24 hour period between 12:00 pm on that day and 12:00 pm on the previous day. The report must include details and nature of the complaint, and if any actions were taken. If works relate to OOHW activities, the report must also include a copy of the relevant Noise and Vibration Assessment.

Note: where a Class 1 Incident has occurred the Authorities are to be notified in accordance with the legislative time frames in the applicable state.

18.4 External Incident Notification – Material Harm

18.4.1 State Matters

TfNSW and the EPA must be notified immediately of all pollution incidents that cause or threaten material harm to the environment.

Harm to the environment is "material" if the effect (or potential effect) from an incident on the health or safety of humans or ecosystems is not trivial and or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000.

Incidents requiring notification to the EPA must also be immediately notified to the Environment Manager and the LORAC Head of Legal and TfNSW. The EM will inform TfNSW and LORAC will notify the EPA.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

If an incident presents an immediate threat to human health or property, 000 is to be called in accordance with the procedures outlined in the Construction Health and Safety Management Plan.

The EPA Environment Line is to be contacted on 131555.

The notification will need to include information on:

- The time, date, nature, duration and location of the incident.
- The location of the place where pollution is occurring or is likely to occur.
- The nature, the estimated quantity or volume and the concentration of any pollutants involved.
- The circumstances in which the incident occurred (including the cause of the incident, if known).
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution.
- Other information prescribed by the regulations.

In addition to notifying the EPA of pollution incidents other authorities as outlined below must also be notified immediately:

- The Ministry of Health (02 9391 9000)
- The WorkCover Authority (13 10 50)
- The local council Newcastle City Council:
- Main Switchboard Telephone: (02) 4974 6000
- After Hours Emergency Telephone: (02) 4974 6000
- Fire and Rescue NSW on 000 or Non Emergency: (02) 9319 7000

Regardless of the actual or potential impact, these authorities must be notified under the amended legislation for all notifiable pollution incidents.

Further information in relation to the incident must be provided immediately if it becomes available after the initial notification. Records of contact with and details of the information provided to external authorities must be maintained in the project records.

18.4.2 Commonwealth Matters

Environmental incidents relating to the Environmental Protection and Biodiversity Conservation Act must be notified to the Secretary of the Department within 7 days of the event.

These types of incidents include the death or injury to the following:

- Migratory bird species
- · Listed marine species
- Threatened species or listed ecological community (includes taking).

18.5 TfNSW Complaints

All communications from TfNSW (including CAR's and Audit reports) expressing concern or dissatisfaction with the implementation or operation of the CEMP shall be treated as an internally raised improvement request and documented in IMPACT.

Public Complaints shall be handled as outlined in Section 18.3 above using Forms E-T-8-1222 "Environmental Incident and Complaint Report" and logged into IMPACT by the Environmental Coordinator. The Community Liaison Manager will also record community complaints in accordance with the Community Liaison Plan.

Management system non-conformances and recurring environmental incidents will be handled in accordance with the Environmental Rules documented in LORAC's "Non-conformances, Incident Investigation and Complaints Management".

Corrective and preventive actions may include:

- Site remediation and rehabilitation.
- · Increased site inspections and monitoring.
- Increase environmental awareness (re-training, tool-box meetings).
- · Review and improve existing environmental controls and job safety analyses/ work method statements.

19 Sustainability

LORAC will implement TfNSW sustainability requirements outlined in TSR E - Environmental Management (5TP-FT-304), including:

- Achieve a Silver Rating in accordance with the TfNSW Sustainable Design Guidelines.
- To seek a rating under the Infrastructure Sustainability Council of Australia's IS Rating Tool.
- · Compliance with the Project-Specific Sustainability Requirements listed in TSR E Annexure A.
- To ensure that LORAC activities are consistent with the principles of Ecologically Sustainable Development as outlined in the Protection of the Environment Administration Act 1991.
- · Reporting on greenhouse gas emissions.

In accordance with CoA 39; prior to commencement of construction, a pre-construction sustainability report (PCSR) has been prepared and accepted by the TfNSW Principal Manager Sustainability.

Further information on the approach for sustainability on the Wickham Transport Interchange Project can be found in the Sustainability Management Plan.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

20 Environmental Management System Audit

Auditing of the project Environmental Management System will be carried out through the project Quality Management System. All auditing will be coordinated by this group to meet Laing O'Rourke and TfNSW auditing requirements.

The audit will evaluate compliance with this CEMP and associated documentation including legal, contractual and other requirements.

It is expected that the project will be audited within 3 months of commencing on site and approximately every 3 months thereafter.

21 Management Review

Project Management, will check the status and adequacy of the Construction Environmental Management Plan (CEMP) to ensure that it meets current TfNSW and LORAC requirements as well as relevant environmental standards.

The Plan will be reviewed as and when required during the course of the contract when the following situations arise:

- TfNSW recommendations for changes (particularly following initial review).
- Changes to the LORAC management system.
- Opportunities for improvement or deficiencies in the project system are identified.
- Following an audit of the system or the occurrence of significant incidents and non-conformances.

If none of the above situation arises an annual management review of the CEMP will be undertaken.

LORAC Form "E-T-8-0121 Management Review of the Environmental System" may be used as a guide for reviewing the system.

Where through monitoring, inspection, audit or other measure, a non-conformance is identified with the administrative or management measures outlined in this CEMP, a Non-conformance Report shall be raised within the Project's Quality Management System IMPACT. The Project Environmental Representative will be responsible for the investigation, identification and close out of the Non-conformance Report.

Where required following the investigation, the CEMP shall be reviewed and revised where required. Revisions and any additional or modified management measures will be communicated to the site team through a toolbox session delivered by the Project Environmental Representative.

TfNSW will be advised of all non-conformances to this CEMP in line with process outlined in the CEMP Section 18 Incidents, Complaints, Corrective and Preventative Action.

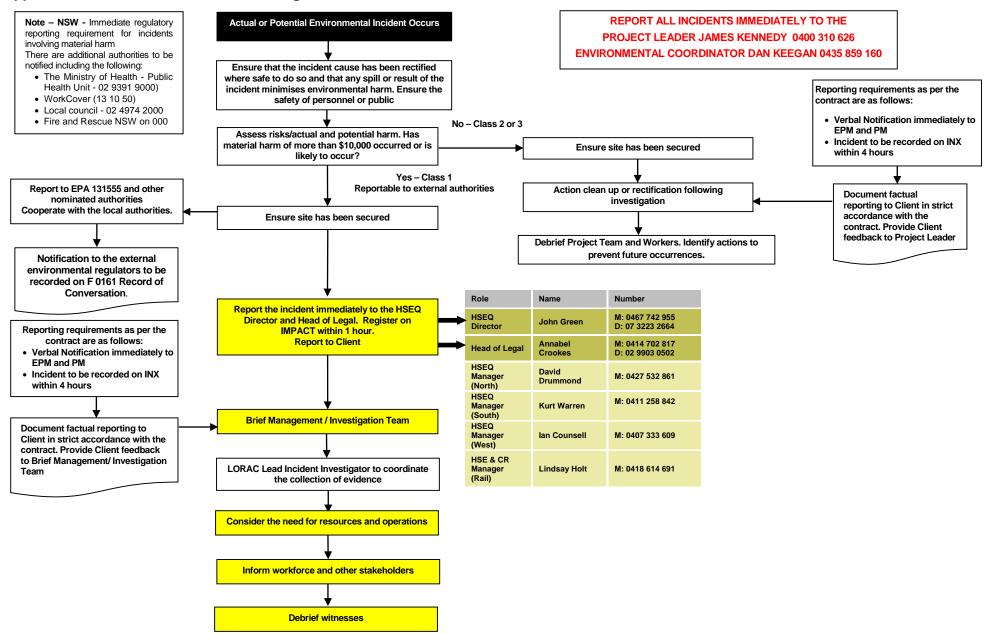
22 Project Close Out

The following tasks will occur, at a minimum to close out the project;

Action	Responsible
PECOMS Audit – Close out of Conditions of Approval, EPL and other permits	PER EMR
WRAPP Reporting	PER
EPA Site Walkthrough	PER EPA Representative
EPL Annual Return	PER
EPL Surrender	PER
Submission of evidence for rating under the TfNSW Sustainable Design Guideline	PER
Submission of evidence for rating under the ISCA Rating Tool	PER
Handover of Heritage reporting to Heritage Council AHIP notification of completion S140 Notification of completion S60 Notification of completion	PER Archaeologist/Heritage Consultant
Handover of Asbestos Register and Hazardous Materials Register to land owner	PER RailCorp
Handover of Site Environmental Management Plan (Contamination) to land owner	PER RailCorp
Environmental and Sustainability Contributions to Operational Management Plan	PER
Site Rehabilitation Plan (including vegetation offsetting)	PER
TfNSW final inspection and site handover	PER EMR
Pre-Operational Compliance Report (Condition of Approval 6)	PER EMR

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Appendix 1 – Environmental Incident Management Flow Chart



Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Appendix 2 - Legal and Other Requirements

The relevant legal and other requirements are shown in the table below. Access to this legislation is available on iGATE at Legal Compliance Service

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Environmental Planning Legislation		
Environmental Planning and Assessment Act 1979 Environmental Planning and Assessment Regulation 2000	This Act and Regulation establishes a system of environmental planning and assessment of development proposals for the State.	High Relevance The approval conditions and obligations are incorporated into the specification documents and LORAC's CEMP.
Local Government Act 1993 Local Government (General) Regulation 2005	The Local Government Act and Local Government (General) Regulation provide a legal framework for an environmentally responsible system of Local Government including the responsibility to administer various regulatory systems (e.g. Environmental Planning, Development Consents and Conditions of Approval).	Low Relevance The local Council (City of Newcastle) has number powers to control local issues including Development Applications (other than state significant development). This would only apply if ancillary works needed to occur on Council land
Roads Act 1993	This Act and Regulation primarily provide for such things as the opening and closing of public roads, identification of road boundaries and road widening, road levels, classification of public roads, road work, protection of public road and regulation of traffic, regulation of work, structures and activities.	Medium Relevance The proposal would involve some Road works on Stewart Avenue
Soil Conservation Act 1938	This Act makes provision for the conservation of soil resources, farm water resources and the mitigation of erosion. The Act is binding on the Crown, however the Crown is not liable for prosecution. The Act provides for notification in the government gazette catchments where erosion is liable to cause degradation of rivers, lakes etc. (i.e. protected land).	No Relevance This Act has low relevance as the site is not located within "protected land". Further, such notification has not been given to the owner of the land.
Environment Protection and Biodiversity Conservation Act 1999 (Cwth)	The main purpose of this Act is to provide for the protection of the environment especially those aspects that are of national environmental importance and to promote ecological sustainable development. The Act binds the Crown. Do not take, use, keep or interfere with "nationally significant" cultural and natural resources, protected wildlife and protected plants without Approval.	No Relevance This Act is of little relevance to the contractor on this project as it has been determined not to trigger the provisions of the act.
Mine Subsidence Compensation Act 1961	Under section 15, approval is required to alter or erect improvements within a mine subsidence district	High Relevance The proposal site is partly located within the Newcastle Mine Subsidence District. Consult with the Mine Subsidence Board and seek any approvals necessary, prior to commencement of construction
Native Vegetation Act 2003	This Act and Regulation provide for the conservation and management of Native Vegetation by requiring Development Consent to be obtained for the clearing of Native Vegetation.	Low Relevance Clearing of native vegetation is not required outside of the
Native Vegetation Regulation 2005	Section 12 of the Native Vegetation Act 2003 excludes the clearing of land carried out in accordance with consent under Division 3 of Part 9 of the Roads Act 1993. Clearing of native vegetation required for construction of the work under the contract would be covered by such consent.	contract.
Land and Environment Court Act 1979	The Land and Environment Court is constituted under this Act. The jurisdiction of the Court is divided into numerous classes. The relevant classes for the project covers matter such as the prosecution for offences under various environmental legislation and to appeal against conditions of approvals, permits or orders.	Low Relevance The relevance of this Act would only apply to work under the contract if LORAC were prosecuted for an Environmental Offence.
Greenhouse Gas (GHG) Emissions National Greenhouse and Energy Reporting Act 2007	Corporations emitting more than 50kT of carbon dioxide equivalent units are required to register and report their Scope 1 and Scope 2 emissions for all Facilities in which they have Operational Control. Facilities emitting more than 25kT of carbon dioxide equivalent units must register and report Scope 1 and Scope 2 emissions.	High Relevance Laing O'Rourke Australia is a registered entity under this act. As such, where Laing O'Rourke has Operational Control, the Scope 1 and Scope 2 emissions associated with the project must be reported. This includes the collation and reporting of subcontractors site emissions. Laing O'Rourke does have Operational Control of this facility.

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
Contaminated Land Legislation		
Contaminated Land Management Act 1997	This Act provides for a process to investigate and remediate land that has been contaminated and presents a significant risk of harm to human health. Section 60 of the Act is a "Duty to Report Contamination". This duty applies to owners of land and persons who become aware their activities have contaminated the land.	Medium Relevance The EPA must be notified in writing of any contamination identified within the proposal site in accordance with the requirements of section 60 of the Act.
Fire Control Legislation		
Rural Fires Act 1997	This Act is intended to prevent, mitigate and suppress bush and other fires. It places a duty on Laing O'Rourke as the occupier of the site to extinguish fires during bush fire danger periods or if unable to do so notify appropriate firefighting authorities of the existence of the fire and its location.	Low Relevance This project site and surrounding areas are not prone to bush fires.
Hazardous Substances Legislation		
Environmentally Hazardous Chemicals Act 1985	This Act prohibits the manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of an environmental hazardous chemical or waste (prescribed activity) except under the provisions of a chemical control or a licence. The EPA is required to prepare inventories of environmentally hazardous chemicals and declared chemical wastes.	Low Relevance It is not anticipated any environmentally hazardous chemicals or declared chemical waste will be used or stored on the site. The Act therefore has little relevance to the site other than being aware of the existence of registers of declared chemical wastes and environmentally hazardous chemicals.
Dangerous Goods (Road and Rail Transport) Act 2008	The purpose of this Act is to regulate the transport of Dangerous Goods by road and rail in order to promote public safety and protect property and the environment. The transport of Dangerous Goods is required to be appropriately licensed (both vehicle and driver). Depending on the quantities being transported, the Act outlines specific requirements for including appropriate placards on the transport vehicle, emergency procedures, PPE, manifest documentation and fire extinguishers.	Medium Relevance The relevance of the Act is in respect to the transport of dangerous good to & from the site. The project will require the use of a variety of dangerous goods. LORAC will need to review and ensure Dangerous Goods requirements are addressed where transported by its vehicles, plant and equipment.
Water Management Act 2000 Water Management (General) Regulation 2004	This Act repeals the Rivers and Foreshores Improvement Act, 1948 and the Water Act, 1912. The provisions of both the aforesaid Acts are progressively rescinded as Water Management Plans are prepared and gazetted for catchment areas within the state. This Act and Regulation provide for the protection, conservation and ecologically sustainable development of water sources of the State and in particular to protect, enhance and restore water sources and their associated ecosystems.	No Relevance This Act has no direct relevance at this time to the construction work under this contract. The project approval does not trigger the provisions of this Act.
Dams Safety Act 1978	This Act constitutes the Dams Safety Committee and confers and imposes on the Committee functions relating to the safety of certain prescribed dams.	Low Relevance It is unlikely any action in respect to this project will endanger the safety of any prescribed dam
Coastal Protection Act 1979	This Act requires public authorities to notify the Coastal Council of NSW of any information, proposed activity or work that in the opinion of the public authority is relevant to the exercise of the function of the Coastal Council. It further empowers the Minister for the Department of Commerce to require public authorities to obtain consent prior to carrying out development in the coastal zone or giving consent to a person to occupy or carry out development in the coastal zone.	No Relevance The project is not located in areas associated with this act.
National Parks and Wildlife Act 1974	A heritage impact permit under section 87 of the Act to harm or desecrate an Aboriginal heritage object.	High Relevance An Aboriginal Heritage Impact Permit (AHIP) is currently in place for the WTI Project site. Test pitting and salvage works were conducted and the site cleared to operate under an unexpected finds procedure.
Threatened Species Conservation Act 1995 Threatened Species Conservation Regulation 2002 Threatened Species Conservation (Savings	This Act and Regulations provide for obtaining licenses to harm or pick threatened species populations or ecological communities whether plant or animal or to damage any critical habitat. The offence of picking or harming any threatened species is covered under the National Parks & Wildlife Act Part 8A. It is a defence under Part 8A of that Act if the offence was essential to carrying out development that is in accordance with a Development Consent within the meaning of the EP&A Act or an approval within the	No Relevance No threatened species of flora or fauna listed in the schedules of this Act have been identified within the area of the proposed work.

Construction Environmental Management Plan

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
and Transitional) Regulation 1996	meaning of Part 5 of the EP&A Act.	
Fisheries Management Act 1994	This Act is applicable to all waters within the state including private and public waters and all permanent and intermittent waters. The Act is most relevant in respect to maintaining water quality and ensuring no polluted water from site works enters streams, creeks and waterways. In addition this Act also has relevance for the removal of marine vegetation.	Low Relevance Along with the POEO Act water discharging from the site must not pollute the adjacent streams or watercourses.
Marine Pollution Act 1987	This Act creates offences for discharges of oil, oily mixtures and noxious liquid substances from ships into State waters.	No Relevance Not applicable to this project.
Noxious Weeds Act 1993	This Act provides for the classification and control of noxious weeds. Declared noxious weeds are classified as Class 1, State Prohibited Weeds; Class 2, Regionally prohibited Weeds, Class 3 Regionally Controlled Weeds, Locally Controlled Weeds and Class 5 Restricted Plants. The characteristics of each class is given in Section 8 (2) of the Noxious Weeds Amendment Act 2005. Class 1, 2 & 5 weeds are referred to in the Act as "Notifiable Weeds".	Low Relevance The Act applies to owners or occupiers of land including public authorities and thus does not apply to LORAC.
Water Act 1912	This Act provides for licences to extract water for construction purposes either from surface or artesian sources. Should construction water be extracted from surface (other than sedimentation ponds) or artesian sources a licence will be required.	Medium Relevance Water will be extracted from the underlying alluvial aquifer to construct a number of components of the project.
Heritage Act 1977	This Act provides for the preservation and conservation of heritage items such as building, works, relic, places of historic interest, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance. Under this Act a relic means any deposit, object or material evidence which is 50 or more years old and relates to the settlement of the area (not being an aboriginal settlement). It is an offence under this Act to wilfully and knowingly damage or destroy items of heritage value. Do not demolish damage, move or develop around any place, building, work, relic, moveable object, precinct, or land that is the subject of an interim heritage order or listing on the State Heritage Register or heritage listing in a Local Environmental Plan without an approval from the Heritage Council (NSW) or local council.	High Relevance The proposal site includes the Hamilton Railway Station Group, which is listed on the State Heritage Register. New siding as part of the Stabling yard will be build adjacent to the northern platform, within the Curtilage area. These works have been assessed and approved under Section 60 2014-S60-166. The Project Site is also subject to a Section 140 Permit – specifically located to the main compound area and the old Station Master's Quarters
Wilderness Act 1987	An Act to provide for the permanent protection of and proper management of Wilderness Areas and to promote the education of the public in the appreciation, protection and management of wilderness. The Act and associated Regulations provides a mechanism for the identification and declaration of Wilderness areas.	No Relevance This project is not within or immediately adjacent to a declared Wilderness area. This Act has little or no relevance to the project.
Plantations and Re-afforestation Act 1999	This Act is intended to facilitate the reforestation of land and development of timber plantations. It provides codified environmental standards together with a streamlined integrated scheme for the establishment and management and harvesting of timber and other forest plantation products.	No Relevance The location of work under this contract is not located within or adjacent to reforested or plantation forest land.
Australian Heritage Council (Consequential & Transitional Provisions) Act 2003 Australian Heritage Council Act 2003 (Cwth)	The Australian Heritage Council (Consequential and Transitional Provisions) Act 2003 repealed the Australian Heritage Commission Act 1975. The Australian Heritage Council Act 2003 establishes the Australian Heritage Council. The Council is required to identify places to be included in the National Estate and to maintain a Register of the National Estate of places.	No Relevance The site is not on Register of the National Estate of places.
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cwth)	This Act provides for the preservation and protection from injury or desecration to areas and objects of particular significance to Aboriginals. Areas and objects can be protected by Ministerial Declaration and it is then and offence to contravene such a declaration.	No Relevance No areas or objects within the works site have been identified as being subject to such a declaration and this Act is of little relevance to the project.
Ozone Protection Act 1989	This Act provides for a system of controls and to regulate and prohibit the manufacture, sale, distribution, use, emission, re-cycling & disposal of stratospheric ozone depleting substances and articles that contain these substances. The impact is that appropriately qualified people in accordance with this Act must undertake all servicing and maintenance of this type of equipment.	Low Relevance The relevance of this Act will relate to the use of refrigerators and air conditioning units in site buildings and vehicles which still contain CFCs. Such items are unlikely to be found on site.
Protection of the Environment Operations Act 1997	This Act is of most relevance to work being carried out under this contract. It integrates into one Act all the controls necessary to regulate pollution and reduce degradation of the environment, provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act.	High Relevance The proposal is considered to meet the definition of a scheduled activity under

Construction Environmental Management Plan

Legal and Other Requirements	Summary of Obligations	Relevance to the Project / Notes and System
		clause 33 ('railway systems activities') of schedule 1 of the POEO Act, and therefore an EPL would be required for construction.
		An EPL was established as part of the Wickham Junction works undertaken by Novo Rail Alliance and held by LORAC, this EPL is in the process of being varied to ensure that the premises that the EPL applies to includes the proposal. Section 148 of the Act requires a pollution incident causing or threatening material harm to the environment to be notified to the EPA and other authorities immediately.
Transport Administration Act 1988	Approval under section 99B to close a level crossing.	No Relevance Works under this Act have occurred in Stage 1.
Pesticides Act 1999 Pesticides Regulation 1995	This Act and Regulation establish a legislative framework to regulate the use of pesticides. They have the objective to promote the protection of human health, the environment, property and trade in relation to pesticides. It is an offence under this Act and Regulation to wilfully or negligently misuse pesticides.	Low Relevance Some pesticides or herbicides may be used on the WTI site. These will be selected on a basis of mitigating risk to the community and the environment. Appropriate notification will be given to the local community and neighbouring businesses.
Waste Avoidance and Resource Recovery Act 2001	This Act repeals the Waste Minimisation and Management Act, 1995. The purpose of the Act is to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecological sustainable development. The Act provides for the making of policies and strategies to achieve these ends. It is an offence under the Protection of the Environment Operations Act to wilfully or negligently dispose of waste in a manner that harms or is likely to harm the environment.	Medium Relevance The relevance of the Act to this project is to implement the strategies by adopting the hierarchy of avoidance; avoidance of unnecessary resource consumption; resource recovery (including reuse, reprocessing, recycling and energy recovery), disposal (as a last resort).

Construction	Environmental	Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 3 – Risk Assessment

Initial risk assessment undertaken: 10 February 2015 Last review undertaken: 30 June 2015 & 21 July 2015

*This risk assessment is to be updated on an annual basis or when deemed necessary due to a project scope change, incident or management review.

All environmental issues have been assessed in accordance with the table below:

Risk Assessment Rankings: $\mathbf{E} = \text{Extreme H} = \text{High}$ $\mathbf{M} = \text{Medium}$ $\mathbf{L} = \text{Low}$

Environmental issues which have an initial risk ranking of Medium or High will require the development and implementation of Environmental Risk Action Plans.

Issues which have an initial Extreme risk will require the development and implementation of an issue specific sub-plan.

The risks must be reassessed following the consideration of control measures.

Issues or activities that represent an Extreme risk after the application of control measures are not to be undertaken.

Aspect	Potential Environmental Impact		itial R Ratin		Control Measures	Pasi	dual Risk	Pating
Approvals and Licensing	Totertial Environmental impact		Italiii	9	CONTROL MEdisures	IVESI	uuai Niski	raung
Not identifying appropriate approvals / licenses required or proceeding without them.	Works delayed, infringements, poor client relations, and reputational loss.	Р	2	Н	Check Environmental Assessment / REF / EIS and statutory documentation. Check for council permits Check contract documentation. Document requirement in CEMP Establish a register of approvals, licenses, permits.	U	2	М
Noise								
Noise from general construction activities resulting in impact to residents.	Disturbance to residents or neighbouring businesses. Potential for complaints.	L	2	E	Develop and implement a Construction Noise and Vibration Management Plan. Induction and toolbox talks to educate workers on noise management Plan for noisy works to occur during normal construction hours. Consult with the community in relation to upcoming activities that may result in concern. Monitor noise for compliance as the works progress at receiver locations. Provide periods of respite for high noise generating activities. Apply noise mitigation measures during entire project. Noise efficient equipment to be used on site.	Р	4	М
Noise during works required to be undertaken out of standard construction hours.	Disturbance to residents or neighbouring businesses with potential for complaints.	С	2	E	Gain approvals required to work outside standard approved hours from regulatory authority and client Induction and toolbox talks to educate workers on noise management Plan for noisy works to occur during normal construction hours. Use of noise barriers where appropriate. Implement noise mitigation strategies for out of standard hours work. Monitor noise for compliance to project goals. Selection of quieter equipment where possible. Selection of subcontractors with newer/quieter plant. Register of approved out of hours work	L	3	М

		lr	nitial R					
Aspect	Potential Environmental Impact		Ratin	g	Control Measures	Resi	dual Risk l	Rating
Vibration								
Vibration intensive activities undertaken on the site such as impact piling, vibratory rolling, etc.	Disruption, annoyance and nuisance to residents. Potential damage to adjacent residential and commercial residences and structures. Disruption to businesses as a result of vibration nuisance	С	2	E	Develop and implement a Noise and Vibration Management Plan. Determine vibration limits and structure/receiver offset distances. Consult with potentially affected parties prior to commencement of works on their upcoming activities that may be impacted by construction vibration. Ongoing vibration monitoring during vibration intensive works.	L	3	н
Water Quality, Erosion & Sedimenta	ation							
Sediment laden runoff from construction works leaving site.	Degradation of local watercourses. Increased turbidity in local water ways resulting in impact on aquatic life. Fines for sediment escaping site.	Р	3	M	Develop Soil and Water Quality Management Plan. Erosion and Sediment Control Plans (ESCPs). Induction, toolbox talks and training. SWMS review & regular site inspections. Develop and implement sediment and erosion control measures including sediment basins, water collection and dispersal systems, etc. Ensure measures are inspected and maintained as the works progress and also prior to and post rainfall events. Provide training and awareness on the need to prevent pollution. Site engineers dealing with earthworks and site supervisors are to undertake Erosion and Sediment Control training.	U	4	L
Stockpiling of vegetation and topsoil.	Wind and water erosion causing weed/seed dispersion offsite. Location of stockpiling next to waterways causing weeds/seeds to disperse from construction site.	L	4	М	Develop Environmental Control Plans to show stockpile areas. Appropriate locations for stockpiling (away from waterways, watercourses, drains). Management of Acid Sulphate Soils in accordance with the Acid Sulphate Soils Management Plan. Designated vegetation stockpiling areas. Minimise stockpiling / Use temporary stockpiling Cover stockpiles if left for extended periods.	U	4	L
Non-compliant water from construction works discharged from site	Non-compliant water entering stormwater system waterways (i.e. polluting - not compliant with discharge criteria).	С	3	н	Induction and toolbox talks Toolbox training on site procedures for water discharge Educate site staff on licence conditions and consequences of prosecution Environmental representative to approve all water discharges from site	U	3	M
Waste								
Waste disposal during construction.	Incorrect disposal of waste, further costs incurred for classifications and disposal, fines may be issued. Incorrect classification of waste (spoil) resulting in incorrect / illegal disposal/re-use.	L	2	E	Develop a Waste Management Plan. Inductions, toolbox talks and training on recycling facilities and waste segregation practices. Identify opportunities to incorporate recovered materials into the permanent works. Provide facilities on site for source separation and recycling. Ensure accurate waste records are retained. Tracking of disposal processes. Removal of wastes from the site would only be undertaken by a licensed contractor as required by the POEO Act and with appropriate approvals, if required, for contaminated materials, etc. All material to be utilised off-site to be appropriately classified in accordance with the Resource Recovery Exemptions. All material that requires off-site disposal to be appropriately tested and classified against the Waste Classification Guidelines (NSW EPA, 2014). Monitored during regular site inspection	U	4	L

		In	itial R	isk				
Aspect	Potential Environmental Impact		Rating		Control Measures	Resi	dual Risk	Rating
Washout of concrete in undesignated areas.	Sediment laden/alkaline water polluting surrounding stormwater system / watercourses.	С	3	н	Contractors to provide and maintain concrete trays Subcontractors that have been found to have washed-out incorrectly are to in the first instance clean up the waste concrete and receive a first warning. Subsequent failures to comply with the concrete washout requirements may result in some penalty. Concrete washout areas clearly marked on Environmental Control Maps and delineated. Concrete truck drivers to be inducted/informed of location of washouts and directed to use them. Inductions/toolboxes on designated concrete washout areas. Subcontractor's agreements to include project compliant waste management principles. Monitored during regular site inspections. Develop pamphlet for all concrete delivery drivers to inform them of site requirements.	L	3	M
Contamination								
Management of contaminated or untreated materials	Non-compliant material and contaminated water entering surrounding waterways. Decrease in health of nearby ecosystems.	L	2	E	Develop contamination management procedures and protocols. Identify any contamination hotspots and incorporate procedures for these locations into construction documentation. Develop unexpected finds procedures.	U	3	М
Potential for discovery of unexpected contaminated spoil during construction.	Health effects resulting from airborne contamination, e.g. asbestos. Complaints received from odours released during excavations. Classification of spoil is changed and disposal options altered, costs incurred associated with disposal of higher classification of waste.	С	2	E	If contaminated soil is encountered, all works are to stop in the vicinity of the find and investigations commence. Induct personnel on location, type, nature, concentration of contaminants on site if found.	U	3	М
Encountering asbestos / contaminated material on site.	Transfer of material into previously uncontaminated area (outside work site) causing new contamination.	С	1	E	An occupational hygienist is to be engaged to manage working with or removal of asbestos. A licensed removalist must remove or direct the removal of asbestos and asbestos contaminated soil Appropriate testing of soils to identify asbestos contamination. Inspections of excavated and filled surfaces would be made during construction to determine the presence of visible asbestos. Contaminated soils would be stockpiled separately in the laydown area. Include asbestos contaminated soils on contamination maps. Communication to workers and where appropriate stakeholders and the community.	U	3	M
Hazardous Materials								
Storage of hazardous substances, leaking plant and equipment and spillage from refuelling.	Localised ground contamination / pollution of stormwater and requiring clean-up and/or receiving fines. Risk of igniting volatile substances. Unauthorised access to site / potential vandalism/damage leading to pollution.	L	3	н	Induction, toolbox talks and training on appropriate handling and storage of liquids. All storm water drains should be identified prior to works. Storage areas to be away from sensitive areas and appropriately bunded. MSDS approved prior to bringing hazardous substances on site including risk assessment. Plans showing storage locations and associated controls e.g. spill kits, etc. (Environmental Control Maps). Training in use of spill kits	U	4	L

		lr	nitial R	lisk				
Aspect	Potential Environmental Impact		Ratin		Control Measures	Resid	dual Risk	Rating
					Contingency plans would be developed to deal with any spills which might occur during construction. Clearly label containers. Refuelling to occur in laydown area near main site compound unless otherwise agreed upon with the Environmental Coordinator. Less mobile plant may be refilled outside of the main compound area with strict controls in place including a spill kit present and a drip tray. Spill tray to be used when refuelling. Regular auditing and inspection of storage areas and materials. Make storage areas restricted access areas. Reduce/eliminate need for hazardous substances. Ensure all work sites are secure before leaving the site. All liquids i.e. fuels, paint etc. are to be securely locked away at the end of each day.			
Fuel contaminated runoff from construction works leaving site	Fuel contaminated runoff entering stormwater or waterways (i.e. polluting - not compliant with discharge criteria).	L	3	Н	All storm water drains should be identified prior to works and controls implemented. Refuelling of vehicles away from culverts, water courses in the laydown area near the main site compound or other area with appropriate controls. A spill tray is to be used during refuelling and a spill kit must be present. Appropriate bunding/storage of substances. Toolbox on site procedures for sediment controls and chemical storage. Educate site staff on project conditions and consequences of prosecution. Regular audits of spill kits.	U	4	L
Biodiversity								
Vegetation trimming / clearing required outside approved work area.	Unauthorised works / removal of vegetation outside defined work area, possibility of removing threatened species, fines incurred.	P	3	М	Induction and tool box training on clearance zones and required protection measures Inspections during clearing activities. Fencing in place/ clear marking of trees to be retained and cleared / demarcation areas / plans showing clearing areas. Pre clearing checklist to be completed before any clearing of vegetation.	U	5	L
Clearing and grubbing of vegetation within work site.	Erosion of soils, uncontrolled runoff, sediment deposited into surrounding vegetated areas and water courses, and invasion of weeds. Wrong vegetation removed. Potential for injury to native fauna.	L	3	н	Inductions and toolbox training on erosion and sediment controls. Where possible works to be staged so environmental controls can be implemented after clearance works. Approved Erosion and Sediment Control Plans in place prior to starting works. Where applicable, mature trees and other native vegetation to be retained would be clearly delineated, with all construction activities excluded from these areas. Pre clearing checklist to be completed before any clearing of vegetation.	U	4	L
Weeds	Spreading of weed species around site. Incorrect disposal of weeds	Р	3	М	Control Weeds in accordance with TfNSW Weed Management and Disposal Guideline 3tp-sd-110	U	4	L
Fauna on site, in particular Little Bentwing bat at Maitland Road Bridge	Disturbance, injury or death of fauna	U	3	М	Induction and tool box training on fauna management and reporting fauna sightings Bat Management Plan	U	4	L
Pest / rodent disturbance from site establishment	Potential to relocate into residential areas / cause of community complaint. Health associated risks with increased rodents.	R	5	L	Ensure site establishment has pest controls such as wire mesh around building bases to ensure pests do not use them for shelter. If issue is problematic during construction activities, pest control services to be implemented as soon as possible	R	5	L
Feral animals	Inhabitation of site by feral animals such as foxes, feral cats, feral dogs and feral pigs.	R	5	L	Eliminate habitat for feral animals. Educate staff to not leave any food around that may attract feral animals.	R	5	L

		lr	nitial R	isk				
Aspect	Potential Environmental Impact		Ratin	g	Control Measures	Resid	dual Risk I	Rating
					If problems with feral animals persist engage a pest controller.			
Air Quality								
General construction works; site establishment, earthworks, piling, drilling, etc.	High dust activity in close proximity to residential and commercial premises, dust deposition at sensitive receivers, repairs and clean up needed, complaints received.	С	2	E	Develop Air Quality Management Plan. Inductions and toolbox training on Dust and Air Quality Management. Stop work or certain conditions in extreme weather. Assess on case by case basis. Maintain vegetation cover where possible Utilise shade cloth. Include provision for air quality monitoring during the works. Provide dust mitigation measures through water sprays/misting. Use of water carts during dry weather on haulage roads and excavations/batters. Install dust controls immediately and continually through the project. Use polymer dust suppressants where appropriate Erosion and Sediment Control Plans approved before works commence. Controls are then reviewed for maintenance.	P	3	M
Exhaust from plant and equipment.	Emissions resulting in air pollution.	U	4	L	Inductions and toolbox training on Dust and Air Quality Management. Well maintained plant/ equipment and pre-start checks and servicing. Non-complaint vehicles removed from site / repaired.	R	4	L
Heritage								
Unexpected heritage items encountered.	Work delays, additional studies, approvals required, damage to heritage item. Failure to comply with Heritage approvals and conditions	L	2	E	General inductions toolbox training on heritage management protocols. Label any known heritage items on Environmental Control Maps. If suspected heritage item encountered. Works to stop immediately and Environmental Representative contacted. Obtain all necessary approvals and act in accordance with conditions imposed. These include approvals under the Heritage Act and National Parks and Wildlife Act 1974.	P	3	М
Non-compliance with Heritage Permits	Damage to heritage items – fines, stop work orders repair costs	U	4	L	Educate the Project Team and workers on the permit conditions Delineation and signage around heritage items, where practicable and feasible.	R	4	L
Acid Sulphate Soils								
Disturbance of Potential Acid Sulphate soils and Actual Acid Sulphate Soils during excavations.	Mobilisation of metals within runoff to levels toxic to natural systems. Release of acidic runoff.	Р	3	М	Follow mitigation measures within the Acid Sulphate Soils Management Plan. Awareness training in the identification and management of ASS. Provide containment and treatment facility on site where appropriate or dispose of for treatment. Ensure ASS material is left underwater, disposed of site or appropriately treated in a bunded area with sump.	U	4	L
Traffic								
Loss of on-street car parking in adjacent residential streets and commercial areas during construction.	Loss of parking availability to adjacent residential and commercial properties could result in community complaints.	Р	4	М	Community notifications. Develop Traffic Management Plan / Traffic control procedures.	U	4	L
General construction traffic disturbing public access between local roads.	Disturbance to local residents resulting in complaints being made, limited access, potential for delays at local road access points resulting in complaints.	Р	4	М	Approved Traffic Management Plans in consultation with relevant authorities. Detour routes to be advertised/ notified. Approved access routes, detailed Traffic Control Plans. Clear notifications / signage.	U	4	L

Construction Environmental Management Plan

		In	nitial R	isk				
Aspect	Potential Environmental Impact		Ratin		Control Measures	Resid	dual Risk l	Rating
Management of heavy vehicles / haulage routes.	Complaints from sensitive receivers due to increased level and frequency of noise.	L	4	М	Designated haulage routes. Approved Traffic Management Plans. Community Notifications. Pedestrian management with traffic controller in place where required.	Р	4	М
Truck deliveries out of normal working hours (un-approved).	Non-conformance with project requirements. Noise impact to community / potential complaints.	L	4	М	Personnel training of noise awareness to community included in induction and toolboxes. Induction on Construction Hours for deliveries. Communication of delivery times to suppliers. Community Notifications on project activities occurring locally. Code of conduct / selection criteria in place for subcontractors. Out of hours works approval where required (Environmental Protection Licence/ Planning Approval/ Council) Approved traffic/haulage routes. Planning and staging of works in approved hours as much as practical.	Р	4	М
Resources and Energy Use								
Energy consumption by construction plant & operation of site compound facilities.	Inappropriate energy use, waste of energy recourses, energy wastage costs, increased greenhouse gas emissions.	L	4	М	Inductions and toolbox training on waste management and energy saving practices in construction plant and equipment and during office work. No idling of plant equipment where possible onsite. Equipment / plant equipment inspections must be undertaken prior to use on site.	U	4	L
Water usage during construction activities.	Excess usage of potable water for construction activities leading to a decline in the amount of potable water for residents.	L	4	М	Include water conservation measures and verifiable targets. Capture and reuse rainfall and runoff for site activities.	U	4	L
Resource usage (e.g. building materials, water, fuels, packaging), waste generation and disposal.	Depletion of resources due to wastage (e.g. wastage of water / no recycling, poor management of procurement, ineffective removal of off-cuts, waste, i.e. no recycling).	L	4	М	Inductions and toolbox talks on recycling facilities and waste segregation, training/education on how to recycle. Procurement of materials (selection of materials) to be considered. Subcontractor's agreements to include project compliant waste management principles. Waste management undertaken in accordance with the Waste Avoidance and Resource Recovery Act 2001.	U	4	L
Lighting								
Lighting during night works	Light spill to sensitive receivers resulting in complaints from the community	L	4	М	Tool box staff on correct use of lighting towers Site Supervisor to monitor	U	4	L

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Environmental Risk Assessment Rankings

This table may be used as a guide in determining the level of risk for each environmental issue. For each identified issue, consider the 'maximum credible' (not absolute worst case) risk that could result with minimal or no controls other than existing and using normal construction practices.

Note: Any one of the listed consequences must result in the use of the applicable consequence grading.

Select a letter and a number from each column. Plot letter and number selections on the Risk Ranking Matrix to determine applicable ranking:

Likeliho (Probak		cy of Occurrence)	Consec (Outco	_	rity of Occurrence)
С	Certain	Common or repeating occurrence Consequence can reasonably be expected to occur in life of Project.	1	Severe	 Major pollution incident causing significant and widespread damage or potential to health or the environment Persistent reduction in ecosystem function and value. Ongoing disruption and loss of protected species. Major prosecution likely, outcome in excess of \$500,000
L	Likely	 Known to have occurred / "has happened" Conditions may allow the consequence to occur on the Project during its lifetime The event has occurred within the Business Unit within the previous 5 years. 	2	Major	Significant widespread and persistent changes to habitat, species or environmental media Significant pollution incident causing damage or potential damage to health or the environment external to the site. Potential for prosecution. Potential outcome between \$50,000 - \$500,000 Numerous substantial complaints Actual material environmental harm
Р	Possible	Could occur / "heard of it happening" Exceptional conditions may allow consequences to occur on the Project, or has occurred nationally within the Australian Business.	3	Moderate	 Localised irreversible habitat loss or effects on habitat, species or environmental media Reportable incident to the relevant environmental regulator or other authority. Demonstrated breach of legislative, licence or guideline requirements. Likely infringement notice or fine, potential for prosecution up to \$50,000. Will cause complaints.
U	Unlikely	Not likely to occur Reasonable to expect that the consequence will not occur on the Project. Has occurred in industry but not in Business Unit.	4	Minor	 Localised degradation of habitat or short term impacts to habitat, species or environmental media. Pollution incident that marginally exceeds licence conditions or guidelines for acceptable pollution. Fine unlikely. Potential for complaints.
R	Rare	Practically impossible Not known to have occurred in industry or unheard of.	5	Incidental	 Localised or short term effects on habitat, species or environmental media. Fully contained on site and can be fully remediated. Little potential for fine or complaints. Insignificant or trivial incident

Probability ► ▼Consequence	Certain	Likely	Possible	Unlikely	Rare
1 – Severe	Е	Е	Е	Н	M
2 – Major	Е	Е	Н	M	М
3 - Moderate	Н	Н	M	M	L
4 – Minor	M	M	M	L	L
5 - Incidental	M	L	L	L	L

Appendix 4 - Operational Control Procedures - Environmental Risk Action Plans

These plans identify the control measures in place to mitigate the risks associated with the environmental aspects identified in the Risk Assessment. Where a control is imposed by Laing O'Rourke, i.e. it is not a legislative requirement, that control may be changed if the risks are appropriately considered in agreement with the Environmental Coordinator.

Operational Control Procedures	s - Environmental Risk Action Plans
Noise and Vibration	
Objective	To comply with contractual and EPL requirements and ensure that noise and vibration from construction activities does not cause environmental nuisance.
Targets	 No valid noise / vibration complaints resulting from construction works. Comply with the noise goals stipulated in the Construction Noise and Vibration Management Plan No unreasonable noise or vibration. No noise and vibration impacts on external receptors. No Infringement notices from the EPA. All works out of hours to be conducted under an Out of Hour Works Assessment and Application (OOHWAA) Full compliance with the REF requirements and CoAs.
Legal, Contractual and Other Requirements	 Contract Specification Clause Planning consent conditions – TfNSW approval number: 385Q472 dated 10th November 2014 EPL OOHW conditions and approvals Environment Planning and Assessment Act 1979 Protection of the Environment Operations Act 1997 Protection of the Environment Operations (Noise Control) Regulation 2000 Local Government Act 1993 AS2436 Guide to Noise Control on Construction, Maintenance and Demolition Sites;
Site specific planning / approval conditions / licence conditions	Construction Hours for Wickham Transport Interchange Project Construction activities would be undertaken during the hours of 7:00 am to 6:00 pm Monday to Friday; 8:00 am to 1:00 pm Saturday and at no time on Sundays and public holidays. The following construction work may be undertaken outside of the hours specified above: Construction work that cause LAeq(15 minute) noise levels that are: No more than 5dB above rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009) and No more than the noise management levels specified in Table 3 of the Interim Construction Noise Guidelines (DECC, 2009) at other sensitive land uses. Delivery of plant, equipment and materials required to be delivered out of hours for safety reasons; Rail maintenance works including tamping and regulating to remediate vertical or horizontal movement >4mm in track geometry that has occurred as a direct result of works being undertaken for the project; and Emergency construction works or activities to ensure the safe operation of rail or avoid loss of life, damage to property or environmental harm. Further details are listed in L3 of the Wickham Transport Interchange Early Works EPL. All work undertaken outside of the standard construction hours, including work in accordance with a), b) d) and e) above, are subject to Conditions L3.4 and L3.5 of the Wickham Transport Interchange Early Works EPL. Conditions of Approval: High Noise Generating Activities Rock breaking or hammering, jack hammering, pile driving, vibratory rolling, cutting of pavement, concrete or steel and any other activities which result in impulsive or tonal noise generation shall only be scheduled between the following hours unless otherwise agreed to by the PMEM (or nominated delegate), or as approved by EPA (where relevant to the issuing of an EPL), unless inaudible at nearby residential properties and/or other noise sensitive receivers: 8.00am to 12:00pm, Monday to Saturday
Site specific planning / approval conditions / licence conditions	Construction noise and vibration mitigation measures shall be implemented through the CEMP, in accordance with TfNSW's Construction Noise Strategy and the EPA Interim Construction Noise Guideline (July 2009). The mitigation measures shall include, but not necessarily be limited to: details of construction activities and an indicative schedule for construction works identification of construction activities that have the potential to generate noise and/or vibration impacts on surrounding land uses, particularly sensitive noise receivers. detail what reasonable and feasible actions and measures shall be implemented to minimise noise impacts (including those identified in the REF)

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Operational Control Procedures - Environmental Risk Action Plans

- procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints
- an out of hours work protocol (OOHWP) for the assessment, management and approval of works outside the standard construction hours identified in condition 17of this approval, including a risk assessment process which deems the out of hours activities to be of low, medium or high environmental risk, is to be developed. All out of hours works are subject to approval by the EMR and/or PMEM or nominated delegate) or as approved by EPA (where relevant to the issuing of an EPL). The OOHWP should be consistent with the TfNSW Construction Noise Strategy.
- a description of how the effectiveness of actions and measures shall be monitored during the proposed works, clearly indicating the frequency of monitoring, the locations at which
 monitoring shall take place, recording and reporting of monitoring results and if any exceedance is detected, the manner in which any non-compliance shall be rectified.

Vibration Criteria

Vibration (other than from blasting) resulting from construction and received at any structure outside of the Project shall be limited to:

- for structural damage vibration German Standard DIN 4150:Part 3 1999: Structural Vibration in Buildings: Effects on Structures
- for human exposure to vibration the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (Dec 2006). These limits apply unless otherwise approved by the PMEM through the CEMP.

Non-Tonal Reversing Beepers

Non-tonal reversing beepers (or an equivalent mechanism) shall be fitted and used on all construction vehicles and mobile plant regularly used on site (i.e. greater than one day) and for any out of hours work.

Noise Impact on Educational Facilities

Potentially affected pre-schools, schools, universities and any other affected permanent educational institutions shall be consulted in relation to noise mitigation measures to identify any noise sensitive periods (e.g. exam periods). As much as reasonably possible noise intensive construction works in the vicinity of affected educational buildings are to be minimised.

Wherever practical, piling activities shall be completed using non-percussive piles. If percussive piles are proposed to be used, approval of the EMR or PMEM shall be obtained prior to commencement of piling activities.

- A Construction Noise and Vibration Management Plan specific to the works has been developed to inform the Project Team of noise and vibration requirements and mitigation measures during construction.
- Carry out work according to the TfNSW's Construction Noise Strategy (The mitigation measures in Table 5 of the TfNSW Construction Noise Strategy aligns with the mitigation measures listed in the REF for out of hours works).
- The noise levels of plant and equipment must have operating Sound Power or Sound Pressure Levels compliant with the criteria listed in Table 2 of the Construction Noise Strategy (Transport for NSW, 2012)
- No work will be undertaken outside of the agreed hours without prior approval in line with the Out of Hours works Procedure Appendix 14.
- Where work outside the hours nominated above hours is required, approval shall be gained prior to the commencement of works from the PER and PL.
- Implement community consultation measures (including notification via letterbox drop, website, email distributions)
- · Site induction to address construction activities and noise for employees, contractors and subcontractors. This induction would include:
- All relevant project specific and standard noise and vibration mitigation measures
- Relevant licence and approval conditions.
- Permissible hours of work
- o Any limitations on high noise generating activities
- Location of nearest sensitive receivers
- Construction employee parking areas
- Designated loading/unloading areas and procedures
- o Construction traffic routes
- Site opening/closing times (including deliveries)
- Environmental incident procedures.
- Where construction vibration is found to be causing a disturbance to, the construction methods shall be reviewed to reduce the impact where possible.
- Site offices, compounds and sheds will be located so as to have no negative impact on the noise amenity of nearby sensitive receptors.
- Delivery operations or other noise generating activities at compound and storage areas will take place during the designated construction hours, unless specifically required by Police or RTA requirements as per the EPL conditions.
- · Where practical, substitution of excessively noise processes with alternative processes.
- Avoiding where practical the use of noisy plant simultaneously close together or adjacent to sensitive receptors.
- · High efficiency mufflers must be fitted to all plant and equipment to minimise the generation of noise.
- All plant will be maintained in accordance with the manufacturer's requirements.

Controls (means and resources)

Construction Environmental Management Plan WTI-LOR-PMP-0014

Operational Control Procedures - Environmental Risk Action Plans • Noise generating equipment to be orientated away from sensitive areas Undertaking loading and unloading activities away from sensitive areas and during designated construction hours. • Select the most appropriate plant and equipment to minimise noise generation and include where necessary screening and enclosures. On-site generators and auxiliary power sources used during construction should be positioned away from existing buildings to buffer noise/ vibration. Regular checks are to be undertaken to ensure all equipment and vehicles are in good working order and are operated correctly. Checking should include: engine covers; defective silencing equipment; rattling components; and o leakages in compressed air lines. Awareness training and information will be provided to project personnel in relation to the vibration requirements on the project and the need to minimise vibration when in close proximity to operational areas. Plant, equipment and processes shall be selected so as to limit construction related vibration. Restrict or modify working hours to minimise impact if required. Include periods of respite where possible when vibration generating activities are being undertaken. • Introduce behavioural practices (no swearing, unnecessary shouting or loud stereos/radios on site; no dropping of materials from height, throwing of metal items and slamming of doors. Monitoring noise throughout the construction period. Attended vibration measurements prior to vibration generating activities to confirm vibration levels are within the acceptable range to prevent cosmetic building damage. • Where reasonable and feasible, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods. If highly noise affected impacts are predicted, high noise and vibration generating activities may only be carried out in continuous blocks, not exceeding three hours each, with a minimum respite period of one hour between each block. • If highly noise affected impacts are predicted no more than three consecutive nights of high noise and/or vibration generating work may be undertaken over any seven day period, unless otherwise approved by the relevant authority. Use quieter and less vibration emitting construction methods where reasonable and feasible. • The offset distance between noisy plant and adjacent sensitive receivers is to be maximised, particularly during OOHWs. • Plant used intermittently to be throttled down or shut down. Noise-emitting plant to be directed away from sensitive receivers. Plan traffic flow, parking and loading/ unloading areas to minimise reversing movements within the site. • Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work. · Select site access points and roads as far as possible away from sensitive receivers. Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible. Stationary noise sources should be enclosed or shielded, where practicable, whilst ensuring that the occupational health and safety of workers is maintained. Use structures to shield residential receivers from noise such as site shed placement; earth bunds; fencing; erection of operational stage noise barriers (where practicable) and consideration of site topography when situating plant. A site information board will be erected at the front of the site, which will include the name of the principal contractor, relevant contact details, hours of operation and regular information updates. All enquiries or complaints will be immediately forwarded to LORAC and be responded to within two hours. Respond to enquiries and Emails will be undertaken within 24 hours. Where construction noise and vibration is found to be causing a disturbance to sensitive receivers, the construction methods shall be reviewed to reduce the impact where possible. The Site Manager will ensure construction activities comply with these requirements and implement the control measures. Responsibilities • The Site Manager/Project Leader will obtain approval to work outside approved hours Timeframe Duration of site works. Noise monitoring and reporting will be undertaken as per requirements of EPL and TfNSW Noise Mitigation Strategy. LORAC Environmental Checklist E-T-8-1227. Weekly inspections to be uploaded on SEQ/CAR in Asite. Complaints to be recorded on LORAC's IMPACT PLUS Incident Reporting System and managed and closed out in Monitoring and Reporting accordance with TfNSW TSR C1 as detailed in Community Liaison Plan Pre-start checks and regular servicing of equipment.

Operational Control Procedures	- Environmental Risk Action Plans
Dust and Air Quality	
Objective	To comply with contractual requirements and ensure that dust and other air emissions from construction activities do not cause impacts on sensitive receivers and equipment.
Targets	 No valid dust complaints from construction works. No dust impacting on offsite activities or surrounding residences. No release of contaminants, (odour, smoke etc.) into the air. Full compliance with the REF requirements and CoAs. Dust levels to comply with limits stipulated by the NSW EPA.
Legal, Contractual and Other Requirements	 Contract specification TfNSW consent conditions – approval number: 385Q472 dated 10th November 2014. Protection of the Environment Operations Act 1997 Protection of the Environment Operations (Clean Air) Regulation 2002 Local Government Act 1993
Site specific planning / approval conditions / licence conditions	All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.
Controls (means and resources)	 All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards Machinery would be turned off when not in use and not left to idle for prolonged periods. Machinery and plant that will be kept on site will be serviced as per manufactures specifications. Vehicle movements would be limited to designed entries and exits, haulage routes and parking areas. Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust. Dust would also be monitored using a Dustrak unit. Monitoring will occur on a quarterly basis or after a dust complaint. Materials transported to and from the site would be covered to reduce dust generation in transit. Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation. Stabilisation of any exposed surfaces as soon as practicable, including implementation of final landscaping as early as possible. Shade cloth would be fastened to the perimeter fence on the project site, where practicable, to minimise dust transported from the site during construction. Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken. Works (including the spraying of paint and other materials) would be suspended during strong winds or in weather conditions where high levels of dust or airborne particulates are likely. Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust. Provision of Water trankers where n
Responsibilities	The Site Manager/Project Leader to implement the requirements of this plan. Site Manager to inspect the works at regular intervals.
Timeframe	Shaker grids to be installed prior to commencement of works. Water tankers and other measures available at the commencement of earthworks. Spilt mud and sediment to be removed from public roads prior to the end of each shift. Duration of site works.
Monitoring and Reporting	 Weekly inspections to be recorded on Form F1227 LORAC Environmental Checklist E-T-8-1227. Complaints to be recorded on LORAC's IMPACT PLUS Incident Reporting System and TfNSW Communications Management System

Operational Control Procedures	s - Environmental Risk Action Plans
Waste	
Objective	To comply with contractual and legislative requirements and ensure that waste from construction activities does not have the potential to escape from the site and cause an environmental nuisance / harm.
Targets	 No incidences where waste is stored in a position where it has the potential to move off-site. All off site movements of waste will be tracked. The principles of the waste management hierarchy will be adopted, where practicable. Target to reuse or recycle 95% by weight of construction waste (including spoil). Waste will be minimised where ever possible. Full compliance with the REF requirements and CoAs. To comply with the requirements of the Wickham Transport Interchange Remediation Action Plan.
Legal, Contractual and Other Requirements	 Contract Specification Clause TfNSW approval conditions – approval number: 385Q472 dated 10th November 2014. Protection of the Environment Operations Act 1997 Protection of the Environment Operations (Waste) Regulation 2005 Waste Avoidance and Resource Recovery Act 2001 Local Government Act 1993 Local Government (General) Regulation 2005
Site specific planning / approval conditions / licence conditions	EPL requirements - Concrete wash water
Controls (means and resources)	 Implementation of LORACs Project Waste Strategy as stated within the Construction Waste, Contamination and Hazardous Materials Management Plan. Waste will be managed in accordance with the NSW Waste Avoidance and Resource Recovery Strategy and the waste hierarchy of reduce, reuse, recycle established under the Waste Avoidance and Resource Recovery Act 2001. Implementation of the Construction Waste, Contamination and Hazardous Materials Management Plan. This plan can be found in Appendix 17 of this document. The Plan covers the requirements of REF Measure 53 – "A waste management plan would be prepared as part of the CEMP and in accordance with the Waste Classification Guidelines (DECCW, 200a)," Resource management hierarchy principles would be followed: Avoid unnecessary resource consumption as a priority. Byspall and the priority of the priorit

Operational Control Procedures	- Environmental Risk Action Plans
	 Any waste material identified as being contaminated would be managed in accordance with the Contaminated Land Management Act 1997 and other relevant legislation. The removal, handling and disposal of any asbestos containing materials would be undertaken by an appropriately licensed contractor, and in accordance with: Code of Practice for the Safe Removal of Asbestos 2005 Code of Practice for the Management and Control of Asbestos in Workplaces 2005 All waste is to be disposed of at a lawful facility. Note: A lawful facility includes one that has the appropriate Development Consent, Environmental Protection Licence or is complying with EPA approved conditions and requirements. Records of the quantity and final location of the spoil material will be retained. Provide recycling services. E.g. Paper, Concrete, Steel, Cardboard, Timber. Ensure housekeeping is maintained and waste is disposed of to the appropriate bin. No illegal dumping of waste permitted.
Responsibilities	 The Site Supervisor and Environmental Coordinator will ensure waste is correctly stored, weighed, recorded, tracked and minimised at all times The Project Leader is to ensure adequate resources are available to manage waste
Timeframe	Duration of site works.
Monitoring and Reporting	 Skips monitored visually by the Site Manager on a daily basis. LORAC Environnemental Checklist E-T-8-1227. LORACs project wide biannual WRAPP Report in accordance with the NSW Government Waste Reduction and Purchasing Policy (WRAPP) – Guidelines to Assist Reporting WRAPP progress for 2005-2007. Waste disposal records to be recorded in LORAC Waste Register on Asite. Waste data to be recorded in LORACs Project Wide WRAPP Report. Waste disposal records to be recorded in Waste Tracker through IMPACT Waste reporting to the client will occur through the WRAPP process on a 6 monthly basis
Water Quality, Site Drainage	and Erosion and Sediment Control
Objective	To comply with contractual and legislative requirements and ensure that water discharged off-site from construction and erosion and sediment control (ESC) activities does not cause environmental nuisance / harm.
Targets	 No sediment impacts to the surrounding environment and waterways as a result of the works Prevent water quality impacts off site as a result of erosion and sedimentation.
Legal, Contractual and Other Requirements	Wickham Transport Interchange Early Works Environmental Protection Licence No 20514 Wickham Transport Interchange Project REF. CoAs for Wickham Transport Interchange Project. Protection of the Environment Operations Act 1997 Water Management Act 2000 Local Government Act 1993 TfNSW Water Discharge and Reuse Guidelines
Site specific planning / approval conditions / licence conditions	 Soil and water management measures shall be prepared as part of the CEMP for the mitigation of water quality and hydrology impacts during Construction of the Project. The management measures shall be prepared in accordance with Managing Urban Stormwater; Soils and construction 4th Edition (Landcom, 2004). Dewatering and water reuse must be undertaken in accordance with "TfNSW Water Discharge and Re-use Guideline – 7TP – ST-146" RMS Specification G38 Soil and Water Management (as per WTI-Specific Requirement Schedule) Flooding Evacuation Plan (Appendix 26)
Controls (means and resources)	 Construction water will be tested and treated prior to being discharged preferentially on land within the project area in accordance with legislative requirements (including the project EPL) and TfNSW Water Discharge and Reuse Guidelines. The EPL does not currently allow for discharge off-site/to waters. The license would need to be varied, a correlation factor between TSS and Turbidity determined and the background water quality of receiving waters monitored. Discharge quality must comply with TfNSW Water Discharge and Reuse Guideline (7TP-ST-146 / 2.0) parameters: NTU background water quality or better (if licensed varied for discharge to Waters). pH: Between 6.5 and 8.5, if discharged to land (or water pending further approval). No visible oil and grease, if discharged to land (or water pending further approval). One or more stormwater sumps may be constructed over the course of the project, where required. Construction water will be collected in these sumps and reused for dust suppression or other construction purposes, where water quality targets are met. All chemicals and oils are to be stored in accordance with the manufacturer's specification or best practice within a bunded area protected from rain with 110% capacity of the largest container.

Operational Control Procedures - Environmental Risk Action Plans • The effectiveness of erosion and sediment controls will be regularly reviewed by the PER and adjusted if necessary. Erosion and sediment controls will be inspected daily and recorded on the daily inspection register as per the requirements of the EPL. • Erosion and sediment controls will extend off site to protect existing council stormwater infrastructure, where necessary. • Erosion and sediment controls are only to be removed once the area they are protecting has been stabilised. The effectiveness of erosion and sediment controls will be regularly reviewed and adjusted if necessary. An Erosion and Sedimentation Control Plan (ESCP) will be developed and maintained for the site in accordance with Managing Urban Stormwater, Soils and Construction Guidelines (Landcom, 2004) (the Blue Book). The ESCP will form part of the General Site Environmental Control Maps (ECMs). The plan will include site access controls preventing tracking of sediment from site, limiting the removal of groundcover and ensuring that the excavation works do not block natural drains or create undrained areas. Additional, activity specific ESCPs will be created depending on the activity and the erosion and sedimentation risk that arises from that activity. ESCPs will be updated regularly in line with construction works. Appropriate stockpiling of materials will take place away from drainage lines, waterways and drains. Stockpiles would be managed by implementing sediment and erosion control devices in accordance with Managing Urban Stormwater, Soils and Construction (Landcom, 2004). · Spill kits will be available onsite. Soil and sediment that accumulates in erosion and sediment control structures would be reused where practicable during site restoration, unless it is contaminated or otherwise inappropriate for use. • Site rehabilitation of disturbed areas to be undertaken progressively as activities are completed during the project. • Foundations in clayey material will be adequately protected to ensure that moisture softening of the foundation does not occur. Excavation during periods of heavy rainfall will be avoided to prevent any infiltration of water into the foundations. Adequate drainage measures must be provided to control entry of groundwater and prevent ingress of surface water runoff to open excavation trenches. • Upstream water flows will be diverted around the worksite, where possible, in accordance with Managing Urban Stormwater, Soils and Construction. Machinery will be checked daily to ensure that no oil, fuel or other liquids are leaking. • Refuelling of plant and equipment will be undertaken away from drainage lines (at least 10metres) within the laydown area near the main site compound, with appropriate controls in place including a spill tray and a spill kit. Any refuelling activity that does not meet this standard may only be undertaken with agreement from the Environmental Coordinator. Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) will be undertaken on a regular basis to identify any potential spills. Work will cease during heavy rainfall events when there is a risk of sediment loss off site or ground disturbance due to waterlogged conditions. • Equipment, plant and materials would be placed in designated lay-down areas where they are least likely to cause erosion. · Vehicle wash down and/or cement truck washout would occur in a designated bunded area or off-site. • Following completion of work, land disturbed as a result of construction would be restored to its pre-existing conditions. A photographic survey (with photo locations being surveyed) would be undertaken prior to the work to provide a record of the baseline and ensure rehabilitation achieves the required outcome. The development of ESCPs will be guided by the Blue Book and other guidelines where required. • Particular attention will be paid to the design criteria for sediment fences, straw bales, catch drains, diversion drains, sandbags and similar controls • Permanent drainage to be installed as early in the program as possible All water to be discharged in accordance with legislation and only after LORAC approval. • The site EPL (20514) does not currently allow for offsite discharge. If the EPL was to be varied to include discharge offsite/to waterways a turbidity/TSS correlation should be found and the background water quality for the receiving waters determined. The EPL allows for application to land only (this should occur in accordance with TfNSW Water Discharge and Reuse Guideline 7tp-st-146). • A shaker grid, or equivalent stabilisation, will be installed at the site egress points where there is a risk of mud-tracking onto local roads. • Top soil/mulch stockpiles to be not greater than 2.0m in height. All stockpiles will be located clear of watercourses and drainage works. • Waste water management facilities shall only be provided through connection to existing sewer or proprietary pump out systems are permitted. • Erosion and Sediment Control devices are to be maintained when their capacity has been reduced by 40%. • Toolbox talks will be conducted for employees and subcontractors on the requirements of the Erosion and Sediment Control Plan. • Use sand bag check dams to protect internal stormwater drains as required. If flooding is predicted, follow the guidance of the Flood Evacuation Plan • All staff to ensure adequate ESC devices are installed and maintained. • The PER will undertake "at least weekly" inspections of on-site ESC devices, plus prior to expected rainfall and after rainfall. Responsibilities • The Site Manager is responsible for the repair/ management of any damage or additional ESC devices, as required. Timeframe Duration of site works. Visually monitored daily by the Site Manager. Monitoring and Reporting Weekly inspections to be documented on the Weekly Environmental Inspection Checklist Form E-T-8-1227. • Maintenance activities for ESCPs shall be documented – items that cannot be immediately repaired are to be documented on the project CAR Register.

Operational Control Procedures	- Environmental Risk Action Plans
	All water quality data including quantity, quality and dates of water release will be maintained the project records.
Groundwater	
Objective	 To manage the interaction of construction works and any groundwater encountered on site. To prevent pollution of groundwater or other receiving waters during discharge.
Targets	 Full compliance with the REF Approval requirements. To meet all conditions of any EPL variation or Extraction License if and when granted by the appropriate authorities.
Legal, Contractual and Other Requirements	Wickham Transport Interchange Project REF Approval. Waste Act 1912 Protection of the Environment Operations Act 1997 Protection of the Environment Operations (Waste) Regulation 2005 Environmental Planning and Assessment Act 1979. TfNSW Standard Requirements TSR E – Environmental Management.
Site specific planning / approval conditions / licence conditions	REF Mitigation Measures 69 -70
Controls (means and resources)	 Any water extracted will be tested in accordance with the TfNSW Water Discharge and Reuse Guidelines and any other conditions imposed by an EPL variation or license from the NSW Office of Water. A site induction and toolbox talk will be held for all employees and will include dewatering requirements, including groundwater. A treatment train may be set up to treat for suspended sediments, pH imbalances and other chemicals if required.
Responsibilities	Site Environmental Representative
Timeframe	Duration of site works.
Monitoring and Reporting	Monitoring in accordance with TfNSW Water Discharge and Reuse Guidelines and any other condition imposed by the EPL or other licenses (including discharge to waters).
Traffic Management	
Objective	To comply with contractual requirements and ensure that noise and additional traffic from construction activities does not cause an environmental nuisance
Targets	 No valid complaints resulting from congestion from construction traffic outside the approved Traffic Management Plan Comply with traffic management standards No visible cueing in streets surrounding the site Full compliance with the REF requirements and CoAs.
Legal, Contractual and Other Requirements	 TfNSW approval conditions – approval number: 385Q472 dated 10th November 2014. Protection of the Environment Operations Act 1997 Roads Act 1993 RTA Traffic Control at Worksites Roads (General) Regulation 2000 Local Government Act 1993
Site specific planning / approval conditions / licence conditions	In accordance with the REF the following mitigation measures will also be applied to traffic management; Adequate road signage to inform motorists and pedestrians of the work and ensure that the risk of accidents and disruption to surrounding land uses is minimised. A pedestrian management plan to maximise safety and access for pedestrians and cyclists, including details of alternative access arrangements. Adequate sight lines to allow for safe entry and exit from the site. Impacts and changes to on and off street parking and requirements for any temporary replacement provision. Routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and businesses. Details for the relocation of kiss-and-ride, taxi ranks and bus stops if required, including appropriate signage to direct patrons, in consultation with the relevant operator. Measures to manage traffic flows around the area affected by the proposal, including required regulatory and directional signposting, line marking and variable message signs and all other traffic control devices necessary. Traffic and access would be managed in accordance with Traffic Control at Work Sites (RTA, 2010) and in consultation with Roads and Maritime Services and Council.

Construction Environmental Management Plan WTI-LOR-PMP-0014

Operational Control Procedures	- Environmental Risk Action Plans
	 Construction vehicles would park within the construction compound/rail corridor safe zone. The timing of deliveries accessing the site would need to be considered to ensure there is sufficient space within the proposal site to accommodate deliveries. The queuing and idling of construction vehicles in residential streets would be minimised. A TMP has been developed which identified the following measures to be implemented: ensuring access to railway stations, businesses and residential properties (unless affected property owners have been consulted and appropriate alternative arrangements made) managing impacts and changes to on and off street parking and requirements for any temporary replacement provision parking locations for construction workers away from stations and busy residential areas and details of how this will be monitored for compliance The performance of all Project traffic arrangements must be monitored during Construction.
Controls (means and resources)	 A Traffic Management Plan shall be developed detailing the route to the site, times of activity, types of machinery, signage, traffic control measures, etc. An approved Traffic Control Plan is required for any activity on/or immediately adjacent to public roads The Traffic Management Plan will detail the monitoring and inspection requirements Road occupancy licences would be obtained from Council for any works within the road reserve of local roads. (REF mitigation Measure 27) Access to all private properties adjacent to the proposal site would be maintained during construction, unless otherwise agreed by relevant property owners (REF mitigation Measure 28) Regular checks are to be undertaken to ensure all equipment and vehicles are in good working order and are operated correctly. Checking should include: defective silencing equipment; rattling components; and hydraulic hose or other fluid leaks. Implement the Traffic Management Plan for the works, which includes the implementation of the following management measures: Prior to construction commencing, the condition surveys and reports on the condition of roads and footpaths affected by construction will be prepared. Any damage resulting from the construction of the Project, aside from that resulting from normal wear and tear shall be repaired at the Proponent's expense. It is recommended that all the delivery vehicles travel to and from the construction site by state and regional roads where possible. Site deliveries of materials and plant will be scheduled outside of the peak hour periods to limit disruptions to the general public. This will avoid the morning and aftermoon peak hours of pedestrian traffic and ensure that all site activity occurs within the site compound area. Site access/egress to the site compound area. Site access/egress to the site compound is via Railway Lane and Holland Street. The preferr
Responsibilities	The Site Manager is responsible for ensuring traffic management plans and TCPs are developed, approved and implemented
Timeframe	Duration of site works.
Monitoring and Reporting	LORAC's IMPACT PLUS Incident Reporting System to be used to document complaints. Daily inspection, checks and regular maintenance to traffic control measures.
Hazardous / Contaminated L	and / Soil / Material
Objective	 To comply with contractual and legislative requirements and ensure that hazardous material from construction activities does not cause an environmental nuisance / harm and is disposed of in accordance with legislative requirements. To comply with the requirements of the WTI Project Remediation Action Plan (RAP)
Targets	 No environmental incidences involving contaminated/ hazardous materials. No pollution events of the surrounding environmental and water ways by contaminated material. All off-site movement of any contaminated material will be tracked. Full compliance with the REF requirements, RAP and CoAs.
Legal, Contractual and Other Requirements	TfNSW approval conditions – approval number: 385Q472 dated 10th November 2014. Contract specification clause Contaminated Land Management Act 1997

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Operational Control Procedures - Environmental Risk Action Plans Protection of The Environment Operations Act 1997 Dangerous Goods Safety Management Act 2001 Dangerous Goods Safety Management Regulation 2001 AS/ NZS 1940: 2004 - The Storage and Handling of Flammable and Combustible Liquids Australian Dangerous Goods Code. 5th Edition Pesticides Act 1999 Unidentified Contamination (Other than Asbestos) The Project's CoAs as issued by TfNSW. If previously unidentified contamination (excluding asbestos) is discovered during Construction, work in the affected area must cease immediately, and an investigation must be undertaken and report prepared to determine the nature, extent and degree of any contamination. The level of reporting must be appropriate for the identified contamination in accordance with EPA Guidelines for Consultants Reporting on Contaminated Sites. The Proponent shall: • Submit a copy of the report to the PME for consideration. The PME shall determine whether consultation with the relevant council and/or EPA is required prior to continuation of Construction works within the affected area. Note: In circumstances where both previously unidentified asbestos contamination and other contamination are discovered within a common area, nothing in these conditions shall prevent the preparation of a single investigation report to satisfy the requirements of both Condition 28 and Condition 29. Site specific planning / approval **Asbestos Management** conditions / licence conditions If previously unidentified asbestos contamination is discovered during Construction, work in the affected area must cease immediately, and an investigation must be undertaken and report prepared to determine the nature, extent and degree of the asbestos contamination. The level of reporting must be appropriate for the identified contamination in accordance with relevant EPA and WorkCover Guidelines and include the proposed methodology for the remediation of the asbestos contamination. Remediation activities must not take place until receipt of the investigation report. Works may only recommence upon receipt of a validation report from a suitably qualified contamination specialist that the remediation activities have been undertaken in accordance with the investigation report and remediation methodology. Note: In circumstances where both previously unidentified asbestos contamination and other contamination are discovered within a common area, nothing in these conditions shall prevent the preparation of a single investigation report to satisfy the requirements of both Condition 28 and Condition 29. Pesticides and Herbicides Notification must be given to the land owner in accordance with the TfNSW Pesticides Application Record Form 9tp-ft-160 Implement the Construction Waste, Contamination and Hazardous Material Management Plan for the works. An asbestos management plan has been prepared for the site and recommendations are to be implemented during the construction phase. Surface asbestos containing material (ACM) will be removed by a licensed asbestos removal contractor and disposed of as asbestos waste to an appropriately licensed facility in accordance with the WorkSafe NSW 2011 Code of Practice How to Safely Remove Asbestos. Following removal of ACM a competent person will undertake a Clearance Inspection of the site to confirm that no visible ACM remains in accordance with the WorkSafe NSW 2011 Code of Practice How to Safely Remove Asbestos. Waste Classification - During excavation works on-site, soil materials will be screened by a suitably qualified Environmental Scientist for visual and/or olfactory indicators of contamination prior to stockpiling. All material is to be stockpiled in a bunded area and wherever possible, material that is visually assessed as being similar, should be stockpiled together. Any materials displaying properties (physical, visual/olfactory) that are inconsistent with the materials characterised as part of the in-situ waste assessment must be stockpiled separately and subject to further ex-situ waste classification. A Waste Classification report will be required detailing the investigation and final classification of the waste and the material disposed of at an appropriately licensed landfill disposal. In the event, the results are below the nominated waste criteria, the material may be beneficially reused on site, if required. A fuel bund with the capability of holding 110% of the material to be stored, if fuel to be stored on site. Controls (means and resources) • Have emergency procedures in place as per PIRMP Appendix 5. · Have current SDS on site. Manage any contaminated material as per legislative / EPA permit requirements. • In the event that indicators of contamination are encountered during construction (such as odours or visually contaminated materials), work in the affected areas would cease immediately, and the procedures detailed in the unexpected finds protocol would be implemented. An Acid Sulphate Soils management plan has been developed for the Project. The plan has been developed in accordance with the Acid Sulphate Soil Planning Guidelines (Department of Urban Affairs and Planning, 1998). Acid sulphate soils will be treated on-site and reused if appropriate or sent to a licensed facility for treatment. • All pesticides and herbicides to be used on site are to be assessed by the PER and Safety Manager or Advisor. Notification of pesticide use is to be made to the land owner and, where applicable, surrounding residents. A pesticide register is to be kept which will record: the date of application, type of pesticide/herbicide, where it was applied, by whom, what notifications were made • Ensure the mitigation measures as described in the WTI Project RAP are implemented including a site validation/emu pick for asbestos, hot-spotting of contaminants and appropriate

Operational Control Procedures	s - Environmental Risk Action Plans
	capping of the potential lead contaminated area.
Responsibilities	Site Supervisors, Project Leader and LORAC Staff to ensure all targets are met.
Timeframe	 Contaminated Material: Duration of any contaminated material removal. Hazardous Material: Duration of site works. Acid Sulphate Soils: Duration of works
Monitoring and Reporting	 LORAC Environmental Checklist E-T-8-1227. Field testing and laboratory testing of soils Weekly inspections to be uploaded on SEQCAR on Asite Receipts for the disposal of any found hazardous material will be filed on Asite by the Site Clerk or PER. The finding of any contaminated material on site will be reported monthly by the PER using LORAC Form E-T-8-1227.
Indigenous and Non-Indiger	nous Heritage
Objective	To comply with contractual and legislative requirements and ensure no adverse impact occurs to heritage items of Indigenous or Non-Indigenous nature.
Targets	 No adverse impacts to heritage items Comply with all conditions of licenses obtained from Heritage Council, including Section 60 obtained during early works which contains main works components Comply with all conditions of licenses obtained from the Office of Environment and Heritage, including the AHIP for test pits. No heritage related incidents. Educate LORAC staff and subcontractors on the known/possible heritage items on site, relevant legislation, unexpected finds procedure and control measures required when working on or near heritage items.
Legal, Contractual and Other Requirements	 Contract specification clause From the Conditions of Approval; CoA 36 - If previously unidentified indigenous or non-indigenous heritage/archaeological items are uncovered during construction works, all works in the vicinity of the find shall cease and appropriate advice shall be sought from a suitably qualified heritage consultant (and in consultation with the Heritage Division where appropriate). Works in the vicinity of the find shall not re-commence until clearance has been received from the heritage consultant and/or Heritage Division or works at Hamilton Station. All NSW Heritage Division or CoA43 - An approval under section 60 of the Heritage Act 1977 has been obtained from the NSW Heritage Division for works at Hamilton Station. All NSW Heritage Division approval conditions are to be implemented. Detailed design of the new station at Wickham, including materials selection would be sympathetic to the surrounding heritage items/elements and the significance of the Newcastle City Centre Heritage Conservation Area, while clearly marking the building as contemporary. These measures are to be detailed in the UDLP prepared under condition 37. Potential impacts on the heritage significance of Wickham, Civic and Newcastle stations as a result of ceasing rail operations at these stations would be addressed as part of the Residual Corridor Management Plan. CoA 44 - Prior to commencing any excavation or piling works where there is a risk of interfering with or destroying Aboriginal artefacts at the new transport interchange, an approval under section 90 of the National Parks and Wildlife Act 1974 is required from the Office of Environment and Heritage All approval conditions are to be implemented. Heritage Act 1977. National Parks and Wildlife Act 1974
Site specific planning / approval conditions / licence conditions	 Section 60 Approval 2014-S60-166. Section 140 (2015/s140/20) Section 90 Aboriginal Heritage Impact Permit – Unexpected find procedure Conditions from the Section 60 approval under the Heritage Act 1977: Development must be in accordance with: Architectural drawings prepared by GHD, Appendix A and B General Arrangement and Detail drawings prepared by URS for Transport for NSW with Project Reference 'Hamilton Railway Station Group, Newcastle, Section 60 Application to NSW Heritage Division', Project No: SH473 Report entitled: 'Hamilton Railway Station Group - Archaeological Assessment' dated October, 2014 prepared by Artefact Heritage for Urbis Report entitled: 'Heritage Impact Statement, Hamilton Railway Station Group SH473, 16 October 2014 prepared by URBIS' Transport for NSW letter to Heritage Division Office of Environment & Heritage, dated 03.10.2014 re: Wickham Transport Interchange project - Application for approval for works at Hamilton Station Use of Experienced Heritage Consultant and Tradespersons Prior to the commencement of any work on site, an experienced heritage consultant is to be commissioned to work with the consultant team throughout the construction stages of the

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Operational Control Procedures - Environmental Risk Action Plans

project. The nominated heritage consultant is to approve the resolution of all matters where existing significant fabric and spaces are to be subject to additions and alterations, recording and demolition. The nominated heritage consultant is to be provided with full access to the site and authorised by the applicant to respond directly to the Heritage Council or its delegate where information or clarification is required regarding the resolution of heritage issues throughout the project.

- The name of the heritage consultant is to be provided to the Heritage Council prior to commencement of any work on site.
- All work shall be carried out by suitably qualified tradespersons with practical experience in conservation and restoration of similar heritage items. The nominated heritage consultant shall be consulted prior to the selection of appropriate tradespersons.

Site Protection & Works

- Significant built elements are to be adequately protected during the works from potential damage. Protection systems must ensure historic fabric is not damaged or removed.
- New services shall be concealed appropriately to minimise visual impacts. The installation of new services and fit-outs shall be carried out in such a manner as to minimise damage to or removal of historic fabric and shall not obscure historic features. Any penetrations through heritage fabric for supply and waste pipes and mechanical ducts should be prevented.
- All recommendations made on p.25 of the report referred to in the abovementioned Condition 1. c) Heritage Impact Statement, Hamilton Railway Station Group are to be carried out to mitigate any potential impacts associated with the proposed works.

Archaeology

The Applicant must ensure that if intact archaeological deposits and/or State significant relics are discovered, work must cease in the affected area(s) and the Heritage Council of NSW must be notified in accordance with Section 146 of the Heritage Act. Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.

Duration of Approval

This approval shall be void if the activity to which it refers is not physically commenced within five years after the date of the approval or within the period of consent specified in any relevant development consent granted under the Environmental Planning and Assessment Act 1979, whichever occurs first.

Conditions of the AHIP includes the following aspects;

- · Responsibility for compliance with the AHIP
- · Project manager to oversee actions relating to this AHIP
- Actions must be in accordance with the AHIP application
- Certain aboriginal objects must not be harmed
- Test excavations in accordance with the Test Excavation Report
- Temporary storage of certain Aboriginal objects
- Long term management of certain Aboriginal objects
- Notification of commencement and completion of actions
- A copy of the AHIP and notices are to be provided to Registered Aboriginal Parties
- Human remains measures
- Incidents which may breach the Act or the AHIP including reporting of incidents
- Provision of Aboriginal Site Impact Recording Form
- Report about Harm to Aboriginal Objects

General conditions; Indemnity, Release, Written Notice

- A Heritage Management Plan has been developed to provide a background of Heritage related issues on site and to provide control measures to mitigate the risk of damage to items with heritage or archaeological significance. This plan will be developed before the commencement of construction and will include the conditions imposed by any licenses or permits. The plan will also include mitigation measures specified within the REF. This plan will form Appendix 15 of this document.
- Include heritage requirements within the Site Induction
- Tool box talks targeted at those working within known heritage areas especially in regards to the S140 earthworks scope
- The Unexpected Finds procedure is as follows;
- o If unexpected heritage items of a non-indigenous nature are found during works, the works will stop until the item can be identified and clearance given by the Heritage Consultant or Heritage Council in accordance with Condition of Approval 36.
 - Should Aboriginal heritage items be uncovered all work in the vicinity will cease and the Project Manager and Transport for NSW staff will be notified immediately. The Office of Environment and Heritage will be notified in accordance with the National Parks and Wildlife Act 1974. The Awabakal Local Aboriginal Land Council will be notified and an assessment by an archaeologist will be arranged to determine the significance of the objects and any other requirements before work resumes. If any human remains are discovered the Police and NSW coroner must be contacted. If the remains are found to be archaeological then the Office of Environment and Heritage must be notified.
- Obtain all appropriate licenses and permits for works.
- · Provide toolbox talks to employees and subcontractors
- Provide control maps detailing the location of known heritage items
- Provide a poster showing key heritage items and what possible unknown finds may look like

Construction Environmental Management Plan WTI-LOR-PMP-0014

Controls (means and resources)

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Operational Control Procedures	- Environmental Risk Action Plans
Responsibilities	 All heritage items in the immediate vicinity of the proposal site would be marked on site plans, fenced off where appropriate, and avoided. The construction noise and vibration management plan prepared as part of the CEMP would define the construction methods to be used in the vicinity of heritage listed items and the measures to minimise the likelihood of vibration impacts. Vibration management measures provided in section 9.5 of the REF would be implemented to minimise the potential for structural vibration impacts to heritage items. Dilapidation surveys would be undertaken for heritage buildings/structures located on or within 25 metres of the proposal site. Sufficient protection including temporary fencing would be installed around built heritage items where works are to be undertaken in close proximity to these items, or where a thoroughfare or construction access is required. The Project Leader will ensure all materials are available to undertake controls as listed above The PER will ensure all relevant subcontractors undertake toolbox talks in relation to Heritage on site.
Timeframe	Full project duration.
Monitoring and Reporting	 Incidents to be recorded in LORAC's IMPACT Incident Reporting System and TfNSW's INX Incident Management System. Incident reporting to OEH in relation to the State Heritage listed Hamilton Railway Station Group. Weekly inspection, checks and regular maintenance of any on-site fencing.
Lighting	
Objective	To comply with contractual and legislative requirements and mitigate the risk of adverse impacts to the community from light spill
Targets	No complaints due to light spill
Legal, Contractual and Other Requirements	
Site specific planning / approval conditions / licence conditions	Lighting plans to include direction to point light towers away from sensitive receivers
Controls (means and resources)	 Tool box training to workers setting up light Visual monitoring of lighting during use Liaison with the local community
Responsibilities	The Project Leader will ensure all materials are available to undertake controls as listed above The PER will ensure all relevant subcontractors undertake toolbox talks in relation to lighting where required.
Timeframe	Full project duration.
Monitoring and Reporting	 Visually monitored by the Shift supervisor as necessary. Reporting as per the TfNSW and LORAC incident reporting procedures for community complaints
Graffiti and Advertising	
Objective	 Minimise visual impact of construction works Eliminate offensive and/or unauthorised graffiti and advertising messages Maintain site facilities to be free of graffiti and unauthorised advertising
Targets	Full compliance with the REF Approval requirements.
Legal, Contractual and Other Requirements	Wickham Transport Interchange Project REF Approval. Environmental Planning and Assessment Act 1979. TfNSW Standard Requirements TSR E – Environmental Management.
Site specific planning / approval conditions / licence conditions	REF Approval Condition 40
Controls (means and resources)	Hoardings, site sheds, fencing, acoustic walls around the perimeter of the site, and any structures built as part of the Project are to be maintained free of graffiti and advertising not authorised by the Proponent during the construction period.
Responsibilities	Site Environmental Representative

Operational Control Procedures	- Environmental Risk Action Plans
Timeframe	Graffiti and unauthorised advertising will be removed or covered within the following timeframes: offensive graffiti will be removed or concealed within 24 hours highly visible (yet inoffensive) graffiti will be removed or concealed within a week graffiti that is neither offensive or highly visible will be removed or concealed within a month any unauthorised advertising material will be removed or concealed within 24 hours
Monitoring and Reporting	Weekly inspection, checks and regular maintenance of hoardings, site sheds, acoustic walls etc. and any structures built as part of the project
Flora and Fauna Managemen	nt
Objective	To comply with contractual and legislative requirements and ensure no adverse impacts to flora or fauna on-site including degradation of site by further weed infestation.
Targets	No unapproved clearing of vegetation No unnecessary clearance of vegetation No harm to fauna Inhibit the spread of weeds on site. Mitigate the risk of feral animal habitation onsite Provide vegetation offsets as per requirements of CoA and TfNSW Vegetation Offset Guidelines Educate LORAC staff and subcontractors on the above
Legal, Contractual and Other Requirements	 Contract specification clause Native Vegetation Act 2003 Threatened Species Conservation Act 1995 Noxious Weeds Act 1993. Pesticides Act 1999. Local Land Services Act 2013. National Parks and Wildlife Act 1974
Site specific planning / approval conditions / licence conditions	Replanting Program All cleared vegetation shall be replaced and/or offset in accordance with the following, unless otherwise agreed or directed by the PMEM: Sydney Train's Biodiversity Offset Calculator for vegetation within the rail corridor TinNSW's Vegetation Off-set Guide for vegetation outside of the rail corridor All vegetation planted on-site is to consist of locally endemic native species, unless otherwise agreed by the PMEM, following consultation with the relevant Local Authority, where relevant, and/or the owner of the land upon which the vegetation is to be planted. CoA34: Removal of Trees or Vegetation Separate approval is required in accordance with TinSW's Application for Removal or Trimming of Vegetation for the trimming, cutting, pruning or removal of trees or vegetation where the impact has not already been identified in the EIA for the Project. CoA 42: Bat Management Plan A Bat Management Plan would be prepared, as part of the CEMP for the proposal, to minimise the potential for any impacts on bats particularly those that use the Maitland Road overpass. Replanting Program All cleared vegetation shall be replaced and/or offset in accordance with the following, unless otherwise agreed or directed by the PMEM: Sydney Train's Biodiversity Offset Calculator for vegetation within the rail corridor TinNSW's Vegetation Offset Guide for vegetation within the rail corridor All vegetation planted on-site is to consist of locally endemic native species, unless otherwise agreed by the PMEM, following consultation with the relevant Local Authority, where relevant, and/or the owner of the land upon which the vegetation is to be planted. Removal of Trees or Vegetation Separate approval is required in accordance with TinSW's Application for Removal or Trimming of Vegetation for the trimming, cutting, pruning or removal of trees or vegetation where the impact has not already been identified in the EIA for the Project.

Construction Environmental Management Plan WTI-LOR-PMP-0014

Operational Control Procedures	- Environmental Risk Action Plans
Controls (means and resources)	 No clearance without prior approval Works to be undertaken in accordance with the Bat Management Plan Inductions and Tool box training on flora and fauna issues – including feral animals and weeds Works to be carried out in accordance with TfNSW Vegetation offset guide 9tp-st-149, TfNSW Weed Management and Disposal Guideline 3tp-sd-110, TfNSW Vegetation Management (Protection and Removal) Guideline 9tp-sd-111 Provide control maps detailing the location of fauna habitats and vegetation not to be disturbed Carry out work in accordance with TfNSW's biodiversity objectives as stated in the Transport Environment and Sustainability Policy Statement periodic monitoring of the underside of the Maitland Road bridge deck prior to and during works involving services or infrastructure attached to the bridge structure and avoid direct disturbance to roosting individuals from light pollution, vibration or direct contact Monitor for signs of feral animals such as foxes, cats, dogs and pigs. Educate workers on not leaving food around which may attract pests and feral animals Limit habitat for feral animals where possible. If feral animals become problematic engage a pest controller to remove the animal in accordance with NSW law. Monitor for weeds and if found organise for removal of herbicide application. Limit the spread of weeks on site. In particular Castor Oil plant. This should be done by appropriate stockpile management and weed spraying where appropriate.
Responsibilities	 The Project Leader will ensure all materials are available to undertake controls as listed above The PER will ensure all relevant subcontractors undertake toolbox talks in relation to flora and fauna. all construction personnel to be made aware of possible roosting by listed threatened species beneath Maitland Road overpass PER to conduct periodic inspection of underside of Maitland Road bridge deck during day time, to identify possible presence of micro-bats and roosting sites such as small cracks 5cm or wider PER, construction staff to be vigilant for microbat activity at dawn and dusk (during possessions), when roosting individuals are likely to be active
Timeframe	Full project duration.
Monitoring and Reporting	Visually monitored daily by the PER. Reporting as per the TfNSW and LORAC incident reporting procedures
Concrete Washout	
Objective	To comply with contractual and legislative requirements in relation to the washing out of concrete on the project.
Targets	Zero spills or uncontrolled release of concrete. No instances of uncontrolled concrete washout.
Legal, Contractual and Other Requirements	TfNSW approval conditions – approval No: 385Q472 dated 10th November 2014. Contract specification clause Protection of the Environment Operations Act 1997.
Site specific planning / approval conditions / licence conditions	Contract Specification EPL requirements Protection of the Environment Operations Act (1997)
Controls (means and resources)	 Subcontractors are to supply their own concrete tray for concrete disposal. Where permitted by Laing O'Rourke, subcontractors may construct and operate a concrete washout pit. Concrete washout to be constructed with geo-fabric lining and bunded. Location of concrete tray or washout to be at least 20m away from any drainage line or stormwater system. Where concrete trays are not appropriate a concrete washout is to be constructed to the dimensions of 6m x 3m x .5m deep prior to commencement of concrete works, where practicable Concrete trays or washouts should have a minimum capacity of 3m3 and should not be subject to inflow of runoff from the local catchment. Washout to be barricaded off on all sides when not in use to prevent unauthorised entry. Washout area is to be inspected daily by the Site Manager to ensure residual water levels don't exceed 75% of capacity. Record of daily inspection to be kept in Site Manager's/Supervisor's diary when concrete washout is being undertaken. Washout area to be cleaned when the capacity has been reduced below 50%. Cleaning of washout to involve, removal of spoiled geo-fabric material and disposed of to a licenced waste disposal facility. Records to be retained Where possible waste concrete shall be returned to the batch plant or concrete recycler. Concrete truck drivers are to be advised of the location of the concrete tray or washout area prior to arrival on site – to be done by subcontractor using concrete. The requirements relating to concrete washout on site are to be provided to the supplier prior to the works.

Operational Control Procedures	- Environmental Risk Action Plans
Responsibilities	 The Site Manager will ensure that an approved and prepared area for concrete washout is available. All personnel are required to ensure that the requirements of this ERAP are implemented for their operations. Site Manager /Project Leader are required to advise LORAC of any concrete spills. The Site Manager is responsible for confirming these requirements with the concrete supplier prior to the works.
Timeframe	Duration of site works.
Monitoring and Reporting	 Weekly inspections to be recorded on Form E-T-8-1227. Incidents or spills of concrete to be recorded on form Environmental Incident and Complaint Report (F1222).
Greenhouse Gas Emission	
Objective	Implement Environmental and Sustainability Initiatives for the project (identified below and in the Sustainable Design Guidelines spreadsheet)
Targets	Implement LORAC Environmental and Sustainability Policy Assist TfNSW in trialling Carbon Estimate Reporting Tool (CERT)
Legal, Contractual and Other Requirements	 Wickham Transport Interchange REF. CoAs for Wickham Transport Interchange Project. ISO 14064-1:2006 Greenhouse Gases – Specification with guidance at the organisational level for quantification and reporting of greenhouse gas emissions. TfNSW's Greenhouse Gas Inventory Guide for Construction Projects (Version 3.0). The GHG Protocol – Revised Edition, 2004, developed by a partnership between the World Resource Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). National Greenhouse and Energy Reporting (Measurement) Determination 2008. National Greenhouse Accounts (NGA) Factors, July, 2013, developed by the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education.
Site specific planning / approval conditions / licence conditions	 Greenhouse gas assessment shall be prepared in accordance with REF and TfNSW Sustainable Design Guidelines for Rail Version 3.0 TfNSW Carbon Estimate Reporting Tool (CERT)
Controls (means and resources)	 The potential use of biodiesel blended with regular diesel in construction vehicles and equipment. Purchase of GreenPower sourced electricity where feasible. Use of energy efficient technologies to power site offices, including; energy efficient, lighting, Behavioural patterns such as ensuring site office personnel switch off computers, monitors and office equipment whilst not in use. The use of materials such as recycled steel or alternative cement products where feasible. All vegetation cleared be disposed of at a registered compost facility or reused on site as mulch. Clearing of vegetation should be limited to the minimum that is required for the project Planting additional vegetation would assist in offsetting GHG emissions. Engines should be switched off when vehicles are not in use. Construction plant and vehicles should be well maintained and regularly serviced. Visibly smoky or defective plant should not be used.
Responsibilities	 All the personnel are responsible for switching off computers, monitors, office equipment, and vehicle whilst not in use. Contractors are responsible for efficient usage of plant and equipment. The PER will undertake "at least weekly" inspections of on-site to make sure no plant leave idle for more than 30 min. Construction manager is responsible for the implementation of sustainability policies on site during construction. Site Supervisors, Senior Project Leader and LORAC Staff to ensure all targets are met.
Timeframe	Duration of site works.
Monitoring and Reporting	 Report will be undertaken by LORAC as part of National Greenhouse and Energy Reporting requirement. LORAC Environmental Checklist E-T-8-1227.
Delivery and Storage of Che	micals, Fuels a Oils and including Dangerous Goods Requirements
Objective	 To comply with contractual and legislative requirements in relations to the transport of dangerous goods. To comply with contractual and legislative requirements in relation to the storage of chemicals, fuels and oils on the site. To ensure contractual and legislative requirements in relation to hazardous substances and dangerous goods are adequately addressed for all operations – there are specific additional requirements relating to the storage and transport of dangerous goods

Construction Environmental Management Plan WTI-LOR-PMP-0014

Operational Control Procedures	s - Environmental Risk Action Plans
Targets	 Zero spills or uncontrolled release of fuel, oils or chemicals associated with Laing O'Rourke's Operations. Compliance with relevant transport and storage requirements. All vehicles transporting dangerous goods have appropriate placards, licenses and emergency equipment and procedures. TfNSW approval conditions – approval No: 385Q472 dated 10th November 2014.
Legal, Contractual & Other Requirements	 AS/ NZS 1940: 2004 – The Storage and Handling of Flammable and Combustible Liquids Dangerous goods (Road and Rail Transport) Act 2008 Dangerous goods (Road and Rail Transport) Regulation 2008 Australian Dangerous Goods Code, 7th Edition Contract specification
Site specific planning / approval conditions / licence conditions	EPL requirements
Controls (means and resources)	The following are the minimum general control measures to be implemented on the project, however additional control measures may be required following the completion of the construction process procedure/work method statement for the proposed activity. • Minimise storage of fuel, oil, chemicals or other dangerous goods on site, though efficient and timely ordering. • The SDS and material risk assessment, including any specific control measures are to be submitted where required and upon request to the TINSW's Environmental Management Representative. • A risk assessment relating to the use of these materials is to be completed in accordance with the Construction Health and Safety Plan prior to the arrival of these goods to site. • SDS and associated documentation for each material to be reviewed prior to the completion of the risk assessment for the relevant construction process. A copy to be included with the SWMS. • Ensure SDS's are available on site for all fuels, oils, chemicals and dangerous goods. Suppliers are to provide SDS prior to dispatch of the material. • Chemicals, fuels and dist to be stored in a securely bunded area with appropriate signage, at all times when not specifically in use. • Chemicals fuels, oils and chemicals to be stored in side impervious bunds of sufficient capacity to contain 110% of the stored volume. Bunded areas must have sufficient cover to prevent ingress of rain. • Materials removed from the bunded storage area for use are to be returned to the bund at the end of each shift. • Storage sites are to be > 20m away from operational facilities, drainage lines, and areas prone to flooding or on slopes > 1V:10H. • Diver or Supervisor to be in attendance at all times when unloading of fuel, oil or chemicals takes place on site. • No water to be discharged from bunded areas into site drainage system. Contaminated water to be removed by appropriately licensed contractor & discharged to a suitably licensed wasts facility. • Delivery drivers are to be provided to the workfor

Operational Control Procedures - Environmental Risk Action Plans

- Double-sided reflectors.
- o Driver safety equipment and PPE.
- o Goods must be secured and where required segregated from incompatible goods.
- o Dangerous goods must be appropriately marked in accordance with the Australian Dangerous Goods Code.

The quantities that trigger the requirements for a Placard Load are as follows:

	Dangerous Goods in Transport Unit	Placard Load Quantity
(a)	Any dangerous goods in a receptacle with a: • capacity > 500 L; or • net mass > 500 kg	One or more such receptacles (i.e. one or more placardable units)
(b)	 Includes any quantity of: Division 2.1 (except Aerosols); or Division 2.3; or Packing group I of any Class or Division 	Aggregate quantity of all dangerous goods in the transport unit $\geq 250 \ kg(L)$
(c)	Division 6.2 Category A	All quantities
(d)	Division 6.2 (other than Category A)	≥ 10 kg(L)
(e)	All loads where placarding is not required by (a), (b), (c) or (d) above	Aggregate quantity of dangerous goods ≥ 1000 kg(L) —unless the load is: (i) a retail distribution load that complies with 7.3.1 (–see Note 3); or (ii) a Fumigated Unit (UN 3359 –see Note 4).

Typical dangerous goods associated with our operations include the following:

Type of Goods	DG Class	Type of Goods	DG Class	Type of Goods	DG Class
LPG Gas	2.1	Epoxy paint including hardener	8	Plumbing adhesive	3
Open Gear Lubricant	2.1	Chemical Anchor - parts A & B	8	Diesel	3
Marker Paint	2.1	Chemical Anchor	8	Joint/gap sealant	3
Silicone Lubricant	2.1	Chemical Anchor	8	Dry Film Lubricating Paint	3
Fuel Gas for welding/cutting	2.1	Adhesive Mortar	8	Joint/gap sealant	5.2
Fuel Gas for welding/cutting	2.2	Acid	8	Sealant	6.1
Air Operated Tool Lubrication	3	Degreaser (Pile Rigs)	9	Flocculent	8
Zinc Primer Paint	3	Engine Coolant	9	Rail Welding Consumables	1.4 S
Air tool lubricant - workshop	3	Antifreeze	9	Adhesive	3
Petrol-Unleaded	3	Grout	9		
Sealant	3	Form Oil	9		

Dangerous Goods Storage

• Dangerous goods storage on site must comply with the requirements of AS 1940:2004 including maintaining separation distances for incompatible materials.

Construction Environmental Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Operational Control Procedu	res - Environmental Risk Action Plans
	 The proposed materials need to be assessed for compatibility and required separation distances or control measures implemented. Flammable materials storage is to be >15m from site facilities, officers, amenities or protected places. Quantities to be stored must be assessed to determine if they are considered manifest quantities - manifest quantities will require notification to WorkCover. A storage location plan is required and needs to include internal layout, location of registers/manifests for the storage location. Bunding to be impervious and of sufficient capacity to contain 110% of the stored volume Appropriate spill containment material and fire extinguishers are also required.
Responsibilities	 Engineering personnel are responsible for identification of requirement to transport Dangerous Goods Relevant Project Leader or Workplace Manager is responsible for ensuring all vehicles carry appropriate placards, licenses, emergency equipment and procedures The General Superintendent is required to ensure that sufficient bunds are available and that material is stored appropriately. Engineering personnel are responsible for ensure MSDS and other relevant documentation are obtained and where required submitted to TfNSW's Representative prior to the material arriving on site. Relevant documentation also includes appropriate risk assessment. The Project Safety Advisor is responsible for ensuring the Chemicals, Fuels/Oils & Hazardous Substances register is maintained.
Timeframe	Duration of operations. The requirements apply to goods transported by Laing O'Rourke and third parties.
Monitoring and Reporting	 Plant / project risk assessments Plant register Weekly inspections to be recorded on Form F1227. Form E-T-8-1232 Dangerous Goods Transport Note Register of Chemicals, Fuels/Oils and Hazardous Materials Incidents or spills to be recorded on form Environmental Incident and Complaint Report (F1222). Storage areas are to be inspected by the Supervisory personnel on a weekly basis.

Appendix 5 - Environmental Control Maps

Date	Revision	Map No.	Author
31/03/2017	5	1 of 4	Reece.Zonta

Extent Map





Hours of work
7am - 6pm Monday to Friday (11 hours)
8am - 1pm Saturday (5 hours)
All other works are subject to approval.
High impact noise including rock breaking, jack
hammering, concrete and rail works can only occur for
3 hours before a 1 hour continuous break is given.

Legend

Haul Road

EPL Boundary 0-0.5



Wickham Transport Interchange Project

Projection: GDA 1994 MGA Zone 56

Environment Control Map: General ItemsPage 1 of 4

Source: Aurecon, Sydney Trains, LPI DPE, Nearmap

Date	Revision	Map No.	Author
31/03/2017	5	2 of 4	Reece.Zonta

Extent Map



Legend

Noise Monitoring Locations Site Access Gate (No.) Flow Direction Archaelogical Area Existing Drainage Existing Sewer Existing Drainage Sediment Fences Existing Sewer 1065 Non-Construction Project Vehicles Spill Kit Delineation Timber Relic Environmental Areas State Heritage Area Earthworks April 2016 - November 2016

EPL Boundary

Hours of work

7am - 6pm Monday to Friday (11 hours)
8am - 1pm Saturday (5 hours)
All other works are subject to approval. High impact noise including rock breaking, jack hammering, concrete and rail works can only occur for 3 hours before a 1 hour continuous break is given. Project Leader - James Kennedy 0400 310 626 Construction Manager - Nick Stephens 0400 318 640 Environmental Coordinator - Dan Keegan 0435 859 160 Communications Manager - Kelly Lofberg 0425 715 536 Construction Response Line - 1800 775 465 Info Line - 1800 684 490 Do not remove vegetati without approval Timber Relic Item 12 in REF Fig 8.1 Do not remove vegetation without approval

Wickham Transport Interchange Project

Source: Aurecon, Sydney Trains, LPI DPE, Nearmap

Date	Revision	Map No.	Author	
31/03/2017	5	3 of 4	Reece.Zonta	
	_			
Exten	t Map)	Vinitari Vinitari (C. C. C	
				の一個などのでは、
				の経過にはははは、
Leger	ıd			
Protect drain	nage pit during	g construction		
Recycling				
Bin				
Spill Kit				
Noise Monit	oring Location	s		
Site Compo	und (See sepe	erate map)		
Site Access				
Flow Direction				
Cate House				
SEWER-CL				
SEWER-PIF				
Existing Dra	inage			
Existing Sev	ver			
Existing Dra	inage			
Sediment Fe				
Chemical St				
Existing Sev	ver 1065			
Non-Constru	ction Project	Vehicles		
Infiltration B	asin			
Piling and E	arthworks			
Spill Kit				
Chemical St				
		- dust supres	sion where required	
Construction				
Soil Stockpil	e			

Earthworks April 2016 - November 2016

EPL Boundary

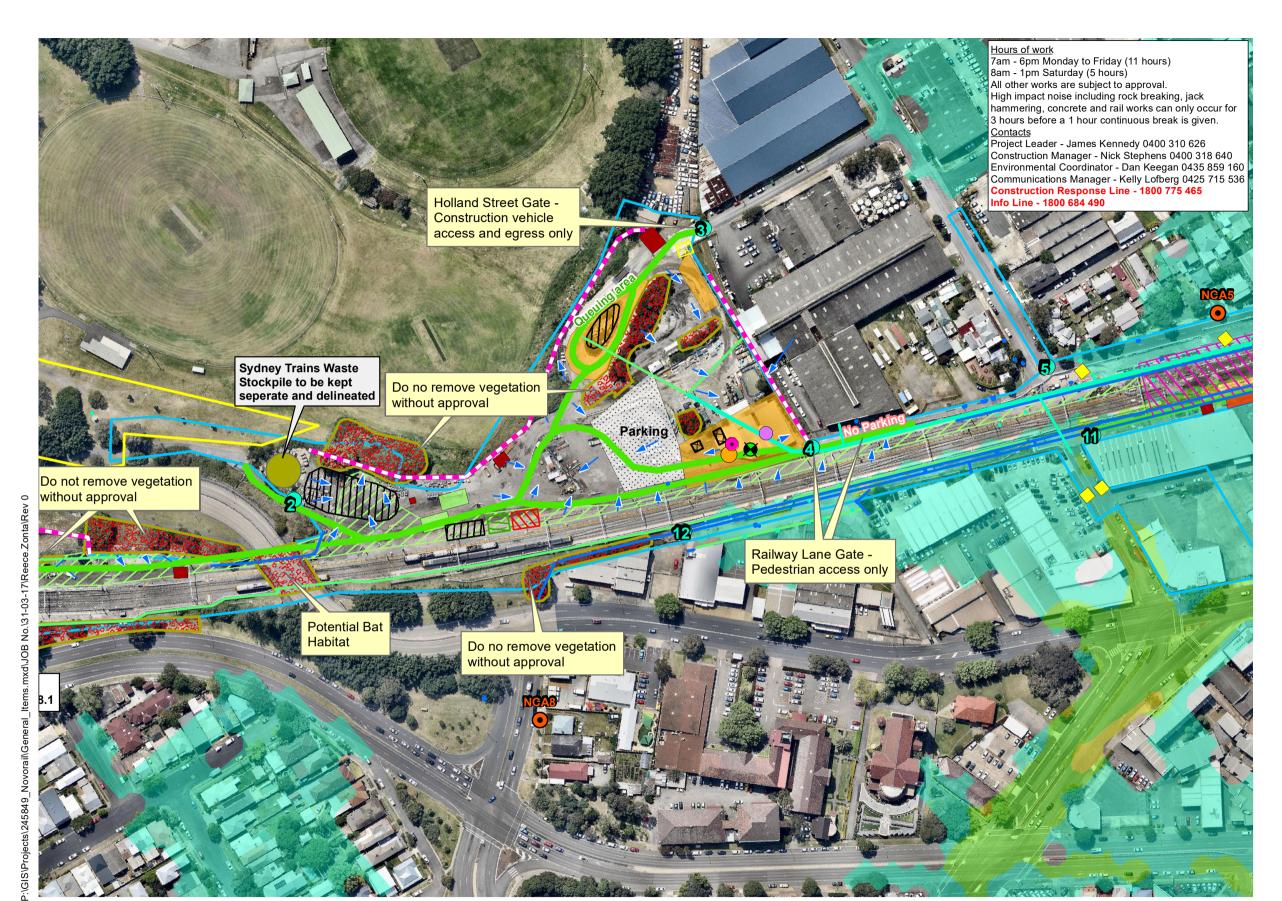
Potential Heritage Structure

EPL Bounda 0-0.5

0-0.5 0.5-1 1-1.5

1-1.5 1.5-2 2-2.5

> Source: Aurecon, Sydney Trains, LPI DPE, Nearmap



Wickham Transport Interchange Project

Date	Revision	Map No.	Author
31/03/2017	5	4 of 4	Reece.Zonta
Exten	t Mar)	

extent Map



Legend

Groundwater Pump

Groundwater Well

Protect drainage pit during construction

Stabilisation

Noise Monitoring Locations

Site Access Gate (No.)

Gate House
SEWER-CL

SEWER-PIPE

Existing Drainage

Existing Sewer
Existing Drainage

Chemical Storage
Existing Sewer 1065

Stormwater Pit
Infiltration Basin

Piling and Earthworks
Site Amenities

Spill Kit
Temporary Access Track - dust supression where required

Earthworks April 2016 - November 2016

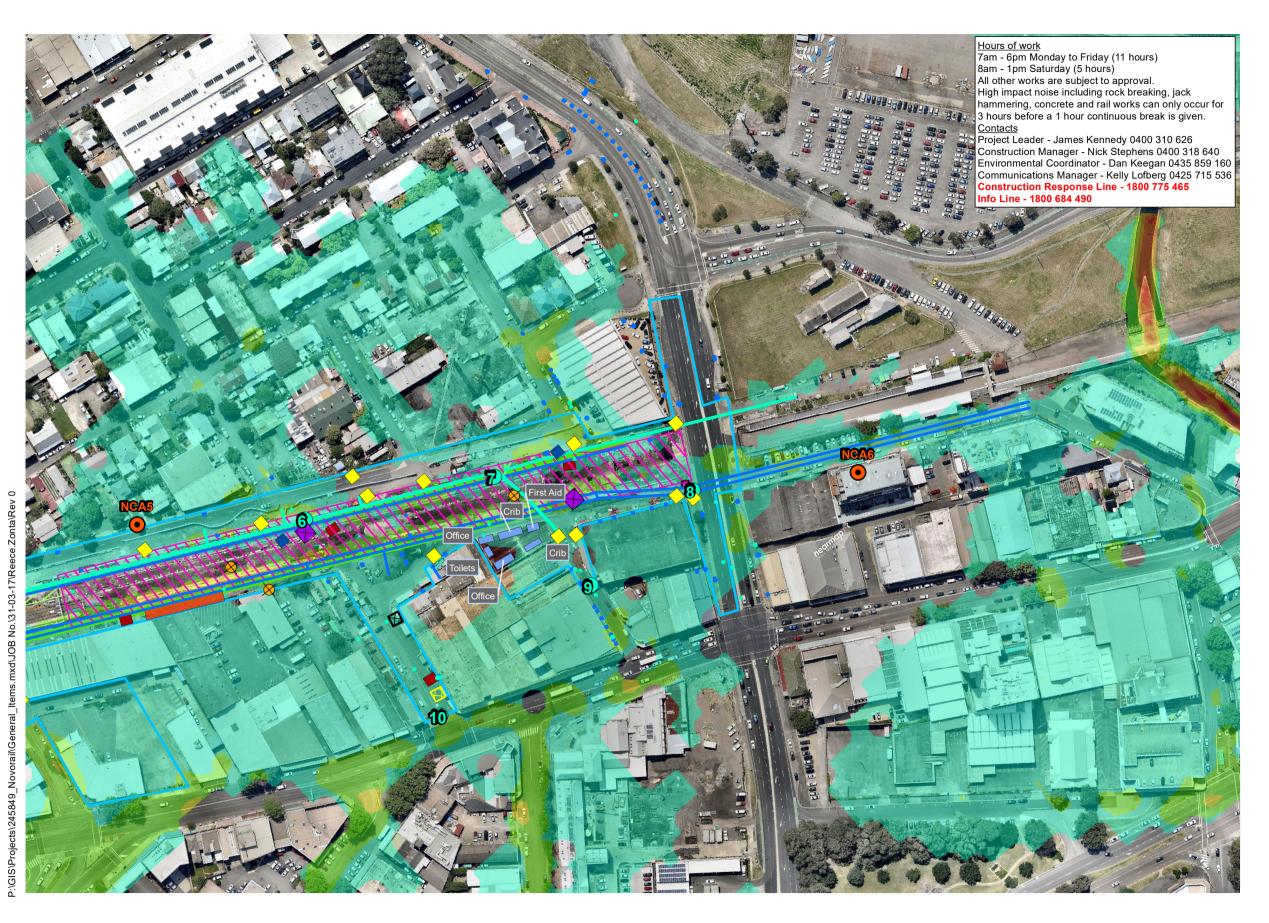
EPL Boundary

0-0.5 0.5-1

1-1.5 1.5-2 2-2.5

2.5-3

Source: Aurecon, Sydney Trains, LPI DPE, Nearmap



Construction Environmental Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 6 – Pollution Incident Response Management Plan (PIRMP)

Refer to document number WTI-LOR-PMP-0016

Project:

Wickham Transport Interchange

Project No: G85

Date: 01 August 2017

Rev:

Appendix 7 - Project Waste Strategy

The following strategy is an indicative guide to identify and state the type of waste that is intended to be controlled and recycled where practical.

Project Waste Management Strategy



Project Waste Management Criteria

Project Start Up

OBJECTIVE

To comply with contractual and legislative requirements and ensure that waste from construction activities does not have the potential to escape from the site and cause an environmental nuisance / harm.

REQUIREMENTS/REGULATIONS

- Client Requirements
- TfNSW Approval Conditions
- Protection of the Environment Operations Act 1997
- Protection of the Environment Operations (Waste) Regulation 2005
- Waste Avoidance and Resource Recovery Act 2001
- Local Government Act 1993
- NSW EPA Waste Classification Guidelines, 2014

TARGETS

- No incidences where waste is stored in a position where it has the potential to move off-site.
- All off site movements of waste will be tracked.
- The principles of the waste management hierarchy will be adopted, where practicable.
- At least 95% of construction waste diverted from landfill and either recycled or reused.
- Waste will be minimised where ever possible.
- Compliance with the WRAPP targets

Project targets to be fed to procurement and design teams

Waste Minimisation Strategies – Design & Procurement

Strategy Implementation and Monitoring

PROCUREMENT STRATEGY

Aspects to consider:

- Location of supplier and logistics (check operational licenses and storage requirement).
- Recyclability or recyclable content of item.
- Longer life spans and durability.
- Biodegradability/non-toxic.
- Environmental endorsements.
- Emergency response equipment requirements
- Sustainable site office fit-out

Procurement and Design Teams

RECYCLING STRATEGY

Assess viability to recycle based on:

- Carbon third party cost;
- Logistical costs;
- Sale price;
- Indirect savings; and
- Ongoing monitoring and improvement.

Procurement and Design Teams

EDUCATION STRATEGY

- Toolbox talks
 - Housekeeping
 - Hazardous Substance Disposal
 - Office Recycling
- Emergency Response and Spill Management
- Pre-starts
- Waste Posters
- Enviro Alerts
- Bin and Skip Signage

Environment Team

Project: Project No: Date: Rev: Wickham Transport Interchange G85 01 August 2017 09

Waste Management Strategies -Construction

All Personnel on Site

GENERAL WASTE

General Solid (non-putrescible) General Solid

- Non-recyclable waste materials
- Broken Glass
- Dried sediment collected from stormwater management systems
- Garden waste
- Drained oil filters
- Rags and oil-absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids
- Building rubble

Dispose to general waste skip bins or office bins

Food waste

Manure

Putrescible Organics

(putrescible)

RECYCLABLE WASTE General Solid (non-putrescible)

- Excess dried concrete
- Steel off cuts
- Reinforcing steel
- Timber
- Scrap Metal
- Paper and cardboard
- Comingled containers milk bottles, drink bottles, cans,
- Non-putrescible cleared vegetation may be mulched and reused for landscaping or ground stabilisation if no invasive weeds included

Place in labelled skip bins or office bins

HAZARDOUS WASTE

Liquid

- Waste oils
- Paints
- Solid
- Asbestos containing material including spoil from earthworks
- Empty oil and paint containers
- Oily rags
- Contaminated soil

Dispose to specific hazardous waste bin on site.

Asbestos is only to be handled or removed by occupational hygienist or AS1/AS2 removal contractor.

Specific oily rag bin to be used for oily rags, used spill kit material, etc.

Decant waste oils/paint into labelled, bunded drums.

Licensed waste contractors only to collect and remove all wastes from site Laing O'Rourke to ensure the waste facility is fully licensed to accept the types of waste being sent offsite Transport and waste facility dockets required within 3 days of disposal from site Laing O'Rourke to input and interpret data from waste tracking spreadsheet

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

Wickham Transport Interchange Project Specific Strategies

GENERAL WASTE

- Non-recyclable office waste will be placed in the general waste bins located at the Wickham Transport Interchange site
- Vegetation waste will be collected in the Wickham Transport Interchange site and if not mulched and reused onsite, will go to a facility for composting
- Any mixed building rubble such as bricks/plasterboard/etc. will be placed in a separate stockpile/or skip and sent to a resource recovery facility for sorting and recycling.

RECYCLABLE WASTE

- Office waste bins will be segregated into the following recycling streams; Comingled / Paper & Cardboard / Organics
- Steel waste will be collected in the a steel and go to a recycling facility
- Dried concrete waste will be collected in the Wickham Transport Interchange site and go to a recycling facility
- Asphalt and bricks will be collected and recycled
- Verified/classified spoil material diverted from landfill.

HAZARDOUS WASTE

- Any oily rags or used spill kit material to be placed in the oily waste bin and disposed of off-site
- Asbestos containing waste is only to be handled or removed by occupational hygienist or AS1/AS2 removal contractor
- Waste oil/paints will be stored in bunded drums

PROCUREMENT

- Identify procurement initiatives specific to the project including packaging reduction and return, bulk loads
- Incorporation of reusable temporary works such as proprietary formwork systems at the Wickham Transport Interchange site.

Waste to be tracked using the Waste Tracker in IMPACT or other suitable document, and all records maintained.

 Project:
 Project No:
 Date:
 Rev:

 Wickham Transport Interchange
 G85
 01 August 2017
 09

Appendix 8 – Project Permits and Licenses Register

Project Permit and Approvals Register	Applicable to the project (Yes / No)	Permit / licence / Approval Number / registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Environmental Planning and Assessment Act 1979							
Transport for New South Wales Approval	Yes	CoA 385Q47	10 Nov 2014	Duration of Project	N/A	PER	
Section 109R Certification (Contractual requirement, not a requirements under the Act)	Yes	109R Certification	AFC	Duration of Project	N/A	Design Manager	
Protection of The Environment Operations Act 1997							
Environment Protection Licence	Yes	EPL20514	31 Oct 2014	Duration of Project	Close out report to NSW EPA	PER	10 May 2015
Water Act 1912							
Section 10 Surface Water Licence	No						
Part 5 Section 112 Groundwater Licence	Yes	20BL173954	8 June 2016	7 June 2017	Close out report to DPI – Office of Water	PER	8 June 2015
Part 8 Division 3 Approval of controlled work	No						
Water Management Act 2000							
Section 56 Access Licences	No						
Section 89 Water use approvals	No						
Section 90 Water management work approvals	No						
Section 91 Activity Approvals	No						
Fisheries Management Act 1994							
Division 3 (Sections 199, 200, 201) Dredging and Reclamation	No						
Section 205 Marine vegetation - regulation of harm Permit to Harm Marine Vegetation	No						
Section 220ZW Licence to harm threatened species, population or ecological community or damage habitat	No						
Hunter Water Act 1991							
Section 31 Offence to discharge into works - Trade Waste Permit	No						
Permit to Use Approved Metered Standpipes on Hunter Water Hydrants	Yes	Subcontractors to confirm upon commencement	Subcontractors to confirm	Subcontractors to confirm	Subcontractors to confirm	PER - Water cart and Street sweeper subcontractor	Subcontractors to confirm
Dangerous Goods (Road and Rail) Transport Act							

 Project:
 Project No:
 Date:
 Rev:

 Wickham Transport Interchange
 G85
 01 August 2017
 09

Project Permit and Approvals Register	Applicable to the project (Yes / No)	Permit / licence / Approval Number / registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Section 6 Licensing of vehicles transporting dangerous goods	No						
Section 7 Licensing of drivers transporting dangerous goods	No						
National Parks and Wildlife Act 1974							
Section 90 Aboriginal heritage impact permit	Yes	3809	13 Mar 2015	13 Mar 2016	Notification 7 days prior to finalisation of works under the AHIP	PER	11 May 2015
Heritage Act 1977	•			•			
Division 3 Applications for approval	No						
Section 60	Yes	2014-S60-166	10 Nov 2014	10 Nov 2019 if works have not commenced	Notice to Heritage Council	PER	
Section 140 Excavation permit	Yes	2014/s140/20	16 Sep 2015	16 Sep 2020	Close out report	PER	12 Sep 2015
Management of Waters and Waterside Lands Regulations	•			•			
Division 3 Occupation of Waters	No						
Environment Protection and Biodiversity Conservation Act 1999	(Cwth)						
Include details of approvals under this Act where applicable	No						
Other							
List other relevant legislation here							
Section 91 Activity Approvals	No						
Roads Act 1993							
Section 138 Works and structures - permit to undertake works to roads	Yes	Multiple	AFC	end of construction	none	Construction Manager	AFC
Occupational Health and Safety Regulation 2001							
Section 174ZS Notification to WorkCover	No						
Section 175L Major hazard facility must be registered or provisionally registered	No						
Marine Safety Act							
Section 29 Types of marine safety licences	No						
Rural Fires Act 1997							
Section 89 Issue of permits (includes "hot works" which would constitute lighting a fire)	Yes	Multiple	AFC	end of construction	none	Construction Manager	AFC

Construction Environmental Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Project Permit and Approvals Register	Applicable to the project (Yes / No)	Permit / licence / Approval Number / registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Local Government Act							
Section 68 - What activities, general, require the approval of council	No						
Section 68A - Operation of a system of sewage management	No						

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 9 – Environmental Incident Investigation Guidelines

Incident Investigation (E-T-8-1222 Environmental Incident and Complaint Report)

Note: Class 1 incidents shall be subject to an ICAM investigation.

The following section outlines the environmental incident and complaint investigation. The actual detail required will vary depending on the class of the incident. In any case, form E-T-8-1222 Environmental Incident and Complaint Report is to be used to document the incident.

Step 1- Identify the class of incident and obtain the incident or complaint details.

Step 2 - Observation and information gathering.

The first priority is to understand the incident and how the incident occurred.

- Take samples or obtain results (required for Class 1&2) laboratory results or insitu samples (Note: for Class 1 & 2 incidents NATA certified laboratories may be required)
- Interview persons involved where required Include witnesses / supervisors / experts
- · Inspect the incident scene Take measurements (do not guess), photos, videos, drawings, diagrams / sketches.

Collect related documentation - Attach additional material as appropriate such as Work Method Statements, JSEA's, Environmental Risk Action Plans (ERAPs), Erosion and Sediment Control Plans, Risk Assessments, induction records, toolbox talks, pre-start, environmental training records, subcontractor/TfNSW incident report, relevant design documentation, maintenance records.

Step 3 - Give detailed description of the incident

- Outlined exactly what happened and give the following details as applicable:
- Area or people affected and pollutant type as appropriate
- · Time, date and weather conditions
- · Plant, equipment, organisations involved
- · Potential stakeholders involved
- Describe the nature of the incident including:
- Breach of licence condition, Act or regulation
- · Discovery of cultural heritage item, artefact, etc.
- Unauthorised release of harmful substance to environment
- Penalty or fine imposed or protection order or notice issued.
- · Performance of the environmental controls
- Describe the immediate remedial actions undertaken:
- Notify relevant parties
- · Contain pollution or clean up affected area
- Repair to environmental controls
- · Rectify damage and remediate the affected area

Step 4 - Undertaken basic level incident analysis

List the elements involved including people, equipment and environment (weather conditions) elements involved in the incident

List the essential and contributing factors for the items above.

Step 5 - Identify the corrective and preventative actions.

- · Change to equipment/machinery design / maintenance
- · Improve environmental control measures
- · Implement additional resources
- · Change to work methods or processes
- Change or additional induction training
- Additional ongoing training

Step 6 - Implement the corrective and preventative actions outlined above

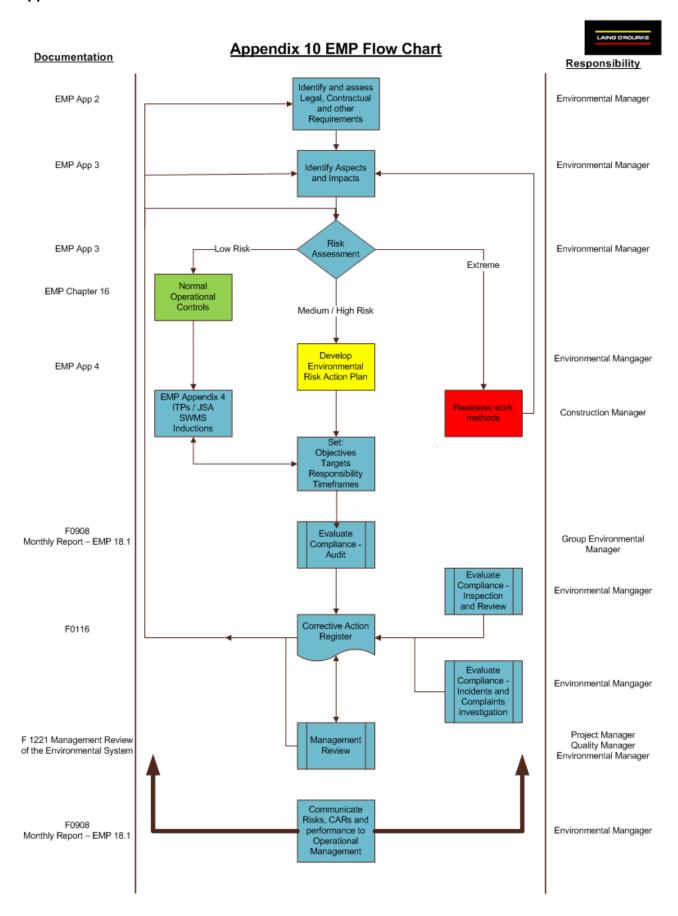
- · Outline responsibilities and accountabilities
- Obtain relevant approvals for the corrective and preventative actions (i.e. Regulatory Authority or TfNSW requirement)
- Provide proposed completion dates for the approved actions
- · Document actions implemented and close out

Note: where a Class 1 Incident has occurred the Corporate HSEQ Manager will initiate the investigation and allocate responsibilities, an external consultant may be engaged. Authorities are to be notified in accordance with the legislative time frames in the applicable state.

 Project:
 Project No:
 Date:
 Rev:

 Wickham Transport Interchange
 G85
 01 August 2017
 09

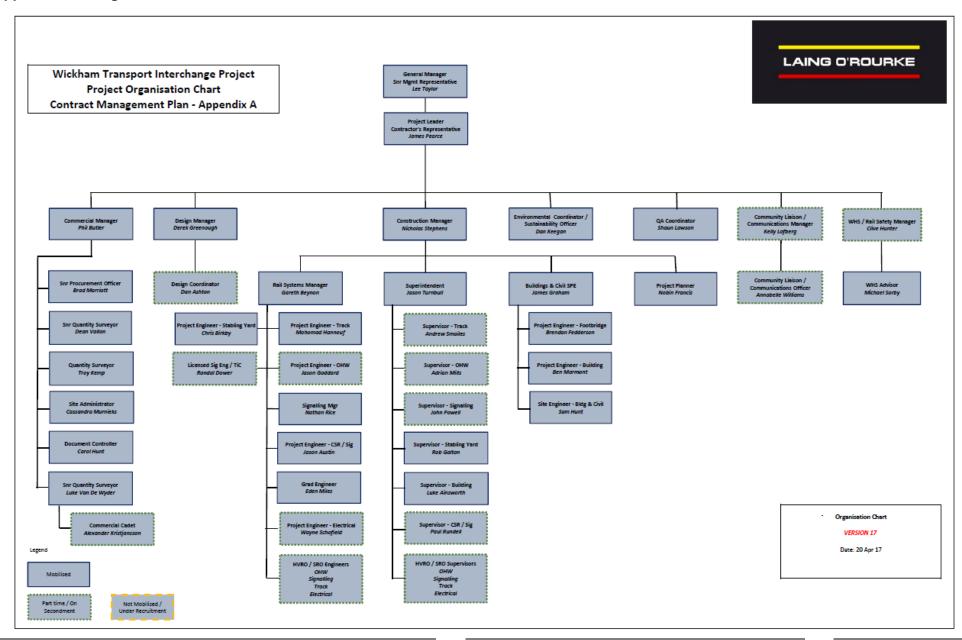
Appendix 10 - CEMP Flow Chart



 Project:
 Project No:
 Date:
 Rev:

 Wickham Transport Interchange
 G85
 01 August 2017
 09

Appendix 11 – Organisation Chart



Construction Environmental Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 12 - Other Attachments

Note the latest version of these forms is located on iGATE.

E-T-8-1200 Environmental Risk Action Plans

E-T-8-0121 Management Review Record

E-T-8-1222 Environmental Incident Complaint Report

E-T-8-1298 Water Sampling Record

Current Construction Program

ENVIRONMENTAL RISK ACTION PLAN



The completed ERAP shall be retained in the EMP Appendix 4

Environmental Issue E.g. Air Quality and Dust						
Initial Risk Rating	Likelihood	Consequence	Rating			
Objective	•					
Legal, Contractual & Other Requirements	•					
Targets or Acceptable Limits	•					
Responsibilities	•					
Controls (means & resources)	•					
Timeframe	•					
Residual Risk Rating	Likelihood	Consequence	Rating			
Monitoring & Reporting	•					

© PAGE 1 OF 1 F 1200 10/08 L1

rocess	Document owne

Enabling Process

Bid/Project Leader

Step
2102 – Review, Report and Action

Performance Outputs



Document type

Template (T)

Management Review Record

Hub/ Region:					DATE:	
Business/ Project: DATE :				DATE:		
System reviewed:	ISO 9001 - Quality		ISO 14001 - Environment		AS 4801 - H & S	
					Rail	
Plan reviewed:	Business/ Quality Plan		Environment Plan		H &S Plan	

AGENDA ITEMS:

- a) Internal/External Audit, Schedule, Effectiveness, Results and Emerging Trends
- b) Customer Feedback & Complaints
- c) Process Performance & Conformity
- d) Recommendations for Improvement
- e) Resources and training needs
- f) Objectives & Targets
- g) Evaluation of compliance with legal and other requirement
- h) Next Meeting

Persons involved in Name Position/ Title the review:

ITEM	ITEM DISCUSSED	Date	ACTION
1.	REVIEW INPUTS		
a)	Internal/External Audit, Schedule, Effectiveness, Results and Emerging Trends		
	Adherence to schedule, improvements following audit, significant trends		
b)	Customer Feedback & Complaints		
	State the status of client relationship		
c)	Process Performance & Conformity		
	Include the status of the close out of NCRs, CARs and Complaints		
d)	Recommendations for Improvement		
	•		
e)	Resource & Training Needs		
f)	Objectives and Targets		
g)	Evaluation of compliance with legal and other requirements		
h)	• NEXT MEETING		
Items ic	lentified as actions above are to be added to the Corrective Actions Register to ensure follow up.	Ref: E-P-8	-0121 ent Review
Distribution	on: Regional HSEQ Manager, Operations Manager, Project Leader, Attendees	Managem	OII I TO VIOW

ENVIRONMENTAL INCIDENT & COMPLAINT REPORT No.



Instructions: This report must be used to record <u>all</u> environmental incidents including pollution events and complaints. Class 1 or 2 incidents as defined in <u>F 1204 Environment Incident Classifications</u> will require a full investigation with supporting information such as photographs, records of interviews, etc. and these should be appended to the report.

· · · · · · · · · · · · · · · · · · ·	interviewe, etc, and these chedia be				
SITE DETAILS					
Location / Project:		Date o	Incident:		
Report raised by:		Date o	Report:		
DETAILS OF PERS	ONS INVESTIGATING INCIDEN	T/COMPLAINT			
Team Leader Name		Position		Contact Number	
Team Member Name		Position		Contact Number	
Team Member Name		Position		Contact Number	
STEP 1: PROBLEM	I IDENTIFICATION AND PREPA	RATION			
Incident Class (Refer <u>F 1204</u>)	Class 1	Class 2		Class 3	
BASIC DETAILS OF	THE INCIDENT/ COMPLAINT (Provide full de	tails of incident)		
Incident/ Complaint rep	orted by:	Duratio	n of Incident/ Complair	nt:	
Exact location of Incide	ent/ Complaint:	Time o	f Incident/ Complaint::		
Comments					
STEP 2: Observation	on / Information Gathering				
1. Take samples or	obtain results (required for Class	1&2) – laborator	y results or insitu sam	ples (Note: for Class	1 & 2 incidents
	oratories may be required) s involved where required – Include	witnesses / super	visors / experts		
	ent scene - Take measurements (do			grams / sketches.	
List of attachments					
No. Details		No.	Details		
1		3			
2	-11-4-4	4			
	ailed description of the inciden				
	nplaint: (more than one box may be m	narked)			
·	public, client, etc		Unauthorised release		
Ш	ce conditions, Act or regulation	닏	Penalty or fine impose	, , ,	
<u> </u>	ultural heritage item, artefact, etc actual damage to environment)	님	Environmental control Pollutant (specify type		
	-			·) ······	
Details (Explain exacti	y what happened, why, where, quantit	ty of pollutant, etc):		

ENVIRONMENTAL INCIDENT & COMPLAINT REPORT No.



COMPLAINT REPO	RT No			
Remedial action (Action to rectify the prob	olem)			
Containment / Rectification / Remedi	iation: (more than one box may be	marked)		
Notify relevant & interested par	ties	Repair / impro	ove environmental controls	
Contain pollution / Clean-up sit	te	Rectify damag	ge and remediate area	
No remedial action possible or	practical	<u> </u>		
Details:				
STEP 4: BASIC LEVEL INCIDENT	T ANALYSIS			
List Elements List the "people", "equipment", and "env	vironment" elements involved in the	incident		
PEOPLE	EQUIPMEN	IT	ENVIRONMENT	
= factor increases the likelihood of occu	essential & contributing factors. Est urrence, but removal may not interre		ssential for the incident to occur. Contribu	uting
Poor workplace practices Lack of or ineffective induction and training Lack of resource Equipment failure Ineffective controls Lack of Planning	ils:			
STEP 5: IDENTIFY CORRECTIVE	E / PREVENTATIVE ACTIONS			
Corrective and Preventative Action	ons may include the followin	g:		
Change to equipment/machinery compared to equipment equipment to equipment			vork methods or processes	
Improve environmental control me			additional induction/induction	
Implement additional resources			ngoing training	
Details:				
STEP 6: IMPLEMENTATION				
SUPERVISOR'S COMMENTS				
Name		Signature		
ENVIRONMENTAL REPRESENTA	ATIVE			
Name		Signature		
PROJECT LEADER'S/WORKPLA	CE MANAGER COMMENTS	Oignature		
TROSECT EEADER O/WORKT EA	IOL MANAGER GOMMENTO			
Name		Signature		
ACTIONS COMPLETED				
Rectification completed		Corrective and	d preventive action completed	
Signed Project Leader/Workplace Mana	ager:	_ Da	ate:	
DISTRIBUTION: Original – master file	e; Copies: Environmental Manager, oth	ner relevant parties.		

		WA	ATER SA	MPL	ING I	RECC	ORD						LAII	NG O'ROURKE
PROJECT	:		JOE	3 No:			,	Analys	sis Coi	mpany	:	<u>.</u>		
DETAILS:			•				•							
					Analy: (t	sis Red ick bo	quired x)			F	Results	3		
Sample Number	Date Sampled	Time	Sample Type	pH 6.5 – 8.5	TSS <50mg/L				pH 6.5 – 8.5	TSS <50mg/L				Compliant/ Non - Compliant
														_

Distribution: Project Leader

	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Float	D I	an E	M And	20		را ي	Oct N	100	= _{N40} =	Apr. NA	2016	1 0 0	Oct NI	D Jan	= Morlo-	r M Luci	Jul A S	Oct N	I F
Nickbar	Transport Interchange	745	95	18-Dec-14 A	13-Nov-17	87.28%	0	i Ja	an F	IVI APF I	vi J	Jui A	5 0	OCI N	Jan	iviar	API M	Jun Jul	A 5 0	JCI N	D Jan F	iviar Apr	IVI Jun .	Jul A S	OCI N	10
	n Transport Interchange																									
Key Milest	ones	731	35	18-Dec-14 A	13-Nov-17	95.24%	0																			
Delivery M	lestones	731	35	18-Dec-14 A	13-Nov-17	95.24%	0																			-
KM1000	Contract Award Date	0	0		18-Dec-14 A	100%		8 co	ontract A	ward Dat	e															-
KM1010	Contract Commencement Date	0	0	19-Dec-14 A		100%				Commenc		Date						:								-
KM1020	Portion 1 Completion (i.e Site Establishment completion)	0	0		27-Mar-15 A	100%				Portio	on 1 Co	mpletion	ı (i.e \$	ite Establis	hment co	mpletio	n)									
KM1030	Portion 2 Completion (i.e Track and OHW Design to AFC completion)	0	0		11-Mar-16 A	100%										\$ ₽	ortion 2	Completic	n (i.e Tracl	k and OH	IW Design	∩ to AFC c	ompletion)			
KM1040	Portion 3 - Completion (i.e. Commissioning)	0	0		24-Sep-17	0%	0																	*	Portion	
KM1050	Portion 4 Completion (i.e Handover of Asbuilt Drawings, DSS, O&M Manuals and Associated Documentation)	0	0		13-Nov-17	0%	0																		\$	
KM1080	Completion of Works required post commissioning	35	35	24-Sep-17	13-Nov-17	0%	0	.										 								Ço
Contract N	ilestones (Revised Baseline)	605	36	28-Mar-15 A	13-Nov-17	94.05%	0																			
KM1090	Portion 1 Contract Completion (i.e Site Establishment completion)	0	0		28-Mar-15 A	100%				Portio	on 1 Co	ntract C	Comple	tion (i.e Sit	e Establis											
KM1100	Portion 2 Contract Completion (i.e Track and OHW Design to AFC completion)	0	0		11-Mar-16 A	100%							♦			▼ P	ortion 2	Contract	Completion	(i.e Trac	k and OH	W Design	to AFC cor			
KM1120	Portion 3 Completion - Completion of works to put works into operation excl works that can only happen after commission	0	0		24-Sep-17	0%	0															\rightarrow		•	Portion	
KM1130	Portion 4 Completion - Handover of Asbuilt , DSS, O&M Manuals and Associated Documentation Incl. all works excl from \$\footnote{1}\$	0	0	0.111	13-Nov-17*	0%	0	<u>.</u>															.		♦ 1	Po
elay Eve	nts	317	0	24-Mar-15 A	26-May-17 A	100%												:								
option 1A	Changes to Station design and Concourse area	1	0	24-Mar-15 A	24-Mar-15 A	100%																	+ $+$ $+$			
DE-0013-100	Variation - Changes to Station design and Concourse area	1	0	24-Mar-15 A	24-Mar-15 A	100%				Variat	ion - C	hanges t	to Stati	ion design	and Cond	course	area									
Delay in P	ocurement of Turnouts- Superceded	1	0	4-May-15 A	4-May-15 A	100%						1]												
	TPO instruction to delay issue Purchase Order of Turnouts	1	0	4-May-15 A	4-May-15 A	100%				1	TPO ir	: nstruction	ni to de	elay issue I	urchase	Örder	of Turno	uts								-
lew Interd	ity Fleet Works	25	0	28-May-15 A	26-Jun-15 A	100%																	1		1	
	Instruction to suspend design for stabling yard	0	0		28-May-15 A	100%					• Inc	truction	to sue	pend desig	n for sta	hliha va	rd			1 1						
	Develop Design Options	15	0	29-May-15 A	19-Jun-15 A	100%								n Options		il ya										
	TPO Decision on Options and Proceed with Concept Design	0	0	,	19-Jun-15 A	100%					₹	1 1	1	on Option		; nceed w	ith Cond	ent Desid	in i	1 1						
	Optioneering/workshop/confirm changes/ Receive design basis	5	0	22-Jun-15 A	26-Jun-15 A	100%					ĭ			/workshop												
	oof Works	0	0	16-Jun-15 A	16-Jun-15 A	0%		1				1											ii		1	
•	Instruction to Proceed with Revised Concept Design	0	0		16-Jun-15 A	100%					•	Inetructio	ion to E	Proceed wi	n Revise	d Cond	ent Desi	an								
	Roof Works	1	0	21-Aug-15 A	21-Aug-15 A	100%					\Q	instruction		Tocped Wi	Kevise	L	cpt Desi	9"		1 1						
•	Direction to Proceed with Design development(PDR)of Option 2A	1	0	-		100%						1														į
	Direction to Proceed with Design development(PDR)of Option 2A	1	0	21-Aug-15 A 24-Sep-15 A	21-Aug-15 A 15-Dec-15 A	100%							Direc	ction to Pro	ceed with	esig לו י	n develo	pment(PL	R)of Optio	on 2A						
Noise Wall		<u>'</u>	-	· ·				<u>.</u>																		
	Direction to Proceed with Noise wall	1	0	24-Sep-15 A	24-Sep-15 A	100%		1					1	Direction		- 1		i I								
	Noise Wall Clarifications (4821735)	1	0	15-Dec-15 A	15-Dec-15 A	100%									Noise	Wall Cla	rification	s (48217	735)							
oot Bridg			U	26-Aug-15 A	26-Aug-15 A								.] [
	Direction to Proceed with Foot bridge	1	0	26-Aug-15 A	26-Aug-15 A	100%							Dire	ction to Pr	oceed wi	th Foot	bridge									
NLR		1	0	24-Sep-15 A	24-Sep-15 A	100%							1						<u> </u>							
DE-0042-100	Direction to Proceed with NLR Platform	1	0	24-Sep-15 A	24-Sep-15 A	100%								Direction	o Procee	d with I	NLR Plat	form								
SFS/Signa	Hut	1	0	28-Sep-15 A	28-Sep-15 A	100%														1 1						
DE-0047-100	SFS/Signal hut variation	1	0	28-Sep-15 A	28-Sep-15 A	100%							1.1	SFS/Sign	al hut var	iation										
ower Stu	dy	1	0	31-Aug-15 A	31-Aug-15 A	100%																				
DE-0039-100	Variation -Power study	1	0	31-Aug-15 A	31-Aug-15 A	100%							Var	iation -Pov	er study											
oss		1	0	19-Oct-15 A	19-Oct-15 A	100%																				1
	Variation - DSS	1	0	19-Oct-15 A	19-Oct-15 A	100%								I _{Variati}	on DSS											
	OGE TO SINGLE SPAN	41	0	30-Oct-15 A	15-Jan-16 A	100%								•				:								
	Direction to vary the footbridge to single span	1	0	30-Oct-15 A	30-Oct-15 A	100%								Diro	tion to ve	ny tho	oothrida	e to single	enan							-
	Develop options / discussions / await confirmation from Principal	20	0	2-Nov-15 A	23-Nov-15 A	100%													ait confirma	tion from	Principal					
	Confirmation from Principal on Concept design	1	0	24-Nov-15 A	24-Nov-15 A	100%		 											cept design		rincipal					
	Incorporate design change & Completion of CDR Design	20	0	25-Nov-15 A	15-Jan-16 A	100%													& Completi)R Desido		+ $+$ $+$			-
	CESS PLATFORMSTRAIN ACCESS PLATFORMS	25	0	4-Nov-15 A	3-Dec-15 A	100%							1 1				20019	190		J. J.			+ $+$ $+$			
	Direction to proceed with train access platforms	1	0	4-Nov-15 A	4-Nov-15 A	100%								Dire	etion to n	rocend	with tra	h access	nlatforme							
	Incorporate Revised design to current CDR (4 Weeks after current CDR)-N/A Suspended	0	0	10-Nov-15 A	26-Nov-15 A	100%								Dire						4 Weeks	after cur	rent CDP\	-N/A Suspe	ended		
	Withdrawl Direction to proceed with train access platforms	1	0	26-Nov-15 A	26-Nov-15 A	100%		 									r	,	train acce			J. (JUN)	, in Suspe	nagu		
	Redo changes and resume CDR preparation and submission to LORA	5	0	27-Nov-15 A	3-Dec-15 A	100%								<u> </u>					preparation			a LORA	+ $+$ $+$			
	eet Reconfiguration	92	0	27-Jul-15 A	26-Apr-16 A	100%								7					p. oparation	. and sub		10.07				-
		20	0	27-Jul-15 A	15-Jan-16 A	100%							1	1 1					L. 10	,			+ $+$ $+$			
	Complete traffic study - by TfNSW Complete traffic report and submission to NCC	15	0			100%						-	1	1 1					by TfNSW				+ $+$ $+$			
	Complete trafffic report and submission to NCC NCC Trafffic committee hearing - Feb'16	15	0	11-Jan-16 A 15-Feb-16 A	28-Jan-16 A 15-Feb-16 A	100%													nd submiss		~				 	
	Station Street reconfiguration - Considered by Elected Council - Mar'16/Apr'16	1	0	26-Apr-16 A	26-Apr-16 A	100%										INCO	- 16	: 1	hearing - I	1 1	Concide	d by Flee	od Column	Mariacia	116	-
	- Station Street reconniguration - Considered by Libbiou Council - Ivial 10/Apr 10		U	20-Apr-10 A	20-Api-10 A	10070		F III	- 1	1 1	- 1	1 1		1 1		1	; Sta	HUUH DIREC	≠ı re¢onfi q u	ıratıon - (Junsiaere	a py ⊨lectr	JU COUNCII -	- Mar'16/Apr'	יסיו	1

 TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

vity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total				2015					2016								
	, and the second	Duration	Duration			Complete	Float	D Ja	n F M	Apr M	J Jul A	S Oct N	D Jan F	Mar Ap	M J	ın Jul	A S	Oct I	N D	Jan F	Mar A	Apr M	Jun Jul A	A S Oct N
DE-LC003-10	0 Latent Condition(No.003) NCC Stormwater sewer	30	0	11-May-16 A	17-Jun-16 A	100%										Later	t Condi	tion(No.	.003) NO	CC Stor	rmwate	r sewer		
DE-LC003-110	0 Removal of 70M of 900mm Stormwater pipe	3	0	20-Jun-16 A	22-Jun-16 A	100%													900mm	Stormw	water p	ipe		
DE-LC003-12	O Construct piling platform	3	0	22-Jun-16 A	27-Jun-16 A	100%				·ii		111			11-	Cor	struct	ing pla	tform					
	uture Structural Connection for NLR OHW mast	1	0	6-Jul-16 A	6-Jul-16 A	100%															1			
	VO 32 - Future Structural Connection for NLR OHW mast	1	0	6-Jul-16 A	6-Jul-16 A	100%										lı v	32 - F	uture S	Structur	; al Conne	ection	; for NLR	OHW mast	
		1	0	6-Jul-16 A	6-Jul-16 A	100%																		
	igital CCTV and Cabling	'	U															L				, ,		
	VO 33- Design and installation of digital CCTV and Cabling	1	0	6-Jul-16 A	6-Jul-16 A	100%						.) 33- D	esigniar	id instal	liation of	or digital		nd Cabling	
VO 34 - NI	LR Intgrated design for Comms & LV	1	0	14-Jul-16 A	14-Jul-16 A	100%															1			
VO-34-100	VO 34 - NLR Intgrated design for Comms & LV at the Interchange	1	0	14-Jul-16 A	14-Jul-16 A	100%										ΙV	O 34 -	NLR In	grated	design f	for Cor	mm¦s & L	√at the linte	erchange
VO 36 - Tfl	NSW's Direction to proceed with Presentation & Security building Procurement	1	0	22-Jul-16 A	22-Jul-16 A	100%											i				1			
	VO 36 -TfNSW's Direction to proceed with Presentation & Security building Procurement	1	0	22-Jul-16 A	22-Jul-16 A	100%											VO 36 -	fnsw	's Direc	tion to p	procee	d with P	esentation	& Security bu
	ickham Footbridge Urban design Requirements	1	0	27-Jul-16 A	27-Jul-16 A	100%											- 1				1			
	9 1	1	0	27-Jul-16 A	27-Jul-16 A	100%											VO 35	Wickh	am Foc	thridae	Urban	design	Requiremen	nts
	VO 35- Wickham Footbridge Urban design Requirements	1	0																1	10.1490		dopigii	1044	
	pvision of Emergency Spare breaker Hamilton Substation	'	U	28-Jul-16 A	28-Jul-16 A	100%																		
VO-39-100	VO-39- Provision of Emergency Spare breaker Hamilton Substation	1	0	28-Jul-16 A	28-Jul-16 A	100%										1 1	VO-39	- Provis	on of E	mergen	ncy Spa	are brea	er Hamilton	n \$ubstation
VO-40- TfN	NSW's Direction to undertake Electronic ticketing and Gates	1	0	25-Aug-16 A	25-Aug-16 A	100%															1			
VO-40-100	VO-40 - Electronic Ticketing and Gates	1	0	25-Aug-16 A	25-Aug-16 A	100%											I VC	40 - E	lectronic	c Ticket	ting and	d Gates		
VO- 43- Tfl	NSW's Direction- Wickham Station Concourse Urban design requirements	1	0	30-Sep-16 A	30-Sep-16 A	100%						1111-						· [[7	[
	VO-43 - TfNSW's Direction- Wickham Station Concourse Urban design requirements	1	0	30-Sep-16 A	30-Sep-16 A	100%											!	VO-4	13 - TfN	ISW s D	Direction	n- Wick	am Station	Concourse U
		1	0	20-Oct-16 A	20-Oct-16 A	100%											i							
	edesign of PC12 pilecap and 165+584 OHW foundation & Drainage pit 1/17 due to NLR	,															- }	1 34	0-50	TfNIS\\\/'	's Direc	tion- P	design of D	C12 pilecap a
	VO-50 - TfNSW's Direction- Redesign of PC12 pilecap and 165+584 OHW foundation & Drainage pit 1/17 due to NLR cla	1	0	20-Oct-16 A	20-Oct-16 A	100%				-								' '	3-00-	1114944	3 01100	Juori- IX	design of t	O12 pieceap a
AFC Signa	alling design to enable Double stacking at stabling of Trains	1	0	5-Oct-16 A	5-Oct-16 A	100%			<u> </u>			1			L I.						1	!		
VO-50-110	AFC Signalling design to enable Double stacking at stabling of Trains	1	0	5-Oct-16 A	5-Oct-16 A	100%				-								I AFC	Signall	ling des	sign to e	enable D	ouble stack	ing at stabling
DE-87- Ask	bestos Liner Fuel pipeline	1	0	31-Aug-16 A	31-Aug-16 A	100%															1			
DE-87-100	Asbestos liner contamination on redundant Fuel pipeline	1	0	31-Aug-16 A	31-Aug-16 A	100%											A	sbestos	i liner cr	ontamin	nation o	n rėdun	lant Fuel pir	peline
	on to Re-sequence NE17 Signal Footing	1	0	4-Aug-16 A	17-Oct-16 A	100%																		
DE-90-100	Direction to re-sequence NE17 Signal Footing	1	0	4-Aug-16 A	4-Aug-16 A	100%											Direct	tion to re	e-seque	ence NE	E17 Sig	; ınal¦Foo	na	
DE-90-100 DE-90-110	Direction to re-sequence NE17 Signal Footing-Lt ref: 5434715_1	1	0	17-Oct-16 A	17-Oct-16 A	100%		} -				. -						1 :			1 1		- :	ing- Lt ref: 543
		1	0	24-Feb-17 A	26-May-17 A	100%												[
VO-59 - Wa		'	U																			50 J.W-	e	
	VO-59 - Wayfinding	1	0	24-Feb-17 A	24-Feb-17 A	100%															1. VO-	59 † Wa		
VO-40-210	VO-59 - Wayfinding - Further chnages to the Wayfinding Requirements	1	0	26-May-17 A	26-May-17 A	100%															1	-	VO-59 - W	/ayfinding - Fu
LOR Delive	erables to Principal's Representative, Sydney Trains, others and External Auth	592	79	28-Apr-15 A	13-Nov-17	86.69%	0														1			
LD1010	Submission of Signalling Scope of Works Document by LORAC to STA	0	0		28-Apr-15 A	100%				Sub	nission of	Signalling Scope	of Works Do	cument	by LOI	RAC to S	STA							
LD1000	Issue Concept Design to TfNSW	0	0							× .											1			
					24-Aug-15 A	100%				1 1		Issue Concer	t Design to T	INSW	1. 1.	ısw								
LD1020	Issue CDR Design to TfNSW	0	0		24-Aug-15 A 16-Dec-15 A							Issue Concer			n to Iti									1 1
LD1020 LD1030	Issue CDR Design to TfNSW CDRC Stage Completion	0				100%						Issue Concer	ssue CD	R Desig		ombletic	on !					- 1		
LD1030	CDRC Stage Completion		0		16-Dec-15 A	100% 100% 100%						Issue Concep	ssue CD	R Desig	tage C						1			
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LD1030 LD1040 LD1060 LD1070	CDRC Stage Completion Issue AFC Design Package Provision of AMI documentation - 8 Weeks prior to commissioning (Refer to AMI matrix) Provision of BCA & DDA Compliance documentation & final inspection- (Excl. Wayfinding) - 6 Weeks prior SP3	0 0	0 0 0 0	27-Jul-17	16-Dec-15 A 19-Feb-16 A 11-Mar-16 A 26-Jul-17 9-Aug-17	100% 100% 100% 100%	-					Issue Concep	ssue CD	R Desig	tage C			9					•	
LD1030 LD1040 LD1060 LD1070 LD1540	CDRC Stage Completion Issue AFC Design Package Provision of AMI documentation - 8 Weeks prior to commissioning (Refer to AMI matrix) Provision of BCA & DDA Compliance documentation & final inspection- (Excl. Wayfinding) - 6 Weeks prior SP3 Provision of AMI documentation - 8 Weeks lead time prior to commissioning	0 0 0 0 0	0 0 0 0 0 0	27-Jul-17 10-Aug-17	16-Dec-15 A 19-Feb-16 A 11-Mar-16 A 26-Jul-17 9-Aug-17 20-Sep-17	100% 100% 100% 100% 0% 0%	0					Issue Concep	ssue CD	R Desig	tage C								•	Provision of I
LD1030 LD1040 LD1060 LD1070 LD1540 LD1550	CDRC Stage Completion Issue AFC Design Package Provision of AMI documentation - 8 Weeks prior to commissioning (Refer to AMI matrix) Provision of BCA & DDA Compliance documentation & final inspection- (Excl. Wayfinding) - 6 Weeks prior SP3 Provision of AMI documentation - 8 Weeks lead time prior to commissioning Provision of BCA & DDA Compliance documentation - 6 Weeks lead time prior to commissioning	0 0 0 0 0 40 30	0 0 0 0 0 0 0 40	10-Aug-17	16-Dec-15 A 19-Feb-16 A 11-Mar-16 A 26-Jul-17 9-Aug-17 20-Sep-17 20-Sep-17	100% 100% 100% 100% 0% 0% 0%	0 0 0					Issue Concep	ssue CD	R Desig	tage C			9					•	Provision of I Provisi Provisi
LD1030 LD1040 LD1060 LD1070 LD1540 LD1550 LD1050	CDRC Stage Completion Issue AFC Design Package Provision of AMI documentation - 8 Weeks prior to commissioning (Refer to AMI matrix) Provision of BCA & DDA Compliance documentation & final inspection- (Excl. Wayfinding) - 6 Weeks prior SP3 Provision of AMI documentation - 8 Weeks lead time prior to commissioning Provision of BCA & DDA Compliance documentation - 6 Weeks lead time prior to commissioning Handover of Asbuilt Drawings, DSS, O&M Manuals and Associated Documentation (35 Business days)	0 0 0 0 0 40 30 35	0 0 0 0 0 0 40 30 35	10-Aug-17 24-Sep-17	16-Dec-15 A 19-Feb-16 A 11-Mar-16 A 26-Jul-17 9-Aug-17 20-Sep-17 20-Sep-17 13-Nov-17	100% 100% 100% 100% 0% 0% 0% 0%	0					Issue Concep	ssue CD	R Desig	tage C			9					•	Provision of I
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LD1030 LD1040 LD1060 LD1070 LD1540 LD1550 LD1050 AMI Assets Station - O LD1080 LD1110	CDRC Stage Completion Issue AFC Design Package Provision of AMI documentation - 8 Weeks prior to commissioning (Refer to AMI matrix) Provision of BCA & DDA Compliance documentation & final inspection- (Excl. Wayfinding) - 6 Weeks prior SP3 Provision of AMI documentation - 8 Weeks lead time prior to commissioning Provision of BCA & DDA Compliance documentation - 6 Weeks lead time prior to commissioning Handover of Asbuilt Drawings, DSS, O&M Manuals and Associated Documentation (35 Business days) s for Handover perating Guide & User Manuals WTI Padmount SS (HV) Station - HVAC system & Control	0 0 0 0 0 40 30 35 79 0	0 0 0 0 0 0 40 30 35 79 0	10-Aug-17 24-Sep-17 26-Jul-17	16-Dec-15 A 19-Feb-16 A 11-Mar-16 A 26-Jul-17 9-Aug-17 20-Sep-17 20-Sep-17 13-Nov-17 13-Nov-17 26-Jul-17 26-Jul-17	100% 100% 100% 100% 0% 0% 0% 0% 0% 0% 0% 0%	0 0 0 0 0 0					Issue Concer	ssue CD	R Desig	tage C			9					◆ W	Provision of I Provision
LD1030 LD1040 LD1060 LD1070 LD1540 LD1550 LD1050 AMI Assets Station - Op LD1080 LD1110 LD1120	CDRC Stage Completion Issue AFC Design Package Provision of AMI documentation - 8 Weeks prior to commissioning (Refer to AMI matrix) Provision of BCA & DDA Compliance documentation & final inspection- (Excl. Wayfinding) - 6 Weeks prior SP3 Provision of AMI documentation - 8 Weeks lead time prior to commissioning Provision of BCA & DDA Compliance documentation - 6 Weeks lead time prior to commissioning Handover of Asbuilt Drawings, DSS, O&M Manuals and Associated Documentation (35 Business days) s for Handover perating Guide & User Manuals WTI Padmount SS (HV) Station - HVAC system & Control Station - Spaceframe Canopy	0 0 0 0 40 30 35 79 0 0	0 0 0 0 0 0 40 30 35 79 0	10-Aug-17 24-Sep-17 26-Jul-17	16-Dec-15 A 19-Feb-16 A 11-Mar-16 A 26-Jul-17 9-Aug-17 20-Sep-17 20-Sep-17 13-Nov-17 13-Nov-17 26-Jul-17 26-Jul-17 26-Jul-17	100% 100% 100% 100% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	0 0 0 0 0 0					Issue Concer	ssue CD	R Desig	tage C			9					◆ W ◆ S S ◆ S S	Provision of I Provis Provis Provis VTI Padmount tation - HVAC tation - Space
.D1030 .D1040 .D1060 .D1070 .D1540 .D1550 .D1050 AMI Assets Station - Op .D1080 .D1110 .D1120 .D1130	CDRC Stage Completion Issue AFC Design Package Provision of AMI documentation - 8 Weeks prior to commissioning (Refer to AMI matrix) Provision of BCA & DDA Compliance documentation & final inspection- (Excl. Wayfinding) - 6 Weeks prior SP3 Provision of AMI documentation - 8 Weeks lead time prior to commissioning Provision of BCA & DDA Compliance documentation - 6 Weeks lead time prior to commissioning Handover of Asbuilt Drawings, DSS, O&M Manuals and Associated Documentation (35 Business days) s for Handover perating Guide & User Manuals WTI Padmount SS (HV) Station - HVAC system & Control Station - Spaceframe Canopy Station - Lighting System & Control	0 0 0 0 0 40 30 35 79 0 0	0 0 0 0 0 0 0 40 30 35 79 0 0 0	10-Aug-17 24-Sep-17 26-Jul-17	16-Dec-15 A 19-Feb-16 A 11-Mar-16 A 26-Jul-17 9-Aug-17 20-Sep-17 20-Sep-17 13-Nov-17 13-Nov-17 26-Jul-17 26-Jul-17 26-Jul-17 26-Jul-17	100% 100% 100% 100% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	0 0 0 0 0 0 0 0					Issue Concer	ssue CD	R Desig	tage C			9					◆ W ◆ S ← S S	Provision of I Provis Provis Provis VTI Padmount tation - HVAC tation - Space
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Actual Work Critical Remainin...

Remaining Work Milestone

Remaining Work Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

rity ID	Activity Name	Original	Remaining	Start	Finish	Duration %		
		Duration	Duration			Complete	Float	icat D Jan F M Apr M J Jul A S Oct N D Jan F Mar Apr M J Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D
LD1250	Help Points	0	0		26-Jul-17	0%	0	
LD1260	ETS Self Service Machines	0	0		26-Jul-17	0%	0	0 ■ ET\$ Self Service Ma
LD1270	Lifts - Station & Pedestrian Footbridge	0	0		26-Jul-17	0%	0	
Stabling Ya	ird - Operating Guide & User Manuals	0	0	26-Jul-17	26-Jul-17	0%	0	0
LD1090	Fire & Life Safety - Alarms, Hydrants, Detection	0	0		26-Jul-17	0%	0	o
LD1100	Decanting System	0	0		26-Jul-17	0%	0	0 De¢anting System
LD1280	Potable Water, Heating units, Sanitary, Eyewash Stations	0	0		26-Jul-17	0%	0	
LD1290	CCTV (Platforms, Station, Stabling Yard)	0	0		26-Jul-17	0%	0	
LD1300	Access Control / swipe card system	0	0		26-Jul-17	0%	0	
Final Hand		0	0	13-Nov-17	13-Nov-17	0%	0	
	over	0	0				0	
Station	WITH Device a court OO // IVA	0	0	13-Nov-17	13-Nov-17	0%	0	o
LD1310	WTI Padmount SS (HV)	0	0		13-Nov-17	0%	0	
LD1340	Station - HVAC system & Control	0	0		13-Nov-17	0%	0	
LD1350	Station - Spaceframe Canopy	0	0		13-Nov-17	0%	0	
LD1360	Station - Lighting System & Control	0	0		13-Nov-17	0%	0	
LD1370	Fire & Life Safety - Alarms, Hydrants, Detection	0	0		13-Nov-17	0%	0	
LD1380	Potable Water, Heating units, Sanitary, Eyewash Stations	0	0		13-Nov-17	0%	0	
LD1390	Windows - Operable	0	0		13-Nov-17	0%	0	
LD1400	Operable Wall	0	0		13-Nov-17	0%	0	
LD1410	CCTV (Platforms, Station, Stabling Yard)	0	0		13-Nov-17	0%	0	
LD1420	Access Control / swipe card system	0	0		13-Nov-17	0%	0	0 M
LD1430	Ticketing System	0	0		13-Nov-17	0%	0	0
LD1440	AFILS	0	0		13-Nov-17	0%	0	0
LD1450	Platform & Concourse Indicators	0	0		13-Nov-17	0%	0	o i i i i i i i i i i i i i i i i i i i
LD1460	VMS Boards	0	0		13-Nov-17	0%	0	<u>o</u>
LD1470	Precise Clocks	0	0		13-Nov-17	0%	0	
LD1480	Help Points	0	0		13-Nov-17	0%	0	 i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i
LD1490	ETS Self Service Machines	0	0		13-Nov-17	0%	0	
LD1500	Lifts - Station & Pedestrian Footbridge	0	0		13-Nov-17	0%	0	ii
		0	0	13-Nov-17	13-Nov-17	0%	0	
Stabling Ya		0	0	13-1107-17			0	Q
LD1320	Fire & Life Safety - Alarms, Hydrants, Detection	0			13-Nov-17	0%	0	
LD1330	Decanting System	0	0		13-Nov-17	0%	0	
LD1510	Potable Water, Heating units, Sanitary, Eyewash Stations	0	0		13-Nov-17	0%	0	
LD1520	CCTV (Platforms, Station, Stabling Yard)	0	0		13-Nov-17	0%	0	
LD1530	Access Control / swipe card system	0	0		13-Nov-17	0%	0	
lobilisation	on and Preliminaries	716	20	19-Dec-14 A	23-Oct-17	97.24%	15	
Mobilisatio	on and Demobilisation of General Plant, Equip, Personnel & Site Establishment	669	20	14-Jan-15 A	23-Oct-17	97.05%	15	15 M
MO1020	First Insurance Payment	0	0		14-Jan-15 A	100%		★ First Insurance Payment
MO1000	Setting up Site Compound / Project office / Car Park	15	0	16-Jan-15 A	31-Mar-15 A	100%		Setting up \$ite Compound / Project office / Car Park
MO1030	Long Service Leavy Payment	0	0	10 0411 1071	23-Apr-15 A	100%		\$ Long Service Leavy Payment
MO1040	Insurance Payment	0	0		19-May-15 A	100%		
MO1040	Second Insurance Payment	0	0		29-Jan-16 A	100%		\$ Insurance Payment
			0	00 N 45 A				Second Insurance Playment
MO1070	Construction of Laydown yard	25	0	30-Nov-15 A	5-Feb-16 A	100%		Construction of Laybown yard
MO1060	Final Dilapidation Survey	10	10	24-Sep-17	9-Oct-17	0%	25	
MO1010	Demobilisation	20	20	24-Sep-17	23-Oct-17	0%	15	15 Demot
lanageme	nt Plans	694	0	19-Dec-14 A	19-May-17 A	100%		
Submissio	n Dates	161	0	23-Jan-15 A	22-Jun-15 A	100%		
MP1000	T4 Management Plans Submission Date	0	0		23-Jan-15 A	100%		T4 Management Plans Submission Date
MP1010	T2 Management Plans Submission Date	0	0		9-Feb-15 A	100%		T2 Management Plans Submission Date
MP1020	T7 Management Plans Submission Date	0	0		16-Feb-15 A	100%		T7 Management Plans Submission Date
MP1030	T5 Management Plans Submission Date	0	0		15-May-15 A	100%		\$ 17 Management Plans Submission Date
MP1040	T9 Management Plans Submission Date	0	0		22-Jun-15 A	100%		
	-			19-Dec-14 A		100%		T9 Management Plans Submission Date
•	nt Plans - Main Works	239	0		2-Nov-15 A			
	ment Plan Production, Submission and Approval Procedure	216	0	19-Dec-14 A	19-Oct-15 A	_		
MP1050	T2 - Prepare Plan (Actual Plans listed below)	26	0	19-Dec-14 A	9-Feb-15 A	100%		T2 - Prepare Plan (Actual Plans isted below)
	T2 - Submit Plan to Principal's Representative	0	0		9-Feb-15 A	100%		💲 †2 - Şubmit Plan to Principal's Representative
MP1380	T2 - Principal's Representative review and comments	10	0	10-Feb-15 A	11-Jun-15 A	100%		T2 - Principal's Representative review and comments
MP1380 MP1390		-	0	2-Mar-15 A	19-Oct-15 A	100%		T2 - Review and Respond to Comments
	T2 - Review and Respond to Comments	5	U	Z-IVIGIT-137A				
MP1390		0	0	Z-IVIAI - IOA	19-Oct-15 A	100%		
MP1390 MP1510	T2 - Review and Respond to Comments		-	19-Oct-15 A				T2 - Plan Complete and Approved
MP1390 MP1510 MP1520 MP1670	T2 - Review and Respond to Comments T2 - Plan Complete and Approved	0	0		19-Oct-15 A	100%		

Critical Remainin... Actual Work Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities. Page 3 of 34

Baseline : Rebaseline

Activity ID	Activity Name	Original	Remaining	Start	Finish	Duration %			2015		2016 2017 20
		Duration	Duration			Complete	Float	D Jan F M Apr M J	Jul A S	Oct N D	D Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan
	Sources Management Plan Human Resources Management Plan	46 46	0	19-Dec-14 A 19-Dec-14 A	27-Apr-15 A 27-Apr-15 A	100% 100%		Huma	Docouroo	Management	Plan
	/ Liaison Management Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%		nulla	iii Resources	wanagement	
	Community Liaison Management Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%		Comr	nunity Liaison	Management I	Pan :
Quality Ma	nagement Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%					
MP1220	Quality Management Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%			y Managemer	nt Plan	
	gement Information Delivery Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%					
	Asset Management Information Delivery Plan	46 46	0	19-Dec-14 A	27-Apr-15 A	100%		Asset	Management	Information D	Delivery Plan
	urance Plan Safety Assurance Plan	46	0	19-Dec-14 A 19-Dec-14 A	12-Jun-15 A 12-Jun-15 A	100% 100%			Safety Assur	anco Plan	
	ngineering Management Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%			Salety Assul	alice Flair	
	Systems Engineering Management Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%	- :	Syste	ms Engineerir	ng Managemer	ant Plan
Property M	anagement Plan	46	0	19-Dec-14 A	23-Jun-15 A	100%					
MP1140	Property Management Plan	46	0	19-Dec-14 A	23-Jun-15 A	100%			Property M	anagement Pla	
	ment Plan Production, Submission and Approval Procedure	93	0	19-Dec-14 A	27-Apr-15 A	100%					
MP1230	T4 - Prepare Plan (Actual Plans listed below)	16	0	19-Dec-14 A	23-Jan-15 A	100%		T4 - Prepare Plan (L 1 	
MP1360	T4 - Submit Plan to Principal's Representative	0	0	07 1 45 4	23-Jan-15 A	100%		T4 - Submit Plan to			
MP1370	T4 - Principal's Representative review and comments T4 - Povious and Pospood to Comments	10	0	27-Jan-15 A 6-Mar-15 A	6-Mar-15 A	100%		T4 - Principal			
MP1480 MP1500	T4 - Review and Respond to Comments T4 - Plan Complete and Approved	10 0	0	U-IVIAI - IO A	27-Apr-15 A 27-Apr-15 A	100%			1 1	espond to Corr	
MP1680	T4 - Close out of Comments	5	0	27-Apr-15 A	27-Apr-15 A 27-Apr-15 A	100%			Plan Complete Close out of C	1 11 1	
	nement Plan	41	0	19-Dec-14 A	27-Apr-15 A	100%			Jiwae Gut Oli Ci	on morno	
	Risk Management Plan	41	0	19-Dec-14 A	27-Apr-15 A	100%		Risk I	Management I	Plan	
Design Ma	nagement Plan	41	0	19-Dec-14 A	27-Apr-15 A	100%					
MP1250	Design Execution Plan (Digital Engineering)	41	0	19-Dec-14 A	27-Apr-15 A	100%		Desig	n Execution P	lan (Digital En	gineering)
	ion Management Plan	41	0	19-Dec-14 A	27-Apr-15 A	100%		<u> </u>			
	Configuration Management Plan	41	0	19-Dec-14 A	27-Apr-15 A	100%		Config	guration Mana	gement Plan	
	ment Plan Production, Submission and Approval Procedure	171	0	10-Feb-15 A	29-Jun-15 A	100%					
MP1400 MP1550	T5 - Prepare Plan (Actual Plans listed below) T5 - Submit Plan to Principal's Representative	45 0	0	10-Feb-15 A	7-May-15 A 7-May-15 A	100%			1 1 1	(Actual Plans	
MP1560	T5 - Principal's Representative review and comments	10	0	11-May-15 A	28-May-15 A	100%					tepresentative
MP1570	T5 - Review and Respond to Comments	5	0	29-May-15 A	16-Jun-15 A	100%					to Comments
MP1710	T5 - Close out of Comments	5	0	1-Jun-15 A	16-Jun-15 A	100%				out of Commen	
MP1580	T5 - Plan Complete and Approved	0	0		29-Jun-15 A	100%			4 : :	Complete and	
Constructi	on and Site Management Plan	66	0	10-Feb-15 A	7-May-15 A	100%			Y		
MP1420	Operational Traffic Management Plan	66	0	10-Feb-15 A	24-Apr-15 A	100%		Opera	tional Traffic N	/lanagement P	Plan : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
MP1430	Vehicle Management Plan	66	0	10-Feb-15 A	7-May-15 A	100%		Vehi	cle Managem	ent Plan	
MP1440	Worksite Management Plan	66	0	10-Feb-15 A	7-May-15 A	100%			ksite Manage	1 1	
MP1450	Utilities Management Plan	66	0	10-Feb-15 A	7-May-15 A	100%			ies Managem	1 1 1	
MP1460	Instrumentation and Monitoring Plan	66	0	10-Feb-15 A	7-May-15 A	100%		Insti	umențation ai	nd Monitoring	Plan
MP1270	ment Plan Production, Submission and Approval Procedure T7 - Prepare Plan (Actual Plans listed below)	104 31	0	19-Dec-14 A 19-Dec-14 A	27-Apr-15 A 16-Feb-15 A	100%	-	T7 D	(4 - 1) - 1 5		<u>, </u>
MP1470	T7 - Submit Plan to Principal's Representative	0	0	19-Dec-14A	16-Feb-15 A	100%		T7 - Prepare Pla	11 1	1 1 1	
MP1490	T7 - Principal's Representative review and comments	10	0	17-Feb-15 A	10-Apr-15 A	100%		T7 - Prir	cinal's Renre	sentative revie	w and comments
MP1530	T7 - Review and Respond to Comments	5	0	2-Mar-15 A	20-Apr-15 A	100%				spond to Com	
MP1690	T7 - Close out of Comments	5	0	21-Apr-15 A	26-Apr-15 A	100%			close out of Co		
MP1540	T7 - Plan Complete and Approved	0	0		27-Apr-15 A	100%				and Approved	
	Relations Management Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%					
	Workplace Relations Management Plan	46	0	19-Dec-14 A	27-Apr-15 A	100%			place Relation	s Managemer	nt Plan
Constructi MP1280	on Environmental Management Plan Contamination Management Plan (Contamination of Hazardous Materials)	51 51	0	19-Dec-14 A	27-Apr-15 A	100%					
MP1290	Asbestos Management Plan	51	0	19-Dec-14 A 19-Dec-14 A	27-Apr-15 A 27-Apr-15 A	100%	-		mination Man stos Managen		(Contamination of Hazardous Materials)
MP1300	Stormwater Management Plan	51	0	19-Dec-14 A	27-Apr-15 A	100%			water Managen		
MP1310	Operational Noise and Vibration Management Plan	51	0	19-Dec-14 A	27-Apr-15 A	100%					Management Plan
MP1320	Flood and Risk Management Plan	51	0	19-Dec-14 A	27-Apr-15 A	100%				nagement Plan	
MP1330	Air Quality Management Plan	51	0	19-Dec-14 A	27-Apr-15 A	100%			uality Manager	- 1 1 I	
MP1340	Waste Management Plan	51	0	19-Dec-14 A	27-Apr-15 A	100%			e Managemer		
MP1350	Long Term Environmental Management Plan	51	0	19-Dec-14 A	27-Apr-15 A	100%			1 1	mental Manage	ement Plan
	agement Plan	1	0	19-Dec-14 A	27-Apr-15 A	100%					
	Traffic Management Plan	1	0	19-Dec-14 A	27-Apr-15 A	100%		Traffic	Managemen	t Plan	
	ment Plan Production, Submission and Approval Procedure	159	0	19-Dec-14 A	30-Jul-15 A	100%			<u>.</u>		
	To Principal's Representative review and comments	10	0	19-Dec-14 A	29-Jun-15 A	100%					en ative review and comments
MP1750 MP1760	T8 - Review and Respond to Comments T8 - Close out of Comments	5	0	29-Jun-15 A	13-Jul-15 A	100%			= T8 - Re	view and Resp	pend to Comments
IVIP 1700	T8 - Close out of Comments	_	U	14-Jul-15 A	30-Jul-15 A	100%	<u> </u>		18-0	Close out of C	pannents

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline Layout : WTIP - TPD Submission Full Program layou

tivity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total	2015 2016 2017 2
		Duration	Duration			Complete	Float	
	T8 - Plan Complete and Approved	0	0		30-Jul-15 A	100%		T8 - Plan Complete and Approved
	lagement Plan	46	0	19-Dec-14 A	17-Jun-15 A	100%		
	Defect Management Plan	46	0	19-Dec-14 A	17-Jun-15 A	100%		Defect Management Plan
MP1590	ment Plan Production, Submission and Approval Procedure	110	0	12-Jun-15 A	2-Nov-15 A	100%		
	T9 - Prepare Plan (Actual Plans listed below)	10	0	12-Jun-15 A	22-Jun-15 A	100%		T9 + Prepare Plan (Actual Plans listed below)
MP1630 MP1640	T9 - Submit Plan to Principal's Representative	0	0	22 1 45 4	22-Jun-15 A	100%		T9 + Submit Plan to Principal's Representative
MP1650	T9 - Principal's Representative review and comments	10	0	23-Jun-15 A 6-Jul-15 A	3-Jul-15 A 17-Jul-15 A	100%		T9 - Pfincipal's Representative review and comments
MP1700	T9 - Review and Respond to Comments T9 - Close out of Comments	5	0	14-Oct-15 A	28-Oct-15 A	100%		T9 - Review and Respond to Comments
MP1700 MP1660	T9 - Plan Complete and Approved	0	0	14-Oct-15 A	2-Nov-15 A	100%		☐ T9:- Close out of Comments
	1	110	0	12-Jun-15 A	22-Jun-15 A	100%		T9 - Plan Complete and Approved
MP1600	oning Management Plan Operational Readiness Plan	30	0	12-Jun-15 A	22-Jun-15 A	100%		Opérational Readiness Plan
MP1610	Contractor's Commissioning Activity Plan	30	0	12-Jun-15 A	22-Jun-15 A	100%		Contractor's Commissioning Activity Plan
MP1620	Project Staging Plan	30	0	12-Jun-15 A	22-Jun-15 A	100%		Project Staging Plan
Client Notif		498	0	28-Apr-15 A	19-May-17 A	100%		a riojet slaging rian
CN1000	Client Notification(100 days) for Signalling works	0	0	20 / (р) 10 / (28-Apr-15 A	100%		
CN1000	Client Notification(100 days) for Signalling works Client Notification(100 days) for Signalling works(Apr'16)	1	0	10-Sep-15 A	10-Sep-15 A	100%		Client Notification (100 days) for Signalling works
		1	0	4-Dec-15 A	· .	100%		Client Notification(100 days) for \$ignalling works(Apr16)
CN1060 CN1070	Client Notification(100 days) for Signalling works (Jun'16) Client Notification(100 days) for Signalling works (Aug'16)	100	0	8-Mar-16 A	4-Dec-15 A 9-Mar-16 A	100%		C ent Notification (100 days) for Signalling works (Jun'16)
CN1070 CN1010	Client Notification(100 days) for Signalling works (Aug 16) Client Notification(100 days) for Signalling works (Oct'16)	100	0	6-Jun-16 A	9-Mar-16 A 9-Jun-16 A	100%		Glient Notification (100 days) for Signalling works (Aug 16)
CN1010 CN1050	Client Notification(100 days) for Signalling works (Oct 16) Client Notification(100 days) for Signalling works (Mar'17)	100	0	29-Sep-16 A	29-Sep-16 A	100%		Client Notification(100 days) for Signalling works (Oct 16)
CN1030	Client Notification(100 days) for Signalling works (Mai 17) Client Notification(100 days) for Signalling works (Aug'17)	100	0	4-Apr-17 A	5-Apr-17 A	100%		Glient Notification(100 days) for Signalling wo
CN1020	Client Notification(100 days) for Signalling works (Sep'17)	100	0	3-May-17 A	19-May-17 A	100%		
		20	0	1-Apr-16 A	29-Apr-16 A	100%		Client Notification
Power Isola			0		·			
PI1090	4 Weeks Notice for power isolations	20	0	1-Apr-16 A	29-Apr-16 A	100%		4 Weeks Notice for power isolations
Design		709	59	19-Dec-14 A	21-Sep-17	91.71%	1	
Inception I	Phase	21	0	19-Dec-14 A	12-Feb-15 A	100%		
DI1000	Mobilise Management Team	3	0	19-Dec-14 A	6-Jan-15 A	100%		Mobilise Management Team
DI1010	Project Kick Off Meeting	0	0		6-Jan-15 A	100%		Project Kidk Off Meeting
DI1030	Design Kick Off Meeting	0	0		16-Jan-15 A	100%		Design Klick Off Meeting
DI1020	Brief and Mobilise Design Team	1	0	30-Jan-15 A	5-Feb-15 A	100%		Birlef and Mobilise Design Team
DI1040	Prepare Management Plans	10	0	19-Jan-15 A	12-Feb-15 A	100%		Prepare Management Plans:
DI1070	Submit Management Plans	0	0	10 0411 1071	12-Feb-15 A	100%		Submit Management Plans
DI1050	Prepare AEO Personnel Approvals	10	0	19-Jan-15 A	12-Feb-15 A	100%		Prepare AEO Personnel Approvals
DI1080	Submit AEO Personnel Approvals	0	0	10 0411 1071	12-Feb-15 A	100%		\$ Submit AEO Personnel Approvals
DI1060	Safety Assurance Plan	10	0	19-Jan-15 A	12-Feb-15 A	100%		Safety Assurance Plan
	igation & Reporting	87	0	9-Jan-15 A	27-Apr-15 A	100%		Salety Assurance rain
	1 0	-	-		·			
DR1000	Preparation of Flood Study Brief	2	0	9-Jan-15 A	12-Jan-15 A	100%		Preparation of Flood Study Brief
DR1040	Resistivity Testing - Not required	35	0	2-Feb-15 A	3-Feb-15 A	100%		Resistivity Testing - Not required
DR1020	Geotechnical & Site Investigations	35	0	30-Jan-15 A	20-Mar-15 A	100%		Geotechnical & Site Investigations
DR1030	Site Survey	35	0	2-Feb-15 A	20-Mar-15 A	100%		Site:Survey
DS1490	Submit Stage Gate 2 CCB to TPD	0	0	0.1.454	27-Apr-15 A	100%		Submit Stage Gate 2 CCB to TPD
ORIGINAL	- Concept Design Phase	133	0	2-Jan-15 A	9-Jun-15 A	100%		
Design Kic	k-off	2	0	6-Feb-15 A	12-Feb-15 A	100%		
DS1010	Design Planning & Workshops	2	0	6-Feb-15 A	12-Feb-15 A	100%		Design Planning & Workshops
Civil Desig	n Package	25	0	13-Feb-15 A	6-Mar-15 A	100%		
DS1030	C01 - General Arrangements	25	0	13-Feb-15 A	6-Mar-15 A	100%		C01 - General Arrangements
DS1040	C02 - Civil Structures	25	0	13-Feb-15 A	6-Mar-15 A	100%		C02 - Civil Structures
DS1050	C03 - Geotechnical, Ground Improvements, Earthworks, Formation & Structure	25	0	13-Feb-15 A	6-Mar-15 A	100%		C03 - Geolechnical Ground Improvements, Earthworks, Formation & Structure
DS1060	C04- Drainage	25	0	13-Feb-15 A	6-Mar-15 A	100%		C04- Drainage
DS1070	C06- Roads & Walkways	25	0	13-Feb-15 A	6-Mar-15 A	100%		CDG-Roads & Walkways
DS1080	C13- Track	25	0	13-Feb-15 A	6-Mar-15 A	100%		Cf13- Track
DS1090	C08 - Fencing, Gates and Signage	25	0	13-Feb-15 A	6-Mar-15 A	100%		CD8 - Fencing, Gates and Signage
DS1100	C11 - Water Services	25	0	13-Feb-15 A	6-Mar-15 A	100%		C11 - Water Services
Rail System	ns Package	25	0	13-Feb-15 A	6-Mar-15 A	100%		
DS1110	R02- OHW and OHWS	25	0	13-Feb-15 A	6-Mar-15 A	100%		Rp2- OHW and OHWS
DS1120	R06- Communications	25	0	13-Feb-15 A	6-Mar-15 A	100%		RD6- Communications
DS1130	R07- HV Traction Power	25	0	13-Feb-15 A	6-Mar-15 A	100%		R07- HV Traction Power:
DS1140	R08- Earthing, Bonding and Stray Current	25	0	13-Feb-15 A	6-Mar-15 A	100%		RD8- Earthing, Bonding and Stray;Current
DS1150	R10- Combined Services Route	25	0	13-Feb-15 A	6-Mar-15 A	100%		R10- Combined Services Route
	R12- HV / LV Supply	25	0	13-Feb-15 A	6-Mar-15 A	100%		R12- HV / LV Supply
DS1160		20		.5.55 107	5 1071	.5070	1	τ <u></u> τηι Ζ-τητν / Εν Ομρριν
DS1160 DS1170	R09- Utilities	25	0	13-Feb-15 A	6-Mar-15 A	100%		Rp9- Utilities

Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone Baseline : Rebaseline

tivity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Total Float		_ []		2015				2016			- - -	201	7		20
D04400	205 Cignalling Installation design			10 Fab 15 A	C Mar 45 A		Tioat						D Jan F	Mar Apr	M Jun Jul	A S Oct	N D Jan	F Mar Ap	r M Jun	Jul A S C	Oct N	D Ja
	R05 - Signalling Installation design	25 69	0	13-Feb-15 A 2-Jan-15 A	6-Mar-15 A 13-Mar-15 A	100%			₩ R0	5 - Signalli	ng Installation	design									- 1 1	
	ports and Study Packages		0			100%																
	SW04 - Environmental Control Map	5	0	2-Jan-15 A	5-Jan-15 A	100%		III N i	i i	1 1	Control Map											
	SW15 - Site Investigations Brief	5	0	12-Jan-15 A	16-Jan-15 A	100%					ations Brief											
	SW03 - System and Safety Assurance, RAMS Reporting SW05 - Sustainability	25 25	0	30-Jan-15 A 30-Jan-15 A	6-Mar-15 A 6-Mar-15 A	100%						/Assurance, F	AMS Repo	rting								
	SW06 - Durability	25 25	0	30-Jan-15 A 30-Jan-15 A	6-Mar-15 A	100%				V05 - Sust	i i										- 1 1	
	SW07 - Design Survey and DSS Management	27	0	28-Jan-15 A	6-Mar-15 A	100%				/06 - Dura	11 1	10001										
	SW08 - BCA and DDA	25	0	30-Jan-15 A	6-Mar-15 A	100%					1 1	d DSS Manage	ement								- 1 1	
	SW09 / R11 - Site Security	25	0	30-Jan-15 A	6-Mar-15 A	100%				V08 - BCA	1 1											
	SW11 - Noise and Vibration	25	0	30-Jan-15 A	6-Mar-15 A	100%	<u> </u>				Site Security					 						
	SW12 - Fire and Life Safety	25	0	30-Jan-15 A	6-Mar-15 A	100%				1 1	and Vibration	1 1 1										
	SW13 - Pedestrian Modelling	25	0	30-Jan-15 A	6-Mar-15 A	100%				1 1	1 1	1 ! !										
	SW16 - Effect of the Works Report	15	0	23-Feb-15 A	6-Mar-15 A	100%		III •		1 1	strian Modell	9 ; ;									- 1 1	
	SW14 - Digital Engineering	15	0	23-Jan-15 A	9-Mar-15 A	100%		III 📥		: :	t of the Work	1 1 1 1										
	SW01 - Geotech Factual and Interpretive Reporting	10	0	23-Feb-15 A	13-Mar-15 A	100%			<u></u>	4	al Engineerin					 						
	SW02 - Contamination Investigation Reporting	10	0	23-Feb-15 A	13-Mar-15 A	100%				1 1	1 1	and Interpreti		9								
	SW10 - Hydrology and Drainage Investigations, Condition Assessment and Reports	15	0	23-Feb-15 A	13-Mar-15 A	100%			=		1 1	vestigation Re	7		<u> </u>							
		84	0	16-Feb-15 A	13-Mar-15 A	100%			= \$	vv ib - Hyd	ology and D	ainage Invest	iyations, Co	i iuition A	sessment ar	и керогт\$						
	mission and Approvals		-		-																	
	Stakeholders Engagement by LORAC ssue Concept Design to LORAC	5 0	0	16-Feb-15 A	20-Feb-15 A 6-Mar-15 A	100%					ngagement b	+				 -						
	Ssue Concept Design to LORAC LORAC Constructability Review	5	0	9-Mar-15 A	13-Mar-15 A	100%			· · · ·		pt Design to I	1 1 1										
	DC Review	5	0	9-Mar-15 A	13-Mar-15 A	100%			1 2	1 1	structability F	Review										
			-							C Review											- 1 1	
	nternal Verification	3	0	16-Mar-15 A	18-Mar-15 A	100%			1	nternal Ver	i i											
	Close Comments and Compile Submission	0	0	19-Mar-15 A	20-Mar-15 A	100%		· • • • • • • • • • • • • • • • • • • •		!!	4	ompile Submis	sion			 -						
	ssue Concept Design to TfNSW	0	0		24-Mar-15 A	100%			· Y	1 1	cept Design t	o TfNSW										
	ssue of CoNO	0	0		24-Mar-15 A	100%			; Y	Issue of C	1 1 1											
	ssue Concept Design to Stakeholders	15	0	24 May 45 A	24-Mar-15 A	100%						o Stakeholder	\$								1 1	
	Review of Concept by TfNSW	36	0	24-Mar-15 A 19-Mar-15 A	16-Apr-15 A 12-May-15 A	100%			=	Review	of Concept I	y I fNSW										
Stage Gate 2 Package 1		36	0	19-Mar-15 A	12-May-15 A	100%	-	· -					- 			 						
Designs		15	0	19-Mar-15 A	24-Apr-15 A	100%															- 1 1	
The second secon	Preparation of CCB (Stage 2) by LORAC	15	0	19-Mar-15 A	24-Apr-15 A	100%				Prepa	ration of CCF	(Stage 2) by	RAG								- 1 1	
Submission	Annual Conference Longer N. A. Conference	0	0	12-May-15 A	12-May-15 A	0%					TOLION OF COL	/ (Juago 2) 5)										
DS1500 F	Package 1 CCB Meeting	0	0		12-May-15 A	100%				🕏 Pa	kage 1 CCB	Meeting									1 1	
Buildings Pa	ckage	93	0	13-Feb-15 A	9-Jun-15 A	100%																
DS1601 (CCG to issue draft model to Aurecon	0	0		26-Mar-15 A	100%			•	CCG to is	sue draft mod	del to Aurecon										
DS1780	KLR Clash reports submitted to LORAC	0	0		7-Apr-15 A	100%			. 🗸	1 1	1 1	bmitted to LO									- 1 1	
DS1190 E	301 - Architecture and Urban Design	25	0	13-Feb-15 A	10-Apr-15 A	100%					1 1 1	d Urban Desid									- 1 1	
DS1200 E	302A - Station Structures	25	0	13-Feb-15 A	10-Apr-15 A	100%				1 1	Station Struct		1									
DS1210 E	302B - Station Roof	25	0	13-Feb-15 A	10-Apr-15 A	100%					Station Roof					!!!						
DS1220 E	303 - Station Services	25	0	13-Feb-15 A	10-Apr-15 A	100%				1 1	ation Service	s										
DS1630 E	303A - Building Services Hydraulics	9	0	27-Mar-15 A	10-Apr-15 A	100%				B03A- E	Building Service	es Hydraulics										
DS1640 E	303B - Building Services mech	9	0	27-Mar-15 A	10-Apr-15 A	100%					Building Servi	1 1 1										
	303C - Building Services Security	9	0	27-Mar-15 A	10-Apr-15 A	100%						ces Security										
DS1660 E	303E - Building Services Comms	9	0	27-Mar-15 A	10-Apr-15 A	100%	ì				Building Servi										1	
DS1670 E	Background Reports	9	0	27-Mar-15 A	10-Apr-15 A	100%				Backgro	und Reports											
DS1680 I	ssue Concept Buildings Design to LORAC	0	0		10-Apr-15 A	100%				lssue C	oncept Buildir	ngs Design to	LORAC									
DS1790)	KLR Clash reports LORAC Review	3	0	8-Apr-15 A	10-Apr-15 A	100%						DRAC Review									- 1 1	
Review, Subr	nission and Approvals	44	0	13-Apr-15 A	9-Jun-15 A	100%																
DS1690 L	OR Review	3	0	13-Apr-15 A	15-Apr-15 A	100%				LORR	eview								1			
DS1700 I	DC Review	3	0	13-Apr-15 A	15-Apr-15 A	100%				IDC Re												
DS1710 I	nternal Verification	3	0	16-Apr-15 A	20-Apr-15 A	100%				Interna	al Verification											
DS1720 (Compile Submission	2	0	21-Apr-15 A	22-Apr-15 A	100%					ile Submissio	n										
DS1730 I	ssue Concept Design to TfNSW & Stakeholders	0	0		24-Apr-15 A	100%				S Issue	Concept Des	ign to TfNSW	& Stakeho	ders								
DS1800 3	3D models review by LORAC	10	0	13-Apr-15 A	24-Apr-15 A	100%					dels review l											
DS1810 [DE Oculus and 3D Flythrough by LORAC	10	0	13-Apr-15 A	24-Apr-15 A	100%				= ' '		Flythrough by	LORAC									
DS1740 [Design Briefing Sessions	5	0	27-Apr-15 A	1-May-15 A	100%					gn Briefing \$											
DS1760 F	Review Concept Design by TfNSW	15	0	27-Apr-15 A	18-May-15 A	100%						t Design by T	fNSW									
Stage Gate 2	Buildings	44	0	13-Apr-15 A	9-Jun-15 A	100%												<u> </u>				
Package 2		44	0	13-Apr-15 A	9-Jun-15 A	100%																
Designs		15	0	13-Apr-15 A	1-Jun-15 A	100%																
DS1820 F	Preparation of CCB (Stage 2) by LORAC	15	0	13-Apr-15 A	1-Jun-15 A	100%					Preparation o	f CCB (Stage	2) by LORA	/C								

Actual Work Critical Remainin...

Remaining Work Milestone

Remaining Work Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

Activity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total			2015						2016					2017			201
		Duration	Duration			Complete	Float	D Jan F	M Apr M	J Jul A	s o	oct N D	Jan F	Mar Ap	r M Ju	n Jul A	S Oct	N D	Jan F Mar	Apr M J	un Jul A	S Oct	N D	Jan
Submissi		8	0	2-Jun-15 A	9-Jun-15 A	100%											$\parallel \parallel \parallel \parallel$. _				. -	ı
	Submit Stage Gate 2 CCB to TPD CCB Meeting	0	0		2-Jun-15 A 9-Jun-15 A	100%			+	Submit Sta	-4	e 2 CCB to	PD				 - -			ļļķ-				ļļ
	-	53	0	23-Mar-15 A	29-May-15 A	100%				CCB Mee	eting													ıİ
	- Preliminary Design Review (PDR) Phase	20	0	23-Mar-15 A	21-Apr-15 A	100%																		ı
Civil Design	C01 - General Arrangements	20	0	23-Mar-15 A	21-Apr-15 A	100%			- 001															ı
DP1000	CO2 - Civil Structures	20	0	23-Mar-15 A	21-Apr-15 A	100%				- General Ar - Civil Structi	, 0	nents												ı
DP1020	C03 - Geotechnical, Ground Improvements, Earthworks, Formation & Structure	20	0	23-Mar-15 A	21-Apr-15 A	100%		· 	 -ii	- Geotechnic		ound Impre	womente	Farthwo	rke Form	mation & S	tructure							
DP1030	C04- Drainage	20	0	23-Mar-15 A	21-Apr-15 A	100%			:	Drainage	icai, Git	Juliu IIIpi	Vernents	Lailiwo	1011	IIIalion & S	iluciule		,					
DP1040	C06- Roads & Walkways	20	0	23-Mar-15 A	21-Apr-15 A	100%				Roads & W	¦ /alkwav	s												
DP1050	C13- Track	20	0	23-Mar-15 A	21-Apr-15 A	100%			::	Track														
DP1060	C08 - Fencing, Gates and Signage	20	0	23-Mar-15 A	21-Apr-15 A	100%			C08	- Fencing, G	Sates ar	nd Signag	e											
DP1070	C11 - Water Services	20	0	23-Mar-15 A	21-Apr-15 A	100%			C11	Water Serv	vices													
Rail Systen	ns Package	20	0	23-Mar-15 A	21-Apr-15 A	100%																		
DP1080	R09 - Utilities	20	0	23-Mar-15 A	21-Apr-15 A	100%			R09	- Utilities														
DP1090	R02- OHW and OHWS	20	0	23-Mar-15 A	21-Apr-15 A	100%			R02	OHW and O	фнws								,				. !	. !
DP1100	R06- Communications	20	0	23-Mar-15 A	21-Apr-15 A	100%			R06	Communica	ations					.	1		,	<u> </u>				
DP1110	R07- HV Traction Power	20	0	23-Mar-15 A	21-Apr-15 A	100%			= : :	HV Traction	1	1 1 1												
DP1120	R08- Earthing, Bonding and Stray Current	20	0	23-Mar-15 A	21-Apr-15 A	100%				Earthing, Bo		1 1 1	Current											ıİ
DP1130	R10- Combined Services Route	20	0	23-Mar-15 A	21-Apr-15 A	100%			::	Combined S	i l	s Route												
DP1140	R12- HV / LV Supply	20	0	23-Mar-15 A	21-Apr-15 A	100%				HV / LV Sup														, !
DP1150	R05 - Signalling Installation design	20	0	23-Mar-15 A	21-Apr-15 A	100%			R05	- Signalling I	ınstallati	ion design					 -		, 	ļ <u> </u> -				·
	bmission and Approvals Statishalders Engagement by LORAC	15 5	0	15-Apr-15 A	5-May-15 A	100%				. . _														
DP1200 DP1250	Stakeholders Engagement by LORAC Review comments from TfNSW	3	0	15-Apr-15 A 17-Apr-15 A	21-Apr-15 A 21-Apr-15 A	100%			T : :	eholders Eng			RAC							1 1				
DP1230	Issue PDR Design to LORAC	0	0	17-Apr-13 A	30-Apr-15 A	100%			- 1	ew comment ue PDR Des														
DP1260	Incorporate TfNSW comments into design	5	0	22-Apr-15 A	30-Apr-15 A	100%	——II			orporate TfN			to docion											
DP1220	LORAC Constructability Review	3	0	1-May-15 A	5-May-15 A	100%		· 		RAC Constr				<u>-</u>			 - -						, 	, <u> </u>
DP1230	Close Out Comments and Compile	3	0	1-May-15 A	5-May-15 A	100%				se Out Com			nile											
DP1240	Issue of CoNO by LORAC	0	0		5-May-15 A	100%				ue of CoNO														
Buildings F	Package	26	0	27-Apr-15 A	29-May-15 A	100%																	.	
DP1960	Design planning and workshops	4	0	27-Apr-15 A	28-Apr-15 A	100%			Des	ign planning	and wo	orkshops											.	
DP1980	Models & XLR Clash reports Submitted to LORAC	0	0		15-May-15 A	100%			+	1odels & XLF		p		to LORA	C		1 1 1		. 1 1					
DP1880	XLR Clash reports Submitted to LORAC	0	0		19-May-15 A	100%			8	KLR Clash re	eports S	Submitted	to LORA	c										
DP1970	XLR Clash reports LORAC Review	5	0	30-Apr-15 A	26-May-15 A	100%				XLR Clash r	reports	LORAC F	eview											
DP1160	B01 - Architecture and Urban Design	20	0	28-Apr-15 A	28-May-15 A	100%				B01 - Archit			Design						,				,	
DP1170	B02A - Station Structures	20	0	28-Apr-15 A	28-May-15 A	100%			+ -	B02A - Stati					ļļ				,	lļļ.				ļ
DP1180	B02B - Station Roof	20	0	28-Apr-15 A	28-May-15 A	100%	I			B02B - Stat														
DP1190	B03 - Station Services	20	0	28-Apr-15 A	28-May-15 A		——			B03 - Statio										1 1				
DP1810	B03A - Building Services Hydraulics	20	0	28-Apr-15 A	28-May-15 A					B03A - Build														. !
DP1820 DP1830	B03B - Building Services mech	20	0	28-Apr-15 A	28-May-15 A	100%				B03B - Build														, !
DP1830 DP1840	B03C - Building Services Security B03E - Building Services Comms	20	0	28-Apr-15 A 28-Apr-15 A	28-May-15 A 28-May-15 A				==	B03C - Build B03E - Build	iqing 5e Idina 6a	rvices Sec	ning				 			 				_[
DP1850	Background Reports	20	0	28-Apr-15 A	28-May-15 A					Background			13											, !
DP1860	Issue PDR Buildings Design to LORAC	0	0		28-May-15 A	100%			T	Issue PDR	1		to LORA	c										
DP1870	Respond to TfNSW concept design comments & closeout as required	5	0	19-May-15 A	28-May-15 A					Respond to					& closed	out as requ	ulred						,	
	omission and Approvals	3	0	28-May-15 A	29-May-15 A																			
DP1920	Constructability review	3	0	28-May-15 A	29-May-15 A	100%				Constructa	ability rev	view		1	Ti	-	T -			111-				
ORIGINAL	- Critical Design Review (CDR) Phase- Suspended	142	0	6-May-15 A	16-Jun-15 A	100%																		, !
Civil Design		23	0	6-May-15 A	5-Jun-15 A	100%																		
DC1010	C01 - General Arrangements	23	0	6-May-15 A	5-Jun-15 A	100%				C01 - Gen	; neral Arı	rangemen	ts											
DC1020	C02 - Civil Structures	23	0	6-May-15 A	5-Jun-15 A	100%				C02 - Civil														
DC1030	C03 - Geotechnical, Ground Improvements, Earthworks, Formation & Structure	23	0	6-May-15 A	5-Jun-15 A	100%				C03 - Geo	otechnic	al, Groun	d mprove	ements, E	arthwork	s, Formati	ion & Struc	cture					,	
DC1040	C04- Drainage	23	0	6-May-15 A	5-Jun-15 A	100%				C04- Drain	i l													
DC1050	C06- Roads & Walkways	23	0	6-May-15 A	5-Jun-15 A	100%				C06- Road	ds & W	alkways												
DC1060	C13- Track	23	0	6-May-15 A	5-Jun-15 A	100%				C13- Trac														, !
DC1070	C08 - Fencing, Gates and Signage	23	0	6-May-15 A	5-Jun-15 A	100%				C08 - Fen			Signage		ļl				,	ļ <u>i</u> i.				ļÌ
	C11 - Water Services	23	0	6-May-15 A	5-Jun-15 A	100%				C11 - Wat	ter Serv	rices												
Rail Systen		142	0	6-May-15 A	15-Jun-15 A	100%						-											,	
DC1090	R09 - Utilities	23	0	6-May-15 A	5-Jun-15 A	100%				R09 - Utilit														
DC1100 DC1110	R02- OHW and OHWS	23	0	6-May-15 A	5-Jun-15 A	100%				R02- OHV														, !
	R06- Communications	23	0	6-May-15 A	5-Jun-15 A	100%	1 II			R06- Com	مضربمناهم	stiono !		: I	1 1	1 1	: 1 :	1 1	. 1 1	1 1 1	1 1	: 1 :	. :	

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Saseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

Activity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total			201	5				201	3			20:	17		201
Activity ID	round round	Duration	Duration	Otali	1 1/11011	Complete		D J	an F M Apr M			S Oct N	D Jan F	Mar Ap			N D Jan	F Mar Ar	or M Jun	Jul A S	Oct N	D Jan
DC1120	R07- HV Traction Power	23	0	6-May-15 A	5-Jun-15 A	100%						ction Power		1		300						-
DC1130	R08- Earthing, Bonding and Stray Current	23	0	6-May-15 A	5-Jun-15 A	100%				- 1	1 1		nd Stray Cu	rrent								
DC1140	R10- Combined Services Route	23	0	6-May-15 A	5-Jun-15 A	100%						ed Services						:				
DC1150	R12- HV / LV Supply	23	0	6-May-15 A	5-Jun-15 A	100%					2- HV / LV											
DC1160	R05 - Signalling Installation design	23	0	6-May-15 A	5-Jun-15 A	100%				R0	5 - Signalli	ng Installati	n design	.il					<u>.ii</u>			
Review, Su	bmission and Approvals	15	0	8-Jun-15 A	15-Jun-15 A	100%																
DC2780	Review of CDR - Activity suspended due to design change	15	0	8-Jun-15 A	15-Jun-15 A	100%				₽ R	eview of C	DR - Activit	suspended	due to d	esign chang	je						
Site Wide	Reports and Study Packages	23	0	6-May-15 A	5-Jun-15 A	100%																
DC1210	SW03 - System and Safety Assurance, RAMS Reporting	23	0	6-May-15 A	5-Jun-15 A	100%				SW	03 - Syste	em and Safe	ty Assuranc	ė, RAMS	Reporting							
DC1220	SW04 - Environmental Control Map	5	0	6-May-15 A	5-Jun-15 A	100%				sw	04 - Envir	onmental C	ontrol Map									
DC1230	SW05 - Sustainability	23	0	6-May-15 A	5-Jun-15 A	100%				SW	05 - Susta	ainability										
DC1240	SW06 - Durability	23	0	6-May-15 A	5-Jun-15 A	100%				SW	06 - Dura	bility										
DC1000	SW07 - Design Survey and DSS Management	23	0	6-May-15 A	5-Jun-15 A	100%				=			nd DSS Mar	agement								
DC1250	SW08 - BCA and DDA	23	0	6-May-15 A	5-Jun-15 A	100%				=	08 - BCA											
DC1260	SW09 / R11 - Site Security	23	0	6-May-15 A	5-Jun-15 A	100%				E+-		Site Secur			ļļļ.							
DC1270	SW12 - Fire and Life Safety	23	0	6-May-15 A	5-Jun-15 A	100%				- 1	- i - i -	and Life Sat	1 1									
DC1280	SW13 - Pedestrian Modelling	23	0	6-May-15 A	5-Jun-15 A	100%				SW	13 - Pede	strian Mod	lling									
Buildings		25	0	1-Jun-15 A	16-Jun-15 A	100%																
DC2140	Design planning and workshops	4	0	1-Jun-15 A	4-Jun-15 A	100%				_		ng and wor						i i I				
DC1170	B01 - Architecture and Urban Design	25	0	1-Jun-15 A	16-Jun-15 A	100%						ecture and		ın	ļļ							
DC1180	B02A - Station Structures	25	0	1-Jun-15 A	16-Jun-15 A	100%				_	1 1	on Structur	s									
DC1190	B02B - Station Roof	25	0	1-Jun-15 A	16-Jun-15 A	100%				=	02B - Stati	1 1										
DC1200	B03 - Station Services	25	0	1-Jun-15 A	16-Jun-15 A	100%				=	1 1	n Services										
DC1990	B03A - Building Services Hydraulics	25	0	1-Jun-15 A	16-Jun-15 A	100%				_	i i	F 1	Hydraulics						1 1			
DC2000	B03B - Building Services mech	25	0	1-Jun-15 A	16-Jun-15 A	100%						ling Service		· 	ļļļ.		ļļļļ	<u> </u>				
DC2010	B03C - Building Services Security	25	0	1-Jun-15 A	16-Jun-15 A	100%				_	1 1	ding Service										
DC2020	B03E - Building Services Comms	25	0	1-Jun-15 A	16-Jun-15 A	100%				_		ling Service	s Comms									
DC2030	Background Reports	25	0	1-Jun-15 A	16-Jun-15 A	100%					ackground											
DC2040	Issue CDR Buildings Design to LORAC	0	0		16-Jun-15 A	100%							esign to LOI									
DC2110	XLR Clash reports Submission to LORAC	0	0	40 1 45 4	16-Jun-15 A	100%		ļ., , , , , ,		-			mission to L		ļļ - -		ļļļļ				ļļ	
DC2160	XLR Clash reports LORAC Review	5	0	13-Jun-15 A	16-Jun-15 A	100%						1 '	AC Review									
DC2190	Models & XLR Clash reports Submission to LORAC	0	0	17-Jun-15 A	16-Jun-15 A	100%				\$ M	odels & XI	LR Clash re	ports Subm	ssion to I	ORAC							
	- Concept Design Phase	64	U		25-Sep-15 A																	
Civil Desig	-	30	0	29-Jun-15 A	7-Aug-15 A	100%																
DS2070	C01 - General Arrangements	30	0	29-Jun-15 A	7-Aug-15 A	100%							rrangemen	ts	ļļļ.		<u> </u>					
DS2080	C02 - Civil Structures	30	0	29-Jun-15 A	7-Aug-15 A	100%				<u> </u>	C02	- Civil Stru	tures									
DS2090	C03 - Geotechnical, Ground Improvements, Earthworks, Formation & Structure	30	0	29-Jun-15 A	7-Aug-15 A	100%				E			ical Groun	Improve	ments, Ear	hworks, Format	ion & Structure	a				
DS2100	C04- Drainage	30	0	29-Jun-15 A	7-Aug-15 A	100%				<u> </u>		- Drainage										
DS2110	C06- Roads & Walkways	30	0	29-Jun-15 A	7-Aug-15 A	100%				<u> </u>		- Roads &	Valkways									
DS2120	C13- Track	30	0	29-Jun-15 A	7-Aug-15 A	100%						- Track	 - 	· -	ļļļ.		ļļļļ	<u> </u>			ļļ	
DS2130	C08 - Fencing, Gates and Signage	30	0	29-Jun-15 A	7-Aug-15 A	100%				E		1 1	Gates and S	Signage								
DS2140	C11 - Water Services	30	0	29-Jun-15 A	7-Aug-15 A	100%				=	C11	- Water Se	rvices									
	ns Package	30	0	29-Jun-15 A	7-Aug-15 A	100%				L												
DS2280	R02- OHW and OHWS	30	0	29-Jun-15 A	7-Aug-15 A	100%				=		- OHW and										
DS2290	R06- Communications	30	0	29-Jun-15 A	7-Aug-15 A	100%						- Communi			ļ <u>-</u>			<u> </u>				
DS2300	R07- HV Traction Power	30	0	29-Jun-15 A	7-Aug-15 A	100%				=		- HV Tracti										
DS2310	R08- Earthing, Bonding and Stray Current	30	0	29-Jun-15 A	7-Aug-15 A	100%							Bonding and		rrent							
DS2320 DS2330	R10- Combined Services Route R12- HV / LV Supply	30 30	0	29-Jun-15 A 29-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%						1 1	Services R	oute								
DS2330 DS2340	R09- Utilities	30	0	29-Jun-15 A 29-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%						- HV / LV S	appry					:				
DS2340 DS2350	R05 - Signalling Installation design	30	0	29-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%						- Utilities	Inetallatia	dociar	 -		 				 	
Buildings		32	0	17-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%				F	- RUS	- Signalling	Installation	uesign								
DS2500	XLR Clash reports submitted to LORAC	0	0	541 1571	4-Aug-15 A	100%					♦ VID	Clack	rto ou bootu -	dtolop								
DS2500 DS2020	B01 - Architecture and Urban Design	30	0	17-Jun-15 A	7-Aug-15 A	100%							rts submitte re and Urba					:				
DS2020 DS2030	B02A - Station Structures	30	0	17-Jun-15 A 17-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%						- Architecti A - Station		iii pesign								
DS2030	B02B - Station Roof	30	0	17-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%	 					B - Station		· 	} -		 	; 				
DS2040	B03 - Station Novices	30	0	17-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%						- Station S										
DS2360	B03A - Building Services Hydraulics	9	0	17-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%							ervices Services Hy	draulias								
DS2370	B03B - Building Services mech	9	0	17-Jun-15 A	7-Aug-15 A	100%					DU3	B Building	Services my	uraullus och								
DS2380	B03C - Building Services Security	9	0	17-Jun-15 A	7-Aug-15 A	100%							Services In									
DS2390	B03E - Building Services Security B03E - Building Services Comms	9	0	17-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%							Services So Services Co		} -		 					
DS2400	Background Reports	9	0	17-Jun-15 A	7-Aug-15 A 7-Aug-15 A	100%						kground Re		JAIIIIS								
DOZ-100	Zaong, Santa Nopolio			17 Juli-13 A	, nug-13 A	10070			<u> </u>		Bac	rground Re	p yllus !	i	1 1	<u> </u>	<u>: </u>	<u>. i </u>	1 1		<u> </u>	

Actual Work Critical Remainin...

Remaining Work Milestone

Remaining Work Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

othirty ID	Activity Nama	Original	Domeining	Ctort	Eiriah	Dureties C	Total			16				2040				2017		10
ctivity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Total Float	D Jan F M Apr	20 M J		S Oc	t N D	Jan F Ma	2016 ar Apr M Jun Jul	A S Oct N	D Jan F M	ar Apr M J	un Jul A	A S Oct	N D Ja
DS2410	Issue Concept Buildings Design to LORAC	0	0		7-Aug-15 A	100%								n to LORAC	2 00. 10			/	2 001	
DS2510	XLR Clash reports LORAC Review	3	0	5-Aug-15 A	7-Aug-15 A	100%				XLI	R Clas	h reports	ORAC Rev	view						
Review, Su	bmission and Approvals	40	0	3-Aug-15 A	25-Sep-15 A	100%														
DS2150	Issue Concept Design to LORAC	0	0		7-Aug-15 A	100%							gn to LORA							
DS2230	Stakeholders Engagement by LORAC	5	0	3-Aug-15 A	7-Aug-15 A	100%							ement by L							
DS2160	LORAC Constructability Review	5	0	10-Aug-15 A	14-Aug-15 A	100%							bility Revie	w						
DS2170	IDC Review	5	0	10-Aug-15 A	14-Aug-15 A	100%				1.7	C Rev	1 1								
DS2240	Issue Concept Design to Stakeholders	3	0	47 000 45 0	14-Aug-15 A	100%		 - 					ign to Stak	eholders						
DS2180 DS2190	Internal Verification Close Comments and Compile Submission	2	0	17-Aug-15 A 20-Aug-15 A	19-Aug-15 A 21-Aug-15 A	100%						Verificatio								
DS2200	Issue Concept Design to TfNSW	0	0	20-Aug-13 A	24-Aug-15 A	100%							and Compli sign to TfN	le Submission						
DS2220	Issue of CoNO	0	0		24-Aug-15 A	100%						of CoNO	esign to Til	12/1						
	ety Assurance deliverables	19	0	24-Aug-15 A	25-Sep-15 A					\\	Souce	JI COIVO								
DS2580	Design RAM Plan	0	0		24-Aug-15 A	100%				* i	Design	RAM Plar				+				
DS2600	Updated Project Specific Risk Register (PSRR)	0	0		24-Aug-15 A	100%				: X:	_	1 1 I	Specific Ris	k Register (PSRR)						
DS2610	Requirements compliance (RATM) with SRS V3.6 updates	0	0		24-Aug-15 A	100%								RATM) with SRS V3.	updates					
DS2620	Updated Outline Design Safety Assurance Report	0	0		28-Aug-15 A	100%								ety Assurance Repo						
DS2590	IHA based on change areas only	0	0		25-Sep-15 A	100%							n change ar							
TfNSW Rev		10	0	24-Aug-15 A	3-Sep-15 A	100%														
DS2210	Review of Concept by TfNSW	10	0	24-Aug-15 A	3-Sep-15 A	100%					Revie	w of Conc	ept by TfNS	sw						
Stage Gate	2	15	0	17-Aug-15 A	22-Sep-15 A															
Package 1		15	0	17-Aug-15 A	22-Sep-15 A	100%														
Designs DS2250	Preparation of CCB (Stage 2) by LORAC	15 15	0	17-Aug-15 A 17-Aug-15 A	10-Sep-15 A 10-Sep-15 A	100% 100%		 				-jj -	000 (0)							
Submission	1	7	0	11-Sep-15 A	22-Sep-15 A	100%				-	Prep	paration of	CCB (Stage	e 2) by LORAC						
DS2260	Stage Gate 2 CCB Review	7	0	11-Sep-15 A	21-Sep-15 A	100%				- 1 1	Sta	age Gate S	CCB Revie	-w						
	Package 1 CCB Meeting	0	0	64	22-Sep-15 A	100%							CB Meeting							
	- Preliminary Design Review (PDR) Phase	39	0	24-Aug-15 A	16-Oct-15 A	100%					•			'						
Civil Desig		35	0	24-Aug-15 A	12-Oct-15 A	100%		<u> </u>					} <u>-</u>			+				
DP1990	C01 - General Arrangements	35	0	24-Aug-15 A	12-Oct-15 A	100%				_ i 🛓		C01 + Ge	eral Arrano	romonte						
DP2000	C02 - Civil Structures	35	0	24-Aug-15 A	12-Oct-15 A	100%					_	3 3	Structures	1 ! ! !						
DP2010	C03 - Geotechnical, Ground Improvements, Earthworks, Formation & Structure	35	0	24-Aug-15 A	12-Oct-15 A	100%						i i	1 1	Ground Improvemen	s Farthworks F	ormation & Struc	ture			
DP2020	C04- Drainage	35	0	24-Aug-15 A	12-Oct-15 A	100%						3 3 H	nage	Silvana improvemen	is, Leiti Works, I	ormation & other	, tule			
DP2030	C06- Roads & Walkways	35	0	24-Aug-15 A	12-Oct-15 A	100%		<u> </u>					ds & Walkw	vavs		+				
DP2040	C13- Track	35	0	24-Aug-15 A	12-Oct-15 A	100%						C13- Trac	k							
DP2050	C08 - Fencing, Gates and Signage	35	0	24-Aug-15 A	12-Oct-15 A	100%						C08 - Fer	cing, Gates	s and Signage						
DP2060	C11 - Water Services	35	0	24-Aug-15 A	12-Oct-15 A	100%						C11 - Wa	er Services							
Rail Syster	ns Package	35	0	24-Aug-15 A	12-Oct-15 A	100%														
DP2070	R09 - Utilities	35	0	24-Aug-15 A	12-Oct-15 A	100%						R09 - Utili	ies							
DP2080	R02- OHW and OHWS	35	0	24-Aug-15 A	12-Oct-15 A	100%						R02- OH	V and OHV	vs						
DP2090	R06- Communications	35	0	24-Aug-15 A	12-Oct-15 A	100%						R06- Con	munication	s						
DP2100	R07- HV Traction Power	35	0	24-Aug-15 A	12-Oct-15 A	100%							raction Pov							
DP2110	R08- Earthing, Bonding and Stray Current	35	0	24-Aug-15 A	12-Oct-15 A	100%		ļ. 						ng and Stray Current		4				
DP2120	R10- Combined Services Route	35	0	24-Aug-15 A	12-Oct-15 A	100%				=				ices Route						
DP2130 DP2140	R12- HV / LV Supply R05 - Signalling Installation design	35 35	0	24-Aug-15 A 24-Aug-15 A	12-Oct-15 A 12-Oct-15 A	100%							LV Supply	llation design						
	, , , , , , , , , , , , , , , , , , ,										7	R05 + Sig	ialling Insta	llation design						
Buildings I	Package Models & XLR Clash reports Submitted to LORAC	35 0	0	24-Aug-15 A 1-Oct-15 A	12-Oct-15 A	100%						ا الملا	D C1-		ODAC					
DP2370 DP2350	Models & XLR Clash reports Submitted to LORAC XLR Clash reports Submitted to LORAC	0	0	1-OCI-15 A	2-Oct-15 A	100%		 						eports Submitted to L omitted to LORAC	URAC					
DP2350 DP2150	B01 - Architecture and Urban Design	35	0	24-Aug-15 A	12-Oct-15 A	100%				1	~			d Urban Design						
DP2160	B02A - Station Structures	35	0	24-Aug-15 A	12-Oct-15 A	100%							itecture an							
DP2170	B02B - Station Roof	35	0	24-Aug-15 A	12-Oct-15 A	100%							tion Roof	u. v.o						
DP2180	B03 - Station Services	35	0	24-Aug-15 A	12-Oct-15 A	100%							on Service	s						
DP2260	B03A - Building Services Hydraulics	35	0	24-Aug-15 A	12-Oct-15 A	100%		<u> </u>					F	ces Hydraulics		†				
DP2270	B03B - Building Services mech	35	0	24-Aug-15 A	12-Oct-15 A	100%							ilding Servi	1 1 1 1						
DP2280	B03C - Building Services Security	35	0	24-Aug-15 A	12-Oct-15 A	100%							1 1	ces Security						
DP2290	B03E - Building Services Comms	35	0	24-Aug-15 A	12-Oct-15 A	100%								ces Comms						
DP2300	Background Reports	35	0	24-Aug-15 A	12-Oct-15 A	100%							nd Reports							
DP2310	Issue PDR Buildings Design to LORAC	0	0		12-Oct-15 A	100%				1				Design to LORAC						7
DP2360	XLR Clash reports LORAC Review	5	0	6-Oct-15 A	12-Oct-15 A	100%					!	XLR Clas	reports L0	ORAC Review						
Review, Su	bmission and Approvals	4	0	12-Oct-15 A	16-Oct-15 A	100%														
DP2320	Constructability review	3	0	13-Oct-15 A	15-Oct-15 A	100%			i		1	Construc	ability revie	w						

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline Layout : WTIP - TPD Submission Full Program layou

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete		2015			2016			2	2017	201
Docign Saf	ety Assurance deliverables	Daration	Duration	12-Oct-15 A	12-Oct-15 A	0%	riout	D Jan F M Apr M J Jul A	S Oct N	D Jan F Mar Ap	r M Jun Jul A	S Oct N	D Jan F Ma	ar Apr M Ju	n Jul A S	Oct N D Jan
	Updated Project Specific Risk Register (PSRR)	0	0	12 001 1071	12-Oct-15 A	100%			♦ lilpdate	ted Project Specific F	Pick Projector (BSDE	5				
	Updated Requirements compliance (RATM)	0	0		12-Oct-15 A	100%				ted Requirements co		"				
TfNSW Rev		1	0	16-Oct-15 A	16-Oct-15 A				O Opuali	ted frequirements co	IIIpiiance (ItATW)					
	Review/Comments Workshop(EAR) -Track, Station Structure and Roof, Earthing and Bonding & Signalling Installation Desi	1	0	16-Oct-15 A	16-Oct-15 A	100%			I Revie	ew/Comments Work	shop(EAR) -Track S	tation Structur	e and Roof Fari	hing and Bong	ding & Signalling	in Installation Desir
	Critical Design Review (CDR) Phase	70	0	13-Oct-15 A	21-Jan-16 A	100%			1 1000		1100(1,11)		c and reconstant	and Dork		J motamation Deorg
Civil Desig		25	0	13-Oct-15 A	3-Dec-15 A	100%		 - 								
	-		0													
DC2470	C01 - General Arrangements C02 - Civil Structures	25 25	0	13-Oct-15 A 13-Oct-15 A	3-Dec-15 A 3-Dec-15 A	100%				C01 - General Arra	17 1 1 1					
DC2480	C03 - Geotechnical, Ground Improvements, Earthworks, Formation & Structure	25	0	13-Oct-15 A	3-Dec-15 A	100%				C02 - Civil Structu						
DC2490 DC2500	C04- Drainage	25	0	13-Oct-15 A		100%					I, Ground Improven	nents, Earthwo	rks, Formation	& Structure		
	C06- Roads & Walkways	25	0	13-Oct-15 A	3-Dec-15 A 3-Dec-15 A	100%		}- - - - }		C04- Drainage		{}				
DC2510 DC2520	C13- Track	25	0	13-Oct-15 A	3-Dec-15 A	100%				C06- Roads & Wa	kways					
			0	-	-					C13- Track						
DC2530	C08 - Fencing, Gates and Signage	25	-	13-Oct-15 A	3-Dec-15 A	100%					tes and Signage					
DC2540	C11 - Water Services	25	0	13-Oct-15 A	3-Dec-15 A	100%				C11 - Water Service	es					
Rail Systen		25	U	13-Oct-15 A	3-Dec-15 A	100%										
DC2300	R09 - Utilities	25	0	13-Oct-15 A	3-Dec-15 A	100%				R09 - Utilities						
DC2310	R02- OHW and OHWS	25	0	13-Oct-15 A	3-Dec-15 A	100%				R02- OHW and O	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
DC2320	R06- Communications	25	0	13-Oct-15 A	3-Dec-15 A	100%	ļ			R06- Communicat						
DC2330	R07- HV Traction Power	25	0	13-Oct-15 A	3-Dec-15 A	100%	<u> </u>			R07- HV Traction	1 1 1 1					
DC2340	R08- Earthing, Bonding and Stray Current	25	0	13-Oct-15 A	3-Dec-15 A	100%					nding and Stray Curr	ent			ļįi	.
DC2350	R10- Combined Services Route	25	0	13-Oct-15 A	3-Dec-15 A	100%	L			R 0- Combined Se	ervices Route					
DC2360	R12- HV / LV Supply	25	0	13-Oct-15 A	3-Dec-15 A	100%				R 2- HV / LV Supp	5 ()					
DC2370	R05 - Signalling Installation design	25	0	13-Oct-15 A	3-Dec-15 A	100%				R05 - Signalling In:	stallation design					
Site Wide F	eports and Study Packages	25	0	13-Oct-15 A	3-Dec-15 A	100%										
DC2390	SW04 - Environmental Control Map	5	0	13-Oct-15 A	19-Oct-15 A	100%			- SW04	04 - Environmental C	ontrol Map	ilii			.1ii	
DC2380	SW03 - System and Safety Assurance, RAMS Reporting	25	0	13-Oct-15 A	3-Dec-15 A	100%				SW03 - System ar	d Safety Assurance	, RAMS Repor	ting			
DC2400	SW05 - Sustainability	25	0	13-Oct-15 A	3-Dec-15 A	100%				SW05 - Sustainab	lity					
DC2410	SW06 - Durability	25	0	13-Oct-15 A	3-Dec-15 A	100%				SW06 - Durability						
DC2420	SW07 - Design Survey and DSS Management	25	0	13-Oct-15 A	3-Dec-15 A	100%				SW07 - Design Su	rvey and DSS Mana	gement				
DC2430	SW08 - BCA and DDA	25	0	13-Oct-15 A	3-Dec-15 A	100%				SW08 - BCA and [DDA	<u> </u>				
DC2440	SW09 / R11 - Site Security	25	0	13-Oct-15 A	3-Dec-15 A	100%				SW09 / R11 - Site	Security					
DC2450	SW12 - Fire and Life Safety	25	0	13-Oct-15 A	3-Dec-15 A	100%				SW12 - Fire and L	ife Safety					
DC2460	SW13 - Pedestrian Modelling	25	0	13-Oct-15 A	3-Dec-15 A	100%				SW13 - Pedestriar	n Modelling					
Buildings F	ackage	38	0	13-Oct-15 A	3-Dec-15 A	100%										
DC2720	Design planning and workshops	4	0	13-Oct-15 A	16-Oct-15 A	100%			Desig	gn planning and work	shops					
DC2730	XLR Clash reports Submission to LORAC	0	0		1-Dec-15 A	100%			8	XLR Clash reports	Submission to LOR	AC			T	
DC2770	Models & XLR Clash reports Submission to LORAC	0	0		1-Dec-15 A	100%	1		8	Models & XLR Clas	h reports Submissi	on to LORAC			1 1	
DC2550	B01 - Architecture and Urban Design	25	0	13-Oct-15 A	3-Dec-15 A	100%				B01 - Architecture	and Urban Design					
DC2560	B02A - Station Structures	25	0	13-Oct-15 A	3-Dec-15 A	100%				B02A - Station Stru	ctures					
DC2570	B02B - Station Roof	25	0	13-Oct-15 A	3-Dec-15 A	100%				B02B - Station Roo	of					
DC2580	B03 - Station Services	25	0	13-Oct-15 A	3-Dec-15 A	100%				B03 - Station Servi	ces					
DC2590	B03A - Building Services Hydraulics	25	0	13-Oct-15 A	3-Dec-15 A	100%				B03A - Building Se	vices Hydraulics					
DC2600	B03B - Building Services mech	25	0	13-Oct-15 A	3-Dec-15 A	100%				B03B - Building Se						
DC2610	B03C - Building Services Security	25	0	13-Oct-15 A	3-Dec-15 A	100%				B03C - Building Se	rvices Security					
DC2620	B03E - Building Services Comms	25	0	13-Oct-15 A	3-Dec-15 A	100%				B03E - Building Se	rvices Comms				1. j. j.	
DC2630	Background Reports	25	0	13-Oct-15 A	3-Dec-15 A	100%				Background Repo						
DC2640	Issue CDR Buildings Design to LORAC	0	0		3-Dec-15 A	100%			8		gs Design to LORA	¢				
DC2740	XLR Clash reports LORAC Review	5	0	27-Nov-15 A	3-Dec-15 A	100%				XLR Clash reports	LORAC Review					
Review, Su	bmission and Approvals	37	0	27-Nov-15 A	21-Jan-16 A	100%										
DC1300	Issue CDR Design to LORAC	0	0		3-Dec-15 A	100%			8	ssue CDR Design	to LORAC					
DC1290	Stakeholders Engagement by LORAC	5	0	27-Nov-15 A	3-Dec-15 A	100%			l I	Stakeholders Enga	gement by LORAC					
DC1310	Issue No TC to TfNSW for June 2015 critical OHWS Footings-NA	0	0		3-Dec-15 A	100%			8	ssue No TC to Tf	NSW for June 2015	critical OHWS	Footings-NA			
DC1320	IDC Review	4	0	4-Dec-15 A	9-Dec-15 A	100%			[IDC Review						
DC1330	LORAC Constructability Review	4	0	4-Dec-15 A	9-Dec-15 A	100%				LORAC Construc	tability Review					
DC1340	Internal Verification	3	0	10-Dec-15 A	14-Dec-15 A	100%				Internal Verification	i i I i					
DC1350	Close Comments and Compile Submission	2	0	15-Dec-15 A	16-Dec-15 A	100%				Close Comment	and Compile Subm	ission				
DC1360	Issue CDR Design to TfNSW	0	0		16-Dec-15 A	100%				ssue CDR Desi	1 1 1					
DC1370	Issue CDR Design to Stakeholders	0	0		16-Dec-15 A	100%				X ! !	gn to Stakeholders					
Docion Saf	ety Assurance deliverables	0	0	16-Dec-15 A	16-Dec-15 A	0%										
Design San									1 1 1		3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	: 1 ! !	1 1 1	1 1 1	1 1 1	1 1 1 1
	RAM Report	0	0		16-Dec-15 A	100%				RAM Report					1 1	

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

tivity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Total Float	2015	2016 2017 20
DC2810	Updated Project Specific Risk Register (PSRR)	0	0		16-Dec-15 A	100%	1 loat		D Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Ja
DC2810 DC2820	Updated Requirements compliance (RATM)	0	0		16-Dec-15 A	100%			Updated Project Specific Risk Register (PSRR) Updated Requirements compliance (RATM)
DC2830	Updated Design Safety Assurance Report (DSAR)	0	0		16-Dec-15 A	100%			Updated Design Safety Assurance Report (D\$AR)
TfNSW Rev		15	0	17-Dec-15 A	21-Jan-16 A	100%			bruated Design Salety Assurance Report (DSAR)
_	Review of CDR by TfNSW	15	0	17-Dec-15 A	21-Jan-16 A	100%		 - 	Review of CDR by TfNSW
	esign Review Closeout (CDRC)	208	0	22-Jan-16 A	15-Nov-16 A	100%			
		10	0	22-Jan-16 A	5-Feb-16 A	100%			
	n Package		0						
DO1000	C01 - General Arrangements	10	0	22-Jan-16 A 22-Jan-16 A	5-Feb-16 A 5-Feb-16 A	100%			C01 - General Arrangements
DO1010 DO1020	C02 - Civil Structures C03 - Geotechnical, Ground Improvements, Earthworks, Formation & Structure		0	22-Jan-16 A 22-Jan-16 A	5-Feb-16 A 5-Feb-16 A	100%			C02 - Civil Structures
DO 1020 DO 1030	C03 - Geolectrinical, Ground Improvements, Earthworks, Formation & Structure C04- Drainage	10	0	22-Jan-16 A 22-Jan-16 A	5-Feb-16 A	100%			C03 - Geotechnical Ground Improvements, Earthworks, Formation & Structure
DO1030	C06- Roads & Walkways	10	0	22-Jan-16 A	5-Feb-16 A	100%			C06- Roads & Walkways
DO1050	C13- Track	10	0	22-Jan-16 A	5-Feb-16 A	100%			C13- Track
DO1060	C08 - Fencing, Gates and Signage	10	0	22-Jan-16 A	5-Feb-16 A	100%			C08 - Fencing, Gates and Signage
DO1000	C11 - Water Services	10	0	22-Jan-16 A	5-Feb-16 A	100%			C11 - Water Services
	ms Package	147	0	22-Jan-16 A	21-Oct-16 A	100%			GIT - Walet Scivices
DO1080	R09- Utilities	10	0	22-Jan-16 A	5-Feb-16 A	100%			RO9- Utilities
DO1080	R02- OHW and OHWS	10	0	22-Jan-16 A 22-Jan-16 A	5-Feb-16 A	100%			R02- OHW and OHWS
DO11090	R06- Communications	10	0	22-Jan-16 A	5-Feb-16 A	100%			R06- Communications
DO1100	R07- HV Traction Power	10	0	22-Jan-16 A	5-Feb-16 A	100%			R07- HV Traction Power
DO1110	R08- Earthing, Bonding and Stray Current	10	0	22-Jan-16 A	5-Feb-16 A	100%			R08- Earthing, Bonding and Stray Current
DO1120	R10- Combined Services Route	10	0	22-Jan-16 A	5-Feb-16 A	100%			R10- Combined Services Route
DO1140	R12- HV / LV Supply	10	0	22-Jan-16 A	5-Feb-16 A	100%			R12- HV / LV Supply
DO1150	R05 - Signalling Installation design	10	0	22-Jan-16 A	5-Feb-16 A	100%			R05 - Signalling Installation design
DO2430	R10- Combined Services Route- Redesign after Main Package CCB	10	0	3-May-16 A	28-Jul-16 A	100%		} - 	R10- Combined Services Route- Redesign after Main Package CCB
DO2440	R05 - Signalling Installation design - Redesign after Main Package CCB	10	0	3-May-16 A	28-Jul-16 A	100%			R05 - Signalling Installation design - Redesign after Main Package CCB
DO2490	Review of CDR by TfNSW	5	0	29-Jul-16 A	12-Aug-16 A	100%			Positive of CDP by TFAISIM
DO2500	CDRC design	5	0	15-Aug-16 A	26-Aug-16 A	100%			CDRC design
DO2510	Close out of Comments with TfNSW	5	0	26-Aug-16 A	30-Sep-16 A	100%			Close out of Comments with TfNSW
DO2540	TfNSW DSAR review	5	0	12-Sep-16 A	7-Oct-16 A	100%		├- ऻॱ╟ ;;;;;;;;;	TħSW DSAR review
DO2550	DSAR(revised) submission	5	0	10-Oct-16 A	21-Oct-16 A	100%			□ DSAR(revised) submission
Buildings		11	0	22-Jan-16 A	5-Feb-16 A	100%			
DO2250	XLR Clash reports Submission to LORAC	0	0		1-Feb-16 A	100%			XLR Clash reports Submission to LORAC
DO1160	B01 - Architecture and Urban Design	10	0	22-Jan-16 A	5-Feb-16 A	100%			B01 - Architecture and Urban Design
DO1170	B02A - Station Structures	10	0	22-Jan-16 A	5-Feb-16 A	100%			B02A Station Structures
DO1180	B02B - Station Roof	10	0	22-Jan-16 A	5-Feb-16 A	100%			B02B Station Roof
DO1190	B03 - Station Services	10	0	22-Jan-16 A	5-Feb-16 A	100%			B03 - Statipn Services
DO2170	B03A - Building Services Hydraulics	10	0	22-Jan-16 A	5-Feb-16 A	100%			B03A Building Services Hydraulics
DO2180	B03B - Building Services mech	10	0	22-Jan-16 A	5-Feb-16 A	100%			B03B - Building Services mech
DO2190	B03C - Building Services Security	10	0	22-Jan-16 A	5-Feb-16 A	100%			B03C - Building Services Security
DO2200	B03E - Building Services Comms	10	0	22-Jan-16 A	5-Feb-16 A	100%			B03E - Building Services Comms
DO2210	Background Reports	10	0	22-Jan-16 A	5-Feb-16 A	100%			Background Reports
DO2220	Issue CDRC Buildings Design to LORAC	0	0		5-Feb-16 A	100%			Issue CDRC Buildings Design to LORAC
DO2340	XLR Clash reports LORAC Review	5	0	1-Feb-16 A	5-Feb-16 A	100%			XLR Clash reports LORAC Review
Review, Su	ubmission and Approvals	203	0	29-Jan-16 A	15-Nov-16 A	100%			
DO1210	Issue CDRC to LORAC & TfNSW	0	0		5-Feb-16 A	100%			\$ Issue CDRC to LORAC & TfNSW
DO1230	Review of CDRC by LORAC	3	0	8-Feb-16 A	10-Feb-16 A	100%			Review of CDRC by LORAC
DO1220	Close out of Comments with TfNSW	5	0	8-Feb-16 A	12-Feb-16 A	100%			Close out of Comments with TfNSW
DO1240	Update and Compile submission	5	0	15-Feb-16 A	19-Feb-16 A	100%			Update and Compile submission
DO1250	CDRC Stage Completion	0	0		19-Feb-16 A	100%			CDRC Stage Completion
DO2420	IPR Review & Closeout	10	0	8-Feb-16 A	19-Feb-16 A	100%			IPR Review & Closeout
Stage Gate		203	0	29-Jan-16 A	15-Nov-16 A	100%			
Package 1		203	0	29-Jan-16 A	15-Nov-16 A	100%			
Designs	Describes of COD Class of Described CDAO	15	0	29-Jan-16 A	19-Feb-16 A	100%			
	Preparation of CCB Stage 3 Documents by LORAC	15	0	29-Jan-16 A	19-Feb-16 A	100%			Preparation of CQB Stage 3 Documents by LORAC
Submissi DO1270	on Stage Gate 3 CCB Submit to TPD	187 0	0	22-Feb-16 A	15-Nov-16 A 22-Feb-16 A	100% 100%			★ Sub- Cut- 2 CCD Cut-with TDD
DO1270 DO1260	-	7	0	22-Feb-16 A	1-Mar-16 A	100%			Stage Gate 3 CCB Submit to TPD
	CCB Meeting	1	0	1-Mar-16 A	1-Mar-16 A	100%			Stage Gate 3 CCB Review
	·	7	0	24-Oct-16 A	14-Nov-16 A	100%		├- - - 	CCB Meeting
	Stage Gate 3 CCB Review - Revised CSR package	7	0	24-Oct-16 A 24-Oct-16 A	14-Nov-16 A	100%			\$tage Gate 3 CCB Review - Revised CSR package
	Stage Gate 3 CCB Review - Revised signal design CCB Meeting - Revised CSR package	1	0	15-Nov-16 A	14-Nov-16 A 15-Nov-16 A	100%			Stage Gate 3 CCB Review Revised signal design
DO5700			U						CCB Meeting - Revised CSR package CCB Meeting - Revised signal design
DO0400	CCB Meeting - Revised signal design	1	_ ^	15-Nov-16 A	15-Nov-16 A	100%		. 💶	The state of the s

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

vity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete		2015 2016	2017
Approved	for Construction (AEC) Phase	306	0	24-Aug-15 A	28-Nov-16 A	100%	1 1001	D Jan F M Apr M J Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N	D Jan F Mar Apr M Jun Jul A S Oct N D
	for Construction (AFC) Phase	300	0		11-Mar-16 A				
Civil Desig		8	0	2-Mar-16 A		100%			
DA1000 DA1010	C01 - General Arrangements C02 - Civil Structures	8	0	2-Mar-16 A 2-Mar-16 A	11-Mar-16 A 11-Mar-16 A	100%		C01 - General/Arrangements	
DA1010	C03 - Geotechnical, Ground Improvements, Earthworks, Formation & Structure	8	0	2-Mar-16 A	11-Mar-16 A	100%		CO2 - Civil Structures	
DA1020	C04- Drainage	8	0	2-Mar-16 A	11-Mar-16 A	100%		C04 Drainage	ents, Earthworks, Formation & Structure
DA1030	C06- Roads & Walkways	8	0	2-Mar-16 A	11-Mar-16 A	100%		C06-Roads & Walkways	
DA1050	C13- Track	8	0	2-Mar-16 A	11-Mar-16 A	100%		C13-Track	
DA1060	C08 - Fencing, Gates and Signage	8	0	2-Mar-16 A	11-Mar-16 A	100%		C08 - Fericing, Gates and Signage	
DA1070	C11 - Water Services	8	0	2-Mar-16 A	11-Mar-16 A	100%		C11 - Water Services	
	ibmission and Approvals	0	0	11-Mar-16 A	11-Mar-16 A			= U11 - Water Services	
	Issue of AFC Design Package - Civil Design Package	0	0	TT Wat TO A	11-Mar-16 A	100%		\$ Issue of AFC Design Package - Civil De	sign Phokago
	ns Package	183	0	2-Mar-16 A	28-Nov-16 A	100%		issue of Art C Wesight Package - Civil De	Signifackage
DA1080	R09- Utilities	8	0	2-Mar-16 A	11-Mar-16 A	100%			
DA1080	R02- OHW and OHWS	8	0	2-Mar-16 A	11-Mar-16 A	100%		R09- Utilities	
DA11090	R06- Communications	0	0	2-Mar-16 A	11-Mar-16 A	100%		R02-OHW and OHWS	
DA1110	R07- HV Traction Power	8	0	2-Mar-16 A	11-Mar-16 A	100%		<u></u>	
DA1110	R08- Earthing, Bonding and Stray Current	8	0	2-Mar-16 A	11-Mar-16 A	100%		R07-HV Traction Power	
DA1120	R12- HV / LV Supply	8	0	2-Mar-16 A	11-Mar-16 A	100%		R08- Earthing, Bonding and Stray Cutre	^m
DA1130	R10- Combined Services Route	3	0	17-Nov-16 A	28-Nov-16 A	100%		☐ R12-HV /LV \$upply	240 0-15-10-5-10-5-1
DA1150	R05 - Signalling Installation design	3	0	17-Nov-16 A	28-Nov-16 A	100%			R10- Combined Services Route R05 - Signalling Installation design
		0	0	11-Mar-16 A	11-Mar-16 A				RUS - Signalling Installation design
	Ibmission and Approvals Issue of AFC Design Package - Rail Systems Package	0	0	TT-IVIAT- TO A	11-Mar-16 A	_			
		152	0	24 Aug 45 A		100%		Issue of AFC Design Package - Rail Sy	stems Package
Buildings I		152	0	24-Aug-15 A	28-Mar-16 A	100%			
DA1160	B01 - Architecture and Urban Design	8	0	2-Mar-16 A	11-Mar-16 A	100%		B01 -Architecture and Urbah Design	
DA1170	B02A - Station Structures	8	0	2-Mar-16 A	11-Mar-16 A	100%		B02A- Station Structures	
DA1180	B02B - Station Roof	8	0	2-Mar-16 A	11-Mar-16 A	100%		B02B - Station Roof	
DA1190	B03 - Station Services	8	0	2-Mar-16 A	11-Mar-16 A	100%		B03 - Station Services	
	Ibmission and Approvals	152	0	24-Aug-15 A	28-Mar-16 A				
	Issue of AFC Design Package - Buildings Package	0	0		11-Mar-16 A	100%		\$ Issue of AFC Design Package - Building	s Package
	ineering Deliverables	152	0	24-Aug-15 A	28-Mar-16 A	100%			
DA1230	DE 3D Flythough submission to TfNSW	9	-	4 D - 45 A	24-Aug-15 A	100%		DE 3D Flythough submission to TfNSW	
DA1240	DE Construction Sequence Flythough to TfNSW	-	0	4-Dec-15 A	16-Dec-15 A	100%		DE Construction Sequence Flythough to TfNSW	
DA1330	DE Construction Sequence Flythough submission to TfNSW	0	0	40 D - 45 A	16-Dec-15 A	100%		DE Gonstruction Sequence Flythough submission to	Tinsw
DA1400	DE Oculus (CDR) Submission to TfNSW	5	0	16-Dec-15 A	16-Dec-15 A	100%		DE Oculus (CDR) Submission to TfNSW	
DA1320	DE Construction sequence to TfNSW	10	0	29-Feb-16 A	18-Mar-16 A	100%		DE Construction sequence to TfNSW	
DA1350	DEIssue Occlus	0	0		28-Mar-16 A	100%		DEIssue Odclus	
	DE 3D Flythough to TfNSW	0	0	00 5-1-40 4	28-Mar-16 A	100%		DE 3D Flythough to TfNSW	
	ety Assurance deliverables	0	U	22-Feb-16 A	23-Feb-16 A	0%			
DA1370	Project Specific Risk Register (PSRR)	0	0		22-Feb-16 A	100%		Project Specific Risk Register (PSRR)	
DA1380	Requirements compliance (RATM)	0	0		23-Feb-16 A	100%		Requirements compliance (RATM)	
DA1390	Design Safety Assurance Report (DSAR)	0	0		23-Feb-16 A	100%		Design Safety Assurance Report (DSAR)	
ootbridge	e design Package	70	0	1-Dec-15 A	11-Mar-16 A	100%			
Review, Su	bmission and Approvals-CDR	44	0	1-Dec-15 A	4-Feb-16 A	100%			
DC1540	Stakeholders Engagement by LORAC	5	0	1-Dec-15 A	7-Dec-15 A	100%		Sakeholders Engagement by LORAC	
DC1480	Issue CDR Design to LORAC	0	0		15-Jan-16 A	100%		ssue CDR Design to LORAC	
DC1490	IDC Review	4	0	18-Jan-16 A	22-Jan-16 A	100%		IDC Review	
DC1560	LORAC Constructability Review	4	0	18-Jan-16 A	22-Jan-16 A	100%		LORAC Constructability Review	
DC1500	Internal Verification Draft CDR review	3	0	25-Jan-16 A	28-Jan-16 A	100%		Internal Verification Draft CDR review	
DC1510	Close Comments and Compile Submission	2	0	29-Jan-16 A	1-Feb-16 A	100%		Close Comments and Compile Submission	
DC1520	Issue CDR Design to TfNSW	0	0		1-Feb-16 A	100%		Issue CDR Design to TfNSW	
DC1550	Issue CDR Design to Stakeholders	0	0		1-Feb-16 A	100%		Issue CDR Design to Stakeholders	
DC1530	Review of CDR by TfNSW	3	0	2-Feb-16 A	4-Feb-16 A	100%		Review of CDR by TfNSW	
DRC	· · · · · · · · · · · · · · · · · · ·	5	0	5-Feb-16 A	11-Feb-16 A	100%			
DO1380	C02 - Civil Structures- Footbridge	5	0	5-Feb-16 A	11-Feb-16 A	100%		C02 - Civil Structures - Footbridge	
	Ibmission and Approvals-CDRC	22	0	1-Feb-16 A	1-Mar-16 A	100%		□ GUZ GIVII SITUCTULES- FOOTDFINGE	
			0	1-1 CD-10 A					
DO1420	Issue CDRC to LORAC & TfNSW	0	0	40 E. L 10 :	11-Feb-16 A	100%		ssue CDRC to LORAC & TfNSW	
DO1390	Close out of Comments with TfNSW	5	0	10-Feb-16 A	16-Feb-16 A	100%		Close out of Comments with TfNSW	
DO1430	Review of CDRC by LORAC	3	0	12-Feb-16 A	16-Feb-16 A	100%		Review of CDRC by LORAC	
DO1400	Update and Compile submission	3	0	17-Feb-16 A	19-Feb-16 A	100%		Update and Compile submission	
DO1410	CDRC Stage Completion	0	0		19-Feb-16 A	100%		CDRC Stage Completion	
	3	22	0	1-Feb-16 A	1-Mar-16 A	100%			

Data Date: 30-Jun-17

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

ctivity ID	Activity Name	Original	Domoining	Stort	Einich	Duration 0/	Total		2015			2016	12046
ctivity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Float	D.	2015 J Jul A	S Oct N	D Jan F	2016 2017 Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N	I D Jan
Package 1		22	0	1-Feb-16 A	1-Mar-16 A	100%							
Designs	Proceeding of OOD Oracle Decomposits had ODAO	15	0	1-Feb-16 A	19-Feb-16 A	100%							
Submissio	Preparation of CCB Stage 3 Documents by LORAC	15	0	1-Feb-16 A 22-Feb-16 A	19-Feb-16 A 1-Mar-16 A	100%						Preparation of CCB Stage 3 Documents by LORAC	
<u> </u>	Stage Gate 3 CCB Submit to TPD	0	0	22-1 eb-10 A	22-Feb-16 A	100%			 		•	Stage Gate 3 CCB Submit to TPD	
	Stage Gate 3 CCB Review	7	0	22-Feb-16 A	1-Mar-16 A	100%					i i	Stage Gate 3 CCB Review	
DO1470	CCB Meeting	1	0	1-Mar-16 A	1-Mar-16 A	100%						CCB Meeting	
AFC		8	0	2-Mar-16 A	11-Mar-16 A	100%							
DA1460	C02a - Civil Structures - Footbridge	8	0	2-Mar-16 A	11-Mar-16 A	100%						C02a - Civil Structures - Footbridge	1
Earlyworks	Drawings Package - EW 1 & 2	109	0	31-Aug-15 A	11-Feb-16 A	100%							
DA1360	Earlyworks Drawing Package - PDR/CDR	10	0	31-Aug-15 A	30-Oct-15 A	100%				Earl	works Drav	wing Package - PDR/CDR	
DA1410	Earlyworks Drawing Package - TfNSW review CDR & IPR	5	0	2-Nov-15 A	18-Jan-16 A	100%					Early	lyworks Drawing Package - TfN\$W review CDR & IPR	
DA1420	Earlyworks Drawing Package - Submit for CCB G3	5	0	19-Jan-16 A	25-Jan-16 A	100%						flyworks Drawing Package - Submit for CCB G3	
DA1430	Earlyworks Drawing Package - CCB Gate 3 review	7	0	25-Jan-16 A	1-Feb-16 A	100%			 			arlyworks, Drawing Package - CCB Gate 3 review	_ii
DA1440	Earlyworks Drawing Package - CCB Gate 3 Meeting	1	0	2-Feb-16 A	2-Feb-16 A	100%						arlyworks Drawing Package - CCB Gate 3 Meeting	
DA1450	Earlyworks Drawing Package - AFC	3	0	3-Feb-16 A	11-Feb-16 A	100%					 	Earlyworks Drawing Package - AFC	
	Drawings Package - EW 7	134	0	15-Oct-15 A	4-May-16 A	100%							
DA1470	Accelerated Drawing Package -CDR	15	0	15-Oct-15 A	10-Nov-15 A	100%						Prawing Package -CDR	
DA1480	Early Drawing Package -CDR Review by LOR	5	0	11-Nov-15 A	18-Nov-15 A	100%			 			g Package -CDR Review by LOR	
DA1490	TfNSW review CDR	15	0	19-Nov-15 A	30-Nov-15 A	100%					TfINSW revi		
DA1610 DA1620	Revised CDR preparation & Submission TfNSW review CDR	15 3	0	30-Nov-15 A 5-Feb-16 A	4-Feb-16 A 9-Feb-16 A	100%						tevised CDR preparation & Submission	
DA1630	CDRC	3	0	10-Feb-16 A	12-Feb-16 A	100%						TINSYV review CDIK	
DA1750	Ausgrid approval	20	0	27-Jan-16 A	19-Feb-16 A	100%						Ausgrid approval	
DA1500	IPR review	10	0	15-Feb-16 A	26-Feb-16 A	100%			 			IPR review	
DA1510	Earlyworks Drawing Package - CCB Gate 3 Meeting	1	0	1-Mar-16 A	1-Mar-16 A	100%						Earlywbrks;Drawing;Package - CCB Gate 3 Meeting	
DA1530	Earlyworks Drawing Package - CCB Gate 3 review	7	0	22-Feb-16 A	1-Mar-16 A	100%						Earlyworks Drawing Package - CCB Gate 3 review	1 1
DA1520	Earlyworks Drawing Package - AFC	8	0	2-Mar-16 A	11-Mar-16 A	100%						Earlyworks Drawing Package - AFC	
DA1740	Hunter water approval	20	0	27-Jan-16 A	4-May-16 A	100%						Hunter water approval	
Drawings F	Package - Powertel - SR # 13	148	0	18-Dec-15 A	7-Apr-16 A	100%							
DA1640	CDR - Draft CDR submission to LORAC	20	0	18-Dec-15 A	21-Jan-16 A	100%					CDI	R - Draft CDR submission to LORAC	
DA1650	Review CDR-LORAC & IDC	3	0	22-Jan-16 A	27-Jan-16 A	100%					Re	view CDR-LORAC & IDC	
DA1660	CDR submission inc DSAS	2	0	28-Jan-16 A	29-Jan-16 A	100%					CE	DR submission inc DSAS	
DA1710	Review CDR- TfNSW/Stakeholers	3	0	1-Feb-16 A	3-Feb-16 A	100%					R	Review CDR- TfNSW/Stakeholers	.iLi
DA1720	CDRC	2	0	4-Feb-16 A	5-Feb-16 A	100%						DRC	
DA1670	CDRC- Close out	2	0	8-Feb-16 A	9-Feb-16 A	100%						CDRC- Close put	
DA1730	Incorporate TfNSW/ Stakeholder comments and submit for CCB Gate 3	2	0	10-Feb-16 A	12-Feb-16 A	100%						Incorporate TfNSW/ Stakeholder comments and submit for CCB Gate 3	
DA1760	IPR review	10	0	22-Feb-16 A	11-Mar-16 A	100%					III	IPR review	
DA1700	CCB Review	6	0	14-Mar-16 A	21-Mar-16 A	100%			 			CCB Review	
DA1680 DA1690	CCB Gate 3 meeting- Conditional Approval AFC - Powertel Cable route package	2	0	22-Mar-16 A 29-Mar-16 A	22-Mar-16 A 7-Apr-16 A	100%						CCB Gate 3 meeting-Conditional Approval	
	ISE-DSS- Staged Service relocation (SR#2/6/8/11)	93	0	29-Mai - 16 A 20-Oct-15 A	22-Apr-16 A	100%						AFC - Powertel Cable route package	
			0		·								
	Review, analyse and identify relocation staging requirements CDR - DSS relocation/removal Package	20	0	20-Oct-15 A 30-Nov-15 A	10-Dec-15 A 29-Jan-16 A	100% 100%					Heview, ar	nalyse and identify relocation staging requirements: DR - DSS relocation/removal Package	
	Review CDR-LORAC	5	0	1-Feb-16 A	5-Feb-16 A	100%			 			DR - DSS relocation/removal Package Review CDR-LORAC	
	Review CDR-TfNSW/Stakeholers	8	0	8-Feb-16 A	24-Feb-16 A	100%						Review CDR-LDRAC Review CDR- TfNSW/Stakeholers	
DE-0048-400		10	0	1-Mar-16 A	22-Mar-16 A	100%						IPR	
	Incorporate TfNSW/ Stakeholder comments and submit for CCB Gate 3	3	0	24-Feb-16 A	24-Mar-16 A	100%						Incorporate TfNSW/ Stakeholder comments and submit for CCB Gate 3	
DE-0048-190	<u>'</u>	6	0	1-Apr-16 A	12-Apr-16 A	100%						CCB Review	
DE-0048-200	CCB Gate 3 meeting	1	0	12-Apr-16 A	12-Apr-16 A	100%			 			CCB;Gate 3 meeting	-:
DE-0048-210	AFC - DSS service relocation package	3	0	20-Apr-16 A	22-Apr-16 A	100%						AFC - DSS service relocation package	
Design Pha	se-DSS- Staged Service relocation (SR # 07)	111	0	20-Oct-15 A	16-May-16 A	100%							
	Review, analyse and identify relocation staging requirements	20	0	20-Oct-15 A	10-Dec-15 A	100%					Review, ar	nalyse and identify relocation staging requirements	
DE-0048-510	CDR - DSS relocation/removal Package	20	0	11-Dec-15 A	18-Mar-16 A	100%						CDR - DSS relocation/removal Package	
	Review CDR-LORAC	5	0	21-Mar-16 A	22-Mar-16 A	100%						Review CDR-LORAC	
	Review CDR- TfNSW/Stakeholers	8	0	22-Mar-16 A	26-Apr-16 A	100%						Review CDR- TfNSW/Stakeholers	
DE-0048-580		10	0	4-Apr-16 A	26-Apr-16 A	100%						IPR I I I I I I I I I I I I I I I I I I	
	Incorporate TfNSW/ Stakeholder comments and submit for CCB Gate 3	3	0	27-Apr-16 A	29-Apr-16 A	100%						Incorporate TfNSW/ Stakeholder comments and submit for CCB Gate 3	
DE-0048-550		6	0	2-May-16 A	9-May-16 A	100%			 			GCB Review	4
	CCB Gate 3 meeting	1	0	3-May-16 A	10-May-16 A	100%						CCB Gate 3 meeting	
	AFC - DSS service relocation package	3	0	11-May-16 A	16-May-16 A	100%						- AFC - D\$S service relocation package	
Signalling	Design	709	50	23-Feb-15 A	21-Sep-17	92.95%	0						

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

tivity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total	2015	2016 2017 20
avity ID	Activity Name	Duration	Duration	Siait	1 1111511	Complete		D Jan F M Apr M J Jul A S Oct N D	Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jar
RS1000	Draft Signalling Functional Specification to be received by LORAC from the Principal's Rep to order Long Lead Items	0	0		23-Feb-15 A	100%			received by LORAC from the Principal's Rep to order Long Lead Items
RS1110	Draft Signalling Plan with track circuit locations and types recieved by LORAC from Principles Representative	0	0		28-Apr-15 A	100%			uit locations and types recieved by LORAC from Principles Representative
RS1120	AFC Signalling Stageworks Design for removing redundant signal huts	0	0		31-Aug-15 A	100%		AFC Signalling §	tageworks Design for removing redundant signal huts
RS1130	Preliminary Rack Layout to be received by LORAC from the Principal's Representative to order remaining materials	0	0		2-May-16 A	100%	1		Preliminary Rack Layout to be received by LORAC from the Frincipal's Representative to ord
RS1010	Draft Signalling Plan to be received by LORAC from the Principal's Representative to order Long Lead Items	0	0		2-May-16 A	100%			Draft Signalling Plan to be received by LORAC from the Principal's Representative to order Lo
RS1020	Draft Circuit Books Design to be received by LORAC from the Principal's Representative to order remaining materials	0	0		2-May-16 A	100%			Draft Circuit Books Design to be received by LCRAC from the Principal's Representative to c
RS1150	4 Months lead time for track insulation/signalling plan after OHW AFC	100	0	14-Apr-16 A	21-Jun-16 A	100%			4 Months lead time for track insulation/signalling plan after OHW AFC
RS1050	Final Track Insulation Plan to be received by LORAC from the Principal's Representative	0	0		21-Jun-16 A	100%			Final Track Insulation Plan to be received by LORAC from the Principal's Repre
RS1080	Final Signalling Circuit Book Design(Greenfield) to be received by LORAC from the Principal's Representative	0	0		21-Jun-16 A	100%			Final Signalling Circuit Book Design (Greenfield) to be r
RS1085	Final Signalling Plan to be received by LORAC from the Principal's Representative	0	0		21-Jun-16 A	100%			Final Signalling Plan to be received by LORAC from the Principal's Representat
RS1040	Microlok Hardware to be received by LORAC from the Principal's Representative	0	0		30-Jun-16 A	100%			♦ Microlok Hardware to be received by LORAC from the Principal's
RS1180	6 Weeks lead time for Microlock hardware prior Factory Rack Wiring Works	30	0	1-Jul-16 A	11-Aug-16 A	100%			6 Weeks lead time for Microlock hardware prior Factory R
RS1060	Signal Sighting Visits completion by TfNSW and Sydney Trains to finalise location of new signals	0	0		4-Oct-16 A	100%	[]		Signal Sighting Visits completion by TfNSW and Sydney Trains to final
RS1190	Signal Design to Proceed with NE17 Footing(Ref Lt: 5427283_1)	40	0	5-Aug-16 A	17-Oct-16 A	100%			Signal Design to Proceed with NE17 Footing (Ref Lt: 5427283_1)
RS1140	Signalling Interface Circuit Book Design(Brownfield)- Advance copy	90	0	1-Jul-16 A	31-Jan-17 A	100%			Signalling Interface Circuit Book Design(Brownfield)
RS1220	Returning the Signalling Design Green Book to the Principal	0	0		14-Feb-17 A	100%			◆ Returning the Signalling Design Green Book to the
RS1200	Receive approved for testing(Pink) design from TfNSW	0	0		20-Mar-17 A	100%			◆ Receive approved for testing(Pink) design fi
RS1082	Final Signalling Circuit Book Design(Brownfield) to be received from Principal's Representative.	0	0		13-Jul-17	0%	0		♦ Final Signalling Cirçuit Book
RS1100	Final Microlok Data to be received by LORAC from the Principal's Representative to enable Final T&C	0	0		17-Aug-17	0%	0		→ Final Microlok Data to
RS1230	Returning the Signalling Design Pink Book to the Principal	0	0		28-Aug-17	0%	19		Returning the Signal
RS1160	Month lead time before final commissioning to receive Final Microlok Data from Principal's Representative.	25	25	17-Aug-17	21-Sep-17	0%	0		1 Month/lead time
RS1210	2 Months prior to the date for Completion of Portion 3	50	50	13-Jul-17	21-Sep-17	0%	0		2 Months prior to
	iation Orders	219	0	12-Jul-16 A	7-Jun-17 A	100%		······································	
			0			100%			
	ure Structural Connection for NLR OHW mast		-	27-Jul-16 A	27-Jul-16 A				II VO 32 NI B OHW most footing degins
	VO 32 - NLR OHW mast footing design	1	0	27-Jul-16 A	27-Jul-16 A	100%			I VO 32 - NLR OHW mast footing design
VO 33 - Dig	ital CCTV and Cabling	107	0	12-Jul-16 A	14-Feb-17 A	100%			
VO-33-110	CCTV analogue to digital - CDR design	20	0	12-Jul-16 A	26-Aug-16 A	100%	li.		CCTV analogue to digital - CDR design
VO-33-120	CCTV analogue to digital - CDR design Review	10	0	29-Aug-16 A	23-Sep-16 A	100%			CCTV analogue to digital - CDR design Review
VO-33-130	CCTV analogue to digital - CDRC	10	0	26-Sep-16 A	30-Sep-16 A	100%			CCTV analogue to digital CDRC
DO2520	Stage Gate 3 CCB Review - CCTV- Not required	6	0	2-Dec-16 A	5-Dec-16 A	100%			Stage Gate 3 QCB Review - CCTV- Not required
DO2530	CCB Meeting - CCTV - Not required	1	0	13-Dec-16 A	13-Dec-16 A	100%			CCB Meeting - CCTV - Not required
VO-33-150	CCTV analogue to digital - CDRC Review	5	0	4-Oct-16 A	31-Jan-17 A	100%			CCTV analogue to digital - CDRC Review
VO-33-140	CCTV analogue to digital - AFC	3	0	1-Feb-17 A	14-Feb-17 A	100%			CCTV arialogue to digital - AFC
VO 34 - NL	R Intgrated design for Comms & LV	121	0	22-Jul-16 A	13-Mar-17 A	100%			
VO-34-110	NLR Intgrated design for Comms & LV at the Interchange - CDR	20	0	22-Jul-16 A	16-Sep-16 A	100%	1		NLR Intgrated design for Comms & LV at the Interchange - CDR
VO-34-120	NLR Intgrated design for Comms & LV at the Interchange- CDR Review	10	0	19-Sep-16 A	10-Oct-16 A	100%			NLR Intgrated design for Comms & LV at the Interchange- CDR Rev
VO-34-130	NLR Intgrated design for Comms & LV at the Interchange - CDRC	10	0	14-Oct-16 A	21-Feb-17 A	100%			NLR Intgrated design for Comms & LV at the Inte
VO-34-140	NLR Intgrated design for Comms & LV at the Interchange - AFC	5	0	1-Mar-17 A	13-Mar-17 A	100%	i i		NLR Intgrated design for Comms & LV at the
VO 36 - TfN	SW's Direction to proceed with Presentation & Security building Procurement	196	0	28-Jul-16 A	10-May-17 A	100%			
	Presentation & Security building - CDR	20	0	28-Jul-16 A	23-Sep-16 A	100%			Presentation & Security building - CDR
	Presentation & Security building - CDR Review	10	0	26-Sep-16 A	25-Oct-16 A	100%			Presentation & Security building - QDR Review
	Stage Gate 3 CCB Review - N/A	6	0	7-Apr-17 A	7-Apr-17 A	100%			Stage Gate 3 CCB Review - N/A
	CCB Meeting - N/A	1	0	7-Apr-17 A	7-Apr-17 A	100%			CCB Meeting - N/A
	Presentation & Security building - AFC	5	0	17-Apr-17 A	19-Apr-17 A	100%			■ Presentation & Security building - AFC
	Presentation & Security building - CDRC	10	0	26-Oct-16 A	10-May-17 A	100%			Presentation & Security building - CD
	Presentation & Security building - CDRC Presentation & Security building - IPR Review- N/A	10	0	10-May-17 A	10-May-17 A	100%			I Presentation & Security building - IPF
		32	0		-	100%			
	kham Footbridge Urban design Requirements			2-Aug-16 A	27-Sep-16 A		ķ.,		Wiqkham Footbridge Urban design Requirements - CDR
	Wickham Footbridge Urban design Requirements - CDR	20	0	2-Aug-16 A	24-Aug-16 A	100%			Wickham Footbridge Urban design Requirements - CDR Review
	Wickham Footbridge Urban design Requirements - CDR Review	10	0	25-Aug-16 A	5-Sep-16 A	100%			
	Wickham Footbridge Urban design Requirements - CDRC	10	0	6-Sep-16 A	22-Sep-16 A	100%			
	Wickham Footbridge Urban design Requirements - AFC	5	0	26-Sep-16 A	27-Sep-16 A	100%			wickhain reationage orban design Requirements - AFC
	rision of Emergency Spare breaker Hamilton Substation	149	0	12-Aug-16 A	23-Mar-17 A	100%			
VO-39-110	Provision of Emergency Spare breaker Hamilton Substation - CDR	20	0	12-Aug-16 A	13-Oct-16 A	100%			Provision of Emergency Spare breaker Hamilton Substation - CDR
VO-39-120	Provision of Emergency Spare breaker Hamilton Substation - CDR Review	10	0	14-Oct-16 A	3-Nov-16 A	100%			Provision of Emergency Spare breaker Hamilton Substation - CD
VO-39-130	Provision of Emergency Spare breaker Hamilton Substation - CDRC	10	0	4-Nov-16 A	31-Jan-17 A	100%			Provision of Emergency \$pare breaker Hamilton Su
VO-36-160	DCCB - IPR Review-N/A	10	0	20-Mar-17 A	20-Mar-17 A	100%			I DC¢B - IPR Review-N/A
DO2580	Stage Gate 3 CCB Review-N/A	6	0	20-Mar-17 A	20-Mar-17 A	100%			I Stage Gate 3 CCB Review-N/A
DO2590	CCB Meeting -N/A	1	0	20-Mar-17 A	20-Mar-17 A	100%			I CCB Meeting -N/A
VO-39-140	Provision of Emergency Spare breaker Hamilton Substation - AFC	5	0	20-Mar-17 A	23-Mar-17 A	100%			Provision of Emergency Spare breaker Ham
		101			40.14 47.4			■	
	W's Direction to undertake Electronic ticketing and Gates	121	0	30-Aug-16 A	13-Mar-17 A	100%			
VO-40- TfNS	Electronic Ticketing and Gates - CDR	20	0	30-Aug-16 A 30-Aug-16 A	13-Mar-17 A 22-Sep-16 A	100%			Electronic Ticketing and Gates - CDR

Page 14 of 34

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline Layout : WTIP - TPD Submission Full Program layou

activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Total Float	D les 5 M	2015		2016 2017	2018
VO-40-130	Electronic Ticketing and Gates - CDRC	10	0	24-Oct-16 A	21-Feb-17 A	100%		D Jan F M Apr	M J Jul A S	S Oct N D	D Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N Electronic Ticketing and Gates - CDRC	
	Electronic Ticketing and Gates - GENCO	5	0	1-Mar-17 A	13-Mar-17 A	100%					■ Electronic Ticketing and Gates - AFC	1 1 1
	SW's Direction- Wickham Station Concourse Urban design requirements	90	0	4-Oct-16 A	3-Feb-17 A	100%						
	Wickham Station Concourse Urban design requirements - CDR	20	0	4-Oct-16 A	17-Nov-16 A	100%					Wickham Station Concourse Urban design requireme	ents - CDR
VO-43-160	Wickham Station Concourse Urban design requirements - CDR Review	10	0	18-Nov-16 A	2-Dec-16 A	100%					Wickham Station Concourse Urban design requirer	
	Wickham Station Concourse Urban design requirements - CDRC	10	0	8-Dec-16 A	25-Jan-17 A	100%					Wickham Station Concourse Urban design	requiremen
	Wickham Station Concourse Urban design requirements - AFC	5	0	30-Jan-17 A	3-Feb-17 A	100%					Wickham Station Concourse Urban desig	jn requireme
	lesign of PC12 pilecap and 165+584 OHW foundation & Drainage pit 1/17 due to NLR clash	79	0	24-Oct-16 A	15-Dec-16 A	100%						
	VO50- PC12/OHW footing (584) and drainage redesign - CDR	20	0	24-Oct-16 A	24-Nov-16 A	100%					VO50- PC12/OHW footing (584) and drainage redes	sign - CDR
	VO50- PC12/OHW footing (584) and drainage redesign - CDR Review	10	0	25-Nov-16 A	30-Nov-16 A	100%					VQ50- PC12/OHW footing (584) and drainage rede	f 1
	VO50- PC12/OHW footing (584) and drainage redesign - CDRC	10	0	1-Dec-16 A	12-Dec-16 A	100%	1				VO50- PC12/ΦHW footing (584) and drainage rec	design - CDI
	VO50- PC12/OHW footing (584) and drainage redesign- AFC	5	0	12-Dec-16 A	15-Dec-16 A	100%					■ VO50- PC12/DHW footing [584] and drainage real	
	finding (Provisional Sum)	141	0	24-Feb-17 A	7-Jun-17 A	100%						
	Wayfinding - CDRC	10	0	24-Feb-17 A	13-Mar-17 A	100%					Wayfinding - QDRC	
VO-40-180	Wayfinding - CDRC review	5	0	13-Mar-17 A	30-Mar-17 A	100%					Wayfinding CDRC review	
VO-40-190	Wayfinding - AFC	5	0	30-Mar-17 A	31-Mar-17 A	100%	-				■ Wayfinding AFC	
VO-40-220	Wayfinding - Updated design - Draft	5	0	26-May-17 A	30-May-17 A	100%					■	esign - Draft
	Wayfinding - Updated design - TrNSW Review	5	0	30-May-17 A	2-Jun-17 A	100%					I Wayfinding - Updated de	
	Wayfinding - Updated design - Final Design	3	0	5-Jun-17 A	7-Jun-17 A	100%					Wayfinding - Updated d	1 1
	missioning Approvals	399	51	10-Feb-16 A	12-Sep-17	87.22%	1					
		399	51	10-Feb-16 A	12-Sep-17	87.22%	4					
	bmissions and Approvals	399	51	10-Feb-16 A	12-Sep-17	87.22%	1					
Stage Gate CCB Meeti		399	51	10-Feb-16 A	12-Sep-17	87.22%	1					
Package 1		28	0	10-Feb-16 A	22-Mar-16 A	100%						
Assets		15	0	10-Feb-16 A	25-Feb-16 A	100%						
	Area 2, 11Kv - Preparation of SG 4 Submission	15	0	10-Feb-16 A	24-Feb-16 A	100%	i				Area 2, 11Kv - Preparation of SG 4 Submission	
DG1200	Area 3, TO 488A - Preparation of SG 4 Submission	15	0	10-Feb-16 A	24-Feb-16 A	100%					Area 3, TO 488A - Preparation of SG 4 Submission	
DG1280	Area 3, TO 488B- Preparation of SG 4 Submission	15	0	10-Feb-16 A	24-Feb-16 A	100%					Area 3, TO 488B- Preparation of SG 4 Submission	
DG1080	Area 3, 11Kv - Preparation of SG 4 Submission	15	0	10-Feb-16 A	25-Feb-16 A	100%					Area 3, 11Kv - Preparation of \$G 4 Submission	
Submiss	ion	16	0	1-Mar-16 A	22-Mar-16 A	100%						
DG1010	P1 - SG4 Submit to TPD	0	0		1-Mar-16 A	100%					P1 - SG4 Submit to TPD	
DG1015	P1 - SG4 IPR review	10	0	1-Mar-16 A	14-Mar-16 A	100%					P1 - SG4 IPR review	
DG1020	P1 - SG4 Submit to CCB Period	6	0	15-Mar-16 A	22-Mar-16 A	100%					P1 + SG4 Submit to CCB Period	
DG1030	P1 - SG4 Review at CCB Meeting -Conditional approval	0	0		22-Mar-16 A	100%					P1 - SG4 Review at CCB Meeting -Conditional approval	
Package 2	(Jun possession)	25	0	4-Apr-16 A	7-Jun-16 A	100%						
Assets	has Provide Provide at 00 t O hadrain	15	0	4-Apr-16 A	29-Apr-16 A	100%						
	June Possession Preparation of SG 4 Submission June Possession Preparation of SG 5 Submission	15 15	0	4-Apr-16 A	29-Apr-16 A	100%					June Possession Preparation of SG 4 Submission	
	•	21	0	4-Apr-16 A	29-Apr-16 A	100%					June Possession Preparation of SG 5 Submission	
Submiss DG1230	P2 - SG4/5 Submit to TPD	0	0	5-May-16 A	7-Jun-16 A 5-May-16 A	100%					P2 - SG4/5 Submit to TPD	
	P2 - SG4/5 IPR Review	15	0	5-May-16 A	25-May-16 A	100%					P2 - SG4/5 IPR Review	
	P2 - SG4/5 Submit to CCB Period	6	0	25-May-16 A	1-Jun-16 A	100%					P2 - SG4/5 Submit to CCB Period	
	P2 - SG4/5 Review at CCB Meeting	0	0	20 may 1071	7-Jun-16 A	100%					P2 - SG4/5 Review at CCB Meeting	
	(Jul/ Aug Possession)	36	0	16-May-16 A	5-Jul-16 A	100%					F2 - 334/3 Neview at COD injecting	
Assets		15	0	16-May-16 A	3-Jun-16 A	100%						
	P3 - Preparation of SG 4/5 Submission	15	0	16-May-16 A	3-Jun-16 A	100%	1				P3 - Preparation of \$G 4/5 Submission	
DG1160	P3 - Preparation of SG 4/5 Submission	15	0	16-May-16 A	3-Jun-16 A	100%					P3 - Preparation of \$G 4/5 Submission	
Submiss		21	0	3-Jun-16 A	5-Jul-16 A	100%						
DG1190	P3 - SG4/5 Submit to TPD	0	0		3-Jun-16 A	100%					P3 - SG4/5 Submit to TPD	
	P3 - SG4/5 IPR Review	15	0	6-Jun-16 A	27-Jun-16 A	100%	1				P3;- SG4/5 PR Review	
DG1170	P3 - SG4/5 Submit to CCB Period	6	0	28-Jun-16 A	5-Jul-16 A	100%					P3 - SG4/5 Submit to CCB Period	
DG1180	P3 - SG4/5 Review at CCB Meeting	0	0		5-Jul-16 A	100%					P3 - SG4/5 Review at CCB Meeting	
	on- Aug Possession	35	0	3-Jun-16 A	26-Jul-16 A	100%						
	P3 - SG4/5 Submit to TPD	0	0		3-Jun-16 A	100%					PB - SG4/5 Submit to TPD	
	P3 - SG4/5 IPR Review	15	0	6-Jun-16 A	6-Jul-16 A	100%				4	P3 - SG4/5 IPR Review	
	P3 - SG4/5 CCB Submission	5	0	7-Jul-16 A	13-Jul-16 A	100%					P3 - SG4/5 CCB Submission	
	P3 - SG4/5 Submit to CCB Period	6	0	14-Jul-16 A	21-Jul-16 A	100%					P3 SG4/5 Submit to CCB Period	
	P3 - SG4/5 Review at CCB Meeting	0	0		26-Jul-16 A	100%					◆ P3 - SG4/5 Review at CCB Meeting	
	(Oct'16 Possession)	67	0	8-Aug-16 A	25-Oct-16 A	100%						
Assets	D4. Propagation of SC 4/E. Submission	15	0	8-Aug-16 A	2-Sep-16 A	100%	-					
	P4 - Preparation of SG 4/5 Submission P4 - Preparation of SG 4/5 Submission	15	0	8-Aug-16 A	2-Sep-16 A	100%					P4 Preparation of SG 4/5 Submission	
	P4 - Preparation of SG 4/5 Submission	15	0	8-Aug-16 A	2-Sep-16 A	100%					P4 - Preparation of SG 4/5 Submission	
Submiss DG1270	P4 - SG4/5 Submit to TPD	23	0	5-Sep-16 A	25-Oct-16 A 5-Sep-16 A	100% 100%					PA COME Colomit to TDD	
DG 1270	1 4 - 00-43 Guoria (U TFD	U	U		3-3eh-10 A	100%			_ ; _ ; _ ;		P4 + SG4/5 \$ubmit to TPD	<u> </u>

 TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

ity ID Activity Name	Original	Remaining	Start	Finish	Duration %		2015	2016 2017
	Duration	Duration			Complete	Float	D Jan F M Apr M J Jul A S Oct N D	Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D
DG1275 P4 - SG4/5 IPR Review	15	0	5-Sep-16 A	7-Oct-16 A	100%			P4 - SG4/5 IPR Review
DG1250 P4 - SG4/5 Submit to CCB Period	6	0	17-Oct-16 A	25-Oct-16 A	100%			P4 - SG4/5 \$ubmit to CCB Period
DG1260 P4 - SG4/5 Review at CCB Meeting-Conditional approval	0	0		25-Oct-16 A	100%			P4 - SG 4/5 Review at CCB Meeting-Conditional approval
Package 5 (Mar'17 Possession)	36	0	16-Jan-17 A	7-Mar-17 A	100%			
Assets	15	0	16-Jan-17 A	15-Feb-17 A	100%			
DG1320 P5 - Preparation of SG 4/5 Submission	15	0	16-Jan-17 A	15-Feb-17 A	100%			P5 - Preparation of SG 4/5 Submission
Submission	16	0	15-Feb-17 A	7-Mar-17 A	100%			
DG1350 P5 - SG4/5 Submit to TPD	0	0		15-Feb-17 A	100%			P5 - SG4/5 Submit to TPD
DG1355 P5 - SG4/5 IPR Review	10	0	15-Feb-17 A	27-Feb-17 A	100%			P5 - SG4/5 IPR Review
DG1330 P5 - SG4/5 Submit to CCB Period	6	0	28-Feb-17 A	7-Mar-17 A	100%			P5 - SG4/5 Submit to C¢B Period
DG1340 P5 - SG4/5 Review at CCB Meeting	0	0		7-Mar-17 A	100%			P5 - SG4/5 Review at CCB Meeting
Package 6 (Jun'17 Possession)	43	0	27-Mar-17 A	6-Jun-17 A	100%			
Assets PO4500 PO December of CO 4/5 Otherining	20	0	27-Mar-17 A	11-May-17 A	100%			
DG1530 P6 - Preparation of SG 4/5 Submission	20	0	27-Mar-17 A	11-May-17 A	100%			P6 - Preparation of SG 4/5 Sub
Submission DG1520 P6 - SG4/5 Submit to TPD	22	0	11-May-17 A	6-Jun-17 A 11-May-17 A	100% 100%			■
DG1540 P6 - SG4/5 IPR Review	12	0	11-May-17 A	26-May-17 A	100%			₹ P6 - \$ G4/5 Submit to TPD
		-						P6 - SG4/5 IPR Review
DG1500 P6 - SG4/5 Submit to CCB Period DG1510 P6 - SG4/5 Review at CCB Meeting	6	0	26-May-17 A	31-May-17 A	100%			P6 - SG4/5 Submit to CCBI
· · · · · · · · · · · · · · · · · · ·	-	-	10 lun 47 f	6-Jun-17 A		1		P6 - SG4/5 Review at CCB
Package 7 (Aug'17 Possession)	41 20	31 10	19-Jun-17 A 19-Jun-17 A	15-Aug-17	24.39%	1		
Assets DG1630 P7 - Preparation of SG 4/5 Submission	20	10	19-Jun-17 A 19-Jun-17 A	14-Jul-17 14-Jul-17	50% 50%	1	- 	P7 - Preparation of SC
Submission	21	21	14-Jul-17			1		
DG1620 P7 - SG4/5 Submit to TPD	0	0	14-Jul-17	15-Aug-17 14-Jul-17	0% 0%	1		♦ P7 - \$G4/5 Submit to
DG1640 P7 - SG4/5 IPR Review	15	15	17-Jul-17	4-Aug-17	0%	1		P7 - SG4/5 IPR Re
DG1600 P7 - SG4/5 Submit to CCB Period	6	6	7-Aug-17	14-Aug-17	0%	1		P7 - SG4/5 Subm
DG1610 P7 - SG4/5 Review at CCB Meeting	0	0	7-Aug-17	15-Aug-17	0%	1	- 	◆ P7 - SG4/5 Revie
•	41	41	17-Jul-17	12-Sep-17	0%	1		
Package 8 (Final Commissioning) Assets	20	20	17-Jul-17 17-Jul-17	12-3ep-17 11-Aug-17	0%	1		
DG1360 Area 1, Commissioning - Preparation of SG 4/5 Submission	20	20	17-Jul-17	11-Aug-17	0%	1		Area 1, Commis
DG1400 Area 2, Commissioning - Preparation of SG 4/5 Submission	20	20	17-Jul-17	11-Aug-17	0%	1		Area 2, Commis
DG1440 Area 3, Commissioning - Preparation of SG 4/5 Submission	20	20	17-Jul-17	11-Aug-17	0%	1		Area 3, Commis
Submission	21	21	11-Aug-17	12-Sep-17	0%	1		Alea 3, Commis
DG1390 P8 - SG5 Submit to TPD	0	0	11-Aug-17	11-Aug-17	0%	1		P8 - SG5 Submi
DG1395 P8 - SG5 IPR review	15	15	14-Aug-17	1-Sep-17	0%	1		P8 - \$G5 PP8
DG1370 P8 - SG5 Submit to CCB Period	6	6	4-Sep-17	11-Sep-17	0%	1		- 303 jr 6
DG1380 P8 - SG5 Review at CCB Meeting	0	0	4-Зер-17	12-Sep-17	0%	1		■
	678	40	19-Dec-14 A	25-Aug-17	94.1%	55		P8 + SG5 R
rocurement				ŭ		33		
Site Set Up / Environmental	39	0	19-Dec-14 A	13-Mar-15 A	100%			
PV1000 Procurement of consultants, subcontractors etc for Site Mobilisation & Enabling Works	39	0	19-Dec-14 A	13-Mar-15 A	100%		Procurement of consultants, subcontract	tors etc for Site Mobilisation & Enabling Works
Earthworks	50	0	26-Oct-15 A	24-Mar-16 A	100%			
PE1000 Procurement of Subcontractor for Earthworks Operations	50	0	26-Oct-15 A	24-Mar-16 A	100%	1		Procurement of Subcontractor for Earthworks Operations
·	87	0	26-Oct-15 A	30-Mar-16 A	100%			Traculation of Quocytilidator for Landinvolta Operations,
Drainage Drawwaynest of Drainage Materials (Dife and Direct) and Cubecaterates (included in Times)		0						
PD1000 Procurement of Drainage Materials (Pits and Pipes) and Subcontractor (inc Lead In Times)	87	0		30-Mar-16 A	100%			Procurement of Drainage Materials (Pits and Pipes) and Subcontractor (inc Lead In Times)
Jtilities	66	0	1-Feb-16 A	28-Jul-16 A	100%			
PU1000 Procurement of Utilities Materials (Pits and Pipes) and Subcontractor (inc Lead In Times)	66	0	1-Feb-16 A	28-Jul-16 A	100%			Procurement of Utilities Materials (Pits and Pipes) and Subcontractor (inc.
Combined Services Route (CSR)	60	0	26-Oct-15 A	24-Mar-16 A	100%			
PC1000 Procurement of CSR Package (Materials and Subcontractor) - inc Lead In Times	60	0	26-Oct-15 A	24-Mar-16 A	100%			Procurement of CSR Package (Materials and Subcontractor) included in Times
Structures	173	0	8-Jan-16 A	15-May-17 A	100%			
		0		•				
PT1000 Procurement of Precast Concrete Structures PT1000 Procurement & Subscriptor Mobilization for Equations Pilips	87	0	8-Jan-16 A	5-Jul-16 A	100%	<u> </u>		Procurement of Precast Concrete Structures Procurement & Subcontract Mobilization for Footbridge
PT1020 Procurement & Subcontract Mobilization for Footbridge Piling	60	-	28-Sep-16 A	9-Dec-16 A	100%	}		<u></u>
PT1010 Procurement & Delivery of Precast Pedestrian Bridge Deck and Wall Panels	112	0	4-Apr-16 A	15-May-17 A	100%	20		Procurement & Delivery of Prec
ermanent Way	408	25	9-Mar-15 A	4-Aug-17	93.87%	30		
Rail and Sleepers Supply	146	0	9-Mar-15 A	26-Sep-16 A	100%			
PW1010 Procurement of Sleepers (inc Lead In Time if Client exercises Option)	60	0	12-Mar-15 A	11-Mar-16 A	100%			Procurement of Sleepers (inc Lead In Time if Client exercises Option
PW1000 Procurement of Rail (Exercised Option 2 - 6/3/15)	105	0	9-Mar-15 A	26-Sep-16 A	100%			Procurement of Rail (Exercised Option 2 - 6/3/15)
Turnouts and Crossovers	406	0	16-Mar-15 A	28-Apr-17 A	100%			
PW1020 Procurement of Turnouts and Crossovers (inc Lead In Time) - 1st Lot	105	0	16-Mar-15 A	29-Feb-16 A	100%			Procurement of Turnouts and Crossovers (inc Lead In Time) - 1st Lot
PW1040 Delivery of Turnouts and Crossovers (inc Lead In Time) - 3rd Lot	38	0	1-Mar-16 A	22-Apr-16 A	100%	 		Delivery of Turnouts and Crossovers (inc Lead in Time) - 2nd Lot
PW1050 Delivery of Turnouts and Crossovers (inc Lead in Time) - 2rd Lot	48	0	19-Apr-16 A	6-Jul-16 A	100%	 		
, , , , , , , , , , , , , , , , , , , ,		-				<u> </u>		Delivery of Turnouts and Crossovers (inc Lead In Time) - 3rd Lot
PW1060 Delivery of Turnouts and Crossovers (inc Lead In Time) - 4th Lot	85	0	28-Jun-16 A	28-Apr-17 A	100%	00		Delivery of Turnduts and Crossov
Buffer Stops	150	25	1-Mar-16 A	4-Aug-17	83.33%	30		

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities. Page 16 of 34

Baseline : Rebaseline

Activity ID Activity Name	Original	Remaining	Start	Finish	Duration %	Total	2015 2016 2017 2
round round	Duration		June		Complete		D Jan F M Apr M J Jul A S Oct N D Jan F Mar Apr M Jun Jun Jul A S Oct N D Jan F Mar Apr M Jun Jun Jul A S Oct N D Jan F Mar Apr M Jun Jun Jul A S Oct N D Jan F Mar Apr M Jun Jun Jul A S Oct N D Jan F Mar Apr M Jun Jun Jul A S Oct N D Jan F Mar Apr M Jun Jun Jul A S Oct N D Jan F M Jun Jun Jul A S Oct N D Jun Jun Jul A S Oct N D Jun Jun Jun Jul A S Oct
PW1030 Procurement of Buffer Stops (inc Lead In Time)	150	25	1-Mar-16 A	4-Aug-17	83.33%	30	Procurement of Buffer
Procurement Phase-DSS	47	0	22-Feb-16 A	9-May-16 A	100%		
DE-0048-220 Placement of P.O for service relocation materials	25	0	22-Feb-16 A	15-Apr-16 A	100%		Placement of P.O for service relocation materials
DE-0048-230 Manufacturing & Delivery of materials	20	0	11-Apr-16 A	9-May-16 A	100%		Manufacturing & Delivery of materials
Service Relocations	30	0	14-Dec-15 A	7-Mar-16 A	100%		
PR1000 Procurement of Subcontractor for 11kV Service Relocation	30	0	14-Dec-15 A	7-Mar-16 A	100%		Procurement of Subcontractor for 11kV Service Relocations
OHW	162	0	21-Jan-16 A	26-Jul-16 A	100%		
PO1000 Procurement of Materials for OHW Footings and Structures	25	0	21-Jan-16 A	29-Mar-16 A	100%		
PO1010 Procurement of Wiring	114	0	14-Mar-16 A	26-Jul-16 A	100%		Procurement of Materials for OHW Footings and Structures Procurement of Wiring
LV	360	0	19-Oct-15 A	25-May-17 A	100%		7 rigorialiteit of willing
PO1030 Procurement of Ring Main Unit WTI Switching station	15	0	7-Dec-15 A	17-Dec-15 A	100%		
PO1040 Manufacturing & Delivery of Ring Main Unit WTI Switching s		0	18-Dec-15 A	22-Mar-16 A	100%		Procurement of Ring Main Unit WTI Switching station
DE-0024-PO Procurement of CSR materials and Cables for new Route	40	0	14-Mar-16 A	29-Sep-16 A	100%		Manufacturing & Delivery of Ring Main Unit WTI Switching station- Air freight Procurement of CSR materials and Caples for new Route
PO1020 Procurement & Delivery of padmount	155	0	19-Oct-15 A	23-Jan-17 A	100%		Procurement & Delivery of padmount
PO1050 Procurement & Delivery of DCCB	100	0	5-Jan-17 A	25-May-17 A	100%		Procurement & Derivery of pacinical Procurement & Delivery of DCCE
·	323	40	5-May-16 A	25-Aug-17	87.62%	q	
Signalling Description of Circulture metaricle. Chart lead Deals within			· ·				
PS1100 Procurement of Signalling materials - Short lead Rack wiring		0	10-May-16 A	8-Sep-16 A	100%		Procurement of Signalling materials - Short lead Rack wiring materials
PS1070 Procurement of Bungalows (12w Lead In Time)	100	0	10-Oct-16 A	21-Oct-16 A	100%		Procurement of Bungalows (12w Lead in Time)
PS1090 Factory Rack Wiring Works PS1040 Procurement of Cables (12w Lead In Time)	47 60	0	9-Sep-16 A	23-Jan-17 A	100%		Factory Rack Wiring Works Procurement of Cables (12w Lead In Time) Procurement of Signalling - Point Machines
PS1040 Procurement of Cables (12w Lead In Time) PS1050 Procurement of Signalling - Point Machines	95	0	10-May-16 A 10-Jun-16 A	25-Jan-17 A 7-Mar-17 A	100%		Procurement of Cables (12w Lead In Time)
PS1110 Procurement of Signalling - Point Machines PS1110 Procurement of Signalling materials-Track Circuits (ML/TI2	150	0	14-Jun-16 A	23-Mar-17 A	100%		Procurement of Signaling - Hont Machines
PS1020 Procurement of Signals (17w Lead In Time)	86	0	10-May-16 A	12-Apr-17 A	100%		Propurement of Signalling materials-Track
PS1080 Procurement of Rugged Comms (6w Lead In Time)	105	0	19-Sep-16 A	12-Apr-17 A	100%		Procurement of Signals (17w Lead In T
PS1010 Procurement of UPS (7 - 8 month Lead In Time)	163	0	5-May-16 A	19-May-17 A	100%		Procurement of Rugged Comms (6w L
PS1120 Fabrication of NE13 Precast building	50	0	13-Mar-17 A	19-May-17 A	100%		Fabication of NE13 Precast build
PS1030 Procurement of Train Stops/Point Machines/Impedence bor		0	10-Jun-16 A	6-Jun-17 A	100%		
PS1130 Fabrication of HN24 Precast building	50	0	13-Mar-17 A	16-Jun-17 A	100%		Procurement of Train Stops/Po
PS1000 Procurement of Signalling MaterialsJ/S Track Circuits	225	10	5-May-16 A	14-Jul-17	95.56%	10	Procurement of Signalling
PS1060 Procurement of Treadles	240	40	10-Aug-16 A	25-Aug-17	83.33%	9	Procurement of Signalling Procurement of Tre
Building	360	17	1-Mar-16 A	25-Jul-17	95.28%	18	i III III III III III III III III III I
DE-0025-090 Procurement of Roof Canopy	35	0	1-Mar-16 A	3-May-16 A	100%		
DE-0031-170 Procurement of Subcontract for noise wall manufacture/ins:		0	2-May-16 A	12-Jul-16 A	100%		Procurement of Roof Canopy
PB1000 Procurement of Structures (Station area)	75	0	2-May-16 A	24-Sep-16 A	100%		Procurement of Subcontract for noise wall mahufacture/installation Procurement of Structures (Station area)
DE-0025-100 Shop Drawings and Manufacture & Delivery Roof Canopy	120	0	4-May-16 A	14-Oct-16 A	100%		Shop Drawings and Manufacture & Delivery Roof Carjopy
PB1010 Procurement of Modular buildings - Yard	120	0	22-Jul-16 A	19-Jun-17 A	100%		Shop Drawings and Manuacture a Derivery Action Carlophy and Carlophy a
Wayfinding	40	17	9-Jun-17 A	25-Jul-17	57.5%	18	
PB1030 Wayfinding- Fabrication of the signs	40	17	9-Jun-17 A	25-Jul-17	57.5%	18	Wayfinding- Fabrication
, , ,	60	0	7-Mar-16 A	29-May-17 A	100%		
PB1020 Subcontract Award and Mobilization of Fencing Subcontract		0		·		-	Subcontract Award and Mobiliza
		60	7-Mar-16 A 4-Jan-15 A	29-May-17 A	100%	25	
Construction	654	- 00		24-Sep-17	90.83%	33	
Stabling Yard Area 1 (Chainage: 164.210 - 165.050)	654	60	21-Feb-15 A	24-Sep-17	90.83%	35	
Interface Contractor Start Milestones	1	1	17-Jul-17	18-Jul-17	0%	35	
CS5300 Train Crew Building- Area Ready for Interface Contractors	0	0	17-Jul-17		0%	36	♦ Train Crew Building- Are
CS5310 Yard Walkway Area Ready for Interface Contractors	0	0	18-Jul-17		0%	29	◆ Yard Walkway Area Rea
Enabling Works	482	0	28-Mar-15 A	24-Feb-17 A	100%		
Earthwork & Site Enabling Works	296	0	28-Mar-15 A	27-Apr-16 A	100%		
CY1400 Site waste classification soil sampling	1	0	11-Apr-15 A	1-Sep-15 A	100%		Site waste classification soil sampling
CY1010 Set Up Site Delineation under worksite protection and obtain	RSW free status 18	0	28-Mar-15 A	1-Sep-15 A	100%		Set Up Site Define ation under work site protection and obtain RSW free status
CY1430 Holland Street - Earth & Civil Works	30	0	30-Nov-15 A	8-Feb-16 A	100%		Holland Street - Earth & Civil Works
CY1020 Installation of Wheelwash / Rumble Grids/Access - Egress	ignage 5	0	7-Mar-16 A	9-Mar-16 A	100%		Installation of Wheelwash / Rumble Grids/Access Egress Signage
CY1070 Clearing and Grubbing	8	0	18-Apr-16 A	27-Apr-16 A	100%		■ Clearing and Grubbing
Demolition and Relocation Works	129	0	18-May-15 A	15-Dec-15 A	100%		
CY1030 Demolition of 2no. Existing Huts	10	0	18-May-15 A	29-May-15 A	100%		B. Demolition of 2no. Existing Huts
CY1000 Relocation of DTRS Mast (by others)	0	0		30-Jun-15 A	100%		Relocation of DTRS Mast (by others)
CY1410 Dismantle of large steel shed (Hamilton Exchange)	5	0	9-Dec-15 A	15-Dec-15 A	100%		Dismantle of large steel shed (Hamilton Exchange)
Services Works	384	0	29-Apr-15 A	24-Nov-16 A	100%		
CY1040 Pothole / Vac Truck / Survey Pick Up Existing Services	32	0	29-Apr-15 A	19-May-15 A	100%		Pothole / Vac Truck / Survey Pick Up Existing Services
CY1050 Relocation / Protection / Removal of Redundant Existing Se		0	11-Apr-16 A	19-Aug-16 A	100%		Relocation / Protection / Removal of Redundant Existing Services
DE-87-110 Removal of Redundant Fuel Pipeline	10	0	31-Aug-16 A	28-Sep-16 A	100%	[Removal of Redundant Fiyel Pipeline

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline Layout : WTIP - TPD Submission Full Program layou

vity ID Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete		2015 2016 2017 2017 2017 2019 D. Dan E. Mari Aori, M. Liu, Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N. D. Dan E. Mari Aori, M. Liu, A. S. Oct. N.
CY1490 Protection Slabs/encasement -Telstra/Ausgrid service	10	0	2-Nov-16 A	24-Nov-16 A	100%		D Jan F M Apr M J Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jun Jul A S Oct N D Jan F M Jul M Jul M Jul M Jul M Jul M Jul M Jul M Jul M Jul M Jul M Jul M Ju
CSR	29	0	5-Apr-16 A	18-May-16 A			
CY1440 Construction of Powertel cable Route	10	0	5-Apr-16 A	18-Apr-16 A	100%		Construction of Powerfel cable Route
CY1380 Relocation of non Std CSR/ Signalling Route by others (incl PowerTel cable & Sydney trains FO)	10	0	18-Apr-16 A	18-May-16 A	100%		Relocation of non Std CSR/ Signalling Route by others (incl PowerTel cable & Sydney train
CY1390 Removal of all Non STD CSR Cables by Others	0	0		18-May-16 A	100%		Removal of all Non STD CSR Cables by Others
HV Power Supply	180	0	5-Mar-16 A	30-Oct-16 A	100%		
CY1090 Preparation for 11KV Aerial Pole Relocation	10	0	5-Mar-16 A	29-Mar-16 A	100%		Preparation for (1KV/Aerial Pole Relocation
DE-0024-C Construct new LV route from Hamilton SS to Exchange & install cabling	10	0	17-Oct-16 A	27-Oct-16 A	100%		Construct new LV route from Hamiton SS to Exchange & install o
DE-0024-C RemoveRedundant structure	5	0	29-Oct-16 A	30-Oct-16 A	100%		RemoveRedundant structure
Permanent Way	3	0	8-Sep-15 A	10-Sep-15 A			
CY1060 Removal and Disposal of existing redundant track through yard	3	0	8-Sep-15 A	10-Sep-15 A	100%		Removal and Disposal of existing redundant track through yard
Item K - Relocate S&C, OF, LV, CCTV & GST on Yard - DSS-002/003/005/006	79	0	22-Mar-16 A	4-Aug-16 A	100%		
DE-0048-2 Civil route (CSR) construction works	25	0	22-Mar-16 A	23-Jun-16 A	100%		Civil route (CSR) construction works
DE-0048-21 Run new cables & Pits	10	0	1-Aug-16 A	4-Aug-16 A	100%		Run new cables & Pits
Item P - Novorail Pit @ Exchange Building - DSS 2001-2006	79	0	10-May-16 A	25-Aug-16 A	100%		
DE-0048-2i Install temporary power arrangement	5	0	10-May-16 A	16-May-16 A	100%		
DE-0048-2! Lower existing routes	15	0	16-May-16 A	3-Jun-16 A	100%		Lower existing routes
DE-0048-31 Demolish & Construct new HV pit	10	0	1-Aug-16 A	12-Aug-16 A	100%		Demolish & Construct new HV pt
DE-0048-3 Run new Cabling & Comms	10	0	12-Aug-16 A	25-Aug-16 A	100%		Ruh new Cabling & Comms
Item Q - Sewer tank, drainage and LV power to be relocated DSS-004	23	0	30-Jun-16 A	30-Jun-16 A	100%		
DE-0048-3: Install new Sewer route & Pit- Not required	20	0	30-Jun-16 A	30-Jun-16 A	100%		Install riew \$ewer route & Pit- Not required
DE-0048-3: Demolish existing - Not required	5	0	30-Jun-16 A	30-Jun-16 A	100%		Demolish existing - Not required
Item AD - Sewer line running north south between Fern Street and Hamilton station DSS-001	13	0	1-Jun-16 A	1-Jun-16 A	100%		
DE-0048-3 ¹ Install New Sewer-Not required	10	0	1-Jun-16 A	1-Jun-16 A	100%		Install New Sewer-Not required
DE-0048-3! Demolish existing-Removed as part of SR05	5	0	1-Jun-16 A	1-Jun-16 A	100%		Demolish existing-Removed as part of SR05
Item B - Service Relocation Works due to DSS)-	79	0	14-Mar-16 A	3-Apr-16 A	100%		
DE-0048-4: Civil route works	9	0	14-Mar-16 A	22-Mar-16 A	100%		Civil route works
DE-0048-4 Cutover new cables	ū	0	2-Apr-16 A	3-Apr-16 A	100%		Cutover new dables
Item G- 6 Ausgrid crossings -Service Relocation Works due to DSS)	204	0	29-Jul-16 A	24-Feb-17 A	100%		
DE-0048-4! Appointment of Subcontract/ Ausgrid Compliance Office & Power outage notice	50	0	29-Jul-16 A	25-Oct-16 A	100%		Appointment of Subcontract/ Ausgrid Compliance Office & Power
DE-0048-4: Beumont St Underbore	30	0	24-Oct-16 A	30-Nov-16 A 12-Dec-16 A	100%		Belumoht St Underbore Underbore Enviro approvals
DE-0048-6: Underbore Enviro approvals	50	0	2-Nov-16 A 13-Dec-16 A	17-Dec-16 A	100%		Remobilization of Underbore subcontractor
DE-0048-6 Remobilization of Underbore subcontractor DE-0048-5! Fern & Ivy St Underbore	20	0	19-Dec-16 A	13-Jan-17 A	100%		Fern's Ivy St Underbore
DE-0048-6 Ausgrid Aproval of Subcontract Works and Power outage- Fern St.Rescheduled	40	0	26-Sep-16 A	13-5an-17 A	100%		Ausgrid Aproyal of Subcontract Works and Pow
DE-0048-6: Fern St. LV relocation (Ausgrid)	2	0	13-Feb-17 A	15-Feb-17 A	100%		Ferr St. LV relocation (Ausgrid)
DE-0048-6: Fern St. HV Isolation (Ausgrid)	4	0	20-Feb-17 A	24-Feb-17 A	100%		■ Ferin St; HV isolation (Ausgrid)
Item AP- GST Relocation for T/O 485 & 486	22	0	1-Mar-16 A	31-Mar-16 A	100%		
DE-0048-4! Install Pits,ULX and backfill	16	0	1-Mar-16 A	21-Mar-16 A	100%		Install Pits,ULX and backfil
DE-0048-41 Duplicate CCTV.PA & LV Cables	4	0	21-Mar-16 A	30-Mar-16 A	100%		Duplicate CCTV:PA & LV Cables
DE-0048-4: Disconnect old cables and connect new cables	1	0	30-Mar-16 A	31-Mar-16 A	100%		Disconnect old cables and connect new cables
DE-0048-44 Test & Commission CCTV,PA & LV cables	1	0	31-Mar-16 A	31-Mar-16 A	100%		Test & Commission CCTV,PA & LV cables
Item AQ -HV GST installed by Novo clashes with the HV padmount transformer, PF 1	6	0	11-Jun-16 A	13-Jun-16 A			1 rest a commission Co. 1, na. 2, cases
DE-0048-31 Relocate GST for platform(including end of buffer stop)	15	0	12-Jun-16 A	13-Jun-16 A	100%		Relocate GST for platfdrm(including end of buffer stop)
DE-0048-3' Run New HV cable from padmount to existing joint	5	0	11-Jun-16 A	13-Jun-16 A	100%		Run New HV ¢able from padmount to existing joint
DE-0048-3I Cut over	2	0	12-Jun-16 A	13-Jun-16 A	100%		Cut over
DE-0048-3! Demolish existing	5	0	12-Jun-16 A	13-Jun-16 A	100%		Demolish existing:
Main Works	257	31	26-Apr-16 A	14-Aug-17	87.94%	64	
Interface Contractor works (Principal's Representative, Sydney Trains,others & External Authorities)	21	21	17-Jul-17	14-Aug-17	0%	22	
CCTV System & Equipment	15	15	21-Jul-17	11-Aug-17	0%	24	
RC1010 Stabling Yard -CCTV camera installation (Indra-TfNSW/ST)	5	5	21-Jul-17	28-Jul-17	0%	24	, □ Stabling Yard -CCTV ca
RC1000 Yard - CCTV Camera test & Commission (Indra-TfNSW/ST)	10	10	28-Jul-17	11-Aug-17	0%	24	□ vard CCTV ¢amera
Public Address (PA)	12	12	28-Jul-17	14-Aug-17	0%	22	
RE1010 Stabling Yard PA - Configuration of head equipment (Stagetec/LOR)	5	5	28-Jul-17	4-Aug-17	0%	24	Stabling Yard FA - Co
RE1000 Stabling Yard PA - Testing & Commissioning (Stagetec/ST/TfNSW)	5	5	8-Aug-17	14-Aug-17	0%	22	Stabling Yard PA - Te
LAN/Phone/Office Equipment	11	11	17-Jul-17	31-Jul-17	0%	32	
RE1030 Crew Building - Installation & Testing (ST/TfNSW)	5	5	17-Jul-17	24-Jul-17	0%	33	☐ Crew Building - Installet
RC1040 Yard- LAN/offce equipment Commissioning (ST/TfNSW)	5	5	25-Jul-17	31-Jul-17	0%	32	I Yard- LAN/ǫffce equipr
Electronic Access Control	5	5	25-Jul-17	31-Jul-17	0%	27	
RE1040 Test & Commission Access control incl(config servers, user access, card issue etc) (Chubb /ST/TfNSW)	5	5	25-Jul-17	31-Jul-17	0%	27	Test & Commission Ac
Earthworks	129	0	12-Jun-16 A	6-Feb-17 A	100%		
CY1100 Bulk Earthworks	8	0	12-Jun-16 A	15-Dec-16 A	100%		Bulk Earthworks
CY1110 Capping	10	0	29-Nov-16 A	23-Jan-17 A	100%		Capping

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Baseline Milestone

Data Date: 30-Jun-17

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

ity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total				115			2016	2017
		Duration	Duration			Complete	Float	D Jan	F M Apı	MJ	Jul A	Oct N D	Jan F Ma	Apr M Jun Jul A	S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D
CY1690	Drainage & Capping completion and handover	5	0	23-Jan-17 A	6-Feb-17 A	100%									Drainage & Capping completion and handover
Services \		28	0	7-Nov-16 A	19-Jan-17 A	100%									
CY1540	Decanting Services	25	0	23-Nov-16 A	16-Jan-17 A	100%									Decanting Services
CY1550	Cold Water Services	25	0	7-Nov-16 A	17-Jan-17 A	100%									Cold Water Services
CY1560	Stormwater Services	5	0	14-Nov-16 A	19-Jan-17 A	100%									Stormwater Services
Decanting		117	18	13-Feb-17 A	24-Jul-17	85.04%	41			ii			. ii		<u> </u>
CY1760	Hardstand area for Decant building	5	0	20-Mar-17 A	25-Mar-17 A	100%									Hardstand area for Decarlt building
CY1180	Decant Building (Slab,blockworks,earthworks)	20	0	13-Feb-17 A	10-Apr-17 A	100%									Decant Building (Slab,blockworks,ear
CY1770	Decanting system plant and equipment	20	0	11-May-17 A	16-May-17 A	100%									Decanting system plant and equ
CY1850	Decant Building roof structure/FRP Slab	10	0	15-Jun-17 A	30-Jun-17 A	100%									Decant Building roof stru
CY1950	Decanting system - Services installation	10	9	26-Jun-17 A	12-Jul-17	10%	47			ļļ			ļļ		Decanting system - Set
CY1970	Decanting system - Test & Commission	3	3	20-Jul-17	24-Jul-17	0%	41								Decanning system - 1
_	w Building	77	31	3-Apr-17 A	9-Aug-17	60.39%	23								Train Crew Building - Driveway
CY1780	Train Crew Building - Driveway	5	0	3-Apr-17 A	7-Apr-17 A	100%									
CY1200	Installation of Building Blinding, Footings / Substructure, Blockworks & PFC	20	0	3-May-17 A	8-Jun-17 A	100%									Installation of Building Blindin
CY1210	Building Installation	20	12	20-Jun-17 A	17-Jul-17	40%	14			ļļ				 	Building Installation
CY1120	Plumbing and Services to Buildings	10	8	26-Jun-17 A	24-Jul-17	20%	30								Plumbing and Service
CY1340	Fencing and Gates Installation	25	25	3-Jul-17	2-Aug-17	0%	20								Fencing and Gates
CY1350	Hardstand - Crew Building, Decant Area	5	5	3-Aug-17	9-Aug-17	0%	23								Hardstand - Crew I
	y and Drainage	64	0	18-Jul-16 A	19-Jan-17 A	100%									
CY1160	Installation of Drainage	38	0	18-Jul-16 A	7-Nov-16 A	100%				ļļ			 		Installation of Drainage Installation of Sanitary drainage
CY1520	Installation of Sanitary drainage	30	0	7-Nov-16 A	21-Dec-16 A	100%									Installation of Surface drainage
CY1530	Installation of Surface drainage	16	0	20-Sep-16 A	19-Jan-17 A	100%									installation of our lace of all lage
CSR	Construction of new ULX & Pits	80	0	9-Sep-16 A	20-Jan-17 A 30-Oct-16 A	100%									Construction of new ULX & Pits
CY1500		15 50	0	9-Sep-16 A	20-Jan-17 A	100%									
CY1170	Construction of new CSR/ Signalling Route	50	0	19-Oct-16 A 26-Apr-16 A	15-Feb-17 A	100%				ļļ			 		Construction of new CSR/ Signalling Route
Structural CY1460	Construction of OHW Footings N164+487 to N164+784- 15 Nos	9	0	26-Apr-16 A	6-May-16 A	100%									
CY1480	Construction of OHW Footings N164+477,629 - 2 Nos	9	0	11-Jun-16 A	20-Jun-16 A	100%								Construction	of OHW Footings N164+487 to N164+784- 15 Nos action of OHW Footings N164+477,829 - 2 Nos
CY11400	Construction of OHW Footings N164+417,029 - 2 Nos	9	0	12-Sep-16 A	19-Sep-16 A	100%									
CY1510	Construction of OHW Footings N164+859	5	0	31-Jan-17 A	6-Feb-17 A	100%									Construction of OHW Footings N164+412,412,477 3 Nos Construction of OHW Footings N164+859
CY1190	Siding 3 & 4 - Retaining Walls for Drivers Walkways & Backfill	15	0	19-Jan-17 A	15-Feb-17 A	100%									Siding 3 & 4 - Retaining Walls for Drivers Wal
		20	10	29-Jun-17 A	13-Jul-17	50%	44								Siding 3 & 4 - Retaining wais for Drivers wai
Exchange CY1790	Exchange Access ramp				13-3 ul- 17	30 /6			1		1 1		1 1	1 1 1 1 1	
		20		29- Jun-17 A	13-Jul-17	50%	44		- 1		; ;	1 1 1 1			Exchange Access ram
		20	10	29-Jun-17 A	13-Jul-17	50% 99.18%	44 30								Exchange Access ram
_	Supply	123	1	6-Feb-17 A	19-Jul-17	99.18%	30								■ Exchange Access ram
CY1700	r Supply N223 Cable IRCS to Feeder Structure		10 1 0	6-Feb-17 A 6-Feb-17 A	19-Jul-17 10-Feb-17 A	99.18% 100%									
CY1700 CY1710	r Supply N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator	123 5	0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A	99.18% 100% 100%									■ N223 Cable IRCS o Feeder Structure
CY1700	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS	123 5 5	0 0	6-Feb-17 A 6-Feb-17 A	19-Jul-17 10-Feb-17 A	99.18% 100%									
CY1700 CY1710 CY1720	r Supply N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator	123 5 5	1 0 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A	99.18% 100% 100% 100% 100%									■ N223 Cable IRCS o Feeder Structure ■ Prepare Relocate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS
CY1700 CY1710 CY1720 CY1730	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger	123 5 5 5 5 5	1 0 0 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A	99.18% 100% 100% 100%									■ N223 Cable IRCS to Feleder Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N423 DCCB to IRCS ■ Battery Charger
CY1700 CY1710 CY1720 CY1730 CY1740	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB	123 5 5 5 5 5 5	1 0 0 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A 5-Jun-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A	99.18% 100% 100% 100% 100% 100%									■ N223 Cable IRCS to Feeder Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DQCB
CY1700 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB	123 5 5 5 5 5 5	1 0 0 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A	99.18% 100% 100% 100% 100% 100%	30								■ N223 Cable IRCS to Feeder Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DCCB ■ N223 Cable N223E DCCB to IRCS
CY1700 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On	123 5 5 5 5 5 5	1 0 0 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17	99.18% 100% 100% 100% 100% 100% 100% 0%	30								■ N223 Cable IRCS to Feeder Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DCCB ■ N223 Cable N223E DCCB to IRCS
CY1700 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling	123 5 5 5 5 5 5 5 5 1	1 0 0 0 0 0 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A 5-Jun-17 A 5-Jun-17 A 19-Jul-17	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17	99.18% 100% 100% 100% 100% 100% 0% 100%	14								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DCCB ■ N223 Cable N223E DCCB to IRCS
CY1700 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling	123 5 5 5 5 5 5 5 1 10 10	1 0 0 0 0 0 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Apr-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DCCB ■ N223 Cable N223E DCCB to IRCS
CY1700 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling ications Comms cable hauling (Non Signalling)	123 5 5 5 5 5 5 5 1 10 10	1 0 0 0 0 0 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A 5-Jun-17 A 5-Jun-17 A 19-Jul-17 10-Apr-17 A 28-Jun-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jul-17 21-Apr-17 A 21-Jul-17	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DQCB ■ N223E DQCB ■ N223 Cable N223E DCCB to IRCS ■ LV Cable hauling
CY1700 CY1710 CY1720 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling ications Comms cable hauling (Non Signalling)	123 5 5 5 5 5 5 5 1 10 10 10	1 0 0 0 0 0 0 0 0 1 0 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A 5-Jun-17 A 5-Jun-17 A 19-Jul-17 10-Apr-17 A 10-Apr-17 A 28-Jun-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jul-17 21-Apr-17 A 21-Jul-17 21-Jul-17	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DQCB ■ N223E DQCB ■ N223 Cable N223E DCCB to IRCS ■ LV Cable hauling
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling ications Comms cable hauling (Non Signalling)	123 5 5 5 5 5 5 5 1 10 10 10 10 10	1 0 0 0 0 0 0 0 0 1 0 0 0 9 9	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A 5-Jun-17 A 5-Jun-17 A 19-Jul-17 10-Apr-17 A 10-Apr-17 A 28-Jun-17 A 11-Jul-17	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jul-17 21-Apr-17 A 21-Jul-17 21-Jul-17 22-Jul-17	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 26 7								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DQCB ■ N223E DQCB ■ N223E Cable N223E DCCB to IRCS ■ LV Cable hauling
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wa	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling ications Comms cable hauling (Non Signalling)	123 5 5 5 5 5 5 1 10 10 10 10 10 10	1 0 0 0 0 0 0 0 0 1 0 0 0 9 9	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 28-Jun-17A 11-Jul-17	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jul-17 21-Apr-17 A 21-Jul-17 21-Jul-17 22-Jul-17 22-Jul-17	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 26 7								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Ci N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DQCB ■ N223E DQCB ■ N223E Cable N223E DCCB to IXEC STRUCTURE Varid - Power On ■ LV Cable hauling
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wa DE-0031-0	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling ications Comms cable hauling (Non Signalling)	123 5 5 5 5 5 5 5 1 10 10 10 10 10 10 10	1 0 0 0 0 0 0 0 1 1 0 0 9 9 9	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 28-Jun-17A 11-Jul-17 11-Jul-17 12-Sep-16A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jul-17 21-Apr-17 A 21-Jul-17 21-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 26 7								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DCCB ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wa DE-0031-0 DE-0031-0	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling ications Comms cable hauling (Non Signalling) Loc- Loc main cable pull II C Manufacture Noise Walls	123 5 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10	1 0 0 0 0 0 0 0 1 1 0 0 9 9 10 10 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 28-Jun-17A 11-Jul-17 11-Jul-17 11-Sep-16A 12-Sep-16A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 24-Oct-16 A	99.18% 100% 100% 100% 100% 100% 100% 100% 0% 100% 100% 10% 0% 10% 0% 10% 0% 10%	14 26 26 7								■ N223 Cable IRCS to Feeder Structure ■ Prepare Relocate 1500V Resonant Shunt Country ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223 Cable N223E DCCB ■ N223 Cable N223E DCCB to IRCS ■ LV Cable hauling ■ LV Cable hauling ■ Loc Loc main cable Manufacture Noise Walls
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wa DE-0031-0 DE-0031-0 DE-0031-0	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling ications Comms cable hauling (Non Signalling) Loc- Loc main cable pull II C Manufacture Noise Walls C Installation of Noise Walls	123 5 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 30 30	1 0 0 0 0 0 0 0 1 1 0 0 9 9 10 10 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 28-Jun-17A 11-Jul-17 11-Jul-17 11-Sep-16A 12-Sep-16A 25-Oct-16A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 24-Oct-16 A 12-Dec-16 A	99.18% 100% 100% 100% 100% 100% 100% 100% 0% 100% 100% 100% 10% 1	14 26 7 7								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DCCB ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS ■ N223E DCCB to IRCS
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wa DE-0031-0 DE-0031-0 DE-0031-0	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling Cations Comms cable hauling (Non Signalling) Loc- Loc main cable pull II C Manufacture Noise Walls C Installation of Noise Walls - Fern St, siding 1/2 & Track works	123 5 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10	1 0 0 0 0 0 0 0 1 1 0 0 9 9 10 10 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 28-Jun-17A 11-Jul-17 11-Jul-17 12-Sep-16A 25-Oct-16A 2-Feb-17A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 24-Oct-16 A 23-Feb-17 A	99.18% 100% 100% 100% 100% 100% 100% 0% 100% 100% 100% 100% 100% 10% 0% 10% 1	14 26 7 7								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Co ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DCCB ■ N223E DCCB ■ N223Cable N223E DCCB to IY23Cable N223E DCCB to IX23Cable N223Cable N223E DCCB to IX23Cable N223E DCCB to IX23Cable N223Cable N
CY1700 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wa DE-0031-C DE-0031-C Walkway	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling Cations Comms cable hauling (Non Signalling) Loc- Loc main cable pull II C Manufacture Noise Walls C Installation of Noise Walls - Fern St, siding 1/2 & Track works	123 5 5 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 20 139	1 0 0 0 0 0 0 0 1 1 0 0 9 9 10 10 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A 5-Jun-17 A 19-Jul-17 10-Apr-17 A 10-Apr-17 A 28-Jun-17 A 11-Jul-17 11-Sep-16 A 12-Sep-16 A 25-Oct-16 A 2-Feb-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 12-Dec-16 A 23-Feb-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 7 7								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquete 1500V Resonant Shunt Cr ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223 Cable N223E DCCB ■ N223 Cable N223E DCCB to IRCS ■ LV Cable N223E DCCB to IRCS ■ N223 Cable N223E DCCB to IRCS ■ N223 Cable N223E DCCB to IRCS ■ LV Cable N223E DCCB to IRCS ■ LV Cable hauling ■ LV Cable hauling ■ Loc Loc main cable Installation of Noise Walls ■ Installation of Noise Walls ■ Installation of Noise Walls ■ Installation of Noise Walls ■ Walkway 3 West - FRP, Hydrants, local
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Noise Wa DE-0031-C DE-0031-C Walkway Walkway	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling cations Comms cable hauling (Non Signalling) Loc- Loc main cable pull LCC Manufacture Noise Walls Installation of Noise Walls - Fern St, siding 1/2 & Track works -3	123 5 5 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10	1 0 0 0 0 0 0 0 1 0 0 9 9 10 10 0 0 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 28-Jun-17A 11-Jul-17 11-Sep-16A 12-Sep-16A 25-Oct-16A 2-Feb-17A 6-Feb-17A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 12-Dec-16 A 23-Feb-17 A 10-Aug-17 28-Jun-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 7 7								■ N223 Cable IRCS to Feeder Structure ■ Prepare Reliquete 1500V Resonant Shunt C ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223 Cable N223E DCCB ■ N223 Cable N223E DCCB I ■ Vard - Power On ■ LV Cable hauling ■ Loc Loc main cable ■ Installation of Noise Walls ■ Installation of Noise Walls ■ Installation of Noise Walls ■ Walkway 3 West - FRP, Hydrants, loca Walkway 3 East - FRP, Hydrants, loca
CY1700 CY1710 CY1720 CY1730 CY1740 CY1750 CY1820 CY1820 Communi CY1810 Signalling CY1800 DE-0031-6 DE-0031-6 Walkway Walkway CY1590	N223 Cable IRCS to Feeder Structure	123 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10 10 10 10 1	1 0 0 0 0 0 0 0 1 0 0 9 9 9 10 10 0 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A 5-Jun-17 A 19-Jul-17 10-Apr-17 A 28-Jun-17 A 28-Jun-17 A 11-Jul-17 11-Jul-17 12-Sep-16 A 25-Oct-16 A 2-Feb-17 A 6-Feb-17 A 6-Feb-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 12-Dec-16 A 23-Feb-17 A 10-Aug-17 28-Jun-17 A 30-Mar-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 7 7								N223 Cable IRCS to Feeder Structure Prepare Religionate 1500V Resonant Shunt Communication N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223E DCCB N223Cable N223E DCCB Vard - Power On LV Cable hauling Loc-Loc main cable Loc-Loc main cable N223E DCCB N223E DCCB Walls N23E DCCB Walls N23E DCCB Walls N23E DCCB Walls Fern St. siding N23E DCCB Walls Fern St. siding Walkway 3 West - FRP, Hydrants, loc Walkway 3 East - FR
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wa DE-0031-C DE-0031-C Walkway Walkway CY1590 CY1600	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling Cations Comms cable hauling (Non Signalling) Loc- Loc main cable pull LCC Manufacture Noise Walls C Installation of Noise Walls - Fern St, siding 1/2 & Track works Walkway 3 West - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	123 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10 10 10 10 1	1 0 0 0 0 0 0 0 1 0 0 9 9 9 10 10 0 0 0	6-Feb-17 A 6-Feb-17 A 13-Feb-17 A 13-Feb-17 A 13-Feb-17 A 5-Jun-17 A 5-Jun-17 A 19-Jul-17 10-Apr-17 A 28-Jun-17 A 28-Jun-17 A 11-Jul-17 11-Jul-17 12-Sep-16 A 25-Oct-16 A 2-Feb-17 A 6-Feb-17 A 6-Feb-17 A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 12-Dec-16 A 23-Feb-17 A 10-Aug-17 28-Jun-17 A 30-Mar-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 7 7								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquete 1500V Resonant Shunt Ci ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223 DCCB ■ N223 Cable N223E DCCB to IRCS ■ N223 Cable N223E DCCB to IRCS ■ N223 Cable N223E DCCB to IRCS ■ N223 Cable N223E DCCB to IRCS ■ N223 Cable N223E DCCB to IRCS ■ Varid - Power On ■ LV Cable hauling ■ Loc Loc main cable hauling ■ Loc Loc main cable Installation of Noise Walls ■ Installation of Noise Walls ■ Installation of Noise Walls ■ Walkway 3 West - FRP, Hydrants, loca ■ Walkway 3 East - FRP, Hydrants, loca ■ Walkway 3 West Access ar
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wal DE-0031-C DE-0031-C DE-0031-C Walkway Walkway CY1590 CY1600 CY1860	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling Cations Comms cable hauling (Non Signalling) Loc- Loc main cable pull C Manufacture Noise Walls C Installation of Noise Walls - Fern St, siding 1/2 & Track works Walkway 3 West - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 West Access area - FRP, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	123 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10 10 10 10 1	1 0 0 0 0 0 0 0 0 1 0 0 9 9 9 10 10 0 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 28-Jun-17A 11-Jul-17 11-Sep-16A 25-Oct-16A 2-Feb-17A 6-Feb-17A 6-Feb-17A 1-Jun-17A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 10-Aug-17 28-Jun-17 A 30-Mar-17 A 4-Apr-17 A 8-Jun-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 7 7								■ N223 Cable IRCS to Feeder, Structure ■ Prepare Reliquate 1500V Resonant Shunt Cu ■ N223 Cable Route, N223 DCCB to IRCS ■ Battery Charger ■ N223E DCCB ■ N223E DCCB ■ N223E DCCB to IRCS ■ LV Cable N223E DCCB to IRCS ■ LV Cable hauling ■ LV Cable hauling ■ Loc- Loc main cable particles with the cable particles and the cable particles with the
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wal DE-0031-C DE-0031-C DE-0031-C Walkway Walkway CY1590 CY1600 CY1860 CY1870	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223E DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling Cations Comms cable hauling (Non Signalling) Loc- Loc main cable pull C Manufacture Noise Walls C Installation of Noise Walls - Fern St, siding 1/2 & Track works Walkway 3 West - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 West Access area - FRP, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	123 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10 10 10 11 11	1 0 0 0 0 0 0 0 0 1 0 0 9 9 9 10 10 0 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 28-Jun-17A 11-Jul-17 11-Sep-16A 25-Oct-16A 2-Feb-17A 6-Feb-17A 6-Feb-17A 1-Jun-17A 8-Jun-17A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 24-Oct-16 A 12-Dec-16 A 23-Feb-17 A 10-Aug-17 28-Jun-17 A 8-Jun-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 7 7								N223 Cable IRCS o Feeder, Structure
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wal DE-0031-C DE-0031-C Walkway Walkway CY1590 CY1860 CY1860 CY1870 Walkway	N223 Cable IRCS to Feeder Structure Prepare Relocate 1500V Resonant Shunt Cubicle & isolator N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DCCB N223 Cable N223E DCCB to N223 DCCB N223 Cable N223E DCCB to N223 DCCB Yard - Power On Supply & Distribution LV Cable hauling Comms cable hauling (Non Signalling) Loc- Loc main cable pull II C Manufacture Noise Walls C Installation of Noise Walls C Installation of Noise Walls C Installation of Noise Walls Walkway 3 West - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 West Access area - FRP, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments Walkway 3 East Access area - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	123 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10 10 10 10 1	1 0 0 0 0 0 0 0 0 1 0 0 9 9 10 10 0 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 11-Jul-17 11-Sep-16A 12-Sep-16A 2-Feb-17A 6-Feb-17A 6-Feb-17A 1-Jun-17A 20-Feb-17A 4-Jun-17A 8-Jun-17A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 12-Dec-16 A 12-Dec-16 A 12-Dec-17 A 30-Mar-17 A 4-Apr-17 A 8-Jun-17 A 9-Jun-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 7 7								N223 Cable IRCS o Feeder, Structure Prepare, Religicate 1500V Resonant Shunt Cu N223 Cable Route, N223 DCCB to IRCS Battery Charger N223E DQCB N223E DQCB N223E Cable N223E DCCB to IRCS Lyard - Power On Lyard - Power On Lyard - Power On Loc Loc main cable particles with the properties of the prop
CY1700 CY1710 CY1710 CY1720 CY1730 CY1740 CY1750 CY1960 LV Power CY1820 Communi CY1810 Signalling CY1800 Noise Wal DE-0031-C DE-0031-C DE-0031-C Walkway Walkway CY1590 CY1860 CY1860 CY1870 Walkway CY1220	N223 Cable IRCS to Feeder Structure	123 5 5 5 5 5 5 1 10 10 10 10 10 10 10 10 10 10 10 10 1	1 0 0 0 0 0 0 0 0 1 1 0 0 9 9 9 10 10 0 0 0	6-Feb-17A 6-Feb-17A 13-Feb-17A 13-Feb-17A 13-Feb-17A 5-Jun-17A 5-Jun-17A 19-Jul-17 10-Apr-17A 28-Jun-17A 11-Jul-17 11-Sep-16A 12-Sep-16A 2-Feb-17A 6-Feb-17A 6-Feb-17A 1-Jun-17 8-Jun-17A 29-Jun-17A 29-Jun-17A 20-Feb-17A 6-Feb-17A 20-Feb-17A 20-Feb-17A 20-Feb-17A 20-Feb-17A 20-Feb-17A	19-Jul-17 10-Feb-17 A 18-Feb-17 A 18-Feb-17 A 9-Jun-17 A 9-Jun-17 A 9-Jun-17 A 19-Jul-17 21-Apr-17 A 21-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 22-Jul-17 23-Feb-17 A 10-Aug-17 28-Jun-17 A 4-Apr-17 A 8-Jun-17 A 9-Jun-17 A 9-Jun-17 A	99.18% 100% 100% 100% 100% 100% 100% 100% 1	14 26 7 7								N223 Cable IRCS o Feeder, Structure

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities. Page 19 of 34

Baseline : Rebaseline

ivity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total		2015				2016				2017	
		Duration	Duration			Complete	Float	D Jan F M Apr I	/ J Jul A	S Oct N D	Jan F Ma	r Apr M J	un Jul A	S Oct N	D Jan F M	Mar Apr M J	un Jul A S	S Oct N D
Siding -2		5	0	1-May-17 A	5-May-17 A	100%												
CY1250	Siding 2 - Track works- West	3	0	1-May-17 A	3-May-17 A	100%									-	1 (-)	ng 2 - Track w	1 : :
CY1230	Siding 2 - Track works- East	3	0	3-May-17 A	5-May-17 A	100%						4				Sidi	ing 2 - Track w	orks- East
Siding - 1	O'Fra 4 Trade grade West	4	0	3-May-17 A	8-May-17 A	100%												
CY1310	Siding 1 - Track works- West	3	0	3-May-17 A	5-May-17 A	100%											Siding 1 - Trac ling 1 - Track w	k works- West
CY1580	Siding 1 - Track works- East	3	0	4-May-17 A	8-May-17 A	100%	_									Siu	ilig i - jilack w	VOIKS- Last
Walkway - 5	Well-way F Foot (400M). FDD I beloods to adopt to said this age of Florida and a said to said the said to the said	54	7	1-May-17 A	10-Jul-17	86.92%	7									- W	alkway:5 Fact	(160M) - FRP, I
	Walkway 5 East (160M) - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	12	0	1-May-17 A	15-May-17 A	100%		ļ .		ļ <u> </u>							*1 1	y 5 West (Exch
CY1660	Walkway 5 West (Exchange to decant 70M)- FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	7	7	1-Jul-17	10-Jul-17	0%	7										vvaik įva	y 5 West (Excil
Walkway 2		26	0	6-May-17 A	8-Jun-17 A	100%												
CY1270	Walkway 2 East(275m) - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	12	0	6-May-17 A	22-May-17 A	100%										iv	1 1	t(275m) - FRP,
CY1330	Walkway 2 West(100m) - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	6	0	22-May-17 A	27-May-17 A	100%										•		Vest(100m) - FF Vest(34m) - FRI
CY1940	Walkway 2 West(34m) - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	6	0	1-Jun-17 A	8-Jun-17 A	100%				ļļ							• • • • • • • • • • • • • • • • • • •	vesi(34III) - FKI
Siding - 4		4	0	15-May-17 A	19-May-17 A	100%										Çi	iding 4 - Track	works Wost
CY1670	Siding 4 - Track works- West	2	0	15-May-17 A	17-May-17 A	100%										1 1 1	iding 4 - Track	1 1 1
CY1680	Siding 4 - Track works- East	2	0	17-May-17 A	19-May-17 A	100%											nully 4 r ITaCK	WOIKS- East
Siding -3		4	0	17-May-17 A	22-May-17 A	100%											iding 3 - Track	works West
CY1610	Siding 3 - Track works- West	2	0	17-May-17 A	19-May-17 A	100%		ļ. 1.			-	4	-			1 1	Siding 3 - Track	1 1
CY1620	Siding 3 - Track works- East	2	0	19-May-17 A	22-May-17 A	100%											Juliy 3;- Track	WUIKS- EAST
Walkway - 4		24	7	19-Jun-17 A	10-Jul-17	70.21%	43										\\\\\aller	/ 4 East - FRP, I
	Walkway 4 East - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	12	4	19-Jun-17 A	6-Jul-17	66.67%	12										T : ::	
CY1630	Walkway 4 West - FRP, Hydrants, local cable routs, Lighting, Decant, Electric equipments	8	7	27-Jun-17 A	10-Jul-17	12.5%	43										walkwa	y 4 West - FRP,
Walkway Fit		39	12	19-May-17 A	17-Jul-17	69.23%	17	ļ. ļļ		ļļļ ii	-	4			ļļļi.	<u></u> -		M 0000 1000 1000
CY1890	Install PA,Speakers, CCTV camera & Walkway Lighting	20	10	19-May-17 A	13-Jul-17	50%	17										- 1	A,Speakers, Co
CY1900	Final connection of lights to DB's	2	2	14-Jul-17	17-Jul-17	0%	17										∥ iFinal co	onnection of ligh
Track Works		65	4	17-May-17 A	10-Aug-17	93.8%	33											
CT1220	Installation of Catchpoints (483) - in situ	6	0	25-May-17 A	27-May-17 A	100%											Ins <mark>tallation of C</mark>	Catchpoints (483
CY1930	Top Ballast sidings & Turnouts	8	0	23-May-17 A	29-May-17 A	100%						<u> </u>				1 1 7	1 1	ings & Turnouts
CY1240	Installation of Turnout 480,481,482 (in-situ + welding)	11	0	17-May-17 A	29-May-17 A	100%											Installation of T	Turnout 480,481
CY1290	Free Welding	2	0	14-Jun-17 A	15-Jun-17 A	100%				1 1							Free Weldin	
CY1300	Adjustment Welding (Destressing)	2	0	14-Jun-17 A	15-Jun-17 A	100%											Adjustment	Welding (Destre
CY1260	Tamping and Regulating	3	0	15-Jun-17 A	19-Jun-17 A	100%									,	,]	Tamping an	
CY1320	Installation of Buffer Stops	4	4	5-Aug-17	10-Aug-17	0%	33									Т Ц.	□ Inst	allation of Buffer
Overhead W	iring	110	0	12-Jan-17 A	9-Jun-17 A	100%						1						
_	OHW Structures Installaton	12	0	12-Jan-17 A	24-Jan-17 A	100%									■ OHV	V Structures Ir	nstallatón	
CY1280	OHW - Preparations & Wire Run 1, 2 & 3 (Siding 2,3 & 4)/ Siding 1 preparations	16	0	22-May-17 A	9-Jun-17 A	100%								"				arations & Wire
Fencing & G		76	30	1-May-17 A	8-Aug-17	61.18%	24									_	T	
	Installation of Noise Walls panels - Fern St	3	0	1-May-17 A	3-May-17 A	100%										Inst	allation of Nois	e Walls panels
	Walkway 1 Fencing	15	9	31-May-17 A	12-Jul-17	40%	25	 		<u> </u>		+					Walkwa	y 1 Fencing
	Walkway 5 Fencing	20	14	15-Jun-17 A	19-Jul-17	30%	30										Walkw	
	Installation of Noise Walls Gates - Fern St	4	4	3-Aug-17	8-Aug-17	0%	24										□ Inst	allation of Noise
	In & Landscaping	8	8	3-Aug-17	12-Aug-17	0%	20											
	•	9	0	_													in 3	
	Landscaping	8	8	3-Aug-17	12-Aug-17	0%	20	<u></u>		ļ 		+					L'ar	ndscaping
Wayfinding		10	10	1-Aug-17	12-Aug-17													
	Signage Installation	10	10	1-Aug-17	12-Aug-17	0%	20										Sig	nage Installation
	Works Stabling Yard - Area 1	113	18	21-Feb-15 A	24-Sep-17	84.44%	6											
_	No. 1 : 21st Feb - 22nd Feb 2015 (Config 9)	2	0	21-Feb-15 A	22-Feb-15 A	100%												
Area 1 (Chai	nage: 164.850 - 165.260)	2	0	21-Feb-15 A	22-Feb-15 A	100%			<u>. j l j</u>		.	1						
General		2	0	21-Feb-15 A	22-Feb-15 A	100%				:								
	Investigation Works - Geotechnical, Contamination and Heritage	2	0	21-Feb-15 A	22-Feb-15 A	100%		Investigati	on Works - Ge	otechnical, Conta	nnation and H	leritage						
	(HV,Sewer,Comms,Water)	2	0	21-Feb-15 A	22-Feb-15 A	100%												
	Utilities Potholing	2	0	21-Feb-15 A	22-Feb-15 A	100%		Utilities Po	tholing									
	No. 2 : 6th - 8th June 2015 (Config 9)	6	0	6-Jun-15 A	8-Jun-15 A	100%			<u>. j j j</u>			1						
	nage: 164.850 - 165.260)	6	0	6-Jun-15 A	8-Jun-15 A	100%												
	Service Locating Works	6	0	6-Jun-15 A	8-Jun-15 A	100%			Service L	ocating Works								
	No. 3 :5th - 6th Sept 2015 (Config 9)	6	0	5-Sep-15 A	7-Sep-15 A	100%				:								
	nage: 164.850 - 165.260)	6	0	5-Sep-15 A	7-Sep-15 A	100%												
Permanent		6	0	5-Sep-15 A	7-Sep-15 A	100%				<u>.</u>		4			ļļ <u>i</u> <u>i</u> .			
	Potholing & Removal of Redundant Structures- Signal Hut(102.83, 102.54 & Railwat st Level xing) & Location cases	6	0	5-Sep-15 A	7-Sep-15 A	100%				Potholing & R	enoval of Red	undant Stru	ctures-Signal	I Ημt(102.83	, 102.54 & Rail	wat st Level xir	ng) & Location	cases
	No. 4 :24th - 25th Oct 2015 (Config 9)	6	0	24-Oct-15 A	26-Oct-15 A	100%												
	nage: 164.850 - 165.260)	6	0	24-Oct-15 A	26-Oct-15 A	100%												
CP2600	Remove Railway St crossing	6	0	24-Oct-15 A	26-Oct-15 A	100%				Remo	e Railway St	rossing						
CP2770	Field investigation works	6	0	24-Oct-15 A	26-Oct-15 A	100%					vestigation w							
Possession	No. 5 :13th - 14th Feb 2016 (Config 9)	6	0	13-Feb-16 A	15-Feb-16 A	100%						T11						
	nage: 164.850 - 165.260)	6	0	13-Feb-16 A	15-Feb-16 A	100%		: 💷 : : I i	1 1 1	: : : : !	I : : :	1 1 1	1 1 1	1 3		1 1 1	1 : :	1 : :

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

ctivity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total		2015		2016 2017 20
,		Duration	Duration	Juli	,	Complete		D Jan F M Apr M		S Oct N D J	lan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Ja
CP2760	Service investigation works	6	0	13-Feb-16 A	15-Feb-16 A	100%					Service investigation works
CP3090	Footpath modification works	6	0	13-Feb-16 A	15-Feb-16 A	100%					Footpath modification works
Possessi	on No. 5A :02nd - 03rd Apr 2016 (Config 9)	6	0	2-Apr-16 A	4-Apr-16 A	100%					
CP1220	Installation of ULX (2 Tracks - Up & Down Main - Ch164+840)	6	0	2-Apr-16 A	4-Apr-16 A	100%					Installation of ULX (2 Tracks - Up & Down Main - Ch164+840)
CP1060	Construction of OHW Footing	6	0	2-Apr-16 A	4-Apr-16 A	100%					Construction of OHW Footing
	on No. 6 :11th -13th June 2016 (Config 9)	9	0	11-Jun-16 A	14-Jun-16 A	100%					
	hainage: 164.850 - 165.260)	9	0	11-Jun-16 A	14-Jun-16 A	100%					
OHW CP1400	Installation of OHW Footings	9	0	11-Jun-16 A 11-Jun-16 A	14-Jun-16 A 14-Jun-16 A	100% 100%		}- - - -	}		Installation of OHW Fobtings
HV/LV	Installation of other Louings	9	0	11-Jun-16 A	14-Jun-16 A	100%					i installation of Ortive Footings
	1500V Feeder - excavate and lay conduits to Hamilton substation	9	0	11-Jun-16 A	14-Jun-16 A	100%					1500V Feeder - excavate and lay conduits to Hamilton substation
	on No. 7A ::1st- 12th Aug 2016 (Config 9)	16	0	1-Aug-16 A	6-Aug-16 A	100%					
	hainage: 164.850 - 165.260)-1	16	0	1-Aug-16 A	6-Aug-16 A	100%					
OHW		6	0	1-Aug-16 A	3-Aug-16 A	100%					
	OHW Adjustment on Up and Down Mains	6	0	1-Aug-16 A	3-Aug-16 A	100%					OHW Adjustment on Up and Down Mains
ULX & C		6	0	4-Aug-16 A	6-Aug-16 A	100%					
	8- ULX - Possession works	4	0	4-Aug-16 A	5-Aug-16 A	100%					ULX - Possession works
	Drainage Works	4	0	4-Aug-16 A	5-Aug-16 A	100%			} 		
	Cut over cables -Possession work on No. 8 :29th - 30th Oct 2016 (Config 9)	2	U	5-Aug-16 A 29-Oct-16 A	6-Aug-16 A 31-Oct-16 A	100%					Cut over cables -Possession work
_	on No. 8 :29th - 30th Oct 2016 (Config 9) hainage: 164.850 - 165.260)	6	0	29-Oct-16 A 29-Oct-16 A	31-Oct-16 A 31-Oct-16 A	100%					
CP3110		6	0	29-Oct-16 A	31-Oct-16 A	100%					▮ 1500V Feeder Route
CP3490		6	0	29-Oct-16 A	31-Oct-16 A	100%					HN-24 Signal location works
CP3500	-	6	0	29-Oct-16 A	31-Oct-16 A	100%		:- !-! :	; <u> </u>	- 	ULX-04 - Route & Pit works
DE-0024	Pole top Transformer and switchboard cutover (Change ID 38)	6	0	29-Oct-16 A	31-Oct-16 A	100%					Pole top Transformer and switchbpard cutover (Change ID 38)
Possessi	on No. 9 :11th - 12th Mar 2017 (Config 9)	6	0	11-Mar-17 A	13-Mar-17 A	100%					
CP1640	ULX-04 area drainage works, Hi rail access ramp & MRB civil works	6	0	11-Mar-17 A	13-Mar-17 A	100%					ULX-04 atea drainage works, I
CP3060	Signalling - Points fit out, Signals local route installation	6	0	11-Mar-17 A	13-Mar-17 A	100%					\$ignalling - Points fit out, Signals local route in
CP3530	Substation -DCCB works	6	0	11-Mar-17 A	13-Mar-17 A	100%					I \$ubstation -DCCB works
CP3600	Signalling - 19AT Track circuit changes	6	0	11-Mar-17 A	13-Mar-17 A	100%					I \$ignalling - 19 AT Track circuit changes
Possessi	on No. 10 :10th - 12th June 2017 (Config 9)	9	0	10-Jun-17 A	13-Jun-17 A	100%					
CP3080	Signalling - Signal post installation	6	0	10-Jun-17 A	12-Jun-17 A	100%					\$ignalling - Signal post installation
CP3510	Substation -DCCB works	9	0	10-Jun-17 A	13-Jun-17 A	100%			ļ <u>ļ</u>		I Substation - DCCB works
CP3520	Stage 3 - OHW Wire Run-10 (Siding 1)	9	0	10-Jun-17 A	13-Jun-17 A	100%					I Stage 3 - OHW Wire Run-10 (
	on No. 11 :26th - 27th August 2017 (Config 9)	6	6	26-Aug-17	28-Aug-17	0%	6				
CP1740	Signalling works - Inspection & Testing	6	6	26-Aug-17	28-Aug-17	0%	0				Signalling works - Ir
CP3550	1500 Feeder connection	6	6	26-Aug-17	28-Aug-17	0%	6				j, 1500 Feeder conne
_	sioning Possession - 21st - 24th September 2017	12	12	21-Sep-17	24-Sep-17	0%	0		ļļ	- - - - - 	
CP1700	Relocation of Temporary Buffer Stop to Siding 3 & 4	6	6	21-Sep-17	22-Sep-17	0%	0				Relocation of Te
CP1710	Removal of Existing "Shunters Building"	6	6	21-Sep-17	22-Sep-17	0%	0				Removal of Exis
CP1720	Removal of Scissors (South Side) and reinstate plain line Track and OHW	6	6	21-Sep-17	22-Sep-17	0%	0				Removal of Scis
CP1760	Commissioning Works - Siding 1,2,3 & 4 and any remaining infrastructure	654	55	22-Sep-17 4-Jan-15 A	24-Sep-17 24-Sep-17	91.59%	25				Commissioning
	Turnback Area 2 (Chainage: 165.050 - 165.404)		55		·		30		ļļ .		
Enabling		336	0	4-Jan-15 A	29-Nov-16 A	100%					
_	k & Site Enabling Works	321	0	4-Jan-15 A	10-Jun-16 A						
CT1020	Closure of Railway Street (by others)	0	0	04.14. 45.4	4-Jan-15 A	100%	-	Closure of Railway	1 1 71		
CT1010	Set Up Site Delineation under worksite protection and obtain RSW free status	28	0	31-Mar-15 A	28-Apr-15 A	100%		Se	Up Site Delir	neation under worksi	ite protection and obtain RSW free status
CT1330	Site waste classification soil sampling	1	0	11-Apr-15 A	5-Sep-15 A	100%					ification soil sampling
CT1000	Removal of existing site stockpiles (by others)	1	0	30-Oct-15 A	30-Oct-15 A	100%	-			Removal	I of existing site stockpiles (by others)
CT1110	Clearing and Grubbing of Shunt Area Formation	287	0	19-May-16 A 29-Apr-15 A	10-Jun-16 A 29-Nov-16 A	100%					Clearing and Grubbing of Shunt Area Formation
Services CT1030	Pothole / Vac Truck / Survey Pick Up Existing Services	36	0	29-Apr-15 A 29-Apr-15 A	29-Nov-16 A 29-May-15 A	100%			Potheld ()	ob Truck // Common	ck Up Existing Services
CP3000x		10	0	5-Mar-16 A	30-Mar-16 A	100%			Poinole / Va	ac Truck / Survey Fic	ck Up Existing Services Relocate existing GST for T/Qs
CT1040	Relocation / Protection / Removal of Redundant Existing Services	22	0	16-Apr-16 A	6-Jul-16 A	100%			 	· ; · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·	Relocate existing GS1 for 17Us Relocation / Protection / Removal of Redundant Existing Services
	4 Ausgrid Drawing Aproval (SR # 04)	30	0	4-Apr-16 A	29-Nov-16 A	100%					Ausgrid Drawing Aptoval (SR # 04)
Permane		109	0	29-Feb-16 A	30-Jul-16 A	100%					Augulu Diawiiig Apiovaii (314 94)
CT1050	Crossover Assembly Pad - 488	5	0	29-Feb-16 A	3-Mar-16 A	100%					Crossover Assembly Pad - 488
CT1080	Crossover Pre Assembly - 488	10	0	3-Mar-16 A	9-Mar-16 A	100%					Grossover Pre Assembly - 488
CT1060	Crossover Assembly Pad - 487	5	0	10-May-16 A	13-May-16 A	100%			i i	· · · · · · · · · · · · · · · · · · ·	Crossover Assembly Pad - 487
CY1080	Turnout Assembly Pad - 486A	10	0	6-May-16 A	13-May-16 A	100%					Turnout Assembly Pad + 486A
CT1090	Turnout Pre Assembly - 486A, 487	10	0	12-May-16 A	24-May-16 A	100%					Turnout Pre Assembly - 486A, 487
CT1070	Crossover Assembly Pad - 485B & 484	5	0	12-Jul-16 A	18-Jul-16 A	100%					Crossover Assembly Pad - 485B & 484
011070											

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

vity ID	Activity Name	Original	Remaining	Start	Finish	Duration %					015					2016					1	2017	
		Duration	Duration			Complete	Float	D Jan	F M Apı	r M J	Jul A	S Oct N	D Jan	F Mar	Apr N	Jun Jul	A S O	ct N [Jan F	Mar Ap	or M Ju	ın Jul A	S Oct N
Main Works		355	36	6-Apr-16 A	28-Aug-17	89.99%	54								i								
	Site Enabling Works Earthworks Treatment to Shunt Formation	286	0	14-Jun-16 A	2-Aug-17	98.25%	14								į					_ L			
	Structural / General Fill to Shunt - Filling from East to West permitting trucks to maintain one way system through site	11 8	0	15-Jun-16 A 14-Jun-16 A	30-Jun-16 A 1-Jul-16 A	100%									:		Earthw	1 1		1 1	1 1	1	
	Construct maintenance access road	10	0	18-Jan-17 A	14-Feb-17 A	100%									į		Struct	tural / Ge	neral Fill to	Constr	uct maint	om East to V enance acce	Vest permitting
	Final trim maintenance access road	5	5	27-Jul-17	2-Aug-17	0%	14	 - 		· 												Fina	al trim mainten
Services Wo		27	27	10-Jul-17	11-Aug-17	0%	26								!								
	Railway St Underbore works	27	27	10-Jul-17	11-Aug-17	0%	26								į							R	ailway St Unde
Hydrology ar	d Drainage	264	7	9-Jul-16 A	26-Jul-17	97.54%	12																
CT1150	nstallation of Drainage	26	0	9-Jul-16 A	10-Jul-16 A	100%									į	1	i 💹 ı	nstallatior	n of Draina	age			
CT1180	nstallation of Swale Drain	14	0	1-Sep-16 A	12-Sep-16 A	100%				1	1					1	•	Installat	ion of \$wa	ale Drain			
CT1350	nstallation of box culvert & surface Drainage	7	7	18-Jul-17	26-Jul-17	0%	14								į							☐ Insta	allation of box
CSR		28	0	8-Nov-16 A	21-Mar-17 A	_									}			<u> _ </u> .			(0=014)		
	install - GST / GLT (256M)	20	0	8-Nov-16 A	28-Nov-16 A	100%												<u> </u>	nstall - GS	<u> </u>	1 1		
	Installation of new CSR / Signalling Route	28	0	1-Dec-16 A	21-Mar-17 A	100%														Ins	stallation	of new CSR	/ Signalling Ro
Structural W		269	0	6-Apr-16 A	22-Jul-16 A											l. l.				.	. []		
	Construction of OHW Footings (N164+921 to N165+299)- 14Nos Construction of OHW Footings (N165+174)	10 6	0	6-Apr-16 A 20-Jun-16 A	20-Apr-16 A 24-Jun-16 A	100%									E Co		of OHW Fo					4NOS	
	Installation of Lightpole Footings-Not required	7	n	20-Jun-16 A 22-Jul-16 A	24-Jun-16 A 22-Jul-16 A	100%										Col	istruction of	OHW F			1 1	Lightnol	otings Not
Overhead W		5	0	7-Jun-16 A	9-Jun-16 A	100%									i					nsta	ilation of I	riaurháie Þó	otings-Not req
	OHW Structures Installation	5	0	7-Jun-16 A	9-Jun-16 A	100%										I OHW	Structures	Installation	on				
Permanent \		250	0	16-Jul-16 A	24-Jun-17 A				;						-		Si gotares	oranquic					
	nstallation of Turnouts (485A,486B) - insitu	10	0	16-Jul-16 A	5-Aug-16 A	100%										-	Inst	allation of	Turnouts	(485A.4	86B) - ins	situ	
CT1190	Installation of Bottom Ballast	10	0	10-Apr-17 A	19-Apr-17 A	100%									į							tion of Botto	m Ballast
CT1210	installation of Tracks	16	0	13-Apr-17 A	24-Apr-17 A	100%									į				1		Install	ation of Trac	ks
CT1240	nstallation of Top Ballast	3	0	20-Apr-17 A	27-Apr-17 A	100%				1 1	1										Install	ation of Top	Ballast
CT1250	Tamping and Regulating	6	0	14-Jun-17 A	21-Jun-17 A	100%													-	_			and Regulating
CT1280	Free Welding	2	0	21-Jun-17 A	23-Jun-17 A	100%																Free Wel	lding
CT1290	Adjustment Welding (Destressing)	1	0	23-Jun-17 A	24-Jun-17 A	100%									į							Adjustme	nt Welding (De
	n & Landscaping	8	8	2-Aug-17	11-Aug-17	0%	26									1						<u>.</u> i.	
CT1320		8	8	2-Aug-17	11-Aug-17	0%	26													-		, Lia	andscaping
Fencing & G		15	15	27-Jul-17	15-Aug-17	0%	14																
	Fencing and Gates Installation	15	15	27-Jul-17	15-Aug-17	0%	14													-		F	encing and Ga
Wayfinding 8	Signage Installation	10	10	15-Aug-17 15-Aug-17	28-Aug-17 28-Aug-17	0%	14													1	1 1		Signage Insta
	Works Wickham Turnback - Area 2	654	20	21-Feb-15 A	24-Sep-17	96.94%	35														4		Signage insta
	No. 1 : 21st Feb - 22nd Feb 2015 (Config 9)	2	0	21-Feb-15 A	22-Feb-15 A		00								į								
	rage: 165.260 - 165.410)	2	0	21-Feb-15 A	22-Feb-15 A	100%																	
General		2	0	21-Feb-15 A	22-Feb-15 A	100%									į					1			
CP1020	nvestigation Works - Geotechnical, Contamination and Heritage	2	0	21-Feb-15 A	22-Feb-15 A	100%			Investig	gation Wo	orks - Geo	technical, Cor	ntamination	aḥd He	ritage								
	HV,Sewer,Comms,Water)	2	0	21-Feb-15 A	22-Feb-15 A	100%] [1111							
	Jtilities Potholing	2	0	21-Feb-15 A	22-Feb-15 A	100%			Utilities	Potholine	g				į								
	No. 2 : 6th - 8th June 2015 (Config 9)	6	0	6-Jun-15 A	8-Jun-15 A	100%									į								
	Service Locating Works	6	0	6-Jun-15 A	8-Jun-15 A	100%				1 1	Service Lo	cating Works			į								
	No. 5A :02nd - 03rd Apr 2016 (Config 9)	6	0	2-Apr-16 A	4-Apr-16 A					. 				,		}}							
	Construction of OHW Footing (N164+970 to N165+194) Relocate 102.98	6	0	2-Apr-16 A	4-Apr-16 A	100%			}								OHW Foot	ing (N164	1+970 to N	1165+194	+)		
	Prainage for 485B & 486A	6	0	2-Apr-16 A 2-Apr-16 A	4-Apr-16 A 4-Apr-16 A	100%										ate 102.9	!!!						
	No. 6 :11th -13th June 2016 (Config 9)	9	0	2-Apr-16 A	14-Apr-16 A										Drair	age ror 48	5B & 486A						
	vo. 6 : Firth - 13th June 2016 (Comig 9)	9	0	11-Jun-16 A	14-Jun-16 A	100%									į								
Permanent		9	0	11-Jun-16 A	14-Jun-16 A															- 			
	installation of Track from Turnout 486A, 487	9	0	11-Jun-16 A	14-Jun-16 A				}						1	nsta	lation of Tra	ack from	Turnout 48	86A, 487			
CP1380	Tamping, Welding and Adjustment	9	0	11-Jun-16 A	14-Jun-16 A	100%									į	1 = 1	ing, Weldin	1 1	1				
CP3040	Signal support for track works	9	0	11-Jun-16 A	14-Jun-16 A	100%									į		al support fo	- 1					
OHW		6	0	11-Jun-16 A	13-Jun-16 A	100%				<u>.</u>	.					1	<u> </u>						
	Installation of OHW Structure (N164+970)	6	0	11-Jun-16 A	13-Jun-16 A	100%			}								lation of OH						
	Installation of OHW Structure (N165+018)	6	0	11-Jun-16 A	13-Jun-16 A	100%									į		lation of OF						
	Installation of OHW Structure (N165+047)	6	0	11-Jun-16 A	13-Jun-16 A	100%									į	1 7 1	lation of OF	1 1	1 1				
	Installation of OHW Structure (N165+082)	6	0	11-Jun-16 A	13-Jun-16 A	100%									;		lation of OF						
	Construction of OHW Footings (N165+263 to N165+273)- 3 Nos	6	0	11-Jun-16 A 11-Jun-16 A	13-Jun-16 A 13-Jun-16 A	100%				·						Cons	truction of (OHW Foo	otings (N1	65+263	ta N165+	273)- 3 Nos	
												1 1 1				. 1							1 1 1
HV and LV	Area 2 Relocation of 11kV	6	-													1	2 Polar	n he 44	,	1			
HV and LV	Area 2 Relocation of 11kV	6 9	0	11-Jun-16 A 11-Jun-16 A	13-Jun-16 A 14-Jun-16 A	100%										Area	2 Relocatio	n of 11kV	,				

Critical Remainin... Actual Work Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities. Page 22 of 34

Baseline : Rebaseline

Activity ID	Activity Name	Original	Remaining	Start	Finish	Duration %		
		Duration	Duration			Complete	Float	at D Jan F M Apr M J Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan
	No: 6A 09th -10th July 2016	6	0	9-Jul-16 A	11-Jul-16 A	100%		
CP3410	VPR 20 - Relocation of Cleaners hut to facilitate construction of OHW footing N165+133	4	0	9-Jul-16 A	10-Jul-16 A	100%		VPR 20 - Relocation of Cleaners hut to facilitate construction of QHW footing N16
CP2540	Installation of OHW Structure (N165+224, 273 & 263)	6	0	9-Jul-16 A	11-Jul-16 A	100%		
CP2550	Installation of OHW Structure (N165+068)	6	0	9-Jul-16 A	11-Jul-16 A	100%		□ Iristallation of QHW Strubture (N165+968)
CP3400	Construction of OHW Footing (N164+133 x 2 Nos (Cleaners Hut Clash) & 165+299	4	0	9-Jul-16 A	11-Jul-16 A	100%		Construction of OHW Flooting (N164+133 x 2 Nos Clejaner's Hut Clajsh) & 165+
CP3440	Earthworks and Drainage Works- Turnback area	4	0	9-Jul-16 A	11-Jul-16 A	100%		I Earthworks and Drainage Works-Turnback area
	n No. 7A ::1st-12th Aug 2016 (Config 9)	30	0	1-Aug-16 A	11-Aug-16 A			
	inage: 165.260 - 165.410)	30	0	1-Aug-16 A	11-Aug-16 A	100%		
Permanen	Installation of Track	6	0	1-Aug-16 A 1-Aug-16 A	4-Aug-16 A 3-Aug-16 A	100% 100%		
CP1530	Tamping, Welding and Adjustment	6	0	2-Aug-16 A	4-Aug-16 A	100%		Installation of Track Tamping, Welding and Adjustment
	Installation of Crossover 485B & 484	9	0	1-Aug-16 A	4-Aug-16 A	100%		Installation of Crossover (485B & 484
	Tamp 485 and 484 connections	9	0	1-Aug-16 A	4-Aug-16 A	100%	-	Tamp 485 and 484 connections
OHW	Tamp 100 and 101 Commodators	15	0	1-Aug-16 A	6-Aug-16 A	100%		5 19mp 40 40 mg-cayls
	Installation of OHW Structure (N164+921)	6	0	1-Aug-16 A	3-Aug-16 A	100%		Installation of OHW Structure (N164+921)
CP1610	Installation of OHW Structure (N165+174)	6	0	1-Aug-16 A	3-Aug-16 A	100%		Installation of OHW Structure (N165+174)
	Installation of OHW Structure (N165+133)	6	0	4-Aug-16 A	6-Aug-16 A	100%		Installation of OHW Structure (N165+133)
	Installation of OHW Structure (N165+299)	6	0	4-Aug-16 A	6-Aug-16 A	100%		Installation of OHW Structure (N165+299)
OHW-Wire		15	0	6-Aug-16 A	11-Aug-16 A	100%		
parameter (1)	Stage 1 OHW -Wire Run 1, 2	6	0	6-Aug-16 A	8-Aug-16 A	100%		Stage 1 OHW Wire Run 1,2
CP1660	Stage 1- OHW -Wire Run - 3,4,5	9	0	8-Aug-16 A	11-Aug-16 A	100%		Stage 1- OHW-Wire Run - 3.4.5
Possession	1 No. 8 :29th - 30th Oct 2016 (Config 9)	6	0	29-Oct-16 A	31-Oct-16 A	100%		
Area 2 (Cha	inage: 165.260 - 165.410)	6	0	29-Oct-16 A	31-Oct-16 A	100%		
CP3050	Signalling Civil works, Points mechanical fit out	6	0	29-Oct-16 A	31-Oct-16 A	100%		Signalling Civil works, Points mechanical fit but
CP3460	Install GIJ's	6	0	29-Oct-16 A	31-Oct-16 A	100%		Install GIJ's
CP3480	OHW - Modification works	6	0	29-Oct-16 A	31-Oct-16 A	100%		■ OHW Modification works
ULX/Civil		6	0	29-Oct-16 A	31-Oct-16 A	100%		
	Installation of ULX-06 -Cleaners hut	6	0	29-Oct-16 A	31-Oct-16 A			Installation of ULX-06 -Cleaners hut
	No. 9 :11th - 12th Mar 2017 (Config 9)	6	0	11-Mar-17 A	13-Mar-17 A			
	OHW Adjustments & N165+095 defect correction	6	0	11-Mar-17 A	13-Mar-17 A			MW Adjustments & N165+09
	No. 10 :10th - 12th June 2017 (Config 9)	2	0	11-Jun-17 A				
	Install Steel deck (Ped Bridge)	2	0	11-Jun-17 A	12-Jun-17 A			i Install Steel deck (Ped Bridge)
	No. 11 :26th - 27th August 2017 (Config 9)	6	6	26-Aug-17	28-Aug-17	0%	6	1 Stage 1 - Infrastruc
CP3620	Stage 1 - Infrastructure removals	4	4	26-Aug-17	27-Aug-17	0%	2	
	Precommission 1500V Works	6	6	26-Aug-17	28-Aug-17	0%	6	
	ning Possession - 21st - 24th September 2017	12	12	21-Sep-17	24-Sep-17	0%	0	
CP1750	Removal of existing NovoRail Assets used for temporary stabling (GST,F/H,Sewer,Light Poles, CCTV,PA, Fencing etc	6	6	21-Sep-17	22-Sep-17	0%	0	
CP1770	Commissioning Works	6	6	22-Sep-17	24-Sep-17	0%	0	
	Removal of remaining redundant Temporary Infrastructure (installed by NovoRail)	6 654	6	22-Sep-17	24-Sep-17	0%	0	Removal of rem
	Station Area 3 (Chainage: 165.404-165.850)		60	21-Feb-15 A	24-Sep-17	90.83%	35	
Interface Co	ontractor Start Milestones	32	9	14-Jun-17 A	25-Jul-17	71.88%	17	
CS5230	Level 1- Area Ready for Interface Contractors	0	0	14-Jun-17 A		100%		◆ Level 1- Area Ready for Interfa
CS5250	MSR/SSR - Area Ready for Interface Contractors	0	0	15-Jun-17 A		100%		◆ MSR/SSR - Area Readly for Int
	Northpod - Area Ready for Interface Contractors	0	0	20-Jun-17 A		100%		
CS5240	Ground Floor- Area Ready for Interface Contractors	0	0	13-Jul-17		0%	11	
CS5270	Platform - Area Ready for Interface Contractors	0	0	18-Jul-17		0%	22	
CS5340	Station Concourse Ready for Interface Contractors	0	0	25-Jul-17		0%	8	◆ Station Concourse Réac
Enabling W	/orks	468	0	28-Mar-15 A	9-Mar-17 A	100%		
	& Site Enabling Works	24	0	28-Mar-15 A	31-Jul-15 A			
CS1020	Preparatory Road Work at Station Street and Beresford Street (Lay Back Installation)	5	0	20-Apr-15 A	24-Apr-15 A	100%		Preparatory Road Work at Station Street and Beresford Street (Lay Back Installation)
CS1010	Set Up Site Delineation under worksite protection and obtain RSW free status	24	0	28-Mar-15 A	9-May-15 A	100%		Set Up Site Delineation under worksite protection and obtain RSW free status
CS1770	Site waste classification soil sampling	1	0	11-Apr-15 A	31-Jul-15 A	100%		Site waste classification soil sampling
Services W		323	0	9-May-15 A	24-Aug-16 A			
CS1030	Pothole/Vac Truck to Locate Existing Services	8	0	9-May-15 A	29-May-15 A			Pothole/VaciTruck to Locate Existing Services
CS3020	Potholing & Service investigation works on ped. Footbridge	10	0	8-Dec-15 A	19-Jan-16 A	100%		Potholing & Service investigation works on ped. Footbridge
CS3040	Construction Fencing & Gate installation- Stewart Avenue & Station St	3	0	8-Feb-16 A	11-Feb-16 A	100%		Construction Fencing & Gate installation- Stewart Avenue & Station St
CS3030	Cut-in temp drive entrance for Mc Carrol's	3	0	16-Feb-16 A	18-Feb-16 A	100%		La cut in temp drive entrance for Mc Carrols
CS2980	Remove redundant Sigs & Comms services	10	0	20-Feb-16 A	7-Mar-16 A	100%		Remove redundant Sigs & Comms services
CS3050	Hunter water culvert core holing & Investigation	5	0	1-Mar-16 A	7-Mar-16 A	100%		Hunter water culvert core holing & Investigation
CY1420	CIPP Site measurement	1	0	1-Apr-16 A	2-Apr-16 A	100%		CIPP Site measurement
CS3080	Bypass pumping arrangement and removal of 225mm Sewer	10	0	27-May-16 A	9-Jun-16 A	100%		□ Bypas's pumping arrangement and removal of 225mm Sewer
	CIPP crew mobilization	27	0	1-Jul-16 A	8-Aug-16 A	100%		CIPP crew mobilization
CY1470	CIPP works onsite		-		-	100%		CIPP works ansite

Actual Work Critical Remainin...

Remaining Work Milestone

Remaining Work Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

ty ID Activ	ivity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Total Float	D lan 5	: NA A	2015	A C C = 1 1 1	D land	E Morlan	2010 Laul M		Oct N D	on E Maria	2017	ا ۱ ا د ا د	Pot N D
CS1060 Relo	ocation of 225mm Sewer - Station Street	15	0	5-May-16 A	24-Aug-16 A	100%		D Jan I	M A	M J Jul	A S Oct N	Jan I	- Iwar Api	W Jun J			an F Mar Ap m Sewer - Stat		JI A S O	CI N D J
Hydrology and D		123	0	17-Oct-16 A	9-Mar-17 A	100%								-	Kelbi	cation of 22311	iii Sewei - Siai	lion Sireet		
	form manhole & Sewer access pits	25	0	23-Jan-17 A	17-Feb-17 A	100%											Oviform			
CS3390 Hun	nterwater Approval - Watermain removal / relocation- Pedstrian Footbridge	30	0	17-Oct-16 A	9-Mar-17 A	100%								¦			Hunt	terwater Appr	oval - Waterr	main removal
HV Power Suppl	ly	194	0	1-Sep-15 A	24-Jun-16 A	100%														
CS2810 Isola	ate New Railway St Level Xing Sig Loc Case	1	0	1-Sep-15 A	1-Sep-15 A	100%					Isolate New	Rai way St	Level Xing	Sig Loc Ca	ise					
CS1070 Prep	paration works for relocation of 11kV Aerial / Other Services	28	0	22-Feb-16 A	30-Mar-16 A	100%										cation of 11kV	Aerial / Other S	Services		
CS3090 Relo	ocation of Ausgrid Poles to enable Station north piling	30	0	27-Apr-16 A	26-May-16 A	100%								Relo	cation of Ausg	rid Poles to er	able Station no	orth piling		
CS1040 Relo	ocation of Ausgrid Poles on Station Street	30	0	27-Apr-16 A	24-Jun-16 A	100%								F	Relocation of	Ausgrid Poles	on Station Stree	et		
Permanent Way		96	0	17-Jul-15 A	2-Dec-15 A	100%														
CS1780 Cou	urt injunction decision(By TPO)	0	0	17-Jul-15 A	13-Nov-15 A	100%						Court injunc	tion decision	n(By TPQ)						
CS1000 Com	mpletion of Track Removal from concourse	15	0	16-Nov-15 A	2-Dec-15 A	100%						Completio	on of Track	Removal fi	om concours	ie				
Main Works		463	45	19-Oct-15 A	1-Sep-17	90.38%	50													
Interface Contra	actor works (Principal's Representative, Sydney Trains,others & External Authorities)	463	45	19-Oct-15 A	1-Sep-17	90.38%	9			-11				ii				1 1		
General		0	0	19-Oct-15 A	19-Oct-15 A	0%														
RG1000 Rec	ceive existing DSS drawings to enable Site Investigations to commence	0	0		19-Oct-15 A	100%					Rece	eiv e existing	g DSS drav	vings to ena	ble Site Inves	tigations to co	mmence			
CCTV System &	Equipment	33	8	15-Jun-17 A	31-Jul-17	76.92%	24													
RC1020 SSE	ER Room CCTV Rack / Marshalling Box (INDRA)	5	0	15-Jun-17 A	22-Jun-17 A	100%				<u> </u>										CTV Rack / N
RC1100 Stati	tion Platform - CCTV camera Installation & Commissioning (Indra - ST/TfNSW)	5	5	20-Jul-17	27-Jul-17	0%	25												T: : I	atform - CCT
RC1090 Stati	tion Concourse CCTV camera Installation & Commissioning (Indra - ST/TfNSW)	5	5	25-Jul-17	31-Jul-17	0%	24												Station C	oncourse CC
Platform & Conc	course Indicators (PI/ CI aka SPI)	14	10	19-Jun-17 A	7-Aug-17	25.93%	27													
RI1000 Platf	fform Indicator Installation	5	0	19-Jun-17 A	28-Jun-17 A	100%												, - F		ator Installatio
RI1010 Con	ncourse Indicator Installation (Downer - LoR)	5	5	25-Jul-17	31-Jul-17	0%	27			_ii								1 1		se Indicator Ir
RI1020 Platf	form/ Concourse Indicator Testing & Commissioning (ST/TfNSW)	5	5	1-Aug-17	7-Aug-17	0%	27												Platform	/ Concourse
Public Address (12	12	21-Jul-17	7-Aug-17	0%	22													
	tion Platform - Configuration of head equipment (Stagetec/Downer - LoR)	5	5	21-Jul-17	28-Jul-17	0%	24												Station Pi	atform + Confi
	tion Concourse - Configuration of head equipment (Stagetec/Downer - LoR)	5	5	25-Jul-17	31-Jul-17	0%	7											1		oncourse - C
RE1070 Stati	tion Concourse/ Platform - testing & Commissioning (ST/TfNSW)	5	5	1-Aug-17	7-Aug-17	0%	22						.					<u> </u>	[] Station (Cohcourse/P
	ing System (VMS)	10	10	25-Jul-17	7-Aug-17	0%	27												E Station C	oncourse - Ir
	tion Concourse - Installation of VMS equipment (Downer - LoR)	5	5	25-Jul-17	31-Jul-17	0%	27												1 1	Concourse t
	tion Concourse - testing & Commissioning (ST/ TfNSW)	5	5	1-Aug-17	7-Aug-17	0%	27												ji Station (Jojicogi se Ti
Precise Clocks RE1100 Stati	tion Dieterm. Installation of proging clocks	34	10 0	12-Jun-17 A	26-Jul-17	70.59% 100%	12											□ S	tation Platforn	n - Installation
	tion Platform - Installation of precise clocks	5	5	12-Jun-17 A 26-Jun-17 A	22-Jun-17 A 19-Jul-17		12							} 						ncourse - Ins
	tion Concourse - Installation of precise clocks (Downer - LoR)	5	5		26-Jul-17	0%	12													oncourse/ Pla
	tion Concourse/ Platform - testing & Commissioning (ST/TfNSW)	13	23	20-Jul-17	26-Jul-17 2-Aug-17	0%	7													
	ry Induction Loop System (AFILS) tallation & Test Head-end equipment (Downer/Stagetec)	5	11	30-Jun-17 A 30-Jun-17 A	17-Jul-17	0%	14												Inotollation	& Test Head-
	t & Commission AFILS to Platforms & Booking window (Stagetec - ST)	5	5	27-Jul-17	2-Aug-17	0%	7													ommission A
Help Points	The continuous in the to Figure in a booking window (stagetor of)	18	18	10-Jul-17	2-Aug-17	0%	20							}						
_ •	Racks installation/cable termination and testing (Indra - Downer)	4	4	10-Jul-17	13-Jul-17	0%	23											1	PA Racks in	nstallation/cab
	ucture & Mount for help points (Indra - LoR)	4	4	18-Jul-17	21-Jul-17	0%	20												Structure 8	& Mount for he
	iallation & Testing of Head-end equipment (Indra - TfNSW)	2	2	24-Jul-17	25-Jul-17	0%	20												Installation	n & Testing of
	p Point units- Installation & Testing (Indra - ST/TfNSW)	3	3	26-Jul-17	28-Jul-17	0%	20													t units- Instal
	p Point units- Commissioning (Indra - ST/TfNSW)	3	3	31-Jul-17	2-Aug-17	0%	20	·						}					Help Poi	nt units- Com
	n Wireless Personal Duress Alarms	10	10	13-Jul-17	26-Jul-17	0%	12													
RC1080 Alloc	cate/Connect a dial up phone line in IAS panel (Chubb/Downer)	5	5	13-Jul-17	19-Jul-17	0%	12												1 1	onnect a dial u
RC1110 Test	t & Commission system (Alarmzone/ST/TfNSW)	5	5	20-Jul-17	26-Jul-17	0%	12												Test & Co	mmission sys
Electronic Ticket	iting System (ETS - FLR)	57	10	30-May-17 A	25-Aug-17	82.3%	8													
RC1120 Insta	tallation of Ticketing and comms racks in SSER & Building	5	0	30-May-17 A	21-Jun-17 A	100%												in In	: : :	icketing and c
CS5320 Insta	tall ticketing & Opal Gates & readers (TaC/TfNSW)	5	5	12-Aug-17	18-Aug-17	0%	10													ticketing & Op
RC1130 Insta	tall FLR reader posts/termination of Cables/interconnections (Downer/LoR)	5	5	14-Aug-17	18-Aug-17	0%	8												[] Install	FLR reader p
RT1000 Test	t & Commission OPAL readers (TaC/ST/TfNSW)	5	5	21-Aug-17	25-Aug-17	0%	8												□ Test	& Commissio
Electronic Ticket	ting System (ETS - Gate Arrays)	52	19	30-May-17 A	18-Aug-17	63.11%	18													
RC1140 Insta	tallation of Ticketing and comms racks in SSER & Building	5	0	30-May-17 A	22-Jun-17 A	100%												In	stallation of T	1 T
RC1150 Term	mination of cables /installation of Gate arrays (Downer/LoR)	5	5	25-Jul-17	31-Jul-17	0%	27												i i	ion of cables
RT1010 EGC	OP Installation (TaC/ST/TfNSW)	5	5	14-Aug-17	18-Aug-17	0%	18												[EGOP	Installation
Lift Phones		8	8	22-Aug-17	1-Sep-17	0%	9		1											
RP1010 Insta	tallation/termination of head set (Liftronics/LoR)	5	5	22-Aug-17	29-Aug-17	0%	9												□ Insta	allation/termin
RP1040 Test	t & Commission phone, Supply telephone numbers (Liftronic /TfNSW)	3	3	29-Aug-17	1-Sep-17	0%	9												[Test	& Commiss
Public Payphone		5	5	7-Aug-17	11-Aug-17	0%	18												1_1	
RP1030 Test	t & Commission Payphone/s (Telstra/ST)	5	5	7-Aug-17	11-Aug-17	0%	18												[Fest &	Commission F
LAN/Phone/Offic	• • •	10	10	25-Jul-17	7-Aug-17	0%	17													
RN1000 Con	nfiguration of PABX and VCS consoles/installation of phone handset (ST/TfNSW)	5	5	25-Jul-17	31-Jul-17	0%	17		1				l l	ill.					U Configura	ation of PABX Commission p

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline Layout : WTIP - TPD Submission Full Program layou

ctivity ID	Activity Name	Original	Remaining	Start	Finish	Duration %		2015	2016 2017 20
		Duration	Duration			Complete	Float		D Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan
Electronic	Access Control	5	5	11-Jul-17	17-Jul-17	0%	37		
RT1020	Test & Commission Access control incl(config servers,user access,card issue etc) (Chubb/ ST)	5	5	11-Jul-17	17-Jul-17	0%	37		☐ Test & Commission Acces
Vending Ma	achines /Retail	10	10	25-Jul-17	7-Aug-17	0%	27		
RT1030	Installation of wireless comms interface (ST/Downer)	5	5	25-Jul-17	31-Jul-17	0%	27		Installation of wireless co
RT1050	Test and Commission machine/s (ST/TfNSW)	5	5	1-Aug-17	7-Aug-17	0%	27		1 Test and Commission r
	ervice Machine (SSM)	10	10	18-Aug-17	1-Sep-17	0%	9		
RT1040	Installation of SSM (Downer/LoR)	5	5	18-Aug-17	25-Aug-17	0%	9		☐ Installation of SSM(
RT1060	Test and Commission SSM (TaC/ST/TfNSW)	5	5	25-Aug-17	1-Sep-17	0%	9		☐ Test and Commissi
Station - Li		397	5	22-Jan-16 A	29-Aug-17	98.74%	12	!-!	
RL1020	Station/Bridge Lift - Produce shop drawings by Liftronic	20	0	22-Jan-16 A	1-Mar-16 A	100%			Station/Bridge Lift - Produce shop drawings by Liftrohic
RL1030	Station/Bridge Lift - Approval of shop drawings by Client/Aurecon	10	0	2-Mar-16 A	29-Mar-16 A	100%			Station/Bridge Lift - Approval of shop drawings by Client/Aurecon
RL1040	Station/Bridge Lift - Manufacture & Delivery of Lifts by Liftronic	115	0	20-Jun-16 A	24-Feb-17 A	100%			Station/Bridge Lift - Manufacture & Delivery of I
RL1010	Commissioning of Lifts -Ped Footbridge	5	5	22-Aug-17	29-Aug-17	0%	12		Commissioning of L
RL1000	Commissioning of Station Lifts	5	5	22-Aug-17	29-Aug-17	0%	12		Commissioning of S
Earthwork	s (common in all areas)	105	0	4-Apr-16 A	21-Oct-16 A	100%			
CS1050	Clearing and Grubbing	2	0	4-Apr-16 A	11-Apr-16 A	100%			Clearing and Grubbing
CS1080	Earthworks Treatment to Wickham Station Area (Piling Mat)	5	0	12-Apr-16 A	22-Apr-16 A	100%			Earthworks Treatment to Wickham Station Area (Piling Mat)
DE-0025-1 ⁻	Additional Sigs & comms relocation works	15	0	16-Apr-16 A	18-May-16 A	100%			Additional Sigs & comms relocation works
CS1090	Structural / General Fill to Wickham Station Area	10	0	12-Aug-16 A	21-Oct-16 A	100%			Structural / General Fill to Wickham Station Area
CSR		12	0	28-Feb-17 A	12-Apr-17 A	100%			
CS1250	Installation of new CSR / Signalling Route	12	0	28-Feb-17 A	12-Apr-17 A	100%			Installation of new CSR / Signalling Rout
HV Works		252	0	29-Feb-16 A	28-Feb-17 A	100%			
CS3060	HV Route investigation	10	0	29-Feb-16 A	10-Mar-16 A	100%			HV Rpute investigation
CP2850x	HV-CSR/cable Installation from UGOH Pole 16 to Padmount (HV ULX)	13	0	12-Mar-16 A	30-Mar-16 A	100%			HV-CSR/cable Installation from UGOH Pole 16 to Padmount (HV ULX)
CP2890x	Remove Sydney Trains Aerial HV	3	0	30-Apr-16 A	30-Apr-16 A	100%			Remove Sydney Trains Aerial HV
CS5150	Remove existing unused underground-GST Transition & Install Conduit Route	10	0	30-Jan-17 A	21-Feb-17 A	100%			Remove existing unused underground-GST Tra
CS2800	Install padmount	6	0	21-Feb-17 A	28-Feb-17 A	100%			Install padmount
C P2870	Energize padmount & Cut over	2	0	27-Feb-17 A	28-Feb-17 A	100%			Energize padmount & Cut over
Pedestrian		363	46	26-Apr-16 A	29-Aug-17	87.33%	9		Linergize padrindurit & Out over
OP1030	Earthworks, pile pad establishment, Excavate to base depth (-800)	10	0	25-Aug-16 A	24-Nov-16 A	100%		 - -	Earthwdrks, pile pad establishment, Excavate to base depth (
OP1040	Piling North/South abutment + Stairwell supports (12x900dia + 8x600dia)	15	0	16-Dec-16 A	3-Feb-17 A	100%			Piling North/South abutment + Stairwell supports (1
CS3150	Watermain removal / relocation- Pedstrian Footbridge	8	0	1-Apr-17 A	11-Apr-17 A	100%			Watermain removal / relocation- Pedstria
OP1050	Construct pile cap / base slabs north/South sides (form, reo, pour, strike) & backfill	10	0	28-Feb-17 A	13-Apr-17 A	100%			
OP1030		4	0	15-May-17 A	18-May-17 A	100%			Construct pile cap / base slabs north/So
	Erect tilt up precast lift shft segments, tie & secure-North								□ 1 Ered tilt up precast lift shft segmen
OP1060	Construct abutment column & headstock supports	15	0	18-Apr-17 A	29-May-17 A	100%			Construct abutment column & hea
OP1130	Construct Stair Pile caps & Columns	15	0	18-Apr-17 A	30-May-17 A	100%			
OP1100	Erect tilt up precast lift shft segments, tie & secure-South	4	0	31-May-17 A	2-Jun-17 A	100%			Elect tilt up precast lift shift segm
OP1080	Install precast stair panels	6	0	2-Jun-17 A	9-Jun-17 A	100%			Install precast stair;panels High Level services
OP1140	High Level services	15	5	14-Jun-17 A	7-Jul-17	66.67%	24	!-!	<u> </u>
OP1090	Complete handrails, floors / topping, lift lobby fitout cladding, anti-throw screens	9	6	14-Jun-17 A	8-Jul-17	33.33%	9		Complete handrails; floors /
OP1110	Supply & Install of Pedestrian Bridge Lift (by Others)	40	40	10-Jul-17	29-Aug-17	0%	9		Supply & Install of F
Permits & /		0	0	26-Apr-16 A	26-Apr-16 A	0%			
OP1120	Land Acquisition OR License agreement (NCC to transfer ownership to Railcorp)	0	0		26-Apr-16 A	100%			Land Adquisition OR License agreement (NCC to transfer ownership to Railcorp)
Administra	tion Buildings	311	25	26-May-16 A	- 5	92.12%	29	!.!	
Services W		41	0	26-Jul-16 A	14-Oct-16 A	100%			
CS1110	Inground Services 3x 900MM stormwater lines	9	0	26-Jul-16 A	22-Aug-16 A				Inground Services - 3x 900MM stormwater lines
	Inground Services Hydraulic/LV services	20	0	23-Aug-16 A	14-Oct-16 A	100%			miground pervices:- Trythauric/Ly services
Structural		197	0	26-May-16 A	20-Mar-17 A	100%			FRP Bridgirlg slåb
	FRP Bridging slab	13	0	24-Jun-16 A	30-Jul-16 A	100%			
CS1100	Piling and pad Footings-Station South	13	0	26-May-16 A	12-Aug-16 A	100%			Piling and pad Footings Station South
CS1100A	Piling and pad Footings after HV/LV removal - Station North	8	0	2-Jun-16 A	31-Aug-16 A				Pilling and pad Footings after HV/LV removal - Station North
CS1190	FRP Verticals (Lift Shafts and Columns) - G.F. to L1	11	0	31-Aug-16 A	12-Sep-16 A	100%			FRP Verticals (Lift Shafts and Columns) - G.F. to L1
CS3130	FRP Retaining wall	12	0	22-Aug-16 A	27-Sep-16 A	100%			FRP Retaining wall
CS1150	FRP Ground Slab section 1	9	0	17-Oct-16 A	28-Oct-16 A	100%			FRP Ground Slab section 1
CS1200	Spaceframe Pedstals- 6 Nos	15	0	5-Oct-16 A	31-Oct-16 A	100%			Spaceframe Pedstals- 6 Nos
CS1210	Precast Walls & lift cores	5	0	7-Nov-16 A	22-Nov-16 A	100%			Precast Walls & lift cores
CS3230	Spaceframe Pedstals- FRP Works	7	0	28-Oct-16 A	25-Nov-16 A	100%			Spaceframe Pedstals- FRP Works
CS1220	FRP - Level 1 Slab	17	0	14-Nov-16 A	3-Dec-16 A	100%			FRP - Level 1 Slab
CS3280	Level 1 Slab - Curing & Post tensioning	4	0	4-Dec-16 A	7-Dec-16 A	100%			Level 1 Slab - Curing & Post tensioning
CS1260	FRP Verticals (Lift Shafts and Columns) - Level 1 to 2	9	0	7-Dec-16 A	17-Dec-16 A	100%			FRP Verticals (Lift Shafts and Columns) Level 1 to 2
CS1280	Level 2 Roof & Parapet - FRP	15	0	9-Dec-16 A	21-Dec-16 A	100%			Level 2 Roof & Parapet - FRP
CS2830	Curing of RC slab & Post tensioning	5	0	22-Dec-16 A	5-Jan-17 A	100%			Curing of RC slab & Post tensioning
CS4140	Stripped out- Ground floor	4	0	6-Jan-17 A	11-Jan-17 A	100%			\$tripped out- Ground floor
CS4150	Stripped out- Level 1	5	0	11-Jan-17 A	20-Jan-17 A	100%			Stripped out-Level 1
		1 -		1					

Page 25 of 34

Critical Remainin... Actual Work Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

Activity ID Ac	ctivity Name	Original	Remaining	Start	Finish	Duration %	Total			2	015				2	016						2017			20
,	, ·	Duration	Duration			Complete	Float	D.	Ian F M Apr I			S Oct N D	Jan F	Mar Apr			S Oct	N D	Jan	F Mar	Apr M	Jun Jul	A S C	Oct N	D Ja
CS1300 FF	RP Hobs & Plinths to roof slab penetrations	6	0	17-Jan-17 A	18-Feb-17 A	100%												-						penetratio	
CS1270 Le	evel 1 to 2 FRP Stairs	7	0	19-Jan-17 A	18-Feb-17 A	100%											-					FRP Stai			
CS1320 FF	RP Lift shaft roof slab	7	0	6-Feb-17 A	20-Feb-17 A	100%												_	<u> </u>	FRP	Liftsha	t roof sla			
CS1330 In:	stall waterproofing membrane to roof slab	7	0	27-Feb-17 A	20-Mar-17 A	100%												-		-	nstall w	terproofi	g membra	ane to roof	f slab
Fitout		152	27	16-Jan-17 A	4-Aug-17	82.24%	32								ļļ		ļļ		4						
Ground Floor		149	24	16-Jan-17 A	1-Aug-17	83.89%	29													Cailings	- Soffit	nsulation	8. Fito		
	eilings - Soffit Insulation & Fire	6	0	19-Jan-17 A	30-Jan-17 A	100%																	& Sealing	nanole:	
	recast propping removal & Sealing panels	4	0	16-Jan-17 A	31-Jan-17 A	100%														Blockwo	1	g reinovą :	& Seaming	parieis	
	lockworks	14	0	17-Jan-17 A	31-Jan-17 A	100%														1		ough in 8	ducts (HV	(40)	
	lechanical - rough in & ducts (HVAC)	15	0	31-Jan-17 A	10-Feb-17 A	100%									ļļ		<u> </u>		1	1	1		1 1	er, stormy	water)
	ydraulic - high level (water, sewer, stormwater)	15	0	25-Jan-17 A	15-Feb-17 A	100%														- : -	- 1	` ';		cable trays	
	lectrical - high level rough in & cable trays (LV, Comms, Security, Fire)	15	0	7-Feb-17 A	22-Feb-17 A	100%														- 1			- 1	aming incl	
	eilings & Partitions - Stud Framing incl stand door frames	5	0	24-Feb-17 A	10-Mar-17 A	100%														7	- 7	- 1	i l	rough-in, w	
	ydraulic - low level (in-wall rough-in, water, sewer, stormwater)	5	0	28-Feb-17 A	17-Mar-17 A	100%																		n LV, Comr	
	lectrical - low level (rough-in LV, Comms, Security, Fire)	10	0	22-Feb-17 A	17-Mar-17 A	100%									ļ -						4				
	ift Installation by Others	45	0	27-Feb-17 A	30-Mar-17 A	100%													\rightarrow	-	- :	allati <mark>on b</mark> ý			
	completion of Lift Installation (by others)	0	0	10 1 17 1	31-Mar-17 A	100%														♦ T				on (by other - sheet & s	
	eilings & Partitions - sheet & set walls	10	0	18-Apr-17 A	8-May-17 A	100%																r	i	SIDEL O.S	∍er wa
	xternal Glazing	6	0	1-May-17 A	8-May-17 A	100%							1									xternal G		- sheet & s	201
	eilings & Partitions - sheet & set ceilings	10	0	26-Apr-17 A	10-May-17 A	100%					ļļ		1		ļ	4	<u> </u>		44					-sneetas ng (wetare	
	iling - waterproofing (wet areas)	7	0	10-May-17 A	18-May-17 A	100%																			
	lectrical - electrical fittings (lights, switches, GPO's, controls, data outlets etc)	10	0	16-May-17 A	15-Jun-17 A	100%														1 1	-			trical fitting nms, Fire S	
	lectical & Comms, Fire Security, CCTV	10	0	17-May-17 A	15-Jun-17 A	100%															- -	_ ;	cai & Com 1 - Wall tilin	11 1	Jecuri
	iling - wall tiling	10	0	29-May-17 A	21-Jun-17 A	100%																_ (1	ls & floor ti	ilina
	iling - screeds & floor tiling	10	0	24-May-17 A	21-Jun-17 A	100%		ļ			ļļ				ļļ	4	i		44			_		Doors & fi	т
	oors - Hang Doors & fit hardware	5	0	23-May-17 A	21-Jun-17 A	100%														1	- i -	- 1	s - mang nting - inte	1 1	i naro
	ainting - internal	5	0	22-Jun-17 A	29-Jun-17 A	100%														1		:	Ÿ.	1 1	vturoo.
	ydraulics - sanitary fixtures (WC pans, sinks, taps, hot water units, showers etc)	8	0	22-Jun-17 A	30-Jun-17 A	100%																7 7		sanitary fix ntractor (S	
	tterface Contractor (SPI, VMS, PA, Security, CCTV, Help Points, DVA, EWIS) Obsolete activity	10	0	22-Jun-17 A	30-Jun-17 A	100%														1			echanical	1 1	,FI, VI
	lechanical - Fit-off	10	6	28-Jun-17 A	8-Jul-17	40%	11								ļļ	ļi	<u> </u>					T :		ommission	
	ervices Commissioning	5	5	4-Jul-17	10-Jul-17	0%	11															- 1	i	i i	T .
	loor Finishes - Carpet & Vinyl	10	10	1-Jul-17	13-Jul-17	0%	18																1	hes - Carp	
	ixtures, Fittings & Equipment - (grab rails, mirrors, soap dispense, TRH, PTD, swr curtains etc)	10	10	1-Jul-17	13-Jul-17	0%	18															1	i	ittings & E	
	oinery - Customer Service desk	10	10	5-Jul-17	18-Jul-17	0%	18																1 1	Customer	
	rea / Room Final Clean	3	3	26-Jul-17	28-Jul-17	0%	12				ļ				ļļ	4	i							oom Final - Wayfind	
CS3760 Si	ignage - Wayfinding, Statutory, Door signage	5	5	26-Jul-17	1-Aug-17	0%	20																Signage :	- wayrino	ing, S
Level 1		146	26	18-Jan-17 A	3-Aug-17	82.19%	28												1.	Proceet r	robnino	removal	& Sealing	nanale	
	recast propping removal & Sealing panels	4	0	18-Jan-17 A	23-Jan-17 A	100%														1 1	4.	nsulation		Jarieis	
	reilings - Soffit Insulation & Fire	6	0	18-Jan-17 A	31-Jan-17 A	100%														1	1	framing			
	xternal Wall framing	12	0	1-Feb-17 A	22-Feb-17 A	100%					ļļ		i		ļ 				-	_ ,		- 1	& ducts (I	HVACV-	
	lechanical - rough in & ducts (HVAC)	20	0	8-Feb-17 A	24-Feb-17 A	100%														_, ,	1	F :	! '	wer, storm	mwate
	ydraulic - high level (water, sewer, stormwater)	20	0	21-Feb-17 A	28-Feb-17 A	100%														7 1	i	-		cable tray	
	lectrical - high level rough in & cable trays (LV, Comms, Security, Fire)	20	0	21-Feb-17 A	1-Mar-17 A	100%																		aming incl	
	eilings & Partitions - Stud Framing incl stand door frames	10	0	24-Feb-17 A	8-Mar-17 A	100%															1		1	ough-in, w	
	ydraulic - low level (in-wall rough-in, water, sewer, stormwater)	15	0	28-Feb-17 A	17-Mar-17 A	100%										+								in LV, Com	
	lectrical - low level (rough-in LV, Comms, Security, Fire)	15	0	28-Feb-17 A	24-Mar-17 A	100%																	Vall beam	1 1	
	Istall Operable Wall beam	4	0	23-Mar-17 A	29-Mar-17 A	100%														i l	i		- Install F	1 1	
	oors & Frames - Install Frames	10	0	27-Mar-17 A	31-Mar-17 A	100%													1 1,	1 4			ing (Exter		
	açade - Framing (External)	20	0	7-Feb-17 A	12-Apr-17 A	100%														1 1			1	sheet & se	et well
	eilings & Partitions - sheet & set walls	15	0	17-Mar-17 A	27-Apr-17 A	100%					ļ					+	<u> </u>		44-					sheet & se	
	eilings & Partitions - sheet & set ceilings(wet Areas)	13	0	5-Apr-17 A	27-Apr-17 A	100%															!	ernal Gla		HOEL OLDE	, Genil
	xternal Glazing	12	0	10-Apr-17 A	28-Apr-17 A	100%														1	i	i	- ;	i installatio	on
	eilings - Ceiling Grid installation	20	0	26-Apr-17 A	10-May-17 A	100%																F :	ass partition		511
	Iteraal Glass partitions	10	0	26-Apr-17 A	11-May-17 A	100%															1	1	i	s, Fire Sec	curity
	lectical & Comms, Fire Security, CCTV	15	0	1-May-17 A	26-May-17 A	100%		ķ.,			ļ				ļ	. 			44	∤⊥			- Cladding	: :	, anty,
	açade - Cladding	20	0	25-Mar-17 A	30-May-17 A	100%																r :	ical - Fit-c		
	lechanical - Fit-off	15	0	17-May-17 A	1-Jun-17 A	100%														1	1	i i	Grid tiling	i i	
	eiling Grid tiling	5	0	23-May-17 A	5-Jun-17 A	100%																- 1	- wall tiling		
	iling - wall tiling	20	0	15-May-17 A	14-Jun-17 A	100%																			orond.
	iling - Waterproofing, screeds & floor tiling	18	0	1-May-17 A	16-Jun-17 A	100%					ļļ					4	ļļ		44-			i iling	- vvaterpr	roofing, sc nal	reeas
	ainting - internal	23	0	1-May-17 A	16-Jun-17 A	100%																	1 1	1 1	
	lectrical - electrical fittings (lights, switches, GPO's, controls, data outlets etc)	15	0	18-May-17 A	19-Jun-17 A	100%																	i i	ctrical fittin	- -
CS5350 Do	oors - Hang Doors & fit hardware	10	0	29-May-17 A	20-Jun-17 A	100%					<u> </u>				i	<u></u> [<u>i</u>		Doo	s - Ḥang l	Doors & fit	t nard

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Saseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

ctivity ID	Activity Name	Original	Remaining	Ctort	Finish	Duration 9/	Total		2015					2016					2017	ia
ctivity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Float	D Jan F M Apr M	2015 J Jul	I A S	Oct N D J	lan F Ma	r Apr	2016 VI Jun Ju	I A S	Oct N	D Jan F	Mar Apr M	Jun Jul	A S Oct N D Ja
CS4040	Floor Finishes - Carpet & Vinyl	15	0	2-Jun-17 A	23-Jun-17 A	100%							1						Floor	Finishes - Carpet & Vin
CS4110	Interface Contractor (SPI, VMS, PA, Security, CCTV, Help Points, DVA, EWIS)	10	0	16-Jun-17 A	29-Jun-17 A	100%														face Contractor (SPI, V
CS4090	Install Operable Wall Panels	3	0	29-Jun-17 A	30-Jun-17 A	100%									1					all Operable Wall Panels
CS3990	Joinery - Toilet Partitions	10	0	19-Jun-17 A	30-Jun-17 A	100%														ery - Toilet Partitions
CS4000	Hydraulics - sanitary fixtures (WC pans, sinks, taps, hot water units, showers etc)	10	0	19-Jun-17 A	30-Jun-17 A	100%													7 7	raulics - sanitary fixtures
CS4060	Joinery - Cabinetry, Lockers, Seating	10	4	24-Jun-17 A	6-Jul-17	60%	22												T :	nery - Cabinetry, Locker
CS4100	Services Commissioning	5	4	30-Jun-17 A	6-Jul-17	20%	22		1						1 1	<u> </u>			F 1	vices Commissioning
CS4050	Fixtures, Fittings & Equipment - (grab rails, mirrors, soap dispense, TRH, PTD, swr curtains etc)	10	9	24-Jun-17 A	12-Jul-17	10%	12												_ T	tures, Fittings & Equipm
CS4120	Area / Room Final Clean	5	5	19-Jul-17	25-Jul-17	0%	12												- 1	Area / Room Final Clean
CS4070	Signage - Wayfinding, Statutory, Door signage	7	7	26-Jul-17	3-Aug-17	0%	28												ı	Signage - Wayfinding,
	min Roof Works	130	27	15-Feb-17 A	4-Aug-17	79.15%	32													
	Install rainwater outlets to roof slab	4	0	15-Feb-17 A	18-Feb-17 A	100%		ļ. 	ļļ	J	-					ļļļ		nstall rainwat		
CS1390	Install structural steel for Lift Shaft roof / slab	5	0	23-Feb-17 A	2-Mar-17 A	100%											• •			for Lift Shaft roof / slab
CS4160	Install roof light domes	5	0	27-Mar-17 A	30-Mar-17 A	100%												Install ro	F 1	1 1 1 1
CS4200	Hydraulic - install hot water unit & fit	7	0	1-Apr-17 A	10-Apr-17 A	100%														Il hot water unit & fit
CS4180	Roof mounted mechanical plant / ductwork	10	0	5-Apr-17 A	8-May-17 A	100%												1 1		ed mechanical plant / du
CS1450	Install parapet cladding modules	12	0	10-May-17 A	29-May-17 A	100%			ļļ		-					ļ <u>i</u> ļ			Ins <mark>tall par</mark>	rapet cladding modules
CS3410	Aluminium louvres to Lift Shaft	4	4	1-Jul-17	6-Jul-17	0%	27												F 1	minium louvies to Lift Sh
CS4190	Mechanical - fit Mechanical switchboard in Switch Room	7	7	1-Jul-17	10-Jul-17	0%	24												F (echanical - fit Mechanica
CS4130	Steel louvered doors to Mech switch room	4	4	6-Jul-17	11-Jul-17	0%	27												- 1	eel louvered doors to Me
CS4210	Area / Room Final Clean	3	3	26-Jul-17	28-Jul-17	0%	12													Area / Room Final Clear
	Install arch feature lighting onto Roof slab	5	5	29-Jul-17	4-Aug-17	0%	32		ļļ		-					ļļļ				Install arch feature ligh
	& Northpod	325	44	2-Jun-16 A	25-Aug-17	86.46%	21													
Services W		10	0	29-Aug-16 A	14-Oct-16 A	100%									1	Lii				
	Inground Services.	10	0	29-Aug-16 A	14-Oct-16 A	100%										Ingrou	nd Services.			
Structural		225	0	2-Jun-16 A	11-Apr-17 A	100%														
CS1120	Piling and pad Footings-Concourse (Finishing in parallel with Station North)	5	0	2-Jun-16 A	12-Aug-16 A	100%			·}	·					Piling	and pad f	ootings+Con pod ground s	ourse (¡Finis labs	hing in par	allel with Station North)
CS3170	North pod ground slabs	8	0	5-Oct-16 A	14-Oct-16 A	100%									11,	I= ! !	eframe Ped	1 1 1		
CS3140	Spaceframe Pedstals- 4 Nos	10	0	29-Sep-16 A	26-Oct-16 A	100% 100%										1 1	North pod b	1 1		
CS3180	North pod blockworks		0	1-Nov-16 A	2-Dec-16 A												1 7 1	1 1 1		
CS1410	FRP North pod roof	14	0	10-Dec-16 A	20-Jan-17 A	100%											F	RP North pod anter boxes &	root ; Trenches	
CS3160	Planter boxes & Trenches	16	-	8-Nov-16 A	8-Feb-17 A	100%		├- 	·}	·										·
CS1460	Stripping formworks		0	31-Jan-17 A	8-Feb-17 A	100%												Stripping form		
CS1170	FRP Ground Slab section 2 & Light rail slab	14	0	9-Feb-17 A	9-Mar-17 A	100%									+ +					ction 2 & Light rail slab
CS1380	Lightrail Platform Canopy Installation	5	0	20-Mar-17 A	29-Mar-17 A	100%											+	Lightrail	Platform C	Canopy Installation ab - Tie in Stewart Av. Fo
CS5290	FRP Ground Slab - Tie in Stewart Av. Footpath	8	0	1-Apr-17 A	11-Apr-17 A	100%													STOUTIG GIG	i i i i i
Spacefram CS1310	Structural SteelSpace frame- Stage A	70 20	0	3-Nov-16 A 3-Nov-16 A	10-Mar-17 A 17-Nov-16 A	100% 100%			· }	+								SteelSpace I		
DE-0025	Structural SteelSpace frame - Lift 2 & 3	15	0	21-Nov-16 A	22-Dec-16 A	100%												ral SteelSpa		~
DE-0025	Structural SteelSpace frame - Lift 4	10	0	21-Nov-16 A	12-Jan-17 A	100%										lit		ural SteelSp		
	Cladding & Rainwater box-gutters	10	0	12-Jan-17 A	8-Mar-17 A	100%											T		1	
	Install roof safety system (anchors & static lines)	10	0	8-Feb-17 A	10-Mar-17 A	100%												Cladding &		1 1 1
Fitout	moral roof outery system (anothers a static mics)	150	44	6-Feb-17 A	25-Aug-17	70.57%	15		 									ınıstalı roof	salety Sys	tem (anchors & static lin
	R(Shared Service Room)	130	8	13-Feb-17 A	1-Aug-17	93.82%	20													
	Fire sealing	4	0	13-Feb-17 A	18-Feb-17 A	100%												Fire sealing		
	Ceilings - Soffit Insulation	3	0	14-Feb-17 A	21-Feb-17 A	100%												Ceilings - Sof	fit Insulatio	on l
CS1530	Mechanical - rough in & ducts (HVAC)	10	0	27-Feb-17 A	8-Mar-17 A	100%														a & ducts (HVAC)
CS3460	Hydraulic - high level (water, sewer, stormwater)	5	0	3-Mar-17 A	11-Mar-17 A	100%			† 				tt-			<u> </u>		Hydraulic -	high level	(water, sewer, stormwa
CS4220	Electrical - high level rough in & cable trays (LV, Comms, Security, Fire)	10	0	28-Feb-17 A	13-Mar-17 A	100%												■ Electrical -	high level	rough in & cable trays (
CS4230	Ceilings & Partitions - Ceiling Grids	10	0	8-Mar-17 A	17-Mar-17 A	100%												Ceilings &	Partitions	- Ceiling Grids
CS4250	Ceilings & Partitions - Ceiling Grids	5	0	13-Mar-17 A	17-Mar-17 A	100%												Ceilings &	Partitions	- Ceiling Grids
CS4240	Electrical - low level (rough-in LV, Comms, Security, Fire)	10	0	21-Mar-17 A	22-Mar-17 A	100%														l (rough-in LV, Comms,
CS4300	Floor Finishes - Carpet & Vinyl	6	0	30-Mar-17 A	31-Mar-17 A	100%			† <u> </u>	1			+					Floor Fi	nishes - C	arpet & Vinyl
CS4340	Painting-	10	0	27-Mar-17 A	11-Apr-17 A	100%												Paintir		
CS4260	Electrical - cable hauling to equipment (LV,Comms, Data etc)	10	0	13-Mar-17 A	19-Apr-17 A	100%												Elect	rical - cabl	le hauling to equipment
CS4290	Fire Detection - MASD Fire Det COMMS room + fire Ind Panel	10	0	21-Mar-17 A	26-Apr-17 A	100%												Fire	Detection	- MASD Fire Det COM
CS4280	Electrical - electrical fittings (lights, switches, GPO's, controls, data outlets etc)	5	0	20-Apr-17 A	28-Apr-17 A	100%												1 1		ectrical fittings (lights, sw
CS4270	Electrical - connection, termination and test to equipment (cable in, equipment in)	10	0	20-Apr-17 A	5-May-17 A	100%			·	·						} 				onnection, termination a
CS4320	Mechanical - HVAC functional	5	0	8-May-17 A	11-May-17 A	100%												1 1		- HVAC functional
CS4310	Doors & Frames - Hang Doors & fit hardware	5	0	24-May-17 A	26-May-17 A	100%												1 1 1	i	Frames - Hang Doors &
35-010	8 Weeks power isolation notice issued and isolation confirmed by Sydney Trains	40	0	13-Apr-17 A	14-Jun-17 A	100%														ks power isolation notice
CS5360				10 / W 11 /A		10070		and the second of the second	. 1		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	- i	1 1	· 1	1 1	1 1 1	1 1			- () i i []
		10	0	12-May-17 A	15-Jun-17 A	100%						1 1		1 1					Electric	cal - main switchboard i
CS5360 CS4330 CS2750	Electrical - main switchboard install, comms racks, security racks & assoc equipment Power On	10	0	12-May-17 A 15-Jun-17 A	15-Jun-17 A 16-Jun-17 A	100% 100%													Electric	

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Saseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

ity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total		2015		2016 2017
		Duration	Duration			Complete	Float	D Jan F M Apr	M J Jul	A S Oct N	D Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D
CS4370	Area / Room Final Clean	3	3	21-Jul-17	25-Jul-17	0%	15				I Area / Room Final C
CS4350	Signage - Wayfinding, Statutory, Door signage	5	5	26-Jul-17	1-Aug-17	0%	20				□ Signage - Wayfindir
FAT's, ATM	M, Retail 1 & 2, BIN, Police & Bike rooms	146	44	14-Feb-17 A	25-Aug-17	69.76%	15				
CS4380	Ceilings - Soffit Insulation	5	0	14-Feb-17 A	20-Feb-17 A	100%					■ Ceillings - Soffit Insulation
CS4400	Mechanical - rough in & ducts (HVAC)	10	0	27-Feb-17 A	15-Mar-17 A	100%					■ Mechanical - rough in & ducts (HVAC)
CS4420	Electrical - high level rough in & cable trays (LV, Comms, Security, Fire)	10	0	28-Feb-17 A	17-Mar-17 A	100%					Electrical - high level rough in & cable tra
CS4630	Ceilings & Partitions - sheet & set walls	10	0	13-Mar-17 A	21-Mar-17 A	100%					■ Ceilings & Partitions - sheet & set walls
CS4390	Fire Detection - cable trays, conduits, speakers, components	6	0	13-Mar-17 A	22-Mar-17 A	100%					■ Fire Detection - cable trays, conduits, s
CS4410	Hydraulic - high level (water, sewer, stormwater)	10	0	13-Mar-17 A	22-Mar-17 A	100%					■ Hydraulic - hgh level (water, sewer, sto
CS4590	Façade - Framing	10	0	13-Mar-17 A	24-Mar-17 A	100%					■ Façade - Fr <mark>a</mark> ming
CS4430	Ceilings & Partitions - Stud Framing incl stand door frames	5	0	13-Mar-17 A	29-Mar-17 A	100%					Ceilings & Partitions - Stud Framing inc
CS4440	Electrical - low level (rough-in LV, Comms, Security, Fire)	10	0	9-Mar-17 A	31-Mar-17 A	100%					Electrical - ow level (rough-in LV, Com
CS4580	Hydraulic - Low level (water, sewer, stormwater)	10	0	13-Mar-17 A	31-Mar-17 A	100%					Hydraulic - Low level (water, sewer, st
CS4460	Electrical - cable hauling to equipment (LV,Comms, Data etc)	12	0	1-Apr-17 A	19-Apr-17 A	100%					Electrical - cable hauling to equipme
CS4600	Electrical Rough in	12	0	1-Apr-17 A	19-Apr-17 A	100%					Electrical Rough in
CS4610	Façade - Cladding	12	0	3-Apr-17 A	26-Apr-17 A	100%					Façade - Cladding
CS4450	Ceilings & Partitions - ceilings grids	5	0	20-Apr-17 A	28-Apr-17 A	100%					■ Ceilings & Partitions - ceilings grid
CS4640	Ceilings & Partitions - sheet & set ceilings	10	0	12-Apr-17 A	4-May-17 A	100%					Ceilings & Partitions - sheet & se
CS4690	Tiling - screeds & floor tiling	7	0	17-May-17 A	25-May-17 A	100%					■ Tiling - screeds & floor tiling
CS4680	Tiling - wall tiling	5	0	17-May-17 A	29-May-17 A	100%					□ Tiling - wall tiling
CS4670	Tiling - waterproofing (wet areas)- Bathroom,Kitchen, police room	5	0	22-May-17 A	30-May-17 A	100%					■ Tillng - waterprobfing (wet are
CS4670	Glazing - External windows fitted	10	0	26-Apr-17 A	31-May-17 A	100%					Glazing - External windows fi
CS4660	Mechanical - Fit off ducts, grills, fascia	5	0	2-Jun-17 A	8-Jun-17 A	100%					Mechanical - Fit offiducts, g
CS4470	Electrical - Fit-off Lighting	10	0	1-Jun-17 A	16-Jun-17 A	100%		ļ .			Electrical - Fit-off Lighting
	• •	5	0			100%					Doors & Frames - Harig D
CS4740	Doors & Frames - Hang Doors & fit hardware	10	0	8-Jun-17 A	17-Jun-17 A	100%					Fire Detection - MASD Fir
CS4490	Fire Detection - MASD Fire Det COMMS room + fire Ind Panel		0	7-Jun-17 A	22-Jun-17 A						Painting-Internal
CS4540	Painting- Internal	5	0	16-Jun-17 A	22-Jun-17 A	100%					Electrical - electrical fittin
CS4530	Electrical - electrical fittings (lights, switches, GPO's, controls, data outlets etc)	10	0	9-Jun-17 A	26-Jun-17 A	100%		ļ			Hydraulics - sanitary fixtu
CS4710	Hydraulics - sanitary fixtures (WC pans, sinks, taps, hot water units, showers etc)	10	0	14-Jun-17 A	27-Jun-17 A	100%					Floor Finishes - Epoxy
CS4720	Floor Finishes - Epoxy	5	0	26-Jun-17 A	28-Jun-17 A	100%					
CS4560	Interface Contractor (SPI, VMS, PA, Security, CCTV, Help Points, DVA, EWIS) - Obsolete Activity	10	0	23-Jun-17 A	30-Jun-17 A	100%					Interface Contractor (SP
CS4500	Floor Finishes - Carpet & Vinyl	6	6	1-Jul-17	8-Jul-17	0%	15				☐ Floor Finishes - Carpet
CS4510	Joinery - Cabinetry, Change tables, Shelving, Service Desk	5	2	26-Jun-17 A	10-Jul-17	60%	29				Joinety - Cabinetry, Ch
CS4750	Fixtures, Fittings & Equipment - (grab rails, mirrors, soap dispense, TRH, PTD, swr curtains etc)	5	5	29-Jun-17 A	13-Jul-17	0%	29				Fixtures, Fittings & Equ
CS4700	Electrical - Fit-off Lighting (Service - special)	10	10	10-Jul-17	21-Jul-17	0%	15				☐ Electrical - Fit-off Ligh
CS4730	Services Commissioning	5	5	21-Jul-17	27-Jul-17	0%	33				Services Commissio
CS4550	Signage - Wayfinding, Statutory, Door signage	5	5	26-Jul-17	1-Aug-17	0%	20				📋 Siģnage - Wayfindir
CS4760	Metalwork - Ballustrades, Handrails & Stairs	6	6	12-Aug-17	19-Aug-17	0%	15				☐ :Metalwotk - Ballu
CS4570	Area / Room Final Clean	5	5	21-Aug-17	25-Aug-17	0%	15				0 Area / Room Fir
-	d roof deck works	125	18	9-Feb-17 A	25-Jul-17	85.54%	15				
CS1760	Structure - Waterproofing	5	0	9-Feb-17 A	14-Feb-17 A	100%					Structure - Waterproofing
CS3200	North Pod platform deck	7	0	20-Mar-17 A	24-Mar-17 A	100%					North Pod platform deck
CS4520	Mechanical - installation	6	0	20-Mar-17 A	30-Mar-17 A	100%					■ Mechanical installation
CS3190	Roof Finishing - Stoneset paving	7	6	26-Jun-17 A	10-Jul-17	14.29%	24				Roof Finishing - Stones
CS3440	Electrical - Fit-off Lighting	15	15	3-Jul-17	21-Jul-17	0%	15				Electrical - Fit-off Light
CS3450	Area / Room Final Clean	3	3	21-Jul-17	25-Jul-17	0%	15				☐ Area / Room Final C
Concours	e e	91	38	20-Apr-17 A	18-Aug-17	58.01%	16				
CS3470	Wall insulation, furring, FC sheet to blockwalls - Northpod & Admin external wall	10	0	20-Apr-17 A	18-May-17 A	100%					Wall insulation, furring, FC she
CS4790	Install grated drain channels	6	0	12-May-17 A	19-May-17 A	100%					☐ Install grated drain channels
CS4780	Hydraulics/Comms/LV - Pit lids	5	0	19-May-17 A	25-May-17 A	100%					■ Hydraulics/Comms/LV - Pit lid
CS3570	Ceilings & Partitions - Concourse soffit batten system	30	0	29-Apr-17 A	31-May-17 A	100%					Ceilings & Partitions - Conco
CS4810	Soft landscaping (garden beds in planters, planting- Palm Trees)	10	0	7-Jun-17 A	22-Jun-17 A	100%					Soft landscaping (garden
CS4860	Electrical - electrical fittings (lights, switches, GPO's, controls, data outlets etc)	5	0	23-Jun-17 A	29-Jun-17 A	100%					■ Electrical - electrical fittin
CS5330	Interface Contractor (SPI, VMS, PA, Security, CCTV, Help Points, DVA, EWIS) - Obsolete Activity	10	0	30-Jun-17 A	30-Jun-17 A	100%					Interface Contractor (SP
CS1670	Soft landscaping (garden beds in planters, planting Mature trees, irrigation etc.)	10	8	26-Jun-17 A	11-Jul-17	20%	35				Şoft landscaping (gard
CS4770	Tiling - wall tiling (external walls- Concourse Admin & northpod area)	30	18	21-Jun-17 A	24-Jul-17	40%	11				Tiling - wall tiling (ext
CS1720	Signage - Wayfinding, Statutory, Door signage	10	10	31-Jul-17	11-Aug-17	0%	21				Signage - Wayfind
CS4800	Unit paving (around 1200m2)	30	30	5-Jul-17	11-Aug-17	0%	8				Unit paving (aroun
CS4800 CS4820		10	10	31-Jul-17	11-Aug-17	0%	10				\$treet furniture (P
	Street furniture (Plaza bench seating, concourse seating, bins etc.) Relustrades and handrails to stairs and ramps	10				_	10				□ Balustrades and h
CS4830	Balustrades and handrails to stairs and ramps		10	31-Jul-17	11-Aug-17	0%	-				☐ Tactile indicators
CS4840	Tactile indicators	10	10	31-Jul-17	11-Aug-17	0%	10				Bollards
CS4850	Bollards	10	10	31-Jul-17	11-Aug-17	0%	10				
CS4880	Area / Room Final Clean	5	5	12-Aug-17	18-Aug-17	0%	10		1 1 1		□ Area / Room Fina

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

Activity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total	2015	2016 2017 2018
		Duration	Duration			Complete		D Jan F M Apr M J Jul A S Oct N D Jan F	F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan F
Station C		127	12	6-Feb-17 A	27-Jul-17	90.51%	33		Syphônic Drainage
	Syphonic Drainage LV Ductwork / conduits	10	0	6-Feb-17 A 14-Mar-17 A	10-Mar-17 A 20-Mar-17 A	100%			LV Ductwork / conduits
	Bird-protection	7	0	8-May-17 A	12-May-17 A	100%			■ Bird-protection
	Lighting Installation	12	12	13-Jul-17	27-Jul-17	0%	33		☐ Lighting Installation
Fencing &	Gates	5	5	19-Jul-17	25-Jul-17	0%	46		
CS1490	Perimeter Fencing, Gates	5	5	19-Jul-17	25-Jul-17	0%	46		Perimeter Fencing, Gates
Platforms		348	37	9-May-16 A	17-Aug-17	89.35%	67		
CS3210	Retaining walls (north of platform road 3)	12	0	12-Sep-16 A	19-Oct-16 A	100%			Retaining walls (north of platform road 3) Load transfer mat over ovitrom sewer (LDB)
CS3220	Load transfer mat over ovifrom sewer(LDB)	12	0	13-Sep-16 A 20-Sep-16 A	21-Oct-16 A 28-Oct-16 A	100%		· 	Earthworks and Capping of Platform 1 & 2
CS3290 CS3400	Earthworks and Capping of Platform 1 & 2 Earthworks and Capping completion - Platform road-1 & 2	6	0	16-Jan-17 A	15-Feb-17 A	100%			Earthworks and Capping completion: - Platform road
CS3300	Earthworks and Capping of Platform road-3	10	0	8-May-17 A	27-May-17 A	100%			Earthworks and Capping of Platform
CS3370	Drivers walkway on Platform road- 3	17	7	6-Jun-17 A	10-Jul-17	61.76%	15		Driver's walkway on Platform'r
	Works-Platform 1	211	0	9-May-16 A	15-Feb-17 A	100%			
CS2870	Piling and pad Footings -Platform 1	9	0	9-May-16 A	7-Oct-16 A	100%			Plling and pad Footings Platform 1
CS3010	Inground Services.	6	0	13-Sep-16 A	17-Oct-16 A	100%			Inground Services.
CS2860	Structural steel platform	10	0	14-Oct-16 A	21-Oct-16 A	100%			Structural steel platform
CS3250	Precast Installation	4	0	12-Dec-16 A	15-Dec-16 A	100%			■ Precast Installation
CS2890	FRP Platform Slabs	15	0	14-Dec-16 A	20-Jan-17 A	100%	<u> </u>	- 	FRP Platform Slabs
CS2880	Structural Steel canopy Part Sharking Making and appring	12	0	23-Jan-17 A	8-Feb-17 A	100%	——I		Structural Steel canopy:
CS2900	Roof Sheeting, flashings and cappings Works-Platform 2 & 3	12 161	0	1-Feb-17 A 30-May-16 A	15-Feb-17 A 6-Feb-17 A	100%			Roof Sheeting, flashings and cappings
CS1140	Piling and pad Footings (PF 2 & 3)	9	0	30-May-16 A 30-May-16 A	6-Feb-17 A 31-Aug-16 A	100%			Piling and pad Footings (PF 2 & 3)
DE-0025-		12	0	30-May-16 A	6-Oct-16 A	100%			Additional piling and pile caps
CS1180	Structural steel platform	14	0	27-Sep-16 A	18-Oct-16 A	100%			Structural steel platform
CS1160	Inground Services.	6	0	7-Sep-16 A	27-Oct-16 A	100%			Inground Services.
CS3240	Precast installation	5	0	25-Oct-16 A	23-Nov-16 A	100%			Precast installation
CS1230	FRP Platform Slabs	6	0	8-Nov-16 A	16-Dec-16 A	100%			FRP Platform Slabs
CS1360	Structural Steel canopy	12	0	17-Dec-16 A	17-Jan-17 A	100%			Structural Steel canopy
CS1420	Roof Sheeting, flashings and cappings	10	0	11-Jan-17 A	6-Feb-17 A	100%			Roof \$heeting, flashings and cappings
	40m Platform 1- Eastern platform (After Spaceframe completion)	53	0	21-Jan-17 A	5-Apr-17 A	100%			
CS2950 CS3260	Structural steel platform	3	0	21-Jan-17 A	24-Feb-17 A	100%			Structural steel platform Precast installation
CS3260 CS3270	Precast installation FRP Platform Slabs	3	0	24-Jan-17 A 27-Feb-17 A	27-Feb-17 A 3-Mar-17 A	100%			FRP Platform Slabs
CS2940	Structural Steel Canopy	3	0	4-Mar-17 A	8-Mar-17 A	100%		· 	Structural Steel Canopy
CS2960	Roof Sheeting, flashings and cappings	3	0	1-Apr-17 A	5-Apr-17 A	100%			Roof Sheeting, flashings and cappings
	40m Platform 2 & 3 -Eastern platform	35	0	20-Feb-17 A	5-Apr-17 A	100%			Tool Group and the control of the co
CS5180	Structural steel platform	1	0	20-Feb-17 A	23-Feb-17 A	100%			■ Structural steel patform
CS5210	Precast installation	2	0	21-Feb-17 A	24-Feb-17 A	100%			I Precast installation
CS5220	FRP Platform Slabs	4	0	25-Feb-17 A	2-Mar-17 A	100%			■ FRP Platform Slabs
CS5170	Structural Steel Canopy	2	0	1-Apr-17 A	4-Apr-17 A	100%			Structural Steel Canopy
CS5190	Roof Sheeting, flashings and cappings	2	0	3-Apr-17 A	5-Apr-17 A	100%			l Roof Sheeting, flashings and cappings
	Structural steel platform	21	0	24-Mar-17 A 24-Mar-17 A	7-Apr-17 A 24-Mar-17 A	100%			I Structural steel platform
CS5090 CS5120	Precast installation	2	0	24-Mar-17 A 24-Mar-17 A	24-Mar-17 A 25-Mar-17 A	100%		· 	Precast installation
CS5120 CS5130	FRP Platform Slabs	3	0	27-Mar-17 A	31-Mar-17 A	100%			FRP Platform Slabs
CS5080	Structural Steel Canopy	2	0	1-Apr-17 A	4-Apr-17 A	100%			Structural Steel Canopy
CS5100	Roof Sheeting, flashings and cappings	2	0	5-Apr-17 A	7-Apr-17 A	100%			
Services V		210	37	26-Oct-16 A	17-Aug-17	82.38%	13		
CS3380	Services on Platform steel structure	10	0	26-Oct-16 A	13-Dec-16 A	100%			Services on Platform steel structure
CS4920	Installation of cable route / trays / conduits to Canopies (P1,2,3)	15	0	14-Mar-17 A	19-Apr-17 A	100%			Installation of cable route / trays / conduits
CS4940	PA Speaker installation	10	0	27-Feb-17 A	26-Apr-17 A	100%			PA Speaker installation
CS4970	Install grated drain channels	15	0	14-Feb-17 A	26-Apr-17 A	100%			Install grated drain channels
CS4930	Installation of Lighting incl mounting & cable-works	15	0	22-Feb-17 A	2-May-17 A	100%	ļ	- 	Installation of Lighting incl mounting & ca
CS4950	CCTV mounts / brackets & camera installation	10	0	28-Feb-17 A	17-May-17 A	100%			Interface Contractor (SPI) VMS
CS5060	Interface Contractor (SPI, VMS, PA, Security, CCTV, Help Points, DVA, EWIS)- (Obsolete Activity)	15 9	0	30-Jun-17 A	30-Jun-17 A	100%	12		
CS1630	Installation of Cable route GST / trays (LV/Comms low level)	10	9	26-Jun-17 A	12-Jul-17	10%	13		Installation of Cable route GS Asphalt - Platform 1, 2 & 3
CS4980 CS4960	Asphalt - Platform 1, 2 & 3 Cable hauling to equipment, terminations	20	6	22-May-17 A 8-Jun-17 A	12-Jul-17 17-Jul-17	70%	13		Cable hauling to equipment
CS4960 CS4990	Coping - platform 1 ,2 & 3	12	12	3-Jul-17	17-Jul-17 18-Jul-17	0%	8	· 	Coping - platform 1, 2 & 3
CS5040	Install Grated drain covers	5	5	13-Jul-17	19-Jul-17	0%	13		🗓 Instậll Grated drain covers
CS5010	Windbreaks - Steel & Glass	5	5	18-Jul-17	24-Jul-17	0%	26		☐ Windbreaks - Steel & Glass
CS5020	Platform seating	5	5	18-Jul-17	24-Jul-17	0%	26		Platform seating
555020		3		.5 GUE 17	_ / Odi: 1/	0,0			

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline Layout : WTIP - TPD Submission Full Program layou

Notinity ID	Activity Namo	Original	Romainina	Ctort	Eicich	Dureties C	Total			200	15				2040				- 00	17	
ctivity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Duration % Complete	Total Float	D Jan	M Apr	20°		S Oct N E	Jan F Ma	ır Apr M	Jun Jul	A S Oct	N D Jan	F Mar Ap	or M Jun		Oct N D
CS5030	Bins	5	5	18-Jul-17	24-Jul-17	0%	26													Bins	
	Cleaners Stations	18	18	19-Jul-17	10-Aug-17	0%	13													1 1	aners Stations
	Area / Room Final Clean	5	5	9-Aug-17	15-Aug-17	0%	14													1 1	a / Room Final 0
	Platform Fencing	5	5	11-Aug-17	17-Aug-17	0%	13													l Flat	lomi i ending
	n & Landscaping Soft Landscaping	10 10	10 10	17-Jul-17 17-Jul-17	28-Jul-17 28-Jul-17	0%	13 13													- Ca41.a	andscaping
Fencing & G		5	5	11-Aug-17	17-Aug-17	0%	13								 - -					- Soft La	indscaping
	Perimeter Fencing, Gates	5	5	11-Aug-17	17-Aug-17	0%	13													□ _{Þeri}	rimeter Fencing,
Wayfinding 8	•	8	8	31-Jul-17	9-Aug-17	0%	24										"				
CS1740	Signage - Wayfinding, Statutory, Door signage	8	8	31-Jul-17	9-Aug-17	0%	24				1 1							. !		Signa Signa	age - Wayfinding
Permanent V	Vay- Platform Road 1 & 2	19	0	16-Feb-17 A	11-Mar-17 A	100%									lll.					<u>i</u> i	
	Bottom Ballast Platform 1, 2	5	0	16-Feb-17 A	2-Mar-17 A	100%											-	1. I		latform 1, 2	
	Install tracks Platform 1, 2	7	0	27-Feb-17 A	6-Mar-17 A	100%											4			atform 1, 2	
	Complete trackworks after building roof completion	7	0	27-Feb-17 A	6-Mar-17 A	100%												1_	11 1	1 1	building roof con
	Top Ballast Platform 1, 2	3	0	3-Mar-17 A	7-Mar-17 A	100%											-	1 . 1	Ballast Plat	1 1	
	Tamping and Regulating	2	0	11-Mar-17 A	11-Mar-17 A	100%												Tam	nping and R	legulating	
	Vay- Platform Road 3	117	0	12-Jan-17 A	22-Jun-17 A	100%												Flash butt	: ! Welding		
	Flash butt Welding Bottom Ballast Platform Road 3	10 5	0	12-Jan-17 A 12-May-17 A	31-Jan-17 A 30-May-17 A	100%													1 1	ttom:Ballast F	Platform Road
	Install tracks Platform Road 3	8	0	30-May-17 A	31-May-17 A	100%													- :	1 1	latform Road 3
	Top Ballast Platform Road 3	4	0	31-May-17 A	3-Jun-17 A	100%													1 1		atform Road 3
	Tamping and Regulating	4	0	17-Jun-17 A	22-Jun-17 A	100%														, ,	nd Regulating
Overhead Wi		183	0	4-Jul-16 A	9-Mar-17 A	100%															
	Installation fo OHW Footing- N165+403, 464	6	0	4-Jul-16 A	10-Aug-16 A	100%									_ 	Installation f	OHW Foot	ing- N165+	403 464	1 1	
	Installation fo OHW Footing- N165+603- 3 Nos	6	0	25-Aug-16 A	31-Aug-16 A	100%									"	Installation				Nos	
CP1180x	Installation fo OHW Footing- N165+525	6	0	31-Jan-17 A	15-Feb-17 A	100%												Installati	ian fo OHV	V Footing- N	165+525
CP1290x	Installation fo OHW Footing- N165+584	6	0	31-Jan-17 A	16-Feb-17 A	100%												Installat	ion fo OHV	V Footing- N	165+584
CP1330x	Installation fo OHW Structure (N165+603)	6	0	23-Feb-17 A	23-Feb-17 A	100%												l Installa	ation fo OH	W Structure	(N165+603)
CP1340x	Installation fo OHW Structure (N165+603)	6	0	23-Feb-17 A	23-Feb-17 A	100%											_	l Installa	ation fo OH	W Structure	(N165+603)
CP1350x	Installation fo OHW Structure (N165+603)	2	0	6-Mar-17 A	8-Mar-17 A	100%											_	I Insta	allation fo C	HW Structur	re (N165+603)
CP1310x	Installation fo OHW Structure (N165+403 & 464) - 2 no Portal	6	0	17-Feb-17 A	9-Mar-17 A	100%			. i l i						lLi.		<u> </u>	nsta 📮	allation fo (HW Structu	ıre (N165+403 8
CP1320x	Installation fo OHW Structure (N165+525 & 584) - 2 no HP2	3	0	6-Mar-17 A	9-Mar-17 A	100%											-	I Insta	allation fo C	HW Structu	ıre (N165+525 8
Transport Int		144	22	20-Feb-17 A	28-Jul-17	84.72%	45				1 1									1 1	
Station Stree		138	11	20-Feb-17 A	14-Jul-17	92.03%	56														
	and Relocation Works Remove Existing Footpath	12 5	0	25-Mar-17 A 25-Mar-17 A	5-May-17 A 30-Mar-17 A	100% 100%					1 1								ldmoi = [atind Easter -	
	Establish Pedestrian and Traffic Diversions	5	0	1-May-17 A	5-May-17 A	100%									 -					sting Footpat	an and Traffic Di
Services Wo		23	0	3-Apr-17 A	8-May-17 A	100%											7		LStab	ion riedesilla	ir and traffic Di
	Stormwater Pits & Stormwater crossing	23	0	3-Apr-17 A	8-May-17 A	100%												_	Storm	water Pits &	Stormwater cro
Hydrology a	nd Drainage	45	0	20-Feb-17 A	28-Apr-17 A	100%												-			
CS5280	Install Oviform sewer Manholes (3 Nos.)	45	0	20-Feb-17 A	28-Apr-17 A	100%			.111					1	<u> </u>				Install C	viform sewe	er Manholes (3 I
	upply & Distribution	2	0	28-Jun-17 A	30-Jun-17 A	100%														India II-II	4 - 3 - 3 - 3
	Installation of pole 7(Ausgrid)	2	0	28-Jun-17 A	30-Jun-17 A	100%													1	installation	of pole 7(Ausgr
Road Works		57 15	9	8-May-17 A	12-Jul-17	84.07%	58														
	Kerb and Guttering Station St Road works by NCC	15 16	0	8-May-17 A 19-Jun-17 A	8-Jul-17	60% 62.5%	20											-		Kerb and	Guttering t Road works by
	NCC inspection prior to Resheeting	0	0	19-Jull-17 A	8-Jul-17 10-Jul-17	0%	23	} }-												◆ NCC inst	pection prior to F
CS3430 CS1730		15	8	8-May-17 A	10-Jul-17 11-Jul-17	46.67%	19													Footpath	
	AC resheeting & Correction layer (Inc NCC)	2	2	11-Jul-17	12-Jul-17	0%	23														eeting & Correct
	NCC inspection - Final	0	0		12-Jul-17	0%	58											-		♦ NCC insp	pection - Pinal
Wayfinding	•	2	2	13-Jul-17	14-Jul-17	0%	23														
	Linemarking and Signage	2	2	13-Jul-17	14-Jul-17	0%	23							1	1					Linemark	king and Signag
	n & Landscaping	10	10	17-Jul-17	28-Jul-17	0%	37														
CS0200	Urban Design & Landscaping	10	10	17-Jul-17	28-Jul-17	0%	37										<u></u>			Urban	Design & Lands
	Works Wickham Station - Area 3	654	20	21-Feb-15 A	24-Sep-17	96.94%	35														
	No. 1 : 21st Feb - 22nd Feb 2015 (Config 9)	2	0	21-Feb-15 A	22-Feb-15 A										<u> </u>						
	nage: 165.410 - 165.760)	2	0	21-Feb-15 A	22-Feb-15 A	100%													+		
General CP1040	Investigation Works Contrological Contemination and United	2	0	21-Feb-15 A	22-Feb-15 A	100%															
	Investigation Works - Geotechnical, Contamination and Heritage	2	0	21-Feb-15 A	22-Feb-15 A	100%			Investiga	ation;Wor	ks - Geote	chnical, Conta	mnation and	-teritage							
	HV,Sewer,Comms,Water) Utilities Potholing	2	0	21-Feb-15 A 21-Feb-15 A	22-Feb-15 A 22-Feb-15 A	100%			Utilities F	Potholina	- 1 1										
	No. 2 : 6th - 8th June 2015 (Config 9)	6	0	6-Jun-15 A	8-Jun-15 A	100%			Junies P	Juloing											
	Service Locating Works	6	0	6-Jun-15 A	8-Jun-15 A	100%				l q	ervide I des	iting Works									
	No. 3 :5th - 6th Sept 2015 (Config 9)	2	0		5-Sep-15 A					10 0	J. VIGO EOC	9 170113									
- 3555551011									<u> </u>			1 ! !	1 : :	1 !	<u> </u>	<u> </u>	1 1 1	!		!!!	

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Saseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

y ID Activity Name		Original	Remaining	Start	Finish	Duration %	Total	2015	2016 2017
		Duration	Duration			Complete	Float	D Jan F M Apr M J Jul A S Oct N D	Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N
Area 3 (Chainage: 165.410 - 165.760)		2	0	5-Sep-15 A	5-Sep-15 A	100%			
Utilities (LV,HV,Sewer,Comms,Water)		2	0	5-Sep-15 A	5-Sep-15 A	100%			
CP2680 Removal of Pole Top Transformer		2	0	5-Sep-15 A	5-Sep-15 A	100%		Removal of Pole	e Top Transformer
Possession No. 5A:02nd - 03rd Apr 2016 (Config	9)	6	0	2-Apr-16 A	30-Apr-16 A	100%			
CP1620 Installation of Track - Crossover 488		6	0	2-Apr-16 A	4-Apr-16 A	100%	1		Installation of Track - Crossover 488
CP1630 Tamping, Welding and Adjustment		6	0	2-Apr-16 A	4-Apr-16 A	100%			Tamping, Welding and Adjustment
CP3010 Installation of RMU switching station and H	V cutover	6	0	2-Apr-16 A	4-Apr-16 A	100%			Installation of RMU switching station and HV cutover
CP3020 Signal support Track works		6	0	2-Apr-16 A	4-Apr-16 A	100%			Signal support Track works
CP1360 Area 3 Relocation of 11kV		6	0	30-Apr-16 A	30-Apr-16 A	100%			Area 3 Relocation of 11kV
Possession No. 6 :11th -13th June 2016 (Config		9	0	11-Jun-16 A	14-Jun-16 A	100%			
Civil		9	0	11-Jun-16 A	14-Jun-16 A	100%			
CP2950 P/F Prep earth works- 40 M western end		6	0	11-Jun-16 A	13-Jun-16 A	100%			P/F Prep earth works- 40 M western end
CP2960 P/F Piling- 40 M western end		6	0	12-Jun-16 A	14-Jun-16 A	100%			P/F Pilling- 40 M western end
Possession No. 6A: 09th -10th July 2016		6	0	9-Jul-16 A	11-Jul-16 A	100%			
CP3420 P/F 2&3- 40 M western end- Pile trimming	R Pile can installation	6	0	9-Jul-16 A	11-Jul-16 A	100%			P/F 2&3- 40 M western end- Pile trimming & Pile cap installation
CP3430 OHW Wire adjustments at the anchor for	•	6	0	9-Jul-16 A	11-Jul-16 A	100%			I OHW, Wire adjustments at the anchor for platfrom 2 piling
		45	0						
Possession No. 7A :1st- 12th Aug 2016 (Config 9		15	0	4-Aug-16 A	10-Aug-16 A	100%	}	••••	A
Area 3 (Chainage: 165.410 - 165.760)		15	0	4-Aug-16 A	10-Aug-16 A	100%			
Civil		12	0	9-Aug-16 A	10-Aug-16 A	100%			
CP2970 P/FSteel work western end		12	0	9-Aug-16 A	10-Aug-16 A	100%			P/FSteel work western end
OHW		6	0	4-Aug-16 A	6-Aug-16 A	100%			
CP2530 Installation of OHW Structure (N165+340)		6	0	4-Aug-16 A	6-Aug-16 A	100%	<u> </u>		Installation of OHW Structure (N165+340)
ossession No. 8 :29th - 30th Oct 2016 (Config 9		6	0	29-Oct-16 A	31-Oct-16 A	100%			
Structural Works		6	0	29-Oct-16 A	31-Oct-16 A	100%			
CP2980 P/F-2 - Steel Works, Precast & pour deck	slab- Western end	6	0	29-Oct-16 A	31-Oct-16 A	100%			P/F-2 - Steel Works, Precast & pour deck slab- Western
Signalling Works		4	0	29-Oct-16 A	30-Oct-16 A	100%			
CP3450 NE17 Signal Footing- Casing done		4	0	29-Oct-16 A	30-Oct-16 A	100%			NE17 Signal Footing- Casing done
ossession No. 9:11th - 12th Mar 2017 (Config 9		6	0	11-Mar-17 A	13-Mar-17 A	100%			
CP3570 Remove and replace buffer stops		2	0	11-Mar-17 A	11-Mar-17 A	100%	1		
CP3580 Install GIJ's		2	0	11-Mar-17 A	12-Mar-17 A	100%			I Install GIJ's
CP3590 Final Tamp Platform road 1 & 2		2	0	11-Mar-17 A	12-Mar-17 A	100%			I Final Tamp Platform road 1 & 2
CP3070 Signalling Civil Works/ Signals local cable	oute installation	6	0	11-Mar-17 A	13-Mar-17 A	100%			\$ignalling Civil Works/ \$ignals local cal
Possession No. 10 :10th - 12th June 2017 (Confi	19)	6	0	29-Oct-16 A	12-Jun-17 A	100%			
CP1670 Stage 2- Wire Run Up OHW run 11	, -	6	0	10-Jun-17 A	12-Jun-17 A	100%			\$tage 2- Wire Run;Up Ol
CP1680 Stage 2 - Wire Run Down OHW Run-12		6	0	10-Jun-17 A	12-Jun-17 A	100%			Stage 2 - Wire Run Down
Civil		6	0	29-Oct-16 A	30-Oct-16 A	100%			wage 2 - Wild Rull Sowi
CP2990 P/F infill after OHW wire run- Not required	Staging revised	6	0	29-Oct-16 A	30-Oct-16 A	100%			P/F infill after OHW wire
ossession No. 11 :26th - 27th August 2017 (Cor		6	6	26-Aug-17	28-Aug-17	0%	6		1 1/1 milli and Orivi wile
CP1540 Stage 3 - OHW Wire Run-6 (Platform Ro		6	6	26-Aug-17	28-Aug-17	0%	0		Stage 3 - OH
CP3610 Grind Platform road 1 & 2	u)	6	6	26-Aug-17		0%	6		Stage 3 - On
		-	12		28-Aug-17		0		
ommissioning Possession - 21st - 24th Septem	per 2017	12		21-Sep-17	24-Sep-17	0%	0		
CP1690 Removal of Redundant OHW Structures		6	6	21-Sep-17	23-Sep-17	0%	6		Removal
P1790 Commissioning Works		6	6	22-Sep-17	24-Sep-17	0%	0		Commiss
Areas (Non Possession)		434	32	16-Nov-15 A	10-Aug-17	92.62%	7		
gnalling (common in all areas)		434	32	16-Nov-15 A	10-Aug-17	92.62%	7		
	between existing buffer stops & Stewart Avenue	5	0	16-Nov-15 A	16-Nov-15 A	100%			pval of redundant signalling equipment between existing buffer stops & Stewart Avenue
S3000 Sydney Trains - Signalling redundant cable		20	0	30-Nov-15 A	12-Mar-16 A	100%		I Real	Sydney Trains - Signalling redundant cables removal
S3070 Install temporary CSR route	o Tomorai	12	0	21-Mar-16 A	30-Mar-16 A	100%			<u> </u>
	ilding	12	0						Install temporary CSR route
S5370 Delivery & Installation of NE13 - precast be	ııuı ıy	1	-	20-May-17 A	20-May-17 A	100%	<u> </u>		.
S1590 Installation of Equipment Housings		18	0	14-Nov-16 A	9-Jun-17 A	100%			Installation of Equipment I
S5390 NE13 - EOL, Power room installation		15	0	22-May-17 A	9-Jun-17 A	100%	<u> </u>		NE13 - EQL, Hower room
Delivery & Installation of HN24 - precast b	ıldıng	1	0	17-Jun-17 A	17-Jun-17 A	100%	<u> </u>		Delivery & Installation of
S5400 HN24 Power room installation		12	2	19-Jun-17 A	4-Jul-17	83.33%	22		HN24 Power room in
S1240 Signalling Local Route Installation		15	6	14-Feb-17 A	8-Jul-17	60%	10		Signalling Local Route
Installation of Signalling Cables		17	11	22-May-17 A	14-Jul-17	35.29%	10		Installation of Signal
Installation of Signals, Points, Track Circui	s etc	15	20	15-May-17 A	4-Aug-17	0%	11		Installation of Sig
S1680 Termination of Signals, Points, Track Circu		15	15	24-Jul-17	10-Aug-17	0%	7		Termination of S
ssessions		654	20	21-Feb-15 A	24-Sep-17	96.94%	0		, somination of o
	0("0)								
ssession No. 1 : 21st Feb - 22nd Feb 2015	Config 9)	75	0	21-Feb-15 A	22-Feb-15 A	100%			
P1950 Possession 1 Work Starts		0	0	21-Feb-15 A		100%		Possession 1 Work Starts	
P0010 Possession No. 1 Summary		2	0	21-Feb-15 A	22-Feb-15 A	100%		Possession No. 1 Summary	
CP1940 Possession 1 Weather allowance		1	0	21-Feb-15 A	22-Feb-15 A	100%		Possession 1 Weather allowance	
ossession No. 2 : 6th - 8th June 2015 (Confi	1 9)	49	0	1-Jun-15 A	7-Jun-15 A	100%			

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities. Page 31 of 34

Baseline : Rebaseline

ctivity ID	Activity Name	Original	Remaining	Start	Finish	Duration %	Total			20							2016						2017			20
		Duration	Duration			Complete	Float	DJ	an F M Apr M	I J	Jul A	S Oct	N D	Jan F	Mar A	or M	lun Jul /	A S Oct	N C	Jan F	Mar Ap	pr M	Jun Jul	A S Oc	t N	D Ja
CP1920	Possession 2 Weather allowance	1	0	1-Jun-15 A	5-Jun-15 A	100%				P	ossession	2 Weatl	her allowa	nce							1					
CP1930	Possession 2 Work Starts	0	0	6-Jun-15 A		100%				× 1	ossession															
CP2510	Possession 2 Summary	6	0	6-Jun-15 A	7-Jun-15 A	100%				ļ P	ossėssion	2 \$umn	nary	l i							j					
Possessio	n No. 3 :5th - 6th Sept 2015 (Config 9)	5	0	5-Sep-15 A	6-Sep-15 A	100%																				
CP2560	Possession 3 - Shift 1 -Potholing & Removal of Pole top transformer, Signal Hut & Location cases	1	0	5-Sep-15 A	5-Sep-15 A	100%						Posse	ssion 3 -	Shift 1 -I	otholin	g & Rei	noval of Po	ole top trans	former,	Signal H	ut & Loc	ation ca	ses			
CP2570	Possession 3 - Shift 2 -NA	1	0	5-Sep-15 A	6-Sep-15 A	100%						Posse	ssion 3 -	Shift 2 -I	NΑ											
CP2580	Possession 3 - Shift 3 -Potholing & Removal of Redundant Structures- Signal Hut & Location cases	1	0	6-Sep-15 A	6-Sep-15 A	100%						Posse	ssion 3 -	Shift 3 -	Potholir	g & Re	noval of R	edundant S	tructure	s- Signal	Hut & Lo	ocation	cases			
CP2590	Possession 3 - Shift 4 -NA	1	0	6-Sep-15 A	6-Sep-15 A	100%						Posse	ssion 3 -	Shift 4 -I	ŅΑ						i					
Possessio	n No. 4 :24th - 25th Oct 2015 (Config 9)	2	0	22-Oct-15 A	25-Oct-15 A	100%																				
CP1800	Possession 4 Weather allowance	2	0	22-Oct-15 A	23-Oct-15 A	100%				7	1	Ţ	Posses	ion 4 W	eather	allowan	:e		ii			1111			7	
CP1810	Possession 4 Work Starts	0	0	24-Oct-15 A		100%						1 1	Posses		: 1											
CP2610	Possession 4 - Shift 1 - Remove Railway St crossing	1	0	24-Oct-15 A	24-Oct-15 A	100%						Y				1 1	Railway	St crossing								
CP2620	Possession 4 - Shift 2 - NA	1	0	24-Oct-15 A	24-Oct-15 A	100%							Possess		i l	i i					1					
CP2630	Possession 4 - Shift 3 - Remove Railway St crossing	1	0	24-Oct-15 A	25-Oct-15 A	100%						1 1	, ,				Railway	St crossing								
CP2640	Possession 4 - Shift 4 - NA	1	0	25-Oct-15 A	25-Oct-15 A	100%							Posses													
Possessio	n No. 5 :13th - 14th Feb 2016 (Config 9)	1	0	12-Feb-16 A	14-Feb-16 A	100%							. 55545	ľ i												
CP2700	Possession 5 Weather allowance	1	0	12-Feb-16 A	12-Feb-16 A	100%									Possos	cibr E	Veather al	lovkanaa								
CP2700 CP2710	Possession 5 Work Starts	0	0	13-Feb-16 A	12 1 30-10 A	100%								1 1 1		1 1	veatner ai Vork Start									
CP2710	Possession 5- Shift 1 - Service investigation	1	0	13-Feb-16 A	13-Feb-16 A	100%								I Y	i	i i	1 1	s ervice inves	tigation							
CP2720 CP2730	Possession 5 - Shift 2 - Service investigation	1	0	13-Feb-16 A	13-Feb-16 A	100%		 							4			ervice inves Service inve	4		· -					
CP2730 CP2740	Possession 5 - Shift 3 - Service investigation	1	0	13-Feb-16 A	14-Feb-16 A	100%								1 ()		1 1		Service inve		1						
CP2740 CP2750	Possession 5 - Shift 4 - Service investigation	1	0	14-Feb-16 A	14-Feb-16 A	100%								I : :	: 1		1 1	1 1		'						
		3	0	30-Mar-16 A	4-Apr-16 A										Posses	sion 5	Shift 4 -Se	rvice inves	gation		i					
	n No. 5A :02nd - 03rd Apr 2016 (Config 9)	, and the second	-			100%																				
CP2830	Possession 5A Weather allowance	3	0	30-Mar-16 A	1-Apr-16 A	100%								ļ	i <u>1</u>			eather allow	ance	4	.i					
CP2840	Possession 5A Work Starts	0	0	2-Apr-16 A		100%									! Y		1 1	ork Starts								
CP3150	Possession 5A- Shift 1 - T/O 488 A installation, HV works, 102.39 Signalling works, OHW & Drainage works	2	0	2-Apr-16 A	2-Apr-16 A	100%										1 1	1 1	hift 1 - T/O			1			ing works	, OHW 8	3 Dra
CP3160	Possession 5A - Shift 2 - Install T/O 488B, HV Works, Sig track support	2	0	2-Apr-16 A	3-Apr-16 A	100%									: [1 :	Shift 2 - Inst		1 1			11.1			
CP3170	Possession 5A - Shift 3 - Weld & adjust X/O 488, HV Works, Sig track support	2	0	3-Apr-16 A	3-Apr-16 A	100%								l i				Shift 3 - We							1 1	
CP3180	Possession 5A - Shift 4- Weld & adjust X/O 488, HV Works, Sig track support	2	0	3-Apr-16 A	4-Apr-16 A	100%								l	ļļ.	Posses	sion 5A - S	Shift 4- Wel	d & adju	st X/O 48	88, HV W	/orks, S	ig track si	ıpport		
Possessio	n No. 6 :11th -13th June 2016 (Config 9)	4	0	7-Jun-16 A	14-Jun-16 A	100%															1					
CP1820	Possession 6 Weather allowance	4	0	7-Jun-16 A	10-Jun-16 A	100%											Posses	sion 6 Wea	ther allo	wance						
CP1830	Possession 6 Work Starts	0	0	11-Jun-16 A		100%											Posses	sion 6 Wor	k Starts		1					
CP1960	Possession 6- Shift 1 -	2	0	11-Jun-16 A	11-Jun-16 A	100%											Posses	sion 6- Shif	t 1 -							
CP1970	Possession 6 - Shift 2 -	2	0	11-Jun-16 A	12-Jun-16 A	100%											Posses	sion 6 Shi	ft 2 -		1					
CP1980	Possession 6 - Shift 3 -	2	0	12-Jun-16 A	12-Jun-16 A	100%											Posses	sion 6 - Sh	íft 3 -	-1		1 1				
CP3130	Possession 6 - Shift 4-	2	0	12-Jun-16 A	13-Jun-16 A	100%											Posses	sion 6 - Sh	lft 4-							
CP1990	Possession 6 - Shift 5 -	2	0	13-Jun-16 A	13-Jun-16 A	100%											Posses	sion 6 - Sh	ift 5 -							
CP3140	Possession 6 - Shift 6 -	2	0	13-Jun-16 A	14-Jun-16 A	100%											1 1 1	ssion 6 - Sh	1 1		1					
Possessio	n No. 7 :1st- 12th Aug 2016 (Config 9)	9	0	27-Jul-16 A	9-Aug-16 A	100%																				
CP1840	Possession 7 Weather allowance	3	0	27-Jul-16 A	30-Jul-16 A	100%		÷						 	 			Possession	7 Wes	ther allow	ance					
CP1850	Possession 7 Work Starts	0	0	1-Aug-16 A		100%											1 1	Possession	1 1	1	ance					
CP2000	Shift 1 - OHW Structure/Installation of Track	1	0	1-Aug-16 A	1-Aug-16 A	100%											I Y	Shift 1 - O	i i	1 1	stallation	of Trac	3k			
CP2010	Shift 2 - OHW Structure/Installation of Track	1	0	1-Aug-16 A	1-Aug-16 A	100%											1 1		1 1	1 1	1	3_ 1.				
CP2020	Shift 3 - OHW Structure/Installation of Track	1	0	1-Aug-16 A	2-Aug-16 A	100%										1 1	1 6	Shift 2 - O	1 1	1	1	1 1				
CP2020 CP2030	Shift 4 - OHW Structure/Installation of Track	1	0	2-Aug-16 A	2-Aug-16 A	100%		 						} 	 				{	-+					+	
CP2030 CP3200	Shift 5 -OHW Structure/Installation of Track	1	0	2-Aug-16 A	3-Aug-16 A	100%										- 1	- 1 5	Shift 4 - O	1 1		9	1 1				
CP3200 CP3210	Shift 6 - OHW Structure/Installation of Track	1	0		_	100%											1 6	Shift 5 OH	i i	- i	i	- 1 1	- 1			
CP3210 CP3220	Shift 7 - OHW Structure/Installation of Track	1	0	3-Aug-16 A	3-Aug-16 A 4-Aug-16 A	100%										1 1	- 1 3	Shift 6 - Ol	: :	1 :		- 1 1				
		1	-	3-Aug-16 A													- 6	Shift 7 - O	1 1	1	1	1 1				
CP3230	Shift 8 - OHW Structure/Installation of Track	1	0	4-Aug-16 A	4-Aug-16 A	100%		<u></u> }₩-						ļ ļ				Shift 8 -OF		-+						
CP3240	Shift 9 - OHW Structure/Installation of Track	1	0	4-Aug-16 A	4-Aug-16 A	100%											1 5	Shift 9 - O			1	1 1				
CP3250	Shift 10 - OHW Structure/Installation of Track	1	0	4-Aug-16 A	5-Aug-16 A	100%										1	1 1	Shift 10 - (i i	i	i l	i i	i			
CP3260	Shift 11 - OHW Structure/Installation of Track	1	0	5-Aug-16 A	5-Aug-16 A	100%											1 17	Shift 11 - (! !							
CP3270	Shift 12 - OHW Structure/Installation of Track	1	0	5-Aug-16 A	6-Aug-16 A	100%											1 14	Shift 12 -	1 1	1	1	1 1				
CP3280	Shift 13 - OHW Structure/Installation of Track	1	0	6-Aug-16 A	6-Aug-16 A	100%		 -						ļļ	; 			Shift 13 -	'	-+'	' +		•			
CP3290	Shift 14 - OHW Structure/Installation of Track	1	0	6-Aug-16 A	6-Aug-16 A	100%										1 1		Shift 14 -								
CP3300	Shift 15 - OHW Structure/Installation of Track	1	0	6-Aug-16 A	7-Aug-16 A	100%											1 1 1	Shift 15 -	1 1	1	0	1 1				
CP3310	Shift 16 - OHW Structure/Installation of Track	1	0	7-Aug-16 A	7-Aug-16 A	100%											1 11	Shift 16 -			1	1 1				
CP3320	Shift 17 - OHW Structure/Installation of Track	1	0	7-Aug-16 A	8-Aug-16 A	100%												Shift 17 -	OHW S	tructure/li	nstallatio	on of Tra	ack			
CP3330	Shift 18 - OHW Structure/Installation of Track	1	0	8-Aug-16 A	8-Aug-16 A	100%				ļl				ļi	ļL.		i].	Shift 18 - 0	OHW S	ructure/Ir	nstallatio	n of Tra	ck			
CP3340	Shift 19 - OHW Structure/Installation of Track	1	0	8-Aug-16 A	9-Aug-16 A	100%												Shift 19 -	OHW S	tructure/I	Installatio	on of Tra	ack			
	Shift 20 - OHW Structure/Installation of Track	1	0	9-Aug-16 A	9-Aug-16 A	100%				1				L	1			Shift 20 - 0	SHW S	ructure/Ir	nstallatio	n of Tra	ck			
CP3350	Grint 26 Grive dit dotter of motion											1 1									. F					

Actual Work Critical Remainin... Remaining Work ◆ Milestone Remaining Work ♦ Baseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline Layout : WTIP - TPD Submission Full Program layou

y ID Ac	tivity Name	Original	Remaining	Start	Finish	Duration %			2015			2016	2017
		Duration	Duration			Complete	Float	D Jan F M Apr M	1 J Jul A	S Oct N I	D Jan F Mar	Apr M Jun Jul A	A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N
	ssession 8 Weather allowance	5	0	24-Oct-16 A	28-Oct-16 A	100%							Possession 8 Weather allowance
	ssession 8 Work Starts	0	0	29-Oct-16 A		100%				.			Possession 8 Work Starts
	ift 1 -	1	0	29-Oct-16 A	29-Oct-16 A	100%							Shift 1
	ift 2 -	1	0	29-Oct-16 A	29-Oct-16 A	100%							Shift 2
	ift 3 -	1	0	29-Oct-16 A	30-Oct-16 A	100%							Shift 3
	ift 4 -	1	0	30-Oct-16 A	30-Oct-16 A	100%							Shift 4
Possession No	o. 9 :11th - 12th Mar 2017 (Config 9)	1	0	10-Mar-17 A	13-Mar-17 A	100%							
CP2790 Po	ssession 9 Weather allowance	1	0	10-Mar-17 A	10-Mar-17 A	100%							Possession 9 Weather allowance
CP2800 Po	ssession 9 Work Starts	0	0	11-Mar-17 A		100%							Rossession 9 Work Starts
CP2810 Sh	ift 1	3	0	11-Mar-17 A	12-Mar-17 A	100%							Shift 1
P2820 Sh	ift 2	3	0	12-Mar-17 A	13-Mar-17 A	100%							\$hift 2
ossession No	o. 10 :10th - 12th June 2017 (Config 9)	3	0	7-Jun-17 A	13-Jun-17 A	100%							
P2660 Po	ssession 10 Weather allowance	3	0	7-Jun-17 A	9-Jun-17 A	100%	Î			1			Possession 10 Weather
CP2670 Po	ssession 10 Work Starts	0	0	10-Jun-17 A		100%							Rossessign 10 Work St
CP2120 Po	ssession 10 - Shift 1	3	0	10-Jun-17 A	11-Jun-17 A	100%							Possession 10 - Shift 1
CP2130 Po	ssession 10 - Shift 2	3	0	11-Jun-17 A	12-Jun-17 A	100%							Possession 10 - Shift 2
P2140 Po	ssession 10 - Shift 3	3	0	12-Jun-17 A	13-Jun-17 A	100%							Possession 10 - Shift 3
	o. 11 :26th - 27th August 2017 (Config 9)	6	6	26-Aug-17	28-Aug-17	0%	0			† <u> </u>	-		
	ssession 11- Shift 1	3	3	26-Aug-17	27-Aug-17	0%	0						Possession
	ssession 11- Shift 2	3	3	27-Aug-17	28-Aug-17	0%	0						Possession 1 Possession
	ng Possession - 21st - 24th September 2017	10	10	9-Sep-17	24-Sep-17	0%	0						
	· ·		4										
	ilding Weather allowance	4		9-Sep-17	14-Sep-17	0%	5			.	- 		∟ Building
	ssession 11 Work Starts	0	0	21-Sep-17	00.0 47	0%	0						Possess
	ay 1- Commission siding 1,2,3 & 4; Final Commissioning	3	3	21-Sep-17	22-Sep-17	0%	0						
	ay 2 - Commission siding 1,2,3 & 4; Final Commissioning	3	3	22-Sep-17	23-Sep-17	0%	0						Day 2 - 0
	ay 3 - Commission siding 1,2,3 & 4; Final Commissioning	3	3	23-Sep-17	24-Sep-17	0%	0						Day 3 -
	ay 4 - Commission siding 1,2,3 & 4; Final Commissioning	3	3	24-Sep-17	24-Sep-17	0%	0			.	- - 		Day 4 -
ting and C	Commissioning	185	70	23-Jan-17 A	9-Oct-17	62.25%	25						
mmissioni	ng, Systems Integration & Operational Readiness	185	70	23-Jan-17 A	9-Oct-17	62.25%	25						
	esting - Buildings	30	30	29-Jun-17 A	8-Aug-17	0%	4						
	ompliance Testing of all Buildings	30	30	29-Jun-17 A		0%	4						
					8-Aug-17		4						Compliance Te
	esting - Concourse & Platforms	30	30	3-Aug-17	8-Sep-17	0%	3				- - 		
	ompliance Testing of Platforms for Rail Systems	25	25	3-Aug-17	4-Sep-17	0%	8						Compliance
	empliance Testing of Concourse	25	25	9-Aug-17	8-Sep-17	0%	4						Compliand
	ompliance Testing of Platforms non Rail Systems	25	25	9-Aug-17	8-Sep-17	0%	5						Compliand
ompliance Te	esting - Turnback area Systems	30	30	21-Jul-17	29-Aug-17	0%	13						
C1040 Co	ompliance Testing of Wickham Turnback Area	30	30	21-Jul-17	29-Aug-17	0%	13						Compliance
mpliance Te	esting - Stabling Yard Systems	30	30	20-Jul-17	26-Aug-17	0%	14						
C1050 Co	ompliance Testing of Stabling Yard	30	30	20-Jul-17	26-Aug-17	0%	14						Compliance
mmissionin	ng - Rail Systems	199	70	23-Jan-17 A	9-Oct-17	64.99%	28						
rmanent Wa	<u> </u>	0	0	24-Sep-17	24-Sep-17	0%	0						
	mmissioning of Track and OHW Completed	0	0		24-Sep-17		0						◆ Commis
nalling	Annihotoring of Haak and Offit Completed	199	70	23-Jan-17 A	9-Oct-17	64.99%	28				- 		Commis
	age 1 (FAT) - Microlok FAT - bell test, wire and null count	31	0	23-Jan-17 A	20-Mar-17 A	100%							Stage 1 (FAT) - Microlok FAT - be
	able insulation and Continuity testing/Circuit Testing, Wire Counts and Null Counts of Signal Locations	40	28	22-Jun-17 A	15-Aug-17	30%	7						Stage 1 (FA1) - Microtok FA1 - De
	inction Circuit Testing - signals, points,track circuits, trainstops etc.	19	19	7-Aug-17	30-Aug-17	0%	7						Cable Insulation
	age 4 (SAT) - 415V Reticulation, Ruggedcoms, Microlok Design Integrity Testing - hot standby	6	6	7-Aug-17 30-Aug-17	6-Sep-17	0%	7						Function Cir
	age 5 (SAT) - Comms Links, I/O Correspondence testing with ATRICS and Interface Testing	5	5	-	· ·		7			·			
			-	7-Sep-17	13-Sep-17	0%							□ Stage 5 (
	age 6 (Commissioning) - Final Signalling Commissioning	2	2	21-Sep-17	24-Sep-17	0%	0						Stage 6
	emoval of decommissioned Comms equipment	10	10	24-Sep-17	9-Oct-17	0%	28						Remo
erational Re		13	13	5-Sep-17	24-Sep-17	0%	U						
	egrated Systems Testing	5	5	11-Sep-17	15-Sep-17	0%	3		4-4-4		- [-] ii		ntegrated
	miliarisation	15	15	5-Sep-17	24-Sep-17	0%	0						
C1130 Tra	aining and Famililiarisation for the Stakeholders	15	15	5-Sep-17	24-Sep-17	0%	0						Training
ions		83	0	9-Jul-15 A	24-Jan-17 A	100%							
proved		83	0	9-Jul-15 A	24-Jan-17 A	100%							
			^										
.2		83	U	9-Jul-15 A	24-Jan-17 A	100%				<u> </u>	<u> </u>	<u> </u>	
	.2 - Supply of Rail & Sleepers	83	0	9-Jul-15 A	24-Jan-17 A	100%							E1.2 - Supply of Rail & Sleepers
iations		470	0	13-Jan-15 A	30-May-17 A	100%							
proved		470	0	13-Jan-15 A	30-May-17 A	100%							
J. O T CU					1				1 1 1				

Actual Work Critical Remainin...

Remaining Work ◆ Milestone

Remaining Work ◆ Saseline Milestone

TASK filters: Hide LOE WBS, Suppressed Activities.
Page 33 of 34
Baseline: Rebaseline

ctivity ID	Activity Name	Original	Remaining	Start	Finish	Duration % Total	2015 2016 2017 201
		Duration	Duration			Complete Float	D Jan F M Apr M J Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan F Mar Apr M Jun Jul A S Oct N D Jan
VO3		22	0	13-Jan-15 A	25-May-15 A	100%	
DR1010	Undertaking of Flood Study (inc TfNSW approvals)	20	0	13-Jan-15 A	25-May-15 A	100%	Undertaking of Flood Study (ne TfNSW approvals)
VO1000	V01 - Flood Study	20	0	13-Jan-15 A	25-May-15 A	100%	V01 - Flood Study
VO1		152	0	5-Jun-15 A	19-Jun-15 A	100%	
VO1020	V01 - Concept Stage 2 Gate CCB Approval	0	0		5-Jun-15 A	100%	🕏 Vb1 - Concept Stage 2 Gate CCB Approva
VO1030	V01 - CDR Approval by TfNSW	0	0		19-Jun-15 A	100%	8 V01: - CDR Approval by Trassw:
VO2		1	0	28-May-15 A	28-May-15 A	100%	
VO1050	V02-Site Establishment savings	1	0	28-May-15 A	28-May-15 A	100%	V02-Site Establishment savings
VO4		0	0	30-Jun-15 A	30-Jun-15 A	0%	
VO1060	VPR4 Artists Impression Roof Design	0	0		30-Jun-15 A	100%	VPR4 Artists Impression Roof Design
V06		3	0	29-Jun-15 A	3-Jul-15 A	100%	
VO1070	VO6 - Raise Overhead Wiring at Merewether Street Level Crossing	3	0	29-Jun-15 A	3-Jul-15 A	100%	VO6 - Raise Overhead Wiring at Merewether Street Level Crossing
V07	100 Maio Promosa Mining at more than 6100t 2010 Processing	3	0	4-Nov-15 A	6-Nov-15 A	100%	a vicinate and a vici
VO1150	VO07 - Argle Street Works	3	0	4-Nov-15 A	6-Nov-15 A	100%	
VO1150	VOOI - AIGIE OTIEET WOING	7	n	26-May-15 A	2-Jun-15 A	100%	VO07 - Argle Street Works
	VOC handing of Friedric Pollary COD laterature	7	0				
VO1080	VO8 - Investigation of Existing Railway CSR Infrastructure	1	0	26-May-15 A	2-Jun-15 A	100%	₽ VΦ8 - Investigation of Existing Railway:CSR Infrastructure
VO9		1	U	24-Aug-15 A	24-Aug-15 A	100%	
VO1090	VPR09 - NIF Concept Design	1	0	24-Aug-15 A	24-Aug-15 A	100%	VPR09 - NIF Concept Design
VO11		1	0	24-Aug-15 A	24-Aug-15 A	100%	
VO1100	V011 - Alternate Option 2 Station Roof Concept Design	1	0	24-Aug-15 A	24-Aug-15 A	100%	V011 - Alternate Option 2 Station Roof Concept Design
VO14 - Re	mediation of existing ATF Fence within the Truncated Rail Corridor	10	0	3-Feb-16 A	14-Feb-16 A	100%	
VO1950	VO14 - Remediation of existing ATF Fence	10	0	3-Feb-16 A	14-Feb-16 A	100%	■ VO14 - Remediation of existing ATF Fende
VO15		1	0	30-Nov-15 A	30-Nov-15 A	100%	
VO1160	VO15 - Sea Container @ Hamilton Station	1	0	30-Nov-15 A	30-Nov-15 A	100%	Vo 15 - Sea Container @ Hamilton Station
VO16		1	0	16-Oct-15 A	13-Nov-15 A	100%	
VO1170	VO16 - Donald Street Park PowerTel Route Proving Works	1	0	16-Oct-15 A	13-Nov-15 A	100%	VO16 - Donald Street Park PowerTel Route Proving Works
VO17- Dec	commissioning Works on Redundant Rail Corridor - Wickham to Newcastle	86	0	23-Oct-15 A	30-Nov-15 A	100%	
VO1110	VO-17 - Direction to undertake decommissioning works	1	0	23-Oct-15 A	23-Oct-15 A	100%	VO;17 Direction to undertake decommissioning works
VO1120	VO-17 -Site Establishment	8	0	26-Oct-15 A	4-Nov-15 A	100%	VO-17 -Sité Establishment
VO1130	VO-17 -Approvals & Notification	12	0	23-Oct-15 A	9-Nov-15 A	100%	VO-17 - Approvals & Notification
VO1140	VO-17 - OHW Wire run Removals & site rectification	10	0	9-Nov-15 A	30-Nov-15 A	100%	Vo-17- OHW Wire run Removals & site rectification
Variation	Orders	470	0	14-Jun-16 A	30-May-17 A	100%	
VO1960	VO20 - PowerTel Cable Relocation Works - Donald Park	1	0	14-Jun-16 A	30-Jun-16 A	100%	VO20 PowerTel Cable Relocation Works Domaid Park
VO1970	VO25 - Alternative Design to Retain Exchange Pit Affected by NIF	1	0	14-Jun-16 A	30-Jun-16 A	100%	VQ25 -Alternative Design to Retain Exchange Pit Affected by NIF
VO1980	VO26 - Novo Rail Demountable Building Clash	1	0	14-Jun-16 A	30-Jun-16 A	100%	VO26 - Novo Rail Demountable Building Clash
VO2030	EVENT 065 Staged Installation of RMU	1	0	14-Jun-16 A	30-Jun-16 A	100%	EVENT 065 Staged Installation of RMU
VO2000	EVENT 076 - Sydney Trains Crossing	1	0	9-Jul-16 A	10-Jul-16 A	100%	I EVENT 076 - Sydney Trains Crossing
VO2040	EVENT 054- Landscape Design	1	0	9-Jul-16 A	10-Jul-16 A	100%	EVENT 054- Landscape Design
VO2060	EVENT 091 -VPR 20 - Partial Relocation of the Cleaners Hut	2	0	9-Jul-16 A	10-Jul-16 A	100%	EVENT 091 - VPR 20 - Partial Relocation of the Cleaner's Hut
VO2110	EVENT 84 - Station Street Work Zone Permit	1	0	14-Oct-16 A	30-Oct-16 A	100%	EVENT 84 - Station Street Work Zone Permit
VO2120	EVENT 52 - Drivers Walkways (Direction Withdrawn)	1	0	14-Oct-16 A	30-Oct-16 A	100%	EVENT 52 - Drivers Walkways (Drection Withdrawn)
VO2130	EVENT 69 - Specailist Lighting	1	0	14-Jun-16 A	30-Oct-16 A	100%	EVENT 69 - Specallist Lighting
VO2150	EVENT 122 - VO40 - Repairs to Drivers Walkways	1	0	14-Oct-16 A	30-Oct-16 A	100%	EVENT 122 - VO40 - Repairs to Drivers Walkways
VO2170	EVENT 125 - VO57 - Installation of Additional Containment for Alternative Position of Concourse Indicators	1	0	14-Oct-16 A	30-Oct-16 A	100%	EVENT 125 - VØ57 - Installation of Additional Containment for Alter
VO2160	EVENT 115 - Ommission of Pole 24	20	0	21-Nov-16 A	30-Nov-16 A	100%	EVENT 115 - Ommission of Pole 24
VO1990	VO29 - Stabling Yard Drainage	1	0	14-Jun-16 A	21-Dec-16 A	100%	VO29 - Stabling Yard Drainage
VO2020	EVENT 049 - Potable Water to the Stabling Yard Decanting Facility	1	0	14-Jun-16 A	30-May-17 A	100%	EVENT 049- Potable Water to the
Advance I	Payment	1	0	17-Dec-15 A	18-Dec-15 A	100%	
VO1180	Unfixed Materials Spreadsheet	1	0	17-Dec-15 A	17-Dec-15 A	100%	Unfixed Materials Spreadsheet
VO1860	Advance payment - Principal 1	4	0	18-Dec-15 A	18-Dec-15 A	100%	Advance payment - Principal 1

TASK filters: Hide LOE WBS, Suppressed Activities.

Baseline : Rebaseline

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 13 – Construction Noise and Vibration Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 14 – Out of Hours Work (OOHW) Procedure

Purpose

This Out of Hours Work Procedure has been developed for the Wickham Transport Interchange Project to comply with TfNSW Conditions of Approval for the Wickham Transport Interchange, Environmental Protection License 20514 and the TfNSW Construction Noise Strategy 7tp-st-157. In particular, this procedure will outline the approval process in order to undertake works outside of the approved construction hours outlined below.

Noise management will also occur in accordance with The WTI Project CEMP and the Construction Noise and Vibration Management Plan.

Approved Working Hours

The following outlines the approved working hours for the Project as described within the CoA and EPL.

CoA/EPL	Condition Detail
COA/ EPL	
	Construction Hours Construction activities shall be restricted to the hours of 7:00 am to 6:00 pm (Monday to Friday); 8:00 am to 1:00 pm (Saturday) and at no time on Sundays and public holidays except for the following works which are permitted outside these standard hours:
CoA 17	 any works which do not cause noise emissions to be more than 5dBA higher than rating background level (RBL) at any nearby residential property and/or other noise sensitive receivers the delivery of plant, equipment and materials which is required outside these hours as requested by police or other authorities for safety reasons and with suitable notification to the community as agreed by the PMEM Emergency Work to avoid the loss of lives, property and/or to prevent environmental harm any other work as agreed by the PMEM (or nominated delegate), and considered essential to the Project, or as approved by
	EPA (where an EPL is in effect). Any work undertaken outside of the standard construction hours shall be subject to approval in accordance with TfNSWs Construction Noise Strategy (CNS) (7TP-ST-157).
	High Noise Generating Activities
CoA B4	Rock breaking or hammering, jack hammering, pile driving, vibratory rolling, cutting of pavement, concrete or steel and any other activities which result in impulsive or tonal noise generation shall only be scheduled between the following hours unless otherwise agreed to by the PMEM (or nominated delegate), or as approved by EPA (where relevant to the issuing of an EPL), unless inaudible at nearby residential properties and/or other noise sensitive receivers: 8:00am to 12:00pm, Monday to Saturday 2:00pm to 5:00pm Monday to Friday.
	Standard construction hours
	Unless permitted by another condition of this licence, construction works and activities must:
EPL L3.1	only be undertaken between the hours of 7:00 am and 6:00 pm Monday to Friday;
	only be undertaken between the hours of 8:00 am and 1:00 pm Saturday; and
	not be undertaken on Sundays or Public Holidays.
	Exemptions to standard construction hours
	The following construction work may be undertaken outside of the hours specified by Condition L3.1:
	Construction work that causes LAeq(15minute) noise levels that are: One of the construction has been precise to a level of the construction has been precised as a construction has been precised as a construction has been precised as a construction has been precised as a construction has been precised as a construction has been precised as a construction has been precised as a construction of the construction has been precised as a construction of the construction has been precised as a construction of the construction of the construction has been precised as a construction of the construction
	o no more than 5 dB above rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC 2009); and
	o no more than the noise management levels specified Table 3 of the Interim Construction Noise Guideline (DECC, 2009)
	at other sensitive land uses;
	Delivery of plant, equipment and materials required to be delivered out of hours for safety reasons;
	Rail maintenance works including tamping and regulating to remediate vertical or horizontal movement >4 mm in track
EPL L3.2	geometry that has occurred as a direct result of works being undertaken for the project; and
	Emergency construction works or activities to ensure the safe operation of rail or avoid loss of life, damage to property, or
	environmental harm. The licensee must:
	on becoming aware of the need to undertake emergency construction work, notify the Environment Protection Authority's
	Environment Line on 131 555 of the need for those activities or work; and:
	the next working day following the emergency works, submit a report to the EPA's Manager Metropolitan Infrastructure
	detailing:
	o the cause, time and duration of the emergency;
	o action taken by the licensee in relation to the emergency; and
	o details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of the emergency.
	High Noise Impact Works High noise impact works and activities must only be undertaken:
	between the hours of 8:00am to 6:00pm Monday to Friday,
EPL L3.3	between the hours of 8:00am to 1:00pm Saturday, and
LI L LJ.J	• in continuous blocks not exceeding 3 hours each with a minimum respite from those activities and works of not less than 1
	hour between each block, except as expressly permitted by Conditions L3.4, L3.5 and L3.6, or another condition of this
	licence.
	For the purposes of this condition "continuous" includes any period during which there is less than a 1 hour respite between ceasing and recommencing any of the work that is the subject of this condition.
	Works Approved Outside of Standard Construction Hours - Local Possessions
	Works and activities may be undertaken during any local possession, but only if:
EPL L3.4	o carrying on those works and activities during standard construction hours (specified in Condition L3.1) would cause
	unacceptable risks to:
	construction personnel safety;
	rail passenger and railways personnel safety; or

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

CoA/EPL	Condition Detail
	 railway network operational reliability as may be notified to the licensee from time to time by RailCorp; and the licensee complies with the requirements of Condition E1; noise and vibration mitigation measures are implemented as detailed in the Interim Construction Noise Guideline (DECC 2009); and the licensee complies with Condition L3.7. High noise impact works and activities (excluding rail adjustment, tamping and regulating) may be undertaken during any local possession permissible by Condition L3.4(a) as follows: between the hours of 6:00am to 10:00pm on any day subject to the works and activities being undertaken in continuous blocks not exceeding 3 hours each with a minimum respite from those works and activities of not less than one hour between each block. For the purposes of this condition "continuous" includes any period during which there is less than a 1 hour respite between ceasing and recommencing any of the works or activities the subject of this condition. Rail adjustment, tamping and regulating may be undertaken at any time during a local possession permissible by Condition
EPL L3.6	 Works Approved Outside of Standard Construction Hours - Weekends Activities and works may be undertaken during the hours outlined in Condition L3.5(b) but only if one or more of the following applies: carrying on those works and activities during the hours specified in Condition L3.1 would cause unacceptable risks to one or more of the following: construction personnel safety; road user and public safety; road network operational performance as may be notified from time to time by the Roads and Maritime Services; and/or essential utility services. the Roads and Maritime Services' Traffic Management Centre (or other road authority) refuse to issue a road occupancy licence for the works or activities during the hours specified in Condition L3.1. For the situations outlined in Condition L3.5(a), activities and works may be undertaken (except on public holidays) between the hours of: 6:00 pm and 7:00 am the following day on Mondays, Tuesdays, Wednesdays, and Thursdays; and 6:00 pm and 8:00 am the following day on Fridays. In undertaking any activities and works under Condition L3.6(b) the licensee must: comply with Condition L3.7; comply with Condition L3.7; comply with Condition L3.7; comply with the requirements of Condition E1; and implement noise and vibration mitigation measures as detailed in the Interim Construction Noise Guideline (DECC 2009).
EPL L3.7	Limitations on Frequency of Night and Evening Works Activities permitted by Condition L3.4, L3.5 or L3.6 (excluding high noise impact works) must not be undertaken within the same local noise catchment on more than: 3 consecutive evenings or nights per week; 4 evenings or nights per week; or 10 evenings or nights per month. High noise impact activities and works must not be undertaken on more than 2 evenings or nights per week within the same local noise catchment. Note: The EPA will consider an exemption to the above conditions if the licensee can demonstrate to the EPA's satisfaction that the majority of stakeholders impacted by the works support the exemption.

Out of Hours Works Assessment and Referral Process

For construction activities that require to be undertaken outside of the approved construction hours for the project, the following process applies. An Out of Hours Works Assessment and Application (OOHWAA) will be utilised to identify risk of the proposed out of hours.

No.	Step	Detail
1	Work Identification	Identify work activities requiring work outside of the approved hours.
2	Assess Alternatives	Assess alternate options that may allow construction to be undertaken within approved hours such as; using alternate equipment, different construction methods, or postponing scheduled works. If no other options are considered practical, consult the project Environment Manager.
3	Undertake OOHWAA	If no alternate options are available/viable, the activity is to be assessed for noise and vibration impacts on the surrounding receivers via an Out of Hours Works Assessment and Approval, prepared by suitably qualified personnel, taking into account all proposed noise and vibration mitigation measures. General activities such as security operations, office staff and cleaning that are not audible at receivers will not require an OOHWAA. The assessment may be based on information within the Construction Noise and Vibration Management Plan, or if works are not sufficiently captured within this plan, a standalone noise assessment in the form of a spreadsheet.
4	Low Impact Works	If the OOHWAA shows that the construction activity L _{Aeq} (15 minute) level is no more than 5 dB above rating background level at any residence the activity will be considered low environmental risk and referred to the Project Environmental Representative (PER), Project Community Manager (PCM) and Project Leader (PL) for review and approval.
5	Medium-High Impact Works	If the OOHWAA shows that the construction activity LAeq (15 minute) level is greater

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

No.	Step	Detail
		than 5 6dB above rating background level at any residence the activity will be considered medium to high environmental. The assessment will categorise the activities into one of 4 categories as listed in Table 5 of the TfNSW Construction Noise Strategy 7tp-st-157; Noticeable Clearly Audible Moderately Intrusive Highly Intrusive Mitigation measures for community liaison will be in accordance with Table 5 of the TfNSW Construction Noise Strategy 7tp-st-157. The OOHWAA must be reviewed and approved by the Project Environmental Representative (PER), Project Community Manager (PCM) and Project Leader (PL). Up to 4 weeks (20 business days) will be allowed to review the OOHWAA.
6	OOH Works Approval	Works will not commence during varied hours until approval is granted by the Project Environmental Representative (PER), Project Community Manager (PCM) and Project Leader (PL). A copy of the OOHWAA will be sent to TfNSW and, where required by any license, the EPA for information purposes.
7	Community Notification	All out of hours works (both low and high impact) will require a 7 day community notification period and be distributed to affected receivers.
8	Mitigation and Monitoring	All reasonable and feasible mitigation measures are to be implemented in both standard approved and varied hours of works for the duration of the project. Attended noise monitoring will be undertaken for commencement of all work activities undertaken out of standard hours that have been predicted to be of medium to high environmental risk to ensure they comply with findings of the OOHWAA. The OOHWAA may stipulate certain mitigation measures for the works it has assessed. These must be complied with. Noise monitoring will be undertaken by suitably qualified personnel, including professionally trained and experienced environmental staff and noise consultants where deemed necessary. Should noise or vibration levels be observed to continually exceed those outlined in the activity specific OOHWAA, works shall stop and alternate methods and mitigation investigated.

Mitigation Measures

Standard noise and vibration mitigation measures for all works are outlined the Construction Noise and Vibration Management Plan and Appendix 4 of the Construction Environmental Management Plan.

Activity specific mitigation measures will be detailed for each out of hours works request.

Notifications

Notification requirements for construction works are detailed in the Community Liaison Plan. Notifications will be issued for work undertaken outside standard construction hours that are deemed to be medium to high risk.

Regular monthly construction updates will also be distributed to surrounding receivers.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 15 – Heritage Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 16 - Traffic Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 17 - Construction Waste, Contamination and Hazardous Material Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 18 – Bat Management Plan

The Maitland Road overpass is potential roosting habitat for the Little Bent Wing Bat, a threatened species listed as vulnerable under the TSC Act. However, the bridge is not considered suitable as breeding habitat. If bats are present beneath the bridge deck, they will likely roost in small (<5 cm) cracks in the concrete, where they will sleep during daylight hours. At dusk they will emerge to forage, returning at dawn the following day. Any works to be undertaken at night will have a heightened risk due to bat activity. Should Little Bent wing bat be identified to be present, additional mitigation measures will be implemented to minimise impacts. These will include lighting source and direction, in addition to toolbox briefing for site personnel working in this area.

Works scheduled to take place beneath the overpass include an additional rail siding, overhead wire structure install, footpaths, attaching cable troughing and services conduits to the vertical walls. Microbats such as the Little Bent wing bat will only roost beneath horizontal or overhanging structures, hence it is unlikely that the proposed works will have any direct or long term impact on their roosting habitat.

Although the proposed works are considered to be too short in duration to significantly impact populations of the Little Bent wing bat within this area, periodic monitoring of the underside of the bridge deck prior to and during construction will be undertaken. This will ensure that these areas are not being utilised by the Little Bent wing bat at the time of the proposed works. This would involve a simple inspection using a torch if necessary to see into any small crevices that might be used as roosts. Should Little Bent wing bats be detected during these surveys, construction personnel will be informed and instructed that bats are not to be disturbed (i.e. direct disturbance, light pollution and vibration).

The presence of the Little Bent Wing Bat will be included in the Site Induction. Workers undertaking activities in the vicinity of the known roosting habitat will be tool boxed on the bat.

Should Little Bent wing bat be present and are accidentally harmed or otherwise require to be relocated, WIRES will be contacted (contact details are on the ECM in Appendix 5 of this CEMP and displayed in the site compound).

This management plan is the responsibility of the Site ER, and appropriate tool box talks will be given to personnel working in the vicinity of the bridge.

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Constru	CHOHE		ientai iviä	anademeni	. Pian

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 19 – Staff Acknowledgement Register

To be populated following TfNSW approval of plan

	Environmental Managemen	t Plan Acknowledgment Register	
Name	Position	Signature	Date
	l		

Appendix 20 – Conditions of Approval – Pre-Construction Compliance Tracking Matrix

No	Туре			CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
Genera	al								
	Terms of Approval The Project shall be carried out generally in accordance with the EIA for this Project, which comprises the following documents:								CEMP and sub-plans written in
	Document	Author	Date						accordance with listed
	Wickham Transport Interchange Review of Environmental Factors	GHD	July 2014	СЕМР	Before/During/ Post		Ongoing	LORAC/ TfNSW	documents to be enforced on- site. Ongoing field inspections,
	Wickham Transport Interchange Submissions Report	GHD	October 2014						systems audits and joint
	Wickham Transport Interchange Determination Report	TfNSW	November 2014						meetings to check compliance.
	In the event of an inconsistency between these conditions prevail to the extent of the inconsistency.	and the EIA, the	ese conditions will						
	Project Modifications Any modification to the project as approved in the EIA woo assessment by TfNSW. This assessment would need to cimpacts resulting from the modifications have been minim	lemonstrate that		Not Used	Before/During		Ongoing	LORAC/ TfNSW	Modifications to the project will be properly assessed as they arise.
	Statutory Requirements These conditions do not relieve the Proponent of the oblig permits, approvals and land owner consents from all relev required under any other legislation for the Project. The Pr terms and conditions of such licences, permits, approvals	ant authorities a roponent shall c	and land owners as comply with the	СЕМР	During		Recurrent	LORAC/ TfNSW	Appendix 2 and Appendix 8
	Pre-Construction Environmental Compliance Matrix A pre-construction environmental compliance matrix (PEC of the Project as agreed to by the Environmental Manager be prepared detailing compliance with all relevant conditio construction. The PECM shall also include details of appr required to be obtained under any other legislation for the The PECM shall include details demonstrating how the de Project will be in compliance with the Sustainable Design of The Proponent shall: • submit a copy of the PECM to the EMR and PMS for re given a minimum period of 7 days to review and provide in relation to the PECM • upon completion of the EMR and PMS review period, so PMEM for approval, at least 14 days (or within such tim PMEM) prior to commencement of construction of the EM	ment Represent ns prior to comrovals, licences a Project. usign and constr Guidelines Versurew. The EMR e any comments ubmit a copy of e as otherwise a	ative (EMR)) shall nencement of and permits uction of the ion 3.0. and PMS are to be to the Proponent the PECM to the	Appendix 20	Pre- construction: prior to each phase or activity		Complete as at pre-construction commencement	LORAC	Appendix 20 (this matrix). SDG requirements are addressed within Condition 39.
	Construction Environmental Compliance Report The Proponent shall prepare a construction environmenta addresses the following matters: compliance with the construction environmental manag conditions compliance with the Sustainable Design Guidelines Ver compliance with any approvals or licenses issued by rel the Project implementation and effectiveness of environmental con effectiveness should be based on a comparison of acturiteria identified in the CEMP)	ement plan (CE rsion 3.0 complice levant authoritie trols (the assess	MP) and these ance checklist s for construction of		6 months from commencement		For preparation post-construction or 6 months after commencement	LORAC	To be completed six months after the commencement of construction

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	 environmental monitoring results, presented as a results summary and analysis details of the percentage of waste diverted from landfill and the percentage of spoil beneficially reused number and details of any complaints, including summary of main areas of complaint, actions taken, responses given and intended strategies to reduce recurring complaints (subject to privacy protection) details of any review and amendments to the CEMP resulting from construction during the reporting period any other matter as requested by the PMPD and PMEM. The Proponent shall: submit a copy of the CECR to the EMR for review. The EMR is to be given a minimum period of 7 days to review and provide any comments to the Proponent in relation to the CECR submit a copy of the CECR to the PMEM (or nominated delegate) for approval upon completion of the EMR review period make publicly available a copy of the CECR by posting the CECR on the TfNSW website within 7 days of approval of the CECR by the PMEM. The first CECR shall report on the first six months of construction and be submitted within six weeks of expiry of that period (or at any other time interval agreed to by the PMEM). CECRs shall be submitted no later than six months after the date of submission of the preceding CECR (or at other such periods as requested by the PMEM) for the duration of construction. Pre-Operation Compliance Report A pre-operation Compliance Report A pre-operation compliance report (POCR) for the Project shall be prepared, prior to commencement of operation of the Project. The POCR shall detail compliance with all the conditions and the Sustainable Design Guidelines Version 3.0 compliance checklist (refer to condition 40). The Proponent shall: submit a copy of the POCR to the EMR for review. The EMR is to be given a minimum 	Not referenced in	Nearing completion of construction — will apply to		To be prepared prior to completion of construction (for	LORAC	Compliance
	 period of 7 days to review and provide any comments to the Proponent in relation to the POCR. upon completion of the EMR review period submit a copy of the POCR to the PMEM (or nominated delegate) and PMS for approval. The POCR is to be provided to the PMEM and PMS at least one month prior to the scheduled operation of the Project (or such time as otherwise agreed to by the PMEM). 		operation of temporary stabling facility at Hamilton.		temporary stabling facilities)	LORAC	
Comm	nunications						
	Community Liaison Plan The Proponent shall develop and implement a community liaison plan (CLP) to engage with government agencies, relevant councils, landowners, community members and other relevant stakeholders (such as utility and service providers, bus companies and businesses). The CLP shall comply with the obligations of these conditions and should include, but not necessarily be limited to: • details of the protocols and procedures for disseminating information and liaising with the community and other key stakeholders about construction activities (including timing and staging) and any associated impacts during the construction period • details of the community liaison team appointed to manage and implement the plan • stakeholder and issues identification and analysis • identification of opportunities where community feedback will be sought throughout the project (including sustainability initiatives) • procedures for dealing with complaints or disputes and response requirements, including	Section 18	Pre- and during construction		Finalised	LORAC	Community notifications have been sent out within the specified time frames as per the TSR-C

Project:Project No:Date:Rev:Wickham Transport InterchangeG8501 August 201709

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	 advertising the 24 hour construction response line number details (including a program) of training for all employees, contractors and sub-contractors on the requirements of the CLP. Sub-plans to the CLP will be developed as required. These sub-plans will detail site-specific consultation and communication requirements for construction works that impact residents, other stakeholders and businesses. They will also identify further mitigation measures and processes to reduce construction impacts. The CLP shall be prepared to the satisfaction of the Technical Director Project Communications at least 7 days prior to the commencement of construction and implemented, reviewed and revised as appropriate during construction of the Project. 						
	Community Notification and Liaison The local community shall be advised of any activities related to the Project with the potential to impact upon them. Prior to any site activities commencing and throughout the Project duration, the community is to be notified of works to be undertaken, the estimated hours of construction and details of how further information can be obtained (i.e. contact telephone number/email, website, newsletters etc.) including the 24 hour construction response line number. Construction-specific impacts including information on traffic changes, access changes, detours, services disruptions, public transport changes, high noise generating work activities and work required outside the nominated working hours shall be advised to the local community at least seven (7) days prior to such works being undertaken or other period as agreed to by the Technical Director Project Communications or as required by Environment Protection Authority (EPA) (where an Environment Protection Licence (EPL) is in effect).	Section 18 CEMP	During		Recurrent	LORAC/ TfNSW	Community notifications will be issued, at minimum, on a monthly basis in accordance with the Community Liaison Plan (ref. condition 7). Further notices may be delivered to targeted residence or businesses impacted by certain parts of the works Project telephone information line has been established (1800 684 490)
	The Proponent shall provide electronic information (or details of where hard copies of this information may be accessed by members of the public) related to the Project, on dedicated pages within its existing website, including: a copy of the documents referred to under condition 1 of this approval and any documentation supporting modifications to the approval or related approvals that may be granted in the future a copy of each relevant licence approval or permit required and obtained in relation to the Project a list of environmental management reports that are publicly available details of construction information 24 hour contact telephone number for information and complaints. Detailed updates of work progress and construction activities shall be regularly provided on the website.	Section 18 CEMP	During		Ongoing	LORAC/ TfNSW	Project construction details on TfNSW Website: http://www.transport.nsw.gov.a u/projects-wickham-transport- interchange
	Complaints Management The Proponent shall set up a 24 hour construction response line number. Details of all complaints received during construction are to be recorded on a complaints register. A verbal response to phone enquiries on what action is proposed to be undertaken is to be provided to the complainant within two (2) hours during all times construction is being undertaken and within 24 hours during non-construction times (unless the complainant agrees otherwise). A detailed written response is to be provided to the complainant within seven (7) calendar days. Responses to written complaints (email/letter) should be provided within 48 hours of receipt of the communication. Information on all complaints received during the previous 24 hours and response times shall be forwarded to the EMR each working day.	Section 18 CEMP	During		Ongoing	LORAC/ TfNSW	Project telephone information line has been established (1800 684 490)

Construction Environmental Management Plan WTI-LOR-PMP-0014

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	Property Condition Surveys Subject to landowner agreement, property condition surveys shall be completed prior to piling, excavation or bulk fill or any vibratory impact works including jack hammering and compaction (Designated Works) in the vicinity of all heritage listed buildings and other sensitive structures within 25 metres from the edge of the Designated Works unless otherwise determined following geotechnical and vibration assessment as endorsed by a qualified geotechnical engineer and as approved by the PMEM as not likely to be adversely affected. Property condition surveys need not be undertaken if a risk assessment indicates buildings/structures/roads will not be affected as determined by a qualified geotechnical and construction engineering expert with appropriate registration on the National Professional Engineers Register prior to commencement of Designated Works. Selected potentially sensitive buildings and/or structures shall first be surveyed prior to the commencement of the Designated Works and again immediately upon completion of the Designated Works. All owners of assets to be surveyed, as defined above, are to be advised of the scope and methodology of the survey and the process for making a claim regarding property damage within a reasonable time (not less than 14 days) prior to commencement of the surveys. A copy of the survey(s) shall be given to each affected owner. A register of all properties surveyed shall be maintained. Any damage to buildings, structures, lawns, trees, sheds, gardens etc. as a result of construction activity direct and indirect (i.e. including vibration and groundwater changes) shall be rectified at no cost to the owner(s).		Pre-construction; Before piling, excavation or bulk fill or any vibratory impact works. Post Construction.	1 Jun 15	Property condition surveys will be undertaken as required. 06 Jun15: Structural Engineer being engaged to conduct surveys.	LORAC	No vibratory works will take place within curtilage of heritage listed buildings (Hamilton Station) until surveys have been completed and conditions of S.60 approval (Heritage Act) have been complied with.
Enviro	nmental Management		•				
	Environmental Induction Prior to the commencement of construction, all contractors shall be inducted by the Proponent on the key Project interfaces and associated environmental risks and procedures.	Section 11 CEMP	Before During		Recurrent	LORAC	Induction package – already in place for all construction staff & subcontractors. Induction must be undertaken prior to being admitted to the site. Copy of Site induction register available on request.
	Environmental Management System Construction works shall be undertaken in accordance with the Proponent's Environmental Management System(s) (EMS) which has been accredited as ISO14001 compliant.	Section 13 CEMP	Before During		Recurrent	LORAC	Section 13 CEMP: CEMP has been prepared so as to achieve consistency with the EMS.
	Environmental Management Representative Prior to the commencement of construction, the PMEM shall appoint an EMR who is independent of the design and construction personnel of the Project, for the duration of the construction period for the Project. The EMR shall provide advice to the PMEM in relation to the environmental compliance and performance of the Project. The EMR shall have responsibility for: • considering and advising the Proponent on matters specified in these conditions and compliance with such • reviewing and where required by the PMEM, providing advice on the Project's induction and training program for all persons involved in the construction activities and monitoring implementation • periodically auditing the Project's environmental activities to evaluate the implementation, effectiveness and level of compliance of on-site construction activities with authority approvals and licences, the CEMP and associated plans and procedures, including carrying out site inspections weekly, or as required by the PMEM;		Ongoing		Active / recurrent	TfNSW	EMR: David Bone OnSite Environmental Management 02 4935 2300 / 0407 461 092 David.bone@osem.com.au

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	 reporting weekly to the Proponent issuing a recommendation to the Proponent for work to stop immediately, if in the view of the EMR circumstances so require. The stop work recommendation may be limited to specific activities if the EMR can easily identify those activities requiring reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts reviewing corrective and preventative actions to ensure the implementation of recommendations made from the audits and site inspections providing reports to the Proponent on matters relevant to the carrying out of the EMR role as necessary where required by the PMEM, providing advice on the content and implementation of the CEMP and Environmental Controls Map (ECM) in accordance with the conditions. The EMR shall be available during construction activities to inspect the site(s) and be present on-site as required during any critical construction Activities as defined in the CEMP and ECM. 						
	Construction Environmental Management Plan The Proponent shall prepare a CEMP prior to commencement of construction which addresses the following matters: • traffic and pedestrian management (in consultation with the relevant roads authority) • noise and vibration management, including TfNSW's Construction Noise Strategy and EPA's Interim Construction Noise Guideline (July 2009) • water and soil management including TfNSW's Water Discharge and Reuse Guidelines (7TP-ST-146) • air quality management (including dust suppression) • indigenous and non-indigenous heritage management • flora and fauna management • storage and use of hazardous materials • contaminated land (including acid sulphate soils) • weed management • waste management • light spill • sustainability initiatives • environmental incident reporting and management procedures including TfNSW's Environmental Incident Classification and Reporting Procedure (9TP-PR-105) • non-compliance and corrective/preventative action procedures The CEMP shall: • comply with the conditions of approval, conditions of any licences, permits or other approvals issued by government authorities for the Project, all relevant legislation and regulations, and accepted best practice management • be prepared in accordance with the Guideline for Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004) The Proponent shall: • consult with government agencies and relevant service/utility providers as part of the preparation of the CEMP • submit a copy of the CEMP to the EMR for review. The EMR is to be given a minimum period of 7 days to review and provide any comments to the Proponent in relation to the CEMP • submit a copy of the CEMP to the PMEM (or nominated delegate) for approval upon completion of the EMR review period, at least 14 days prior to commencement of construction (or such time as is otherwise agreed to by the PMEM)	CEMP (all)	Before / During	01 Jun 15	Plan to be updated during life of construction works.	LORAC	Approved CEMP

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	 make publicly available a copy of the CEMP by posting the CEMP on the Proponent's website within 7 days of approval of the CEMP by the PMEM (or nominated delegate where relevant) review and update the CEMP at minimum 6-monthly intervals, and in response to any actions identified as part of the EMR's audit of the document ensure updates to the CEMP are be made within 7 days of the completion of the review or receipt of actions identified by any EMR audit of the document, and be submitted to the EMR for approval. The CEMP must be approved by the PMEM prior to the commencement of construction work associated with the Project. 						
	Environmental Controls Map The Proponent shall prepare an ECM in accordance with TfNSW's Guide to Preparing ECMs prior to the commencement of construction for implementation for the duration of construction. The ECM is to be endorsed by the EMR and may be prepared in stages as set out in the CEMP. The Proponent shall submit a copy of the ECM to the EMR for review and endorsement. The EMR is to be given a minimum period of 7 days to review and endorse the ECM. Following receipt of the EMR's endorsement, the ECM shall be submitted to the PMEM (or nominated delegate) for approval, at least 14 days prior to commencement of construction (or such time as is otherwise agreed to by the PMEM). The ECM shall be prepared as a map – suitably enlarged (e.g. A3 size or larger) for mounting on the wall of a site office and included in site inductions, supported by relevant written information. Updates to the ECM shall be made within 7 days of the completion of the review or receipt of actions identified by any EMR audit of the document, and be submitted to the EMR for approval.	Appendix 5 CEMP	All	Jun 2015	Early works ECM submitted to cover clearing and grubbing. Construction ECMs to be submitted by the 29 Jun 15.	LORAC	Subject to periodic revision/review
Hours	Construction Hours Construction activities shall be restricted to the hours of 7:00 am to 6:00 pm (Monday to Friday); 8:00 am to 1:00 pm (Saturday) and at no time on Sundays and public holidays except for the following works which are permitted outside these standard hours: • any works which do not cause noise emissions to be more than 5dBA higher than rating background level (RBL) at any nearby residential property and/or other noise sensitive receivers • the delivery of plant, equipment and materials which is required outside these hours as requested by police or other authorities for safety reasons and with suitable notification to the community as agreed by the PMEM Emergency Work to avoid the loss of lives, property and/or to prevent environmental harm any other work as agreed by the PMEM (or nominated delegate), and considered essential to the Project, or as approved by EPA (where an EPL is in effect). Any work undertaken outside of the standard construction hours shall be subject to approval in accordance with TfNSWs Construction Noise Strategy (CNS) (7TP-ST-157).	Appendix 4 (Environment al Risk Action Plans)	During		Recurrent OOHW subject to conditions in EPL.	LORAC	OOHW applications will be prepared and submitted as required. Internal sign off under LORAC EPL. All works outside EPL boundary will be signed off by TfNSW EMR.
	High Noise Generating Activities Rock breaking or hammering, jack hammering, pile driving, vibratory rolling, cutting of pavement, concrete or steel and any other activities which result in impulsive or tonal noise generation shall only be scheduled between the following hours unless otherwise agreed to by the PMEM (or nominated delegate), or as approved by EPA (where relevant to the issuing of an EPL), unless inaudible at nearby residential properties and/or other noise sensitive receivers:	Appendix 4 (Environment al Risk Action Plans)	During		Recurrent	LORAC	Works to occur in line with this CoA and the EPL conditions.

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	8:00am to 12:00pm, Monday to Saturday 2:00pm to 5:00pm Monday to Friday.						
Noise a	and Vibrations	I					
	Construction Noise and Vibration Construction noise and vibration mitigation measures shall be implemented through the CEMP, in accordance with TfNSW's Construction Noise Strategy and the EPA Interim Construction Noise Guideline (July 2009). The mitigation measures shall include, but not necessarily be limited to: • details of construction activities and an indicative schedule for construction works • identification of construction activities that have the potential to generate noise and/or vibration impacts on surrounding land uses, particularly sensitive noise receivers. • detail what reasonable and feasible actions and measures shall be implemented to minimise noise impacts (including those identified in the REF) • procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints • an out of hours work protocol (OOHWP) for the assessment, management and approval of works outside the standard construction hours identified in condition 17of this approval, including a risk assessment process which deems the out of hours activities to be of low, medium or high environmental risk, is to be developed. All out of hours works are subject to approval by the EMR and/or PMEM or nominated delegate) or as approved by EPA (where relevant to the issuing of an EPL). The OOHWP should be consistent with the TfNSW Construction Noise Strategy. • a description of how the effectiveness of actions and measures shall be monitored during the proposed works, clearly indicating the frequency of monitoring, the locations at which monitoring shall take place, recording and reporting of monitoring results and if any exceedance is detected, the manner in which any non-compliance shall be rectified	Appendix 4 (Environment al Risk Action Plans)	During	01 Jun 15	Recurrent	LORAC	Construction Noise & Vibration Management Plan to be developed before 01 June.
	Vibration Criteria Vibration (other than from blasting) resulting from construction and received at any structure outside of the Project shall be limited to: • for structural damage vibration - German Standard DIN 4150:Part 3 – 1999: Structural Vibration in Buildings: Effects on Structures • for human exposure to vibration – the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (DEC 2006). These limits apply unless otherwise approved by the PMEM through the CEMP.	Appendix 4 (Environment al Risk Action Plans)	During	01 Aug 15	Recurrent	LORAC	Construction Noise & Vibration Management Plan to be developed before 01 August
	Non-tonal Reversing Beepers Non-tonal reversing beepers (or an equivalent mechanism) shall be fitted and used on all construction vehicles and mobile plant regularly used on site (i.e. greater than one day) and for any out of hours work.	Appendix 4 (Environment al Risk Action Plans)	During		Recurrent	LORAC	Plant inspection for pre- mobilisation
	Noise Impact on Educational Facilities Potentially affected pre-schools, schools, universities and any other affected permanent educational institutions shall be consulted in relation to noise mitigation measures to identify any noise sensitive periods (e.g. exam periods). As much as reasonably possible noise intensive construction works in the vicinity of affected educational buildings are to be minimised.	Appendix 4 (Environment al Risk Action Plans) Community Liaison Plan	During		Recurrent	LORAC	Noise & Vibration Management Plan Community Liaison Plan
	Operational Noise and Vibration During detailed design an operational noise and vibration management plan (ONVMP) shall be prepared to confirm the final mitigation measures for operational noise and vibration that	Not referenced in CEMP	Pre-construction		Completed	TfNSW	The operational Noise and Vibration Management Plan has been completed.

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	 would be implemented. The ONVMP shall be prepared in consultation with NSW Trains (where relevant) and other relevant stakeholders. The ONVMP shall: consider any changes to the predicted noise and vibration levels resulting from design refinements and any changes to the proposed operational plan for trains examine all reasonable and feasible noise and vibration mitigation measures consistent with the Rail Infrastructure Noise Guidelines and Industrial Noise Policy identify specific physical and other mitigation measures for controlling noise and vibration at the source and at the receiver (if relevant) including location, type and timing of implementation of the proposed operational noise and vibration mitigation measures seek feedback from directly affected receivers on the final mitigation measures proposed in the review consider measures identified in the NSW Government's broader noise mitigation program and the role this would play in mitigation at the project level. The ONVMP is to be prepared for the approval of PMEM prior to the commencement of operation. 						
	Operational Noise Compliance Monitoring In order to validate the predicted noise levels identified in the noise and vibration assessment, monitoring shall be undertaken within three months of commencement of operation. This noise and vibration monitoring shall be undertaken to confirm compliance with the predicted noise and vibration levels, or as modified by the reasonable and feasible review. Should the results of monitoring indicate that the predicted noise and vibration levels are exceeded, additional reasonable and feasible mitigation measures would be implemented in consultation with the affected property owners.	Not referenced in CEMP	Post- construction (operation of temporary stabling facility at Hamilton)		To be scheduled at commencement of operation	TfNSW	
	Piling Wherever practical, piling activities shall be completed using non-percussive piles. If percussive piles are proposed to be used, approval of the EMR or PMEM shall be obtained prior to commencement of piling activities.	Appendix 4 (Environment al Risk Action Plans)	During		Recurrent	LORAC	Piling will be conducted using continuous flight auger (CFA) piling method
Conta	mination and Hazardous Materials						
	Duty to Notify If previously unidentified contamination is identified within the site, the Proponent is to determine whether there is a Duty to Report under section 60 of the Contaminated Land Management Act 1997, and notify the EPA in accordance with the EPA's Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (2009).	CEMP Section 18 Appendix 4 (Environment al Risk Action Plans)	During		Recurrent	LORAC	CEMP Section 18 Appendix 4 (Environmental Risk Action Plans)
	Unidentified Contamination (Other than Asbestos) If previously unidentified contamination (excluding asbestos) is discovered during construction, work in the affected area must cease immediately, and an investigation must be undertaken and report prepared to determine the nature, extent and degree of any contamination. The level of reporting must be appropriate for the identified contamination in accordance with EPA Guidelines for Consultants Reporting on Contaminated Sites. The Proponent shall submit a copy of the report to the PMEM for consideration. The PMEM shall determine whether consultation with the relevant council and/or EPA is required prior to continuation of Construction works within the affected area. Note: In circumstances where both previously unidentified asbestos contamination and other contamination are discovered within a common area, nothing in these conditions shall prevent the preparation of a single investigation report to satisfy the requirements of both condition 27 and condition 28.	Appendix 4 (Environment al Risk Action Plans)	During		Recurrent	LORAC	'Unexpected finds' procedure documented in CEMP Appendix 4

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	Asbestos Management If previously unidentified asbestos contamination is discovered during construction, work in the affected area must cease immediately, and an investigation must be undertaken and report prepared to determine the nature, extent and degree of the asbestos contamination. The level of reporting must be appropriate for the identified contamination in accordance with relevant EPA and WorkCover Guidelines and include the proposed methodology for the remediation of the asbestos contamination. Remediation activities must not take place until receipt of the investigation report. Works may only recommence upon receipt of a validation report from a suitably qualified contamination specialist that the remediation activities have been undertaken in accordance with the investigation report and remediation methodology. Note: In circumstances where both previously unidentified asbestos contamination and other contamination are discovered within a common area, nothing in these conditions shall prevent the preparation of a single investigation report to satisfy the requirements of both condition 27 and condition 28.	Appendix 4 (Environment al Risk Action Plans) Appendix 2 (Legal and other requirements) Appendix 3 (Environment al Risk Assessment) Appendix 7 (Project Waste Strategy)	During		Recurrent	LORAC	'Unexpected finds' procedure documented in CEMP Appendix 4 Asbestos Management Plan has been developed
	Storage and Use of Hazardous Materials Construction hazard and risk issues associated with the use and storage of hazardous materials shall be addressed through risk management measures, which shall be developed by the construction contractor prior to construction as part of the overall CEMP, in accordance with relevant EPA guidelines, TfNSW Chemical Storage and Spill Response Guideline and Australian and ISO standards. These measures shall include: • the storage of hazardous materials, and refuelling/maintenance of construction plant and equipment to be undertaken in clearly marked designated areas that are designed to contain spills and leaks • spill kits, appropriate for the type and volume of hazardous materials stored or in use, to be readily available and accessible to construction workers. Kits to be kept at hazardous materials storage locations, in site compounds and on specific construction vehicles. Where a spill to a watercourse is identified as a risk, spill kits to be kept in close proximity to potential discharge points in support of preventative controls • all hazardous materials spills and leaks to be reported to site managers and actions to be immediately taken to remedy spills and leaks • training in the use of spill kits to be given to all personnel involved in the storage, distribution or use of hazardous materials.	CEMP Section 15 CEMP Section 18 Appendix 3 (Environment al Risk Assessment) Appendix 4 (Environment al Risk Action Plans) Appendix 6 (Pollution Incident Response Management Plan)	During		Recurrent	LORAC	ECMs (CEMP Appendix 5) illustrate locations for storage of hazardous materials
	Traffic Management Plan The Proponent shall prepare a construction traffic management plan (TMP) as part of the CEMP which addresses, as a minimum, the following: ensuring adequate road signage at construction work sites to inform motorists and pedestrians of the work site ahead to ensure that the risk of road accidents and disruption to surrounding land uses is minimised maximising safety and accessibility for pedestrians and cyclists ensuring adequate sight lines to allow for safe entry and exit from the site ensuring access to railway stations, businesses, entertainment premises and residential properties (unless affected property owners have been consulted and appropriate alternative arrangements made) managing impacts and changes to on and off street parking and requirements for any temporary replacement provision parking locations for construction workers away from stations and busy residential areas and details of how this will be monitored for compliance routes to be used by heavy construction-related vehicles to minimise impacts on sensitive	Appendix 16 - Construction Traffic Management Plan	Pre-construction	Apr 2015.	Final comments from TfNSW incorporated.	LORAC	Construction Traffic Management Plan

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	 land uses and businesses details for relocating kiss-and-ride, taxi ranks and rail replacement bus stops if required, including appropriate signage to direct patrons, in consultation with the relevant bus operator. Particular provisions should also be considered for the accessibility impaired. measures to manage traffic flows around the area affected by the Project, including as required regulatory and direction signposting, line marking and variable message signs and all other traffic control devices necessary for the implementation of the TMP. identify crane locations and swing paths The Proponent shall consult with the relevant roads authority during preparation of the TMP, as required. The performance of all Project traffic arrangements must be monitored during construction. 						
	Road Condition Reports Prior to construction commencement, the Proponent shall prepare road condition surveys and reports on the condition of roads and footpaths affected by construction, to the satisfaction of the infrastructure owner(s). The Proponent shall carry out rectification work at the Proponent's expense to repair infrastructure to the asset condition prior to commencement of construction.	Not referenced in CEMP	Pre-construction commencement	01 Aug 15		LORAC	Local roads that will be subject to construction traffic – Report for Railway Lane has been completed and accepted by NCC. Remaining reports will be staggered to coincide with road usage.
Lightir	ng						
	Lighting Control All permanent lighting for the Project must be designed, installed and operated in accordance with the requirements of AS 1158 Road Lighting and AS 4282 Control of the Obtrusive Effects of Outdoor Lighting and other relevant standards.	Appendix 3 (Environment al Risk Assessment) Appendix 4 (Environment al Risk Action Plans)	During		Recurrent	LORAC	Permanent lighting will be managed through design process. Construction lighting to be managed ion accordance with CEMP.
Flora a	and Fauna						
	Replanting Program All cleared vegetation shall be replaced and/or offset in accordance with the following, unless otherwise agreed or directed by the PMEM: Sydney Train's Biodiversity Offset Calculator for vegetation within the rail corridor TfNSW's Vegetation Offset Guide for vegetation outside of the rail corridor All vegetation planted on-site is to consist of locally endemic native species, unless otherwise agreed by the PMEM, following consultation with the relevant Local Authority, where relevant, and/or the owner of the land upon which the vegetation is to be planted.	Appendix 4 (Environment al Risk Action Plans)	During Post		Recurrent	LORAC	Replanting to occur in accordance with TfNSW guideline. Appendix 4 (Environmental Risk Action Plans)
	Removal of Trees or Vegetation Separate approval is required in accordance with TfNSW's Application for Removal or Trimming of Vegetation for the trimming, cutting, pruning or removal of trees or vegetation where the impact has not already been identified in the EIA for the Project.	Appendix 4 (Environment al Risk Action Plans)	During		Recurrent		All vegetation will be removed in under a TfNSW Removal or Trimming of Vegetation Application. Appendix 4 (Environmental Risk Action Plans)
Erosio	n and Sediment Control						
	Erosion and Sediment Control Soil and water management measures shall be prepared as part of the CEMP for the mitigation of water quality and hydrology impacts during construction of the Project. The management measures shall be prepared in accordance with Managing Urban Stormwater;	Appendix 3 (Environment al Risk Assessment)	During		Recurrent	LORAC	ESC Plans to be updated as construction progresses as relevant to changing ground conditions

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	Soils and Construction 4 th Edition (Landcom, 2004).	Appendix 4 (Environment al Risk Action Plans) Appendix 5 (Environment al Control Maps)					
Herita	ge	. ,					
	Indigenous and Non Indigenous Heritage If previously unidentified indigenous or non-indigenous heritage/archaeological items are uncovered during construction works, all works in the vicinity of the find shall cease and appropriate advice shall be sought from a suitably qualified heritage consultant (and in consultation with the Heritage Division where appropriate). Works in the vicinity of the find shall not re-commence until clearance has been received from the heritage consultant and/or Heritage Division. Refer to Conditions 43 and 44 for additional heritage requirements.	Appendix 3 (Environment al Risk Assessment) Appendix 4 (Environment al Risk Action Plans) Appendix 5 (Environment al Control Maps)	During		Recurrent	LORAC	Unexpected finds procedure documented in CEMP Appendix 4 Heritage Management Plan to be developed before excavation or piling works occur.
Urban	Design and Landscaping						
	Urban Design and Landscaping Plan Prior to the finalisation of the Project's detailed design, the Proponent shall prepare an urban design and landscaping plan (UDLP) which addresses the following matters: materials, finishes, colour schemes and maintenance procedures including graffiti control for new walls, barriers and fences location and design of pedestrian pathways, street furniture including relocated bus and taxi facilities, bicycle storage (where relevant), telephones and lighting equipment landscape treatments and street tree planting to integrate with surrounding streetscape design detail that is sympathetic to the amenity and character of the local heritage items opportunities for public art created by local artists to be incorporated, where considered appropriate, into the Project total water management principles to be integrated into the design where considered appropriate design measures included to meet the Sustainable Design Guidelines Version 3.0 identification of design and landscaping aspects that will be open for community input any other matters which the conditions require the UDLP to address. The UDLP shall be prepared in consultation with Council, relevant stakeholders and accepted by the Director Technical Services, Transport Projects Division, TfNSW. Refer to condition 43 for consideration of non-Aboriginal heritage in detailed design.	Not referenced in CEMP	During After	Prior to finalisation of Detailed design – 01 Aug 15	Ongoing	LORAC	UDLP to be developed in consultation with stakeholders – prior to finalisation of the Project's detailed design.
Sustai	nability						
	Sustainability Officer The Proponent shall appoint a Sustainability Officer who is responsible for implementing sustainability objectives for the Project. Details of the Sustainability Officer, including defined responsibilities consistent with the Proponent's sustainability objectives, included in the REF, are to be submitted to the satisfaction of the PMS prior to preparation of the PCSR.	Section 8 of CEMP	Before During			LORAC	Sustainability Officer during construction to be Daniel Keegan

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	 Pre-Construction Sustainability Report Prior to commencement of construction, a pre-construction sustainability report (PCSR) shall be prepared to the satisfaction of the PMS. The Report shall include the following minimum components: a completed electronic checklist demonstrating compliance with the Sustainable Design Guidelines Version 3.0 to a Silver level standard a statement outlining the Proponent's own corporate sustainability obligations, goals, targets, in house tools, etc. a section specifying any areas of innovation that will be explored and/or implemented on the Project during the course of the construction period. The Proponent shall submit a copy of the PCSR to the PMS for approval, at least 14 days prior to the commencement of construction (or within such time as otherwise agreed to by the PMS). 	Not referenced in CEMP	Pre, during construction	30 Jun 15	Final comments from TfNSW to be incorporated into checklist.	LORAC	SDG Checklist to be finalised and Pre-construction Sustainability Report to be Finalised.
Miscel	laneous		•	•			
	Graffiti and Advertising Hoardings, site sheds, fencing, acoustic walls around the perimeter of the site, and any structures built as part of the Project are to be maintained free of graffiti and advertising not authorised by the Proponent during the construction period. Graffiti and unauthorised advertising will be removed or covered within the following timeframes: • offensive graffiti will be removed or concealed within 24 hours • highly visible (yet inoffensive) graffiti will be removed or concealed within a week • graffiti that is neither offensive or highly visible will be removed or concealed within a month • any unauthorised advertising material will be removed or concealed within 24 hours	Appendix 4 (Environment al Risk Action Plans)	During		Recurrent		Graffiti-free surfaces; prompt removal of graffiti, advertising
	Authorised Water Servicing Co-ordinator The Proponent shall engage a Hunter Water authorised water servicing coordinator to manage the design and construction of any works to the existing potable water or sewer reticulation.	Not referenced in CEMP	During		To be confirmed		Construction Manager and Design Manager to liaise with Hunter Water in mean time
Projec	t Specific						
	Bat Management Plan A Bat Management Plan shall be prepared, as part of the CEMP for the proposal, to minimise the potential for any impacts on bats particularly those that roost under the Maitland Road overpass.	Appendix 3 (Environment al Risk Assessment) Appendix 5 (ECM) Appendix 18 (Bat Management Plan)	During (only works beneath Maitland Road overpass)		Ongoing	LORAC	Appendix 18 The presence of Bats on site is also discussed in the Environmental site induction
	Non Aboriginal Heritage An approval under section 60 of the Heritage Act 1977 has been obtained from the NSW Heritage Division for works at Hamilton Station. All NSW Heritage Division approval conditions are to be implemented. Detailed design of the new station at Wickham, including materials selection would be sympathetic to the surrounding heritage items/elements and the significance of the Newcastle City Centre Heritage Conservation Area, while clearly marking the building as contemporary. These measures are to be detailed in the UDLP prepared under condition 37. Potential impacts on the heritage significance of Wickham, Civic and Newcastle stations as a	Appendix 3 (Environment al Risk Assessment) Appendix 4 (Environment al Risk Action Plans) Appendix 5	During	01 Aug 15	Conditions of S.60 approval require heritage consultant to be engaged prior to commencement of any works on site relating to heritage fabric	LORAC	Heritage Management Plan to be developed before construction works commence in State Heritage curtilage for Hamilton Station.

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
	result of ceasing rail operations at these stations would be addressed as part of the Residual Corridor Management Plan.	(Environment al Control Maps)			and spaces		
	Aboriginal Archaeology Prior to commencing any excavation or piling works where there is a risk of interfering with or destroying Aboriginal artefacts at the new transport interchange, an approval under section 90 of the <i>National Parks and Wildlife Act 1974</i> is required from the Office of Environment and Heritage All approval conditions are to be implemented.	Appendix 3 (Environment al Risk Assessment) Appendix 4 (Environment al Risk Action Plans)	Before During		AHIP granted – survey works to occur early Apr 15	LORAC	All relevant plans to be updated pending results of indigenous archaeology survey
	Residual Corridor Management Plan To manage potential environmental impacts on the residual rail corridor of the Newcastle Branch Line, east of Stewart Avenue, following the cessation of rail services, the Proponent shall prepare a Residual Corridor Management Plan. Potential impacts on the heritage significance of Wickham, Civic and Newcastle stations as a result of ceasing rail operations at these stations would be addressed as part of the Residual Corridor Management Plan. The Residual Corridor Management Plan would be developed with consideration of the recommendations of the socio-economic assessment to enhance future access within the city centre. The Residual Corridor Management Plan is to be prepared by to the cessation of rail services east of Stewart Avenue.	Not Referenced	After		Ongoing	TfNSW	A Residual Corridor Management Plan exists
	Stabling Facility Noise Management Plan Within 6 months of the date of this approval, the Proponent shall prepare a Stabling Facility Noise Management Plan (SFNMP) with the objective of minimising noise impacts on surrounding sensitive receivers. The SFNMP shall: • be prepared in accordance with relevant noise criteria including INP and RING; • be prepared in consultation with NSW Trains and relevant stakeholders and the surrounding receivers; • identify preferred mitigation measures with an established hierarchy of mitigating at the source prior to at the boundary of the facility followed lastly by at receiver treatments; and • at source mitigation measures shall include the potential for testing train horns at less sensitive locations and/or the use of low noise yard warnings. The SFNMP shall be approved by the PMEM.	Not referenced in CEMP	During (prior to commissioning of temporary stabling facility at Hamilton)		To be prepared prior to commissioning of temporary stabling facility at Hamilton	TfNSW	A "draft Stabling Facility Noise Management Plan" has been prepared in accordance with this condition and is currently under review by TfNSW.
Other	Permits						
47	Hamilton Railway Station Group Section 60 Approval Heritage Council approval for works to occur in the curtilage of the Hamilton Railway Station Group in accordance with Section 60: 2014-S60-166	Appendix 3 (Environment al Risk Assessment) Appendix 4 (Environment al Risk Action Plans) Appendix 5 (Environment al Control Maps)	During		Ongoing	LORAC/ TfNSW	All works to occur in accordance with conditions of Section 60: 2014-S60-166

No	Туре	CEMP Ref.	Construction Phase	Action date	Status	Responsi bility	Comment/Evidence of Compliance
48	Environmental Protection License 20514 NSW EPA approval for Railway Systems works to occur in accordance with EPL 20514	ALL CEMP	Before / During / After		Ongoing	LORAC	All works to occur in accordance with conditions of EPL 20514
49	Aboriginal Heritage Impact Permit A permit was granted by the NSW Office of Environmental & Heritage on the 13 Mar 15 to disturb aboriginal relics during test pitting as part of Indigenous Heritage survey works. Several artefacts were found during this test pit phase. On the 5 May 15 an AHIP variation was approved for 4 salvage pits between Railway Street and Stewart Avenue Wickham. The AHIP allows for the collection of any artefacts by the Archaeologists from Artefact. The remainder of the site beyond will operate under the unexpected finds procedure outlines within the ERAP.	Appendix 3 (Environment al Risk Assessment) Appendix 4 (Environment al Risk Action Plans)	During		Ongoing	TfNSW /LORAC	Artefact to commence salvage works on 11 Jun 15.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 21 – Project Monthly Environmental Report – E-T-8-1250b

An internal monthly report will be made to using this form or a similar standard as set by the Project Leader.

Project Na	e:	Month:	
Prepared	y:	Report Date:	

- 1. General (risks, status of control measures, update to plans, trends, ESCPs)
- 2. Environmental KPI

КРІ	Number t	his period	Project total to date	
Weekly Environmental Inspections signed off by the Project Leader? (Target 100%)				
Number of weekly environmental inspections accompanied by supervisory or engineering personnel? (Target 50%)				
Number of equirenmental hazard / near miss recorded? (target 1:2500 hours)	Number	Hours	Number	Hours
Number of environmental hazard / near miss recorded? (target 1:2500 hours)				
Relevant environmental content in Toolbox Talks / Prestart Meetings (TBT target 3 per month / Pre-start target 2 per week)	TBT	Pre-start		
Relevant environmental content in Toolbox Talks / Prestart Meetings (TBT target 3 per month) Pre-start target 2 per week)				
Hydraulic Inspections/Audits completed (minimum 5)				

3. Environmental Governance

Description	Number this period	Total to date	Comments/Outcomes/Actions
Inspections by Regulatory Authorities			
Notices from Regulatory Authorities			
TfNSW Audits/inspections			
Internal Audits			

4. Monthly Environmental Incident Analysis

Description of Incident	Incident Class	Action Taken

Construction Environmental Manag	gement Plan						
Project: Wickham Transport Interchange	Project No G85	o :	Date: 01 August	2017	Rev: 09		
Description of	f Incident	Incident Class			Action Taken		
5. Monthly CAR Register Analysis –	- New or Open Corrective Actions	3					
Item	Evidence sighted	Risk	Description of n	on-compliance	Corrective Action Taken	Date Closed	
6. Permits, Licence and conditions of	compliance						
ı	item	Con	npliance this	Comme	nts or Action Taken on Non-compliance		
Environmental Planning/Approval instrur	ment Conditions	peri	od (Y/N/NA)				
Statutory Licence/Environmental Authori							
Other Permits (list)	· · · ·						
Project permits and approvals register re	eviewed and up to date						
7. Environmental Monitoring - Curre	ent Status – to be completed whe	re required					
Description	Compliance this period (Y/N/NA)			Comments on Non-c	compliance		
Noise Monitoring Results							
Dust Monitoring Results							
Water Quality Monitoring							
Vibration Monitoring							

Erosion and Sediment control

Flora and Fauna

Project:	Project No:		Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Description	Compliance this period (Y/N/NA)	Comments on Non-compliance
Aboriginal and Non Aboriginal heritage		
Soil contamination		
Waste and Resource		
Hazardous Substances		

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 22 – Acid Sulphate Soils Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 23 – Air Quality Management Plan

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 24 – Site Rehabilitation Plan

Laing O'Rourke will endeavour to conserve site resources to enable site rehabilitation at the end of the construction. This will include, where possible, the stockpiling of suitable topsoil for reuse on site. The general approach will be to re-apply this topsoil to encourage vegetation regrowth. Vegetation cover is important to prevent erosion from dust and wind and for aesthetic purposes.

By reusing the site top-soil, the local seed bank will be retained, leading to the reestablishment of vegetation with local plants. Care must be taken to mitigate the risk of the establishment or re-establishment of weeds.

When removing topsoils for separate storage the Environmental Coordinator must be present to ensure the layer identified as topsoil is collected without mixing of other layers.

Top soils will be stored in the Holland Street Laydown and Main Laydown. The stockpiles will be managed to prevent erosion, contamination and mixing with other materials from site. Top soil stockpile will be appropriately segregated and sign posted. Weeds will not be allowed to grow on topsoil stockpiles and should be manually removed. Vegetation contained within the topsoil should be allowed to grow to maintain coverage, mitigate erosion and maintain soil ecology.

Top soils may require further treatment to meet standards required for the growth of vegetation. Additional top soil may be introduced to site where necessary.

Top soil won from site will not be used in the landscaping at the Interchange building as per the Remediation Action Plan.

Planting may occur on site during the close out of construction. The number of plants required will be determined once offsetting requirements are finalised. The offsetting will occur in accordance with TfNSW Vegetation removal and Trimming Guideline.

Species selection for replanting will be based on the following;

- Native Species
- Local species
- · Rapid growing species
- · Species that provide maximum ground cover
- Species that will not attract larger fauna species such as possums or bats to the vicinity of the infrastructure.
- Species that require minimal maintenance –drought tolerant species
- Species that are appropriate for the soil profile.

The majority of the site does not have a top-soil layer and consists of mainly sand and ballast associated with the operation of the railway over. There is a limited amount of topsoil on-site, primarily located in the Holland Street Compound Area and the Station area. It is estimated that approximately 150m3 of viable topsoil exists on site. This topsoil is to be maintained throughout the construction and reapplied to the project as per the Landscaping Plan once major construction works have been completed. The Landscape Plan includes the addition of top soil and planting to previously bare areas. As such it is expected that all of the capture topsoil from site can be beneficially re-used on site without pavement cover (pending the identification contamination during construction).

It should be noted that the Remediation Action Plan requires that soils remain on the project site or are disposed of as waste. Therefore no topsoil will be used on nearby projects.

Project:	Project No:	Date:	Rev:
Wickham Transport Interchange	G85	01 August 2017	09

Appendix 25 - Pesticide Use and Notification Plan

Laing O'Rourke will mitigate the risk to the surrounding community and environment by implementing this Pesticide Use and Notification Plan. This plan also applies to the application of herbicides.

In accordance with the Pesticides Act of 1999 Laing O'Rourke will notify the local community and neighbouring businesses, where required to under the act, when the use of pesticide is planned on the WTI project.

Laing O'Rourke will implement the following measures to mitigate the risks to the community and environment when applying pesticides;

- Assess the use of each pesticide based on a review of the SDS ensuring the pesticide is fit for purpose from both a safety and an environmental perspective
- Not to apply pesticides during windy or rainy weather
- · To apply the pesticide as directed by the label and SDS
- To report any incidents involving the miss application of pesticides
- Give sufficient notice to local residence and businesses, in accordance with the Pesticide Act of 1999, when applying pesticide.

Appendix 26 - Flood Evacuation Plan

The Project Leader and Emergency Response Coordinator will facilitate the following process during a flood evacuation, assigning tasks to others, where deemed necessary and appropriate.

