



Transport
Roads & Maritime
Services

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Windsor Bridge Replacement Project



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Glossary / Abbreviations

ASS	Acid sulfate soils
CEMP	Construction environmental management plan
Compliance audit	Verification of how implementation is proceeding with respect to a construction environmental management plan (CEMP) (which incorporates the relevant approval conditions).
CoA	Conditions of approval
Director-General	Director-General of the NSW Department of Planning and Infrastructure (or delegate)
DOI (NRAR)	Department of Industry (Natural Resources Access Water, NRAR) (formerly NSW Office of Water (NOW))
DPIE	Department of Planning, Infrastructure and Environment (formerly Department of Planning, Environment (DP&E))
EA	Environmental Assessment
Ecological sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992).
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EMS	Environmental management system
ESR	Environmental Site Representative
ER	Environmental Representative
Environmental aspect	Defined by AS/NZS ISO 14001:2004 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2004 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment.
Environmental objective	Defined by AS/NZS ISO 14001:2004 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2004 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.

Environmental Representative	A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction, and approved by the Planning Secretary in accordance with condition D14. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
Minister, the	Minister for Planning and Infrastructure
Non-compliance	Failure to comply with the requirements of the Project approval or any applicable license, permit or legal requirements.
Non-conformance	Failure to conform to the requirements of Project system documentation including this CEMP or supporting documentation.
NOW	NSW Office of Water (now DOI – NRAR)
OEH	NSW Office of Environment and Heritage
Planning Secretary	Secretary of the NSW Department of Planning and Environment (or delegate)
Project, the	The Windsor Bridge Replacement Project
SPIR	Submissions/Preferred Infrastructure Report
TfNSW	Transport for New South Wales

1 Introduction

1.1 Background

Transport for NSW (TfNSW), (formerly Roads and Maritime Services (Roads and Maritime)) and Georgiou Group (Georgiou) have partnered together to undertake construction activities for the new road bridge over the Hawkesbury River at Windsor (the Windsor Bridge Replacement Project), on behalf of the New South Wales (NSW) Government.

The Windsor Bridge Replacement Project (the Project) has been assessed as State Significant Infrastructure under the former Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

An Environmental Impact Statement (EIS), Windsor Bridge Replacement Project Environmental Impact Statement, was prepared by Sinclair Knight Merz in November 2012 for TfNSW. The EIS was on public exhibition until 17 December 2012.

A submissions / preferred infrastructure report (SPIR) was finalised in May 2013 which addressed stakeholder submissions received during the EIS exhibition period. Following this, in December 2013, the project was approved by the Minister for Planning and Infrastructure.

A Modification Report was submitted to DPIE in September 2019 and placed on public exhibition from 23 October 2019 to 7 November 2019. The submissions were addressed by Transport for NSW in the Submissions Report which was lodged with the Director-General in February 2020.

The Minister for Planning and Public Spaces approved the modification on 30 April 2020. The Minister's CoA were updated to incorporate the modification.

Construction of the project will be managed by TNSW through direct engagement of Georgiou.

1.2 Purpose of this CEMP

This Construction Environmental Management Plan (CEMP) and sub plans have been prepared to comply with the Minister for Planning and Infrastructure's Conditions of Approval (CoA) for the Windsor Bridge Replacement Project. A detailed description of the Project is provided in Section 2.

The CEMP has been prepared in accordance with TfNSW QA Specification G36 and the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004). It is also consistent with AS/NZS ISO 14001. The TfNSW QA Specification G36 requirements are summarised in the Compliance Tracking Register (Appendix A1).

The purpose of this CEMP is to provide a structured approach to the management of environmental issues during construction of the Project. Implementing this CEMP effectively will ensure that the Project team meets regulatory and policy requirements in a systematic manner and continually improves its performance. The CEMP ensures the requirements of Roads and Maritime and the Minister's conditions of approval are met.

In particular, this CEMP:

- Describes the Project in detail including activities to be undertaken and relative timing.
- Provides specific mitigation measures and controls that can be applied on-site to avoid or minimise negative environmental impacts.
- Provides specific mechanisms for compliance with applicable policies, approvals, licences, permits, consultation agreements and legislation.
- Describes the environmental management related roles and responsibilities of personnel.

- States objectives and targets for issues that are important to the environmental performance of the Project.
- Outlines a monitoring regime to check the adequacy of controls as they are implemented during construction.

This CEMP and sub-plans meet the requirements of CoA D4 and CoA D5. The requirements of these conditions and where they are met in this CEMP are shown in Table 1-1 below.

Table 1-1 CoA requirements for the CEMP

CoA no.	Requirement	Reference
D4	The Applicant shall prepare and (following approval) implement a Construction Environmental Management Plan for the project. The Plan shall outline the environmental management practices and procedures that are to be followed during construction, and shall be prepared in consultation with the relevant agencies and in accordance with the Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004). The Plan shall include, but not necessarily be limited to:	This Plan
D4 (a)	A description of activities to be undertaken during construction of the project or stages of construction, as relevant;	Section 2
D4 (b)	Statutory and other obligations that the Applicant is required to fulfil during construction including approvals, consultations and agreements required from agencies and key legislation and policies. Evidence of consultation with relevant agencies shall be included identifying how issues raised by these agencies have been addressed in the CEMP;	Section 3 and Appendix A1
D4 (c)	A description of the roles and responsibilities for relevant employees involved in the construction of the project including relevant training and induction provisions for ensuring that employees, including contractors and sub-contractors are aware of their environmental and compliance obligations under these conditions of consent;	Section 4 and Section 5
D4 (d)	Identification of ancillary facility site locations, including an assessment against the location criteria outlined in this consent;	Section 2.3 Ancillary Facility Assessment (separate document)
D4 (e)	An environmental risk analysis to identify the key environmental performance issues associated with the construction phase and details of how environmental performance would be monitored and managed to meet acceptable outcomes including what actions will be taken to address identified potential adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan: <ul style="list-style-type: none"> i. measures to monitor and manage dust emissions including dust from stockpiles, blasting, traffic on 	Section 3.4, Appendix A2 &

CoA no.	Requirement	Reference
	unsealed public roads and materials tracking from construction sites onto public roads;	Appendix B1-B10
	ii. measures to minimise hydrology impacts, including measures to stabilise bed and bank structures as required;	
	iii. measures to monitor and manage impacts associated with the construction and operation of ancillary facilities;	
	iv. measures for the handling, treatment and management of contaminated materials;	
	v. measures to monitor and manage waste generated during construction including but not necessarily limited to: general procedures for waste classification, handling, reuse, and disposal; use of secondary waste material in construction wherever feasible and reasonable; procedures for dealing with green waste including timber and mulch from clearing activities; and measures for reducing demand on water resources (including the potential for reuse of treated water from sediment control basins);	
	vi. measures to monitor and manage spoil, fill and materials stockpile sites including details of how spoil, fill or material would be handled, stockpiled, reused and disposed and a stockpile management protocol detailing locational criteria that would guide the placement of stockpiles and management measures that would be implemented to avoid/ minimise amenity impacts to surrounding residents and environmental risks (including to surrounding water courses). Stockpile sites that affect heritage, threatened species, populations or Endangered Ecological Communities require the approval of the Director-General, in consultation with the OEH;	
	vii. measures to monitor and manage hazard and risks including emergency management; and;	
	viii. the issues identified in condition D7.	
D4 (f)	Details of community involvement and complaints handling procedures during construction, consistent with the requirements of conditions D11 to D13;	Community Communication Strategy (separate plan)
D4 (g)	Details of compliance and incident management consistent with the requirements of conditions D7 and D8 ; and	CEMP Section 7
D4 (h)	Procedures for the periodic review and update of the CEMP and sub-plans required under this consent respectively, as necessary (including where minor changes can be approved by the Environmental Representative).	CEMP Section 9

CoA no.	Requirement	Reference
	The Plan shall be submitted for the approval of the Director-General no later than one month prior to the commencement of construction, or as otherwise agreed by the Director-General. Construction works shall not commence until written approval has been received from the Director-General.	
D5	As part of the CEMP for the project, the Applicant shall prepare and implement the following sub plan(s):	
D5 (a)	<p>A Construction Traffic Management Sub-plan, prepared in accordance with the Roads and Maritime Service's QA Specification G10 — Control of Traffic and Traffic Control at Work Sites Manual (2003) to manage disruptions to traffic movements as a result of construction traffic associated with the project. The sub-plan shall be developed in consultation with the relevant council and shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of construction traffic routes and quantification of construction traffic volumes (including heavy vehicle/ spoil haulage) on these routes; ii. details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points; iii. details of potential impacts to traffic on the existing road network, including, intersection, level of service and potential disruptions to pedestrians, public transport, parking, cyclists and property access; iv. details of temporary and interim traffic arrangements to address potential impacts; v. a response procedure for dealing with traffic incidents; and; vi. a mechanism for the monitoring, review and amendment of this sub-plan. 	Appendix B1
D5 (b)	<p>A Construction Flora and Fauna Management Sub-plan to detail how construction impacts on ecology will be minimised and managed. The sub-plan shall be developed in consultation with the OEH and DPI (Fishing and Aquaculture) and shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. details of pre-construction surveys undertaken by a suitably qualified and experienced ecologist to verify the construction boundaries/ footprint of the project based on detailed design and to confirm the vegetation to be cleared as part of the project (including tree hollows, threatened flora and fauna species and riparian vegetation); 	Appendix B2

CoA no.	Requirement	Reference
	<ul style="list-style-type: none"> ii. updated sensitive area/ vegetation maps based on (i) above and previous survey work; iii. details of general work practices and mitigation measures to be implemented during construction to minimise impacts on native fauna and native vegetation (particularly threatened species and EECs) not proposed to be cleared as part of the project, including, but not necessarily limited to: fencing of sensitive areas, a protocol for the removal and relocation of fauna during clearing, engagement of a suitably qualified and experienced ecologist to identify locations where they would be present to oversee clearing activities and facilitate fauna rescues and re-location, clearing timing with consideration to breeding periods, measures for maintaining existing habitat features (such as bush rock and tree branches etc.), seed harvesting and appropriate topsoil management, construction worker education, weed management (including controls to prevent the introduction or spread of <i>Phytophthora cinnamomi</i>), erosion and sediment control and progressive re-vegetation; iv. specific procedures to deal with EEC/ threatened species anticipated to be encountered within the project corridor including re-location, translocation and/or management and protection measures; v. a procedure for dealing with unexpected EEC/threatened species identified during construction including cessation of work and notification of the OEH, determination of appropriate mitigation measures in consultation with the OEH (including relevant re-location measures); and vi. mechanism for the monitoring, review and amendment of this sub-plan. 	
D5 (c)	<p>A Construction Noise and Vibration Management Sub-plan to detail how construction noise and vibration impacts will be minimised and managed. The sub-plan shall be developed in consultation with the EPA and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of nearest sensitive receptors and relevant construction noise and vibration goals applicable to the project; ii. identification of key noise and/or vibration generating construction activities (based on representative construction scenarios, including at ancillary facilities) that have the potential to impact on surrounding sensitive receivers including expected noise/ vibration levels; 	Appendix B3

CoA no.	Requirement	Reference
	<ul style="list-style-type: none"> iii. identification of feasible and reasonable measures proposed to be implemented to minimise construction noise and vibration impacts (including construction traffic noise impacts); iv. procedures for dealing with out-of-hours works in accordance with condition C14, including procedures for notifying the Director-General concerning complaints received in relation to the extended hours approved under condition C14; v. procedures and mitigation measures to ensure relevant vibration and blasting criteria are achieved, including a suitable blast program, applicable buffer distances for vibration intensive works, use of low-vibration generating equipment/ vibration dampeners or alternative construction methodology, and pre- and post-construction dilapidation surveys of sensitive structures where blasting and/ or vibration is likely to result in damage to buildings and structures (including surveys being undertaken immediately following a monitored exceedance of the criteria); vi. 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; and vii. a program for construction noise and vibration monitoring clearly indicating monitoring frequency, location, how the results of this monitoring would be recorded and, procedures to be followed where significant exceedances of relevant noise and vibration goals are detected. 	
D5 (d)	<p>A Construction Soil and Water Quality Management Sub-plan to manage surface and groundwater impacts during construction of the project. The sub-plan shall be developed in consultation with the OEH, EPA, DPI (Fishing and Aquaculture) and NOW and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of potential sources of erosion and sedimentation, and water pollution (including those resulting from maintenance activities); ii. details of how construction activities would be managed and mitigated to minimise erosion and sedimentation consistent with condition C23; and iii. where construction activities have the potential to impact on waterways or wetlands (through direct disturbance such as construction of waterway crossings or works in close proximity to waterways or wetlands), site specific mitigation measures to be implemented to minimise 	Appendix B4

CoA no.	Requirement	Reference
	<p>water quality, riparian and stream hydrology impacts as far as practicable, including measures to stabilise bed and/ or bank structures where feasible and reasonable, and to rehabilitate affected riparian vegetation to existing or better condition. The timing of rehabilitation of the waterways shall be identified in the sub-plan; a contingency plan, consistent with the Acid Sulfate Soils Manual, to deal with the unexpected discovery of actual or potential acid sulfate soils, including procedures for the investigation, handling, treatment and management of such soils and water seepage.</p> <p>iv. a contingency plan, consistent with the Acid Sulfate Soils Manual, to deal with the unexpected discovery of actual or potential acid sulfate soils, including procedures for the investigation, handling, treatment and management of such soils and water seepage;</p> <p>v. a tannin leachate management protocol to manage the stockpiling of mulch and use of cleared vegetation and mulch filters for erosion and sediment control;</p> <p>vi. construction water quality monitoring requirements consistent with condition C24; and</p> <p>vii. a groundwater management strategy, including (but not necessarily limited to):</p> <p>(i) description and identification of groundwater resources (including depths of the water table and water quality) potentially affected by the project based on groundwater modelling undertaken in accordance with this consent;</p> <p>(ii) identification of surrounding licensed bores, dams or other water supplies and groundwater dependant ecosystems and potential groundwater risks associated with the construction of the project on these groundwater users and ecosystems;</p> <p>(iii) measures to manage identified impacts on water table, flow regimes and quality and to groundwater users and ecosystems;</p> <p>(iv) groundwater inflow control, handling, treatment and disposal methods; and</p> <p>(v) a detailed monitoring plan to identify monitoring methods, locations, frequency, duration and analysis requirements.</p>	
D5 (e)	<p>A Construction Heritage Management Sub-plan to detail how construction impacts on Aboriginal and non-Aboriginal heritage will be avoided, minimised and managed. The sub-plan shall be prepared by an appropriately qualified heritage consultant(s)</p>	Appendix B5

CoA no.	Requirement	Reference
	<p>approved by the Director-General and the OEH (Aboriginal heritage) and be developed in consultation with registered Aboriginal stakeholders, and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. details of management measures and strategies for protection, excavation, salvage and archival recording, and/or conservation of heritage items and sites that will be directly or indirectly impacted during construction (including further archaeological investigations, salvage measures and/ or measures to protect unaffected sites during construction works in the vicinity); ii. procedures for dealing with previously unidentified non-Aboriginal and Aboriginal objects (excluding human remains) including cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when works can re-commence by a suitably qualified and experienced archaeologist in consultation with the Department, OEH and registered Aboriginal stakeholders and assessment of the consistency of any new non-Aboriginal and Aboriginal heritage impacts against the approved impacts of the project, and notification to the Department, and the OEH for Aboriginal heritage (in accordance with Section 89A of the National Parks and Wildlife Act 1974) and the OEH for non-Aboriginal heritage (in accordance with Section 146 of the NSW Heritage Act 1977); iii. procedures for dealing with human remains, including cessation of works in the vicinity and notification of the Department, NSW Police Force, OEH and registered Aboriginal stakeholders and not recommencing any works in the area unless authorised by the Department and/ or the NSW Police Force); and; iv. induction processes (identification, protection) for construction personnel (including procedures for keeping records of inductions) and procedures for ongoing Aboriginal consultation and involvement. 	
C8	<p>Unless otherwise approved by the Director-General, the location of Ancillary Facilities shall:</p> <ul style="list-style-type: none"> (a) be located more than 50 metres from a waterway; (b) be located within or adjacent to land where the SSI is being carried out; (c) have ready access to the road network or direct access to the construction corridor; 	<p>Section 3.7.2</p> <p>Ancillary Facilities Assessment (separate document)</p>

CoA no.	Requirement	Reference
	<p>(d) be located to minimise the need for heavy vehicles to travel through residential areas;</p> <p>(e) be sited on relatively level land;</p> <p>(f) be separated from nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant);</p> <p>(g) not require vegetation clearing beyond that already required by the SSI;</p> <p>(h) not be located within the Thompson Square Conservation Area;</p> <p>(i) not impact on Heritage items (including identified Aboriginal cultural value and archaeological sensitivity) beyond those already impacted by the SSI and not have any additional impacts to those heritage items impacted by the proposal;</p> <p>(j) not unreasonably affect the land use of adjacent properties;</p> <p>(k) be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented; and</p> <p>(l) provide sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours.</p> <p>The location of the ancillary facilities shall be identified in the Construction Environment Management Plan.</p>	
C9	<p>Ancillary sites that do not meet the criteria set out in this consent shall be approved by the Director-General prior to establishment. In obtaining this approval, the Applicant shall assess the ancillary facility against the criteria set out in this consent to demonstrate how the potential environmental impacts can be mitigated and managed to acceptable standards. Such assessment(s) can be submitted separately or as part of the Construction Environmental Management Plan required under this consent. The assessment shall include, but not necessarily be limited to:</p> <p>(a) a description of the Ancillary Facility, its components and the surrounding environment;</p> <p>(b) details on the activities to be carried out at the facility, including the hours of use and the storage of dangerous and hazardous goods;</p> <p>(c) an assessment of the environmental impacts on the site and the surrounding environment, including, but not limited to noise, vibration, air quality, traffic access, flora and fauna, heritage and light spill;</p> <p>(d) details on the mitigation, monitoring and management procedures specific to the Ancillary Facility that would be</p>	<p>Ancillary Facilities Assessment</p> <p>Addendum Ancillary Facilities Assessment</p> <p>(separate documents)</p>

CoA no.	Requirement	Reference
	<p>implemented to minimise the environmental impacts or, where this is not possible, feasible and reasonable measures to offset these impacts and an assessment of the adequacy of the mitigation or offsetting measures. This shall include consideration of restrictions on the hours of use or exclusion of certain activities;</p> <p>(e) details on the timing for the completion of activities at the ancillary facility and how the site will be decommissioned (including any necessary rehabilitation); and</p> <p>(f) Demonstrated overall consistency with the approved project.</p> <p>The Applicant shall demonstrate to the satisfaction of the Director-General that there will be no additional significant adverse impact from that Ancillary Facility's construction or operation.</p>	
C10	<p>The Director-General's approval is not required for minor Ancillary Facilities (e.g. lunch sheds, office sheds, and portable toilet facilities, etc.) that do not comply with the criteria set out in condition C8 of this consent and which:</p> <p>(a) are located within an active construction zone within the approved project footprint; and</p> <p>(b) have been assessed by the Environmental Representative to have:</p> <p>(i) no additional adverse impact on the Thompson Square Conservation Area;</p> <p>(ii) minimal amenity impacts to surrounding residences, with consideration to matters such as noise and vibration impacts, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and</p> <p>(iii) minimal environmental impact in respect to waste management, and no impacts on flora and fauna, soil and water, and heritage beyond those approved for the project; and</p> <p>(c) have environmental and amenity impacts that can be managed through the implementation of environmental measures detailed in a CEMP for the project.</p>	Section 3.7.2

This CEMP is the overarching document in the environmental management system for the Project that includes a number of management documents. These are described in Section 4.1. It is applicable to all staff and sub-contractors associated with the construction of the Project.

1.3 Consultation

Extensive consultation for the project commenced during the environmental impact assessment of the concept design. The primary objective of consultation was to keep stakeholders well informed and involved during each stage of project development.

The development of this CEMP has been undertaken in consultation with the nominated Project Environmental Representative who is independent from the Project team. On-going

consultation with the Department of Planning and Environment (DP&E) (now DPIE) on the structure of this CEMP has been undertaken at monthly progress meetings with Roads and Maritime.

Further consultation with relevant stakeholders and government authorities has continued through the development of this CEMP and associated sub-plans. Those consulted include:

- NSW Environment Protection Authority (EPA).
- NSW Department of Primary Industries – Fisheries (DPI (Fisheries)).
- NSW Office of Environment and Heritage (OEH).
- NSW Department of Industry – Natural Resources Access Regulator (NRAR).
- Hawkesbury City Council.

Evidence of consultation with the relevant agencies is provided in Appendix A8, Consultation will continue throughout the Project with relevant stakeholders and Government authorities. The outcomes of this consultation will be documented where relevant in subsequent revisions of the CEMP and the management review.

1.4 Certification and approval

This CEMP must be approved by the TfNSW Project Manager and TfNSW Environmental Manager prior to submission to DPIE. Submission to DPIE is required no later than one month prior to commencement of construction or as otherwise agreed, and must be approved by the Planning Secretary prior to the commencement of construction. The sub-plans prepared under CoA D5 require approval by the Planning Secretary prior to commencement of construction. Further explanation and details of these documents are provided in Section 4.

1.5 Distribution

This CEMP is available to all personnel and sub-contractors via the Project document control management system. An electronic copy can be found on the Project website.

The document is uncontrolled when printed. One controlled hard copy of the CEMP and supporting documentation will be maintained by the Quality Manager at the Project office.

Registered copies will be distributed to:

- Project Manager.
- Environmental Representative.
- Construction Manager.
- Environmental Manager.
- Communications Manager.
- TfNSW Representative.
- TfNSW Environmental Manager.
- TfNSW Heritage Manager.

1.6 Revision

A document review process ensures that environmental documentation including this CEMP is updated as appropriate for the specific works that are occurring on-site. This includes the management review process described in Section 9.

Should the document review process identify any issues or items within the documents that are either redundant or in need of updating, it is the responsibility of the Environmental Manager or Environmental Officers to prepare the revised documents.

The revised document will then be issued to the Project Manager and the Environmental Representative for certification of the changes. The Environmental Representative can approve minor changes to the CEMP. Minor changes would typically include those that:

- Are editorial in nature e.g. staff and agency/authority name changes.
- Do not increase the magnitude of impacts on the environment when considered individually or cumulatively.
- Do not compromise the ability of the Project to meet approval or legislative requirements.

Where the Environmental Representative deems it necessary, the amended CEMP will be forwarded to the Planning Secretary for approval.

Revised versions of the CEMP will be made available through the processes described in Section 1.5.

2 Project description

2.1 General features

This project will involve:

- Construction of a new bridge over the Hawkesbury River at Windsor, around 35 metres downstream of the existing Windsor Bridge.
- Construction of new approach roads and intersections to connect the new bridge to existing road network.
- Modifications to local roads and access arrangements, including changes to the Macquarie Park access and connection of The Terrace.
- Construction of pedestrian and cycling facilities, including a shared pedestrian/cycle pathway for access to and across the new bridge.
- Removal and backfilling of the existing bridge approach roads.
- Demolition and removal of the existing road bridge, known as Windsor Bridge.
- Urban design and landscaping works, including within the parkland area of Thompson Square and adjacent to the northern intersection of Wilberforce Road, Freemans Reach Road and the Macquarie Park access road.
- Ancillary works such as site compound establishment, public utility adjustments, water management measures and scour protection works, as required.

The project site and construction features can be observed in Figure 2.1.

Since Project approval in 2013 TfNSW have engaged AAJV to undertake the Aboriginal, historical and maritime pre-construction archaeological salvage excavations on the site. The archaeological testing program was undertaken between August and November 2016 with the following results:

- The Aboriginal testing program excavated a total of 102.18 metres² and recovered a total of 1,434 Aboriginal stone artefacts, with an average artefact density of 0.81 lithics/metre² on the northern bank and 18.26 lithics/metre² on the southern bank, with the highest concentrations of artefacts recovered from between 700 millimetres and 2.4 metres from the surface. Optically Stimulated Luminescence (OSL) dating of the sandbody suggested Aboriginal occupation of the study area over a period of at least 17,000 years.
- The historical testing program confirmed the presence of relics of high significance dating from the early 19th century including a brick footing potentially associated with the entry gate and compound wall of the Government Domain, a brick and stone surface associated with the Government Stables and a brick box drain, along with over 3,000 artefacts. Historical archaeological features were identified at depths of between 200 millimetres and 2 metres from the surface.
- The maritime testing program identified remains potentially associated with the early 19th century wharf and suggested that additional remains were likely to be preserved under ballast material which had been placed in order to serve as erosion protection.

During the course of salvage excavation in Area 1 conducted between October 2017 and March 2018, the remains of an early nineteenth-century drainage system servicing Thompson Square were exposed. The Thompson Square Brick Drain Heritage Mitigation and Options Report determined that this drain was the work of local men, John Howe and James Magrath, who were contracted by Governor Macquarie to construct the drain between 1814-1815. The alignment of the drain falls directly in the alignment of the proposed new bridge abutment, which would largely, if not completely, remove the drain. An alternate footing design for the

bridge abutment has been developed which would allow the barrel drain, though not all of the surface box culverts, to be retained in situ beneath the new bridge abutment.

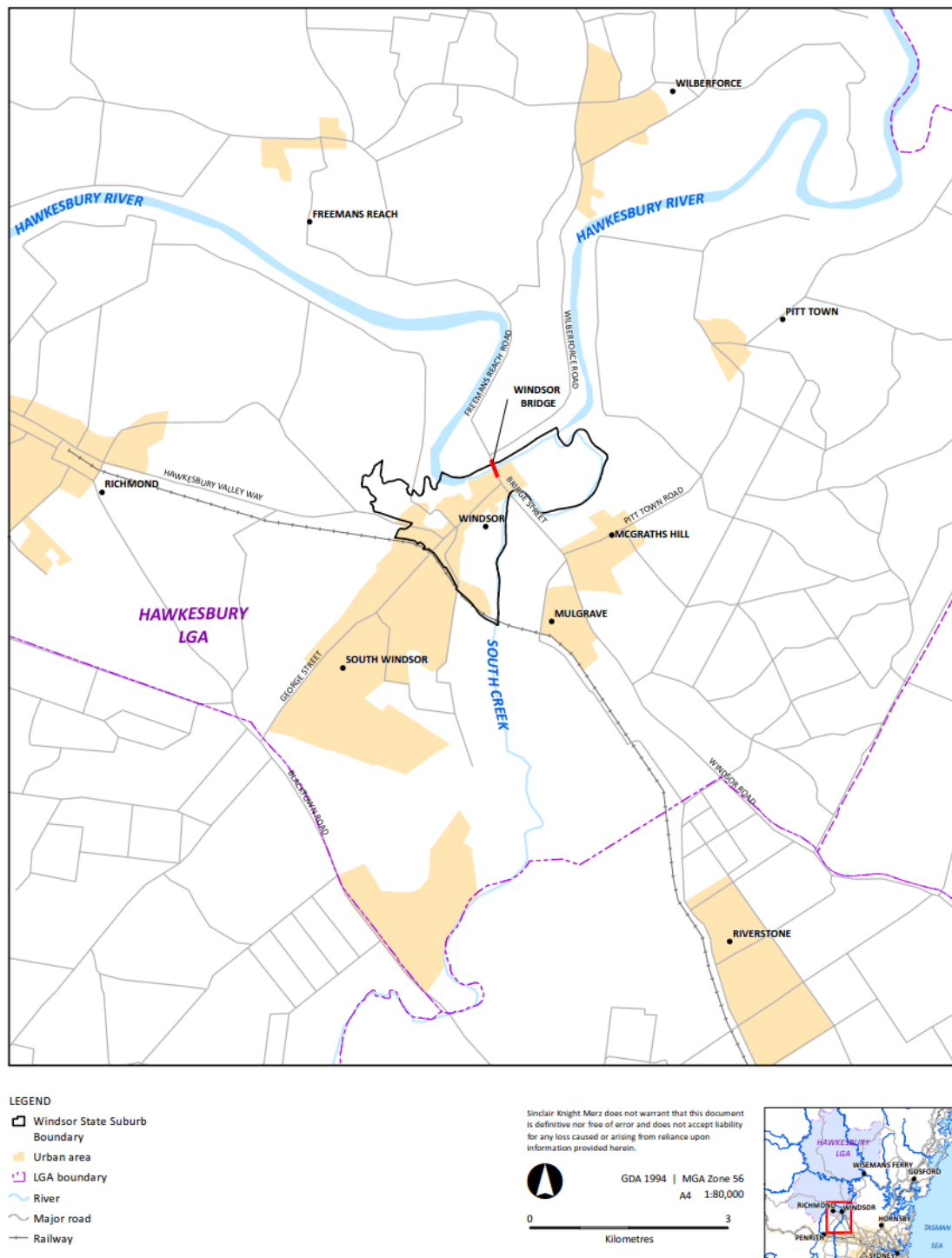


Figure 2-1 Location of Windsor Bridge Replacement Project

2.2 Construction activities and sequence

The following sequence of construction activities is anticipated:

- Pre-construction - Salvage and interpret any impacted heritage sites, including historical archaeologically significant sites including sites within the Thompson Square Conservation Area and archaeological sites.
- Site establishment – installing boundary fencing, construction facilities, environmental controls and carrying out pre-clearing vegetation fauna surveys.
- Relocation or protection of services – relocating and protecting electricity, gas, water and telecommunications infrastructure affected by the Project.
- Site preparation – clearing and grubbing, topsoil stripping and storage.
- Earthworks – undertaking cut and fill works along the alignment to achieve desired levels, removal of unsuitable material, batter and embankment shaping.
- Structures – building the new bridge and drainage.
- Pavements – forming sub and base layers and construction final pavement finishes.
- Road furniture – installing signage, line marking and safety barriers.
- Demolition – demolition of the existing bridge.
- Landscaping and restoration – reuse of topsoil, planting of native plants and seeding disturbed areas with native and cover crops species (note this will take place throughout construction as elements of the project are complete where ongoing disturbance is not anticipated).
- Open to traffic – decommission construction facilities and commissioning new road and related infrastructure.

2.3 Compound and ancillary facilities

A temporary compound and ancillary area will be required to support construction of the Project. The primary site compound will be established on the northern side of the river with a secondary minor construction facility on the southern side of the river. These sites will accommodate the majority of management, engineering, specialist and administrative personnel. Typically these facilities include:

- Office accommodation;
- Staff amenities;
- Light vehicle parking;
- A plant and equipment maintenance workshop;
- Material and chemical storage;
- Crib sheds and minimal office accommodation;
- Temporary site fencing, signage and lighting;
- Equipment storage;
- Material storage;
- Concrete casting areas;
- Environmental controls, including but not limited to erosion and sediment controls and temporary diversion drains.

A separate Ancillary Facilities Assessment details the location, composition and purpose of main ancillary facility required for the Project. This includes an assessment against the location

criteria as required by CoA C8. A separate approval will be obtained from the Planning Secretary of the DPIE for the Ancillary Facilities Assessment. Figure 2-2 below shows the proposed location for main ancillary site including stockpile area to be approved by DPIE under a separate Ancillary Facilities Assessment. Figure 2-3 below shows potential locations for minor ancillary facilities on the south side of the river. Minor facilities can be assessed and approved by the ER in accordance with Assessment criteria for CoA C8 as provided in Section 3.7.2. Following approval of the main and minor ancillary facility sites, the CEMP will be updated where required to include any associated approval requirements.

Figure 2-2 Proposed Location of Main Ancillary Facility

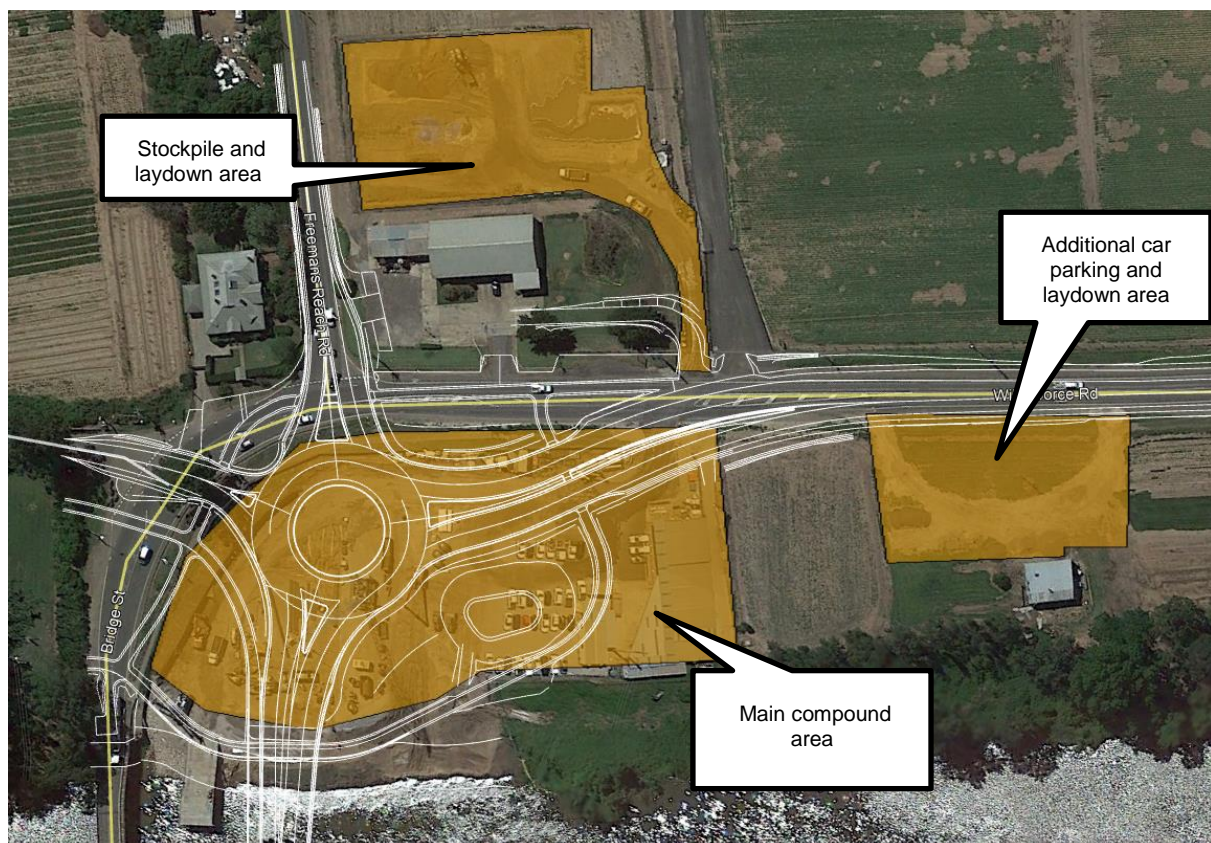
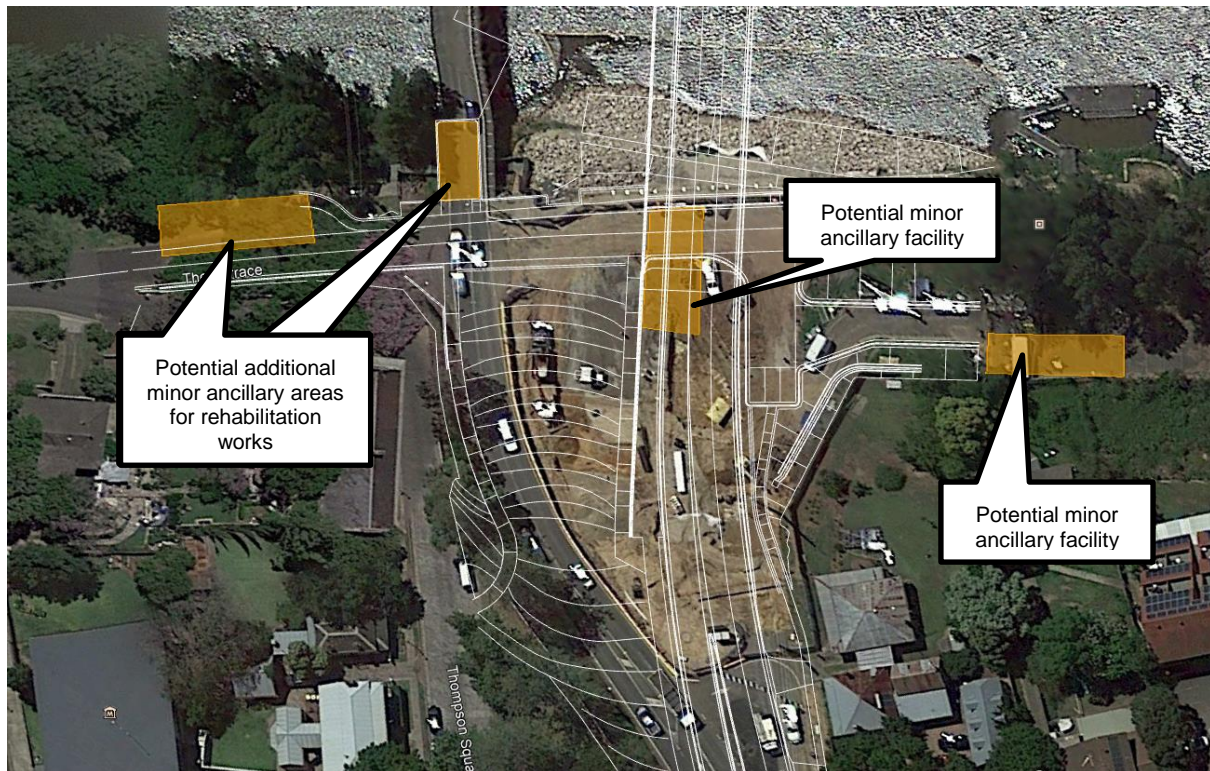


Figure 2-3 Potential Locations for minor ancillary facilities



2.4 Hours of Operation

Condition of Approval C13 states that construction activities shall be undertaken during the following standard construction hours:

- (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; and
- (b) 8:00am to 1:00pm Saturdays; and
- (c) At no time on Sundays or public holidays.

Construction works outside of the standard construction hours identified in condition C14 may be undertaken in the following circumstances:

- (a) Construction works that generate noise that is:
 - (i) no more than 5 dB(A) above rating background level at any residence in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009); and
 - (ii) no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) at other sensitive receivers; or
- (b) For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons.
- (c) Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.
- (d) Works as approved through the out-of-hours work protocol outlined in the CEMP.

Procedures for works outside the standard construction hours are addressed in the Construction Noise and Vibration Management Sub Plan (Appendix B3). The Sub Plan details the procedure for notifying Road and Maritime and all relevant Authorities in advance of any proposed extension to working hours.

3 Planning

3.1 Project environmental obligations

All construction personnel working on the Project have the following general obligations:

- Minimise pollution of land, air and water.
- Use pollution control equipment and keep it in proper working order.
- Preserve the natural and cultural heritage environment.
- Give notice to TfNSW and relevant authorities of a non-Aboriginal or Aboriginal heritage discovery.
- Minimise the occurrence of offensive noise.
- Be a good neighbour to surrounding land users.
- Keep the community informed of Project milestones, upcoming activities and duration of relevant aspects of the works.
- Use equipment with noise control features where available and ensure that it is properly maintained.

Take all feasible and reasonable steps to ensure compliance with the requirements of this CEMP.

3.2 Legal and other requirements

A register of legal and other requirements for the Project is contained in Appendix A1 and is maintained as a checklist. The TfNSW G36, G38, G40 specification requirements are provided in this register as these are the contractual requirements that relate to environmental management for the project. The TfNSW G36 specification is for general environmental management, the G38 specification is specific to soil and water and the G40 specification is specific to clearing and grubbing. This register will be reviewed at regular intervals e.g. during management reviews, and updated with any applicable changes. Any changes made to the legal requirements register will be communicated to the wider team where necessary through toolbox talks, specific training and other methods detailed in Section 5.

3.3 Approvals, permits and licensing

Appendix A1 contains a register of all relevant environmental approvals, permits and licenses. The register will be maintained by the Environmental Manager and will be reviewed prior to the commencement of construction and/or stages of construction, and at regular intervals during construction and at least annually as part of the management review.

The Project has been approved under the former Part 5.1 of the EP&A Act (EP&A Act s.115ZG). In turn a number of approvals that generally apply under other NSW legislation are not required for this project. See table below for a list of relevant licences and approvals.

Table 3-1 Licences, Permits and approvals

Approval/Permit/License	Responsibility	Status
Project Approval under the Environment Planning and Assessment act 1979 (EP&A Act)	RMS	Complete

Approval/Permit/License	Responsibility	Status
Environmental protection licences (EPL) under the Protection of the Environment Operations Act 1997 for road construction	TfNSW/Georgiou	Not required as there is no 'scheduled activity' occurring that is above the threshold which a licence is needed (Schedule 1, POEO Act)
Permits under sections 201, 205 and 219 of the Fisheries Management Act 1994.	TfNSW	RMS is exempt as the Project has been approved under the under Part 5.1 of the EP&A Act
Approvals under Part 4 and excavation permits under section 139 of the Heritage Act 1977.	TFNSW	TFNSW is exempt as the Project has been approved under the under Part 5.1 of the EP&A Act
Aboriginal heritage impact permits under section 90 of the National Parks and Wildlife Act 1974.	TFNSW	TFNSW is exempt as the Project has been approved under the under Part 5.1 of the EP&A Act
Various approvals under the Water Management Act 2000, water use approvals under section 89, water management work approvals under section 90, and activity approvals (not aquifer interference approvals) under section 91.	Georgiou	TFNSW is exempt as the Project has been approved under the under Part 5.1 of the EP&A Act
Aquifer interference approval under the Water Management Act 2000	Georgiou	An access licence from the NSW Office of Water is not likely to be required as construction activities are not expected to result in the use of more than three mega litres (3000 L) of groundwater per year.
Road Occupancy Licences	Georgiou	ROL's will be required at various stages of construction. Where traffic will be impacted on TfNSW roads, the ROL's submission will go through TfNSW to TMC. If traffic is impacted on local council managed roads, Georgiou will gain approval accordingly through the Hawkesbury Shire Council representative.

In accordance with CoA D4, all necessary licences, permits and approvals that are required for the development of the Project will be obtained and maintained as required throughout the life of the Project. No condition of the Project Approval removes the obligation for TfNSW or Georgiou to obtain, renew or comply with such necessary licences, permits or approvals except as provided under Section 5.23 of the EP&A Act.

The Project Approval and environmental management measures (from the Submissions / Preferred Infrastructure Report) are contained in the Compliance Tracking Program and provide a reference to where each requirement is addressed by this CEMP or other Project documentation. A checklist of compliance with TfNSW specification G36 is included in Appendix A1. The Compliance Tracking Register will be maintained by Georgiou and be a 'live' document.

3.4 Environmental aspects and impacts

A risk management approach will be used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance. This process considers potential regulatory and legal risks as well as taking into consideration the concerns of community and other key stakeholders.

The objectives of risk assessment are to:

- Identify activities, events or outcomes that have the potential to adversely affect the local environment and/or human health/property.
- Qualitatively evaluate and categorise each risk item.
- Assess whether risk issues can be managed by environmental protection measures.
- Qualitatively evaluate residual risk with implementation of measures.
- Identify plans and procedures required to detail specific controls and monitoring requirements to manage the risks.
- Risk assessments for the Project are based on AS/NZS 4360:1999, the Australian standard for risk assessments.

Georgiou conducted a construction risk assessment workshop post contract award on the 31st May 2018 with relevant construction personnel including the Project Manager, Superintendent, Safety Manager, Project Engineer, Environmental Site Representative and Environmental Manager. This workshop identified all the environmental aspects and impacts associated with the proposed project activities. The results of the construction risk assessment workshop has been used to guide the development of plans and procedures to detail specific management strategies to eliminate or reduce the risk exposure.

The outcomes of this construction risk assessment workshop are detailed in the environmental aspects and impacts register (Appendix A2). Appendix A2 includes a list of activities associated with the Project, related aspects and corresponding risks. Mitigation measures in the aspects and impacts register have been translated into more specific environmental controls and monitoring measure in the relevant CEMP sub plans.

3.5 Environmental policy

The environmental policy (Appendix A3) describes Georgiou's commitment to continual improvement in environmental performance and compliance with applicable legal requirements.

The environmental policy is displayed on Georgiou's website and at the site office, and communicated to staff and other interested parties via inductions and ongoing awareness programs.

3.6 Objectives and targets

As a means of assessing environmental performance during construction of the Project, environmental objectives and targets have been established. These objectives and targets have been developed with consideration of key issues identified through the environmental assessment and risk assessment process. The objectives and targets are consistent with the

Project environmental policy and will assist in monitoring whether the commitments of the policy are being met.

The targets are incorporated into relevant environmental management sub-plans.

The performance of the Project against the objectives and targets will be documented in the Project construction compliance reports and at least on an annual basis as part of the management review.

Environmental objectives and targets for the Project are provided in Table 3-2 below.

Table 3-2 Environmental objectives and targets

Objective	Target	Measurement tool
Construction of the project in accordance with environmental approvals.	<ul style="list-style-type: none"> • Full compliance with statutory approvals. 	Audits, construction compliance reporting, management view.
Compliance with all legal requirements.	<ul style="list-style-type: none"> • No regulatory infringements (PINs or prosecutions). • No formal regulatory warning. 	Audits, construction compliance reporting, management view.
Implement a rigorous and comprehensive EMS that meets the requirements of AS/NZS ISO 14001.	<ul style="list-style-type: none"> • Address non-conformances and corrective actions within specific timeframes. 	Audits, management reviews.
Engage with the effected and broader community, minimise complaints and respond to any complaints within a suitable timeframe.	<ul style="list-style-type: none"> • Disseminate regular Project updates and other information through the Project website and other tools identified in the Community Communication Strategy. • Record and response to complaints within the timeframe specified in the Community Communication Strategy. 	Review complaints register, construction compliance report, audits.
Continuously improve environmental performance.	<ul style="list-style-type: none"> • Develop and maintain a program of ongoing environmental training. • Capture lessons learnt from environmental incidents to minimise repeat issues. • Encourage and reward innovation and effort throughout the works force. 	Construction compliance report, management review.

3.7 Project refinements

3.7.1 General changes

Refinements to the Project may result from changed circumstances throughout construction. TfNSW is responsible for formally seeking approval from the Minister for any Project modifications as a consequence of compliance with conditions B1 to B7.

The TfNSW Environmental Manager is responsible for the assessment of Project refinements and management of the consistency assessment process. The Environmental Manager is responsible for incorporating any new environmental impacts and/or new statutory approval requirements into the appropriate environmental management documentation.

Any design changes or changes in scope of works should be communicated to the Environmental Manager. The Environmental Manager or Environmental Site Representative will then undertake an additional environmental assessment and consistency review in consultation with the TfNSW Environmental Manager to determine if a Project modification may be required.

Should the consistency review determine that a Project modification maybe required i.e. the impacts are of a nature and scale that it is not considered consistent with the Project approval, the Environmental Representative will be informed immediately and modification application under Section 5.25 of the EP&A Act 1979 prepared and submitted to the DPIE for determination.

The TfNSW Project Director will approve all refinements that are deemed consistent with the Project approval.

3.7.2 Primary and minor ancillary facilities assessment criteria

Ancillary facilities are defined as a “temporary facility for construction, including for example an office and amenities compound, construction compound, batch plant (concrete or bitumen), materials storage compound, maintenance workshop, testing laboratory or material stockpile area”.

The location of the primary site compound and ancillary facilities are nominated, assessed and detailed in the Ancillary Facilities Assessment, which has been submitted separate to this CEMP. This AFA includes an assessment against the location criteria as required by CoA C8. Circumstance may arise during construction where additional, or changes to the location of, ancillary facilities are required.

Where this situation arises an assessment against the criteria detailed in CoA C8 will be undertaken. This criteria requires that ancillary facilities:

- a) be located more than 50 metres from a waterway;
- b) be located within or adjacent to land where the SSI is being carried out;
- c) have ready access to the road network or direct access to the construction corridor;
- d) be located to minimise the need for heavy vehicles to travel through residential receivers;
- e) be sited on relatively level land;
- f) be separated from the nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant);
- g) not require native vegetation clearing beyond that already required by the SSI;
- h) not be located in the Thompson Square Conservation Area;
- i) not impact on Heritage items (including identified Aboriginal cultural value and archaeological sensitivity) beyond those already impacted by the SSI and not have any additional impacts to those heritage items impacted by the proposal;
- j) not unreasonably affect the land use of adjacent properties;
- k) be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented; and
- l) provide sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours.

Ancillary sites that do not meet the criteria set out in this consent shall be approved by the Planning Secretary prior to establishment in accordance with the requirements in CoA C9. In obtaining this approval, the Applicant shall assess the ancillary facility against the criteria set out in this consent to demonstrate how the potential environmental impacts can be mitigated and managed to acceptable standards.

The assessment shall include, but not necessarily be limited to:

- a) a description of the Ancillary Facility, its components and the surrounding environment;
- b) details on the activities to be carried out at the facility, including the hours of use and the storage of dangerous and hazardous goods;
- c) an assessment of the environmental impacts on the site and the surrounding environment, including, but not limited to noise, vibration, air quality, traffic access, flora and fauna, heritage and light spill;
- d) details on the mitigation, monitoring and management procedures specific to the Ancillary Facility that would be implemented to minimise the environmental impacts or, where this is not possible, feasible and reasonable measures to offset these impacts and an assessment of the adequacy of the mitigation or offsetting measures. This shall include consideration of restrictions on the hours of use or exclusion of certain activities;
- e) details on the timing for the completion of activities at the ancillary facility and how the site will be decommissioned (including any necessary rehabilitation); and
- f) demonstrated overall consistency with the approved project.

The Applicant shall demonstrate to the satisfaction of the Planning Secretary that there will be no additional significant adverse impact from that Ancillary Facility's construction or operation.

In accordance with CoA C10, minor Ancillary Facilities (e.g. lunch sheds, office sheds, and portable toilet facilities, etc.) not in compliance with CoA C8 do not require approval from the Planning Secretary provided they:

- a) are located within an active construction zone within the approved project footprint; and
- b) have been assessed by the Environmental Representative to have:
 - i. no additional adverse impact on the Thompson Square Conservation Area;
 - ii. minimal amenity impacts to surrounding residences, with consideration to matters such as noise and vibration impacts, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and
 - iii. minimal environmental impact in respect to waste management, and no impacts on flora and fauna, soil and water, and heritage beyond those approved for the project; and
- c) Have environmental and amenity impacts that can be managed through the implementation of environmental measures detailed in a CEMP for the project.

For this project an Ancillary Facility Assessment has been submitted as a separate document to the CEMP.

3.7.3 Stockpile locality

During construction a number of temporary stockpiles will be required. Stockpile sites may be required to store material including, but not limited to:

- Excavated material to be used in fill embankments and other design features;
- ASS subject to treatment prior to reuse;
- Excavated material unsuitable for reuse in the formation;
- Excess concrete, pavement, rock, steel and other material stored for either future use in the Project or prior to removal from site;
- Topsoil, mulch, excess timber for landscaping and revegetation works.

Where these facilities are proposed, the stockpile locating criteria contained in the Stockpile Management Protocol (Soil and Water Management Plan – Appendix B4) will be considered and stockpile sites located accordingly.

The protocol also includes standard mitigation measures that will be implemented to minimise or avoid impacts on the environment.

4 Implementation and operation

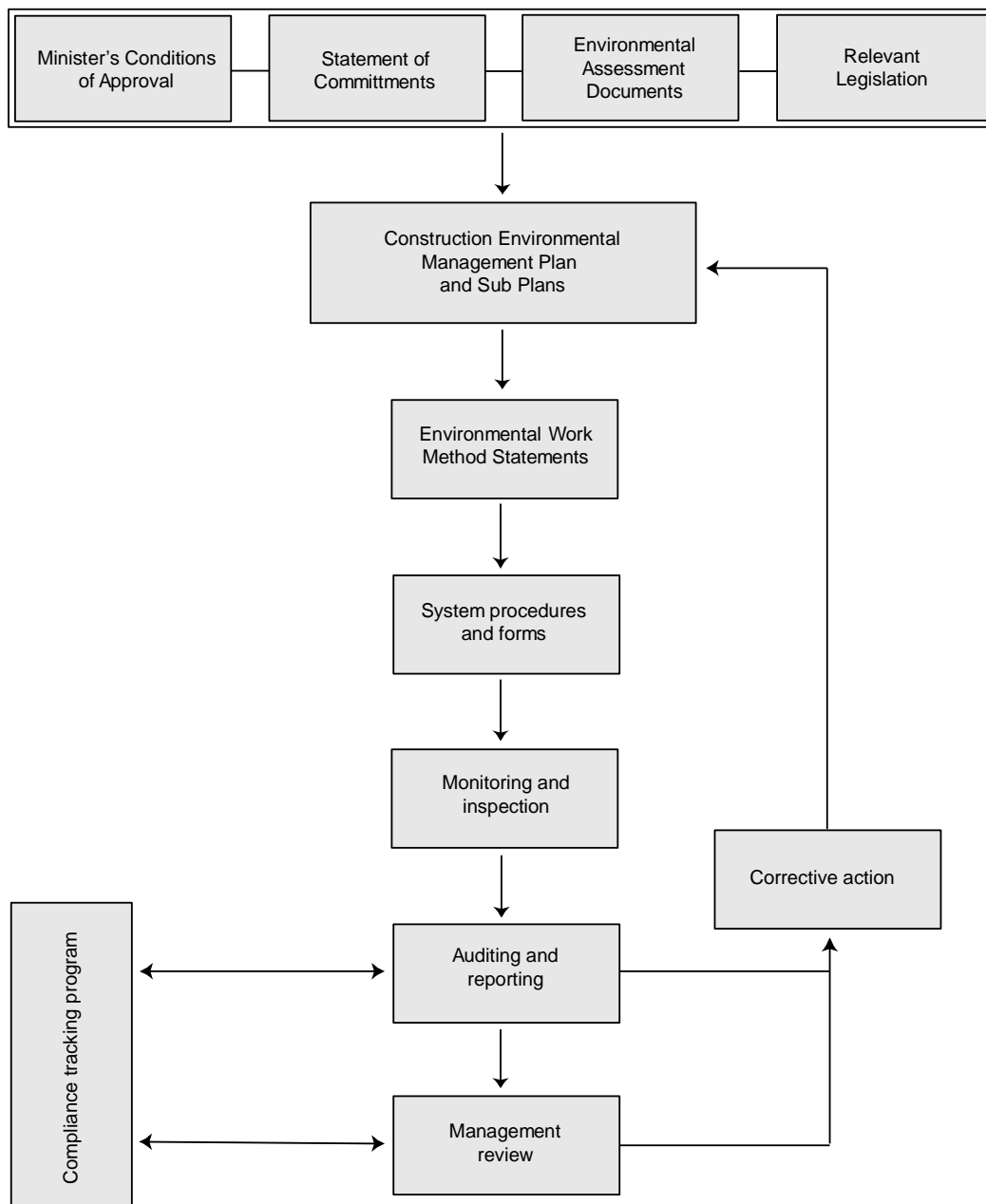
This CEMP is the overarching management plan for a suite of environmental management documents. It provides a structured and systematic approach to environmental management.

The primary purpose of the system of documentation is to:

- Ensure compliance with all applicable environmental laws, obligations and approvals.
- To minimise environmental impacts.

The structure of the environmental management system for the Project is shown in Figure 4-1.

Figure 4-1 Environmental management system structure



4.1 Environmental management system documentation

4.1.1 Construction environmental management plan

This CEMP provides the system to manage and control the environmental aspects of the Project during pre-construction and construction. It identifies all the requirements applicable to manage the activities described in Section 2. It also provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled. The strategies defined in this CEMP have been developed with consideration of the Project approval requirements, environmental management measures presented in the Submissions / Preferred Infrastructure Report and approval documents. This CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the Project on the environment.

This CEMP is consistent with:

- Guideline for the preparation of Environmental Management Plans (DIPNR, 2004).
- AS/NZS ISO14001: 2004, 'Environmental Management Systems - requirements with guidance for use'.
- TfNSW QA Specification G36.

The CEMP and sub-plans required under CoA D4 and CoA D5 will be provided to the Planning Secretary for approval.

4.1.2 Environmental management sub plans and strategies

A number of environmental management sub-plans support the CEMP. These documents are prepared to identify requirements and processes applicable to specific impacts or aspects of the activities described in Section 2. They address requirements of the CoA, environmental management measures identified in the Submissions / Preferred Infrastructure Report and other approval documents.

Environmental strategies may also be developed as required throughout the Project. These will also guide environmental management of potential impacts on-site.

A list of construction sub-plans and strategies for the Project, and their approval requirements, are provided in Table 4-1.

Table 4-1 Environmental management sub plans and strategies

Document name	Location	Approval pathway
Ancillary Facilities Assessment	Separate Document	DPIE approval
Construction Traffic Management Sub-plan	Appendix B1	DPIE approval
Construction Flora and Fauna Management Sub-plan	Appendix B2	DPIE approval
Construction Noise and Vibration Management Sub-plan	Appendix B3	DPIE approval
Construction Soil and Water Quality Management Sub-plan	Appendix B4	DPIE approval
Construction Heritage Management Sub-plan	Appendix B5	DPIE approval

Document name	Location	Approval pathway
Construction Air Quality Management Sub-plan	Appendix B6	TFNSW approval
Construction Waste Management Sub-plan	Appendix B7	TFNSW approval
Construction Contaminated Land Management Sub-plan	Appendix B8	TFNSW approval
Construction Coal Tar Management Plan	Appendix B9	TFNSW approval
Construction Acid Sulfate Materials Management Plan	Appendix B10	TFNSW approval
Vegetation Management Plan	Appendix B11	TFNSW approval
Pollution Incident Response Management Plan	Appendix B12	TFNSW approval

4.1.3 Environmental work method statements

Environmental work method statements (EWMS) are prepared to manage and control all activities that have the potential to negatively impact on the environment. EWMS will be prepared prior to the commencement relevant construction activities on site and will incorporate relevant mitigation measures and controls from management sub plans. They also identify key procedures to be used concurrently with the EWMS. EWMS are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions. For example, a EWMS would be developed for working near heritage buildings and structures to specify vibration management requirements to prevent any impacts.

EWMS will be prepared progressively in the lead up to and throughout construction in consultation with relevant members from the Project team, and approved by the Environmental Manager.

EWMS that have been developed for activities considered high risk include:

- Clearing and Grubbing.
- Scour protection (Including fauna management during rock placement)
- Work in Waterways - Bridge construction (includes; piling, and bridge construction).
- Acid Sulfate Soils.
- Work near heritage buildings and structures (Vibration management).
- Excavation salvage of areas 2-5 and work potentially impacting Aboriginal heritage.
- Handling of coal tar asphalt.
- Removal of asbestos.
- Demolition of existing bridge.
- Work near the heritage brick barrel drain (Vibration management).

All construction personnel and sub-contractors undertaking a task governed by an EWMS must participate in training on the EWMS, and acknowledge that they have read and understood their obligations prior to commencing work.

EWMS are to be submitted to TfNSW prior to commencing the works.

Regular monitoring, inspections and auditing against compliance with the EWMS will be undertaken by Project management, quality, and environmental personnel to ensure that all controls are being followed and that any non-conformances are recorded and corrective actions implemented.

4.1.4 Progressive erosion and sediment control plans

Progressive Erosion and Sediment Control Plans (PESCPs) are planning documents that clearly show the site layout and the approximate location of erosion and sediment control structures onsite. They cover all construction stages from initial vegetation clearing through to rehabilitation when erosion and sediment control are no longer required and are removed. PESCP will be developed and implemented across the Project where there is a risk of erosion and sediment loss.

PESCPs may be produced in conjunction with Environmental Work Method Statement (EWMS) to provide more detailed site-specific environmental mitigation measures. PESCPs will be developed by environment staff in consultation with the superintendent, site engineers, foreman and other relevant site personnel, as required. They will be modified to reflect site condition at the time of construction. The Environmental Manager will approve PESCP in the first instance. Minor changes thereafter will be approved by environment staff in consultation with the Environmental Manager, as required.

PESCPs will be developed as part of the Soil and Water Quality Management Sub-plan (Appendix B4) for all work areas prior to commencing activities.

4.1.5 Sensitive area plans

The Project is located in environmental and socially sensitive areas/sites. To assist pre-construction planning and on-site construction management, these site constraints are consolidated on series of map-based sheets. Sensitive area maps include information pertaining, but not limited to:

- Aboriginal and non-Aboriginal heritage sites, including items, places, objects and sites.
- Noise sensitive receivers.
- Vibration sensitive structures and zones within which vibration mitigation measures are necessary.
- Waterways Areas of Acid Sulphate Soils (ASS) or Potential Acid Sulphate Soils (PASS).
- Areas of vegetation to be retained (to be confirmed following the pre-clearing survey).
- Monitoring locations for groundwater, surface water, heritage items and dust.
- Site compounds and ancillary facilities.

The sensitive area plans are presented in Appendix A4. They are a working element of the CEMP and will be revised throughout construction to reflect true ground conditions and the most up-to-date information available on sensitive sites. Sensitive area plans will be used in conjunction with EWMS to help identify key risk areas and to promote ongoing communication to construction personnel during the Project.

4.1.6 Protection of Heritage Buildings and Structures

The Construction Noise and Vibration Management Plan and the Construction Heritage Management Plan include project specific vibration management measures to protect heritage items within the Thompson Square Conservation Area, together with standard buildings and heritage buildings outside of the Thompson Square Conservation Area. The Project specific vibration limits to protect against structural damage comply with the German Standard DIN 4150-3 Structural Vibration – effects of vibration on structures.

4.1.7 System procedures, forms and other documents

The Project environmental management system procedures, forms and other documents provide instructions and records related to both environmental and non-environmental activities throughout the Project.

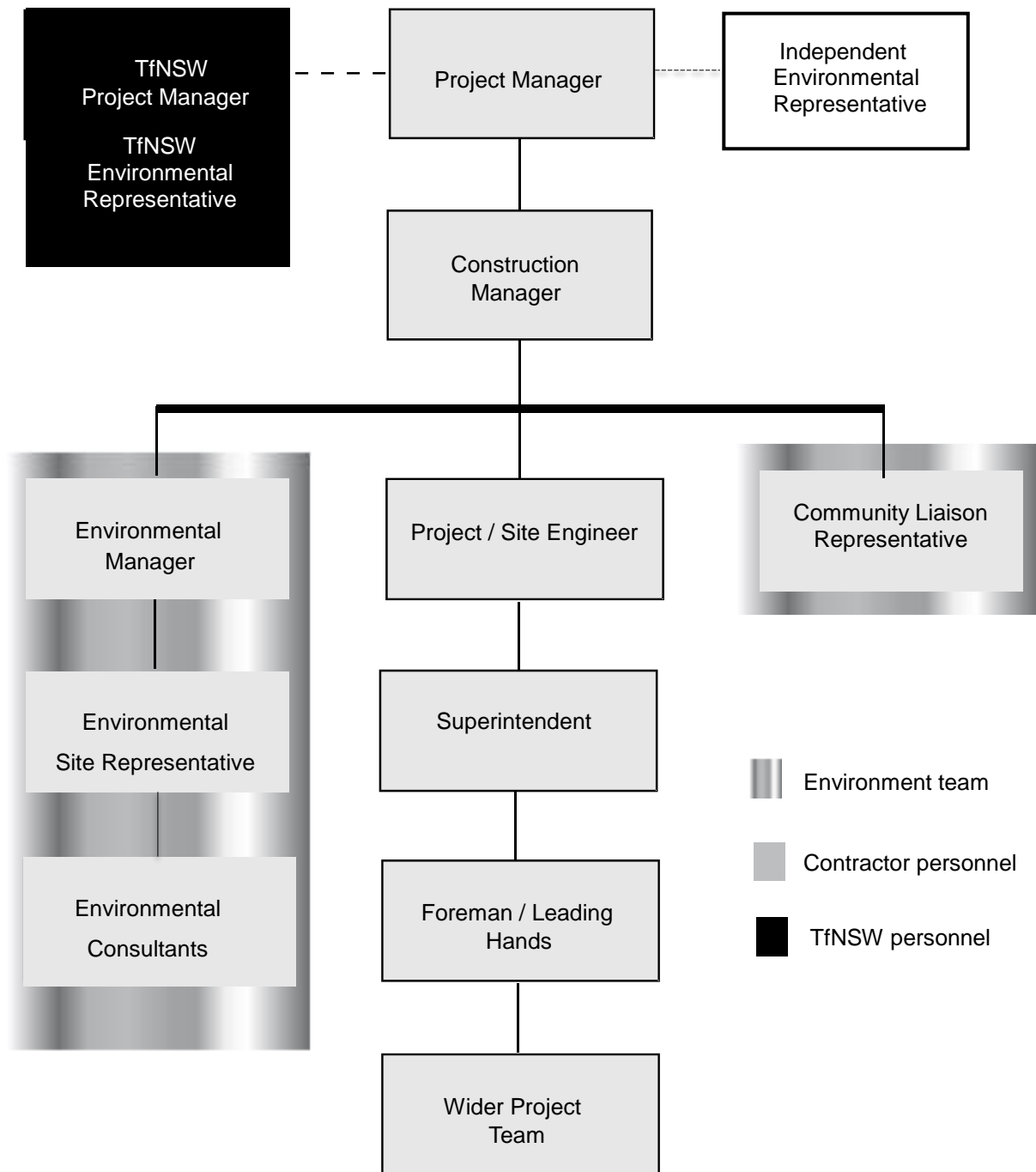
Project specific procedures will be developed in accordance with the requirements for the Project. Where applicable, existing Georgiou procedures and work instructions will be applied or amended for use on the Project.

Relevant environmental procedures and standards are detailed in Appendix A5, A6, and A7.

4.2 Resources, roles, responsibilities and authority

The key environmental management roles and responsibilities for the construction phase of the Project are described below. The structure of these roles is shown in Figure 4-2.

Figure 4-2 Management Structure



4.2.1 Independent Environmental Representative

The environmental responsibilities of the Environmental Representative are detailed in CoA D14 and include:

- Be the principal point of advice in relation to the environmental performance of the project.
- Monitor the implementation of environmental management plans and monitoring programs required under this consent and advise TfNSW upon the achievement of these plans/ programs.
- Have responsibility for considering and advising TfNSW on matters specified in the conditions of approval, and other licences and approvals related to the environmental performance and impacts of the project.
- Ensure that environmental auditing is undertaken in accordance with the TfNSW Environmental Management System(s).
- Be given the authority to approve/ reject minor amendments to the CEMP.
- Be given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.
- Be consulted in responding to the community concerning the environmental performance of the Project where the resolution of points of conflict between TfNSW and the community is required.

4.2.1 TfNSW Environmental Representative

The environmental responsibilities of the TfNSW Environmental Representative include (but are not limited to):

- Review any environmental management plans and related documents prepared for the Project.
- Review minor project refinements that are consistent with the Project environmental impact assessment and approval documentation and recommend they be approved to the TfNSW Representative.
- Monitor the environmental performance of the Project in relation to TfNSW requirements.

4.2.2 TfNSW Heritage Manager

The environmental responsibilities of the TfNSW Heritage Manager include (but are not limited to):

- Prepare the Construction Heritage Management Sub Plan for the project.
- Monitor any ongoing heritage salvage works onsite in accordance with the Salvage Strategy and the Construction Heritage Management Sub Plan.
- Advise on the detail design resolution of new works and undertake inspection as required during construction of new works.
- Advise on design and installation of services (to minimise impacts on significant fabric and views).
- Undertake on-site heritage inductions.
- Provide advice to the contractor on program and resource requirements for salvage operations.
- Provide input to the compliance reporting required under CoA D6.
- Provide a principal point of contact for OEH Heritage Branch and the DPIE on Heritage management and salvage operations on site.

- Prepare a completion report for the DPIE for which describes the work, any impacts/damage and corrective works carried out and includes a revised Statement of Significance in accordance with NSW Heritage Council guidelines.

4.2.3 TfNSW Project Manager

The environmental responsibilities of the TfNSW Project Manager include (but are not limited to) the following:

- Evaluate and advise on compliance with TfNSW environmental requirements.
- Review and approve any environmental management plans for the Project or related activities that are not required to be approved by the Planning Secretary of DPIE.
- Responsible for the liaison with the Heritage Manager and the Independent Environmental Representative.
- Responsible for the engagement of the archaeologists to supervise construction in the salvage areas.

4.2.4 Project Manager

The environmental responsibilities of the Project Manager include (but are not limited to) the following:

- Ensure all works comply with relevant regulatory and Project requirements.
- Ensure the requirements of this CEMP are fully implemented, and in particular, that environmental requirements are not secondary to other construction requirements.
- Endorse and support the Project environmental policy attached at Appendix A3.
- Liaise with Roads and Maritime, Environmental Representative and other government authorities as required.
- Participate and provide guidance in the regular review of this CEMP and supporting documentation.
- Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this CEMP.
- Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements.
- Ensure that complaints are investigated to ensure effective resolution.
- Stop work immediately if an unacceptable impact on the environment is likely to occur.

4.2.5 Construction Manager

The environmental responsibilities of the Construction Manager include (but are not limited to) the following:

- Plan construction works in a manner that avoids or minimises impact to environment.
- Ensure the requirements of this CEMP are fully implemented.
- Ensure construction personnel manage construction works in accordance with statutory and approval requirements.
- Ensure environmental management procedures and protection measures are implemented.
- Ensure all Project personnel attend an induction prior to commencing works.
- Liaise with Roads and Maritime, Environmental Representative and other government authorities as required.

- Stop work immediately if an unacceptable impact on the environment is likely to occur.

4.2.6 Superintendent

The environmental responsibilities of the superintendent include (but are not limited to) the following:

- Communicate with all personnel and sub-contractors regarding compliance with the CEMP and site-specific environmental issues.
- Ensure all site workers attend an environmental induction prior to the commencement of works.
- Co-ordinate the implementation of the CEMP.
- Co-ordinate the implementation and maintenance of pollution control measures.
- Identify resources required for implementation of the CEMP.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the Environmental Manager / Environmental Officers.
- Co-ordinate action in emergency situations and allocate required resources.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Construction Manager and Environmental Manager.

4.2.7 Environmental Manager

The Environmental Manager will be based offsite with routine visits to the site for surveillance, auditing and inspections. The administration of the project's environmental management function will be performed by the Environmental Manager with onsite support from the Environmental Site Representative who will be onsite on a full time basis. The environmental responsibilities of the Environmental Manager include, but are not limited to, the following:

- Regular liaison with the ESR and project team to ensure that all required environmental safeguards are being implemented and maintained.
- Regular liaison with Independent ER and ESR to determine if the implemented environmental measures (including monitoring and maintenance of sediment controls) are being met and if not, identifying the necessary improvement areas.
- Ensuring all corrective and preventative actions identified during inspections and audits are effectively addressed by the project team.
- Development and maintain the CEMP, sub plans, EWMS's and procedures in accordance with ISO14001 and the TFNSW specification.
- Ensure management reviews of the CEMP are undertaken annually, documented and actions implemented.
- Maintain a register of all environmental documents for the project.
- Advise on environmental requirement of the TFNSW environmental specifications.
- Risk based inspections and surveillance audits during stages of construction.
- Obtain and update all environmental licences, approvals and permits as required.
- Lead liaison with the principal and all relevant authorities where required in relation to environmental matters.
- Manage environmental document control, reporting, inductions and training.
- Manage environmental reporting within the Project team and to the TFNSW and regulatory authorities and ensuring compliance with the Project CoAs.

- Preparing reports on a monthly basis outlining the Project Works undertaken and the achievements that have been met, as well as identifying those areas where improvements were made.
- Prepare environmental training and awareness materials for the project team.
- Assist the Communications Manager to resolve environment-related complaints.

4.2.8 Environmental Site Representative

The Environmental Site Representative (ESR) will report to the offsite Environmental Manager. The ESR will be based full time onsite. The environmental responsibilities of the Environmental Site Representative include, but are not limited to, the following:

- Assist in preparing the CEMP (including any future revisions) in accordance with all relevant requirements.
- Develop PESCP in consultation with the superintendent, site engineers, foreman and other relevant site personnel, as required.
- Undertake site inspections, carry out monitoring activities and complete site checklists.
- Ensure monitoring records are appropriately maintained, reviewed and any non-compliance issues addressed.
- Manage the day-to-day environmental elements of construction.
- Record and provide written reports to the Environmental Manager of non-conformances or corrective actions with the CEMP. This may include the need to implement additional, or revise existing, mitigation measures.
- Assist in identifying environmental risks.
- Advise the Environmental Manager and Construction Manager of the need to stop work immediately if an unacceptable impact on the environment is likely to occur or to require other reasonable steps to be taken by the Construction Manager or site construction staff to avoid or minimise impacts.
- Provide reports to the Environmental Manager on any major issues resulting from the Project.
- Assist all site staff with issues concerning Project environmental matters.
- Assist in developing training programs regarding environmental requirements and deliver where required, including delivery of the environmental component of toolbox talks.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager, Construction Manager, Superintendent and Environmental Manager.

4.2.9 Environmental Consultants

Georgiou will engage various environmental consultants at different stages of the Project, the responsibilities of these consultants include, but are not limited to the following:

- Pre-clearing flora and fauna assessments.
- Clearing of habitat trees.
- Asbestos assessment.
- Soil testing and classification.

4.2.10 Community Liaison Representative

The environmental responsibilities of the Communications Liaison Representative include, but are not limited to, the following:

- Ensure that all community consultation activities are carried out.
- Report any environmental issues to the Environmental Manager raised by stakeholders or members of the community.
- Communicate general Project progress, performance and issues to stakeholders including the community.
- Maintain the 24 hour complaints hotline.

4.2.11 Project/Site Engineers

The environmental responsibilities of the site / Project engineers include (but are not limited to) the following:

- Provide input into the preparation of environmental planning documents as required.
- Ensure that instructions are issued and adequate information provided to employees that relate to environmental risks on-site.
- Ensure that the works are carried out in accordance with the requirements of the CEMP and supporting documentation, including the implementation of all environmental controls.
- Identify any environmental risks.
- Identify resource needs for implementation of CEMP requirements and related documents.
- Ensure that complaints are investigated to ensure effective resolution.
- Take action in the event of an emergency and allocate the required resources to minimise the environmental impact.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the Superintendent and Environmental Manager.

4.2.12 Foreman

The environmental responsibilities of the foreman include (but are not limited to) the following:

- Undertake any environmental duties as defined by the superintendent or Project/site engineer.
- Control field works and implement/maintain effective environmental controls.
- Where required, undertake environmental risk assessment of works prior to commencement.
- Ensure site activities comply with EWMS and relevant records are kept.
- Ensure all site workers are site inducted prior to commencement of works.
- Attend to any spills or environmental incidents that may occur on-site.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the Superintendent.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager, Construction Manager, Superintendent or Environmental Manager.

4.2.13 Wider Project Team (including sub-contractors)

Comply with the relevant requirements of the CEMP, or other environmental management guidance as instructed by a member of the Project's management.

- Participate in the mandatory Project/site induction program.

- Report any environmental incidents to the foreman immediately or as soon as practicable if reasonable steps can be adopted to control the incident.
- Undertake remedial action as required to ensure environmental controls are maintained in good working order.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager, Construction Manager, Superintendent or Environmental Manager.

4.3 Sub-contractor management

Environmental requirements and responsibilities are to be specified to sub-contractors in the contract documentation. As part of the selection process, consideration will also be given to their past environmental performance. The Environmental Manager, or delegate, will participate in the tender assessment and selection process where it is deemed necessary due to associated environmental risks. All sub-contractors will be required to complete a sub-contractor questionnaire or similar.

All sub-contractors are required to work in accordance with the approved CEMP.

All sub-contractors are required to attend Project and/or site inductions where the requirements and obligations of the CEMP are communicated. A record of all sub-contractors inducted will be maintained as part of the Project induction and training register.

A standard monitoring form will be developed that will be used to assess:

- The sub-contractor's general work practices.
- The effectiveness of the sub-contractor's environmental protection measures.
- The sub-contractor's compliance with the requirements of this CEMP.
- The maintenance of environmental measures.

4.4 CEMP availability

This CEMP will be made available for public inspection on request. Confidential information, which may include the location of threatened species, Aboriginal objects or places and personnel contact details, will be removed from all documents provided or made available to the public.

An electronic copy of the CEMP is provided on the Project website.

5 Competence, training and awareness

To ensure that this CEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them are aware of the requirements of this CEMP. The Environmental Manager will coordinate the environmental training in conjunction with other training and development activities (e.g. safety).

5.1 Environmental induction

All personnel (including sub-contractors) are required to attend a compulsory site induction that includes both a heritage and environmental component prior to commencement on-site. This is done to ensure all personnel involved in the Project are aware of the requirements of the CEMP and to ensure the implementation of environmental management measures.

Short-term visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times.

The Environmental Manager (or delegate) will conduct the environmental component of the site inductions.

The environmental component will include, but not limited to, an overview of:

- Legal requirements and obligations of all the staff that work on the project including due diligence and duty of care.
- Relevant corporate policies and environmental management systems.
- Identification of high risk issues and environmental safeguards e.g. vegetation clearing.
- Relevant details of the CEMP including purpose and objectives.
- Key environmental issues.
- Conditions of environmental licences, permits and approvals.
- Specific environmental management requirements and responsibilities.
- Mitigation measures for the control of environmental issues.
- Incident response and reporting requirements.
- Information relating to the location of environmental constraints.
- Precautionary measures in the event of flooding.
- Procedures to follow in the event of discovering contaminated soils, unexpected heritage items, and ASS or PASS.
- Information relating to the location of environmental constraints and procedures for working in environmentally sensitive areas.
- Waste management measures.
- Protection of biodiversity in the project area.

The heritage component of the induction will include, but not limited to, and over view of;

- Known heritage sites within the Project.
- Information on heritage values and items in the area and on environmental management measures to minimise potential heritage impacts. Relative heritage plans and other Project documentation (e.g. EWMS).
- Unexpected finds procedure.
- General procedures for working around heritage sites, items, buildings and structures.

A record of all environment inductions will be maintained and kept on-site. The Environmental Manager may authorise amendments to the induction at any time. Possible reasons for

changes to the induction may be Project modifications, legislative changes or amendments to this CEMP or related documentation.

The Environmental Representative will review and approve the induction program and monitor implementation.

5.2 Toolbox talks, training and awareness

Toolbox talks will be one method of raising awareness and educating personnel on issues related to all aspects of construction including environmental issues. The toolbox talks are used to ensure environmental awareness continues throughout construction.

Toolbox talks will include details of EWMSs for relevant personnel. Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works.

Relevant environmental issues may include (but are not limited to):

- Erosion and sedimentation control.
- Site preparation prior to significant rainfall and flooding events.
- Community engagement principles.
- Hours of work.
- Emergency and spill response.
- Aboriginal and non-Aboriginal heritage.
- Threatened species, endangered ecological communities, clearing controls and vegetation protection.
- Weed management.
- Dust control.

Toolbox attendance is mandatory and attendees of toolbox talks are required to sign an attendance form and the records maintained.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Topics covered may include those detailed above, or others deemed necessary in the lead up to or during construction.

Another way to inform construction personnel will be through the development and distribution of awareness notes. These will typically take the form of a poster, booklet, or similar and will be distributed to engineers, leading hands, foreman and others with a responsibility for managing specific work locations or activities. This documentation will be used to inform the broader workforce through either daily pre-starts meeting (see section 5.3) or provision in worker crib sheds / break facilities.

The Environmental Representative will review and approve the training program and monitor implementation.

5.3 Daily Pre-Start Meetings

The pre-start meeting is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

The Foreman will conduct a daily pre-start meeting with the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. Daily pre-start meetings are generally succinct in nature and take approximately 10-15 minutes.

The environmental component of pre-starts will be determined by relevant foreman and environmental personnel and will include any environmental issues that could potentially be impacted by, or impact on, the day's activities. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

Pre-start topics, dates delivered and a register of attendees will be recorded.

6 Communication

6.1 Internal communication

Clear lines of communication throughout all levels and functions (e.g. management, staff and sub-contracted service providers), is key to minimising environmental impacts and achieving continual improvements in environmental performance.

The environmental team will meet regularly to discuss any issues with environmental management on-site, any amendments to plans that might be required or any new / changes to construction activities.

Regular meetings may also be scheduled with the Environmental Representative and relevant TfNSW environmental staff. The purpose of these meetings would be to communicate ongoing environmental performance and to identify any issues to be addressed.

In addition, environment team members will participate in toolbox talks on at least a weekly basis. This forum will provide an opportunity for the environment team members to communicate on environmental performance, to advise on any upcoming sensitive environmental matters for future work areas and to receive feedback from on-site personnel.

Further internal communications regarding environmental issues and aspects will be through awareness training as described in Section 5.2.

6.2 External and government authority consultation

The Environmental Manager will be the main point of contact for external and government authorities. The Environmental Manager has the responsibility to report on the ongoing environmental performance of the Project to Roads and Maritime, the Environmental Representative and external agencies (e.g. EPA/OEH). The Environmental Manager will report regularly to TfNSW on progress and any key environmental.

The Environmental Manager will ensure the contact details of two Georgiou Representatives, available to be contacted on a 24 hour basis; will be provided to the EPA Regional Manager. These Georgiou Representatives have the authority to take immediate action to shut down any activity or to affect any pollution control measure, as directed by an authorised officer of the EPA (see Contact details on page ii).

In the event of any visit to site by the EPA, the TfNSW is to be immediately notified and a report prepared which notifies of the purpose and outcome of the EPA visit, and all actions taken by Georgiou in response to the EPA visit. The report is to be submitted to TfNSW within one (1) working day of the EPA site visit. Refer to Section 8.3 for reporting requirements.

6.3 Stakeholder and community communication

6.3.1 Community communications strategy

A Community Communications Strategy has been developed by TfNSW to provide an approach to stakeholder and community communications in accordance with the requirements of CoA D13. This strategy has been submitted to the DPIE for approval under CoA D13 as a separate document to the CEMP.

The strategy identifies opportunities for providing information and consultation with the community and stakeholders during the construction phase of the Project. The strategy defines:

- The engagement groups.
- The key messages of the Project.

- The range of tools that will be used to interact with community and stakeholders.

Communication tools defined in the strategy include:

- Targeted community open days.
- Advertisements.
- Displays.
- Door-knock.
- Letterbox drops.
- Signage.
- Website.
- Focus meetings.
- 1800 numbers and email address.

6.3.2 Complaints and enquires procedure

A Complaints and Enquiries Procedure has been developed by Roads and Maritime, consistent with *AS 4269: Complaints Handling*, in accordance with the requirements of CoA D12. This procedure has been submitted to the DPIE for approval under CoA D12 as a separate document to the CEMP.

The procedure identifies that all community enquiries and complaints related to the construction activities will be referred to the 24-hour community information line (1800 983 657). A postal address (Windsor Bridge Replacement Project, PO Box 973, Parramatta NSW 2124) and email address (windsor_bridge@rms.nsw.gov.au) has been provided for receipt of complaints and enquiries. The telephone number, the postal address and the email address was published in newspapers circulating in the local area prior to the commencement of construction and is provided on the Project website.

Information on all complaints and enquires received, including the means by which they were addressed and whether resolution was reached and whether mediation was required or used, will be included in a complaints and enquires register. The information contained within the register will be made available to the Planning Secretary on request.

Attempts will be made to resolve all complaints and enquires in accordance with the community engagement strategy. An initial response to complaints and enquires will be provided within 24 hours of a complaint or enquiry being received. A further detailed response, including steps taken to resolve the issue(s) that lead to the complaint, will be provided within 10 days. All complaints should be closed off in the stakeholder database. At all times the stakeholder will be kept informed of when they will receive a response.

The Environmental Manager will apply an adaptive approach to ensure that corrective actions are applied in consultation with the appropriate construction staff to allow modifications and improvements in the management of any environmental issues resulting in community complaints.

7 Incidents and emergencies

In the event of an environmental incident, TfNSW's Environmental Incident Classification and Reporting Procedure (Appendix A5) will be followed for the notification, classification, and investigation and reporting requirements for the incident.

For incident response to pollution incidents (including spills) the Pollution Incident Response Plan (Appendix B12) is to be followed.

The TfNSW Environmental Incident Classification and Reporting Procedure (Appendix A5) provides references to:

- Types of incidents and required responses.
- Criteria for classifying of environmental incidents.
- Processes for systematically responding to and managing emergency situations.
- Processes, and legal requirements (e.g. Acts, Regulations), for reporting and notification of an environmental incident.

The Pollution Incident Response Plan (Appendix B12) provides detail for:

- Potential pollution scenarios for the site.
- Risk assessment for potential pollution events on the site.
- Notification requirements and initial response.
- Emergency contacts.
- Spill response procedure.

During the personnel training and induction program, Georgiou emphasises to all personnel working on the site that all events must be immediately reported, documented and investigated accordingly. All incident investigations shall include the following basic elements:

- Identify the cause of the incident.
- Identify the necessary corrective action(s).
- Identify personnel responsible for carrying out corrective action(s).
- Implement or modifying controls necessary to avoid repetition.
- Record any changes in written procedures required.

7.1 Notification

The following notifications will be undertaken in accordance with CoAs D7 and D8:

- The Planning Secretary (DPIE) and other relevant government agencies will be notified of any incident with actual or potential significant off-site environmental impacts on people or the biophysical environment as soon as practicable and within 24 hours of the incident occurrence. The following steps would be undertaken:
 - Following the occurrence of an incident, TfNSW (in consultation with contractor and the ER where necessary) will determine if the incident is considered significant. This will include incidents which cause or threaten to cause material harm to the environment; and/or breaches or exceedances of the limits or performance measures/criteria in this consent. If the incident is considered significant the Planning Secretary (DPIE) will be notified within 24 hours.
- A full report detailing the incident will be given to the Planning Secretary (DPIE) within seven days of the date on which the incident occurred. The investigation report shall

meet the requirements of the DPIE or relevant government agency to address the cause or impact of any incident, as it relates to the project approval.

- Where an incident involves a heritage item site the Planning Secretary (DPIE) and relevant regulatory authority will be informed. In the case of an Aboriginal heritage item, TfNSW will liaise with OEH and relevant Registered Aboriginal Parties and their input sought in closing out the incident. In the event of European heritage, the relevant regulatory authority to be informed is the OEH, Heritage Branch.

Typically, environmental incidents will be notified verbally immediately and in writing within one (1) hour of any incident occurring to the TfNSW Representative and Independent Environmental Representative (ER).

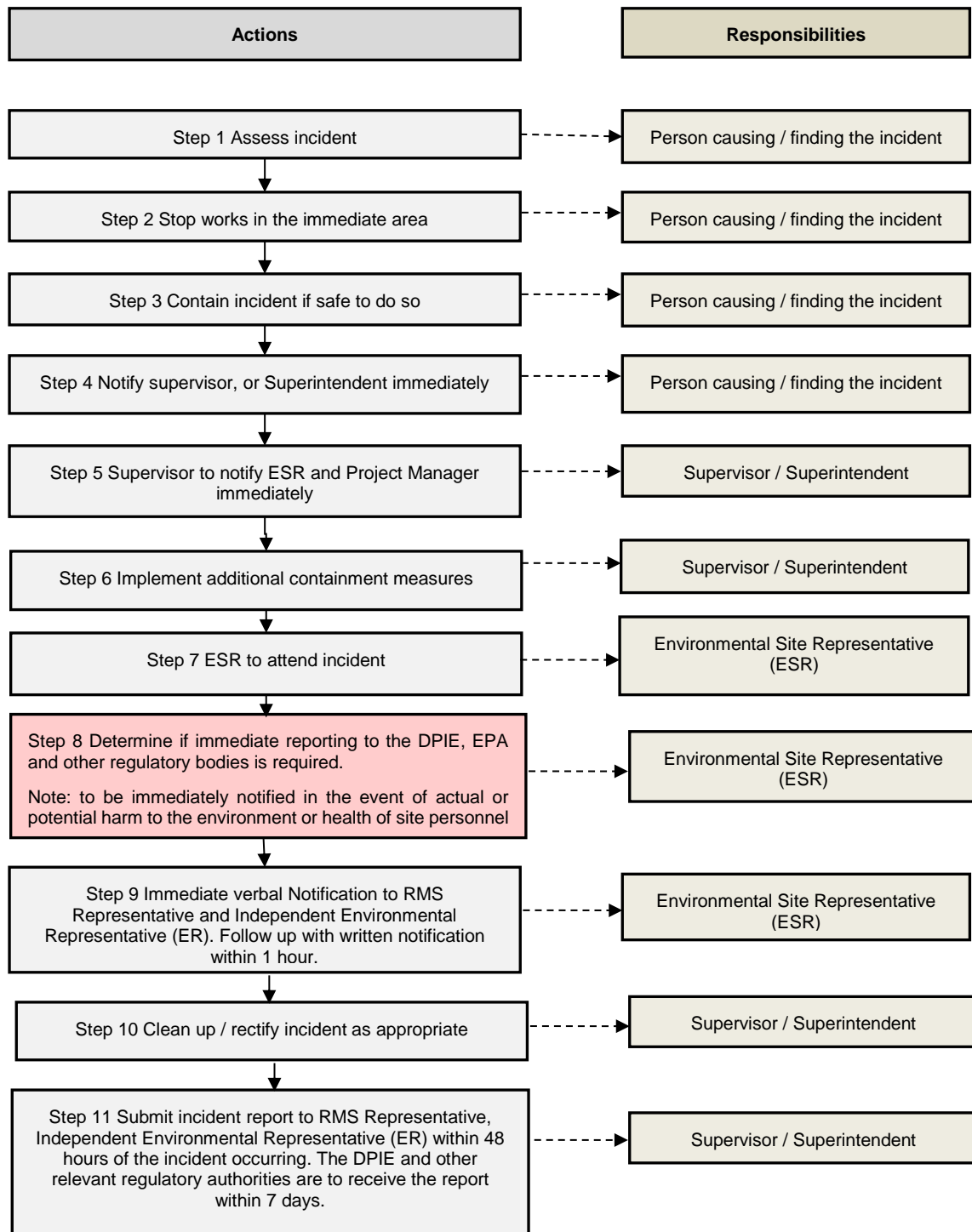
Incident reports will be provided to TfNSW Representative and Independent Environmental Representative (ER) within 48 hours of the incident occurring, including lessons learnt from each environmental incident and proposed measures to prevent the occurrence of a similar incident. See Figure 7-1 for the incident management flow chart, this flow chart is also within the PIRMP (Appendix B12). All efforts will be undertaken immediately to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

In addition to the above notification process, the EPA will be immediately notified of any pollution incidents on or around the site via the EPA Environment Line (telephone 131 555) in accordance with Part 5.7 of the *Protection of the Environment Operations Act 1997* (NSW) (POEO Act). The circumstances where this will take place include:

- If actual or potential harm to the health or safety of human beings or ecosystems has or is likely to occur and is not trivial.
- If actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds \$10,000.

TfNSW Environment Branch and Project team will maintain all records relating to environmental incidents.

Figure 7-1 Incident Management Flow Chart



8 Inspections, monitoring and auditing

8.1 Environmental inspections

8.1.1 Weekly and post rainfall site inspections

The Environmental Site Representative will undertake weekly and post rainfall inspections of the work sites to evaluate the effectiveness of environmental controls. The Environmental Site Representative will record inspection findings on an inspection checklist form.

If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded on the checklist form. Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority.

Refer to Appendix A8 for Georgiou's auditing, review and inspection standard.

8.1.2 Environmental Representative and TfNSW inspections

The Independent Environmental Representative and TfNSW staff will undertake regular inspections of works sites, and in particular critical activities throughout construction of the Project. Inspections by the Environmental Representative and TfNSW Project staff would typically occur on a weekly or fortnightly basis depending on the complexity and anticipated risks associated with the stage of construction.

A member of the Project environment team will participate in all Environmental Representative and client inspections, and records maintained. Deficiencies and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed.

8.1.3 Pre-work inspections

Prior to the commencement of works on each shift, an inspection will be carried out and will include a check of relevant environmental controls and resources required to ensure effective operation and maintenance. Works are not to commence unless inspections are found to be satisfactory.

The foreman will undertake the inspections.

8.2 Environmental monitoring

Monitoring will be undertaken to validate the impacts predicted for the Project, to measure the effectiveness of environmental controls and implementation of this CEMP, and to address approval requirements. The monitoring requirements for required aspects during construction are included in the relevant environmental management sub-plans and summarised in Table 8-1.

Table 8-1 Summary of environmental monitoring required by project approval

CoA	Description	Relevant Sub-Plan	Reporting Requirements
C9 (d)	Details on the mitigation, monitoring and management procedures specific to the Ancillary Facility that would be implemented to minimise the environmental impacts	Ancillary Facility Assessment	Refer to separate plan

CoA	Description	Relevant Sub-Plan	Reporting Requirements
C19	The project shall be constructed with the aim of achieving compliance with the vibration limits set out in the German Standard DIN for structural damage and the limits in the Environmental Noise Management Assessment Vibration: A Technical Guideline (DEC, 2006) for human exposure.	Construction Noise and Vibration Management Sub-plan (Appendix B3) Construction Heritage Management Sub-plan (Appendix B5)	Results of vibration monitoring in monthly report to Roads and Maritime.
C24	Prepare and implement a Water Quality Management Program to monitor and minimise the impacts of the project on surface and groundwater quality and resources and wetlands, during construction and operation of the SSI	Construction Soil and Water Quality Management Sub-plan (Appendix B4) Water Quality Management Program (Appendix B4)	Reporting of the monitoring results to the DPIE, OEH, EPA and DOI – Water.
C37	A minimum two year monitoring and maintenance period is required for the riparian zone commencing after final planting, or until such time as a minimum 80 per cent survival rate of each species planted and a maximum 5 per cent weed cover for the treated riparian corridor is achieved. The monitoring program is to include weed control monitoring.	Vegetation Management Plan (CEMP Appendix B11)	Refer to the Vegetation Management Plan
D4 (e)(i)	Monitoring of dust emissions	Construction Air Quality Management Sub-plan (Appendix B6)	Refer to Sub-plan
D4 (e)(iii)	Construction and operation of ancillary facilities	Ancillary Facility Assessment	Refer to separate plan
D4 (e)(v)	Monitoring of construction waste	Construction Waste Management Sub-plan (Appendix B7)	Refer to Sub-plan
D4 (e)(vi)	Monitoring the impacts of spoil, fill and materials stockpile sites	Construction Soil and Water Quality Management Sub-plan (Appendix B4)	Refer to Sub-plan
D4 (e)(vii)	Monitoring of construction hazard and risks	TfNSW Environmental Incident Classification and Reporting (Appendix A5)	Refer to Appendix A5
D5 (a)(vi)	Monitoring of the Construction Traffic Management Sub-plan	Construction Traffic Management Sub-plan (Appendix B1)	Refer to Sub-plan
D5 (b)(vi)	Monitoring of the Construction Flora and Fauna Management Sub-plan	Construction Flora and Fauna Management Sub-plan (Appendix B2)	Refer to Sub-plan

CoA	Description	Relevant Sub-Plan	Reporting Requirements
D5 (c)(vii)	A program for construction noise and vibration monitoring clearly indicating monitoring frequency, location, how the results of this monitoring would be recorded and, procedures to be followed where significant exceedances of relevant noise and vibration goals are detected.	Construction Noise and Vibration Management Sub-plan (Appendix B3)	Results of noise and vibration monitoring in monthly report to Roads and Maritime.
D5 (d)(vii)(v)	A detailed monitoring plan to identify monitoring methods, locations, frequency, duration and analysis requirements to manage surface and groundwater impacts during construction of the project	Construction Soil and Water Quality Management Sub-plan (Appendix B4) Water Quality Management Program (Appendix B4)	Reporting of the monitoring results to the DPIE, OEH, EPA and DOI – Water .
D5 (d)(vi)	Construction water quality monitoring requirements consistent with condition C24 (below)		

The Environmental Representative and TfNSW Representative will be advised of any non-conformances from monitoring and details reported in the monthly report.

Where a non-conformance is detected or monitoring results are outside of the expected range and are directly attributable to the Project (i.e. are influenced by factors under the direct control of the Project e.g. noise from construction equipment), the process described in Section 8.6 will be implemented. Steps in the process will typically include:

- An analysis of the results by the Environmental Manager in more detail with a view of determining possible causes for the non-conformance.
- A site inspection by the Environmental Manager or delegate.
- Advising relevant personnel of the problem.
- Identifying and agreeing on actions to resolve or mitigate the non-conformance.
- Implementing actions to rectify or mitigate the non-conformance.

A non-conformance Environmental Incident Report and/or Environmental Improvement Notice may be issued by the Environmental Manager in response to the non-conformance problem if it is found to be construction related.

The timing for any improvement will be agreed between the relevant Engineer/Superintendent and Environmental Manager based on the level of risk (e.g. a significant risk will require immediate action).

All environmental monitoring equipment shall be maintained and calibrated according to manufacturer's specifications and appropriate records kept.

8.3 Auditing

Table 8-2 presents auditing requirements that are applicable to the Project.

8.3.1 Contractor audits

Internal auditing will be undertaken during the construction program generally on a six monthly basis throughout the Project. The purpose of auditing is to verify compliance with:

- This CEMP and associated sub-plans.
- Approval requirements (CoAs, environmental management measures).
- Any relevant legal and other requirements (e.g. licenses, permits, regulations, TfNSW contract documentation).

An audit checklist will be developed and amended as necessary to reflect changes to this CEMP, subsequent approvals and changes to Acts, regulations or guidelines.

8.3.2 Independent external audits

External auditing will be undertaken by an independent environment auditor in accordance with ISO 19011:2003 - *Guidelines for Quality and/ or Environmental Management Systems Auditing*.

Table 8-2 Audit requirements

No.	Audit	Requirement	Timing	Responsibility	Recipient
1	Internal audit	Verify compliance with approval and legal requirements, TfNSW specifications and construction documentation	The first audit within three months of the commencement of construction and then at six monthly intervals thereafter. The final submitted within five working days of contract completion date.	Georgiou	Project manager, Roads and Maritime
2	External independent audit	Verify compliance with approval and legal requirements, TfNSW specifications, construction documentation and any other commitments.	Six monthly	Roads and Maritime	Georgiou, Roads and Maritime Independent Environmental Representative

8.4 Compliance tracking program

A Compliance Tracking Program has been developed for the Project by Roads and Maritime. This program has been submitted to the DPIE for approval under CoA D6 as a separate

document to the CEMP. The requirements of the Compliance Tracking Program, as prescribed in CoA D6, include:

- a) Provisions for the notification of the Planning Secretary of the commencement of works prior to the commencement of construction and prior to the commencement of operation of the project (including prior to each stage, where works are being staged).
- b) Provisions for periodic reporting of compliance status against the requirements of this consent, including the Statement of Commitments, to the Planning Secretary including at least one month prior to the commencement of construction and operation of the project and at other intervals during the construction and operation, as identified in the Program.
- c) A program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing.
- d) Mechanisms for reporting and recording incidents and actions taken in response to those incidents.
- e) Provisions for reporting environmental incidents to the Planning Secretary during construction and operation.
- f) Procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management.

The Compliance Tracking Program describes how the requirements of CoA D6 will be met and sets out a program and frequency for compliance reporting and independent auditing. The compliance reporting required under the Compliance Tracking Program will record how the CoA and environmental management measures have been addressed. A summary of the required compliance reporting, as required by CoA D6, is provided in Table 8-3.

Table 8-3 Compliance Reporting

No.	Report	Requirement	Timing	Responsibility	Recipient
1	Compliance tracking program CoA D6	Describes how the requirements of CoA D6 will be tracked and met, along with the requirements of G36, and sets out a program and frequency for compliance reporting and independent auditing. Relates to both the construction and operational phases of the project.	Prior to construction	TfNSW to develop and submit for approval prior to the commencement of construction. Georgiou to provide TfNSW with regular information updates regarding the requirements of CoA D6, in order to track compliance.	DPIE and ER
2	Compliance Reporting CoA D6 (b)	Report on compliance and performance against approval requirements. The compliance reporting required under the Compliance Tracking Program will record how the CoA and environmental management measures have been addressed.	Prior to construction, six months following commencement of construction and then at six monthly intervals thereafter. The compliance report must include the results of environmental monitoring carried of the matters listed in Table 8.1. Prior to commencement of operation.	Georgiou to provide TfNSW with regular information updates regarding the requirements of CoA D6, in order to track compliance.	DPIE and ER

8.5 Reporting

Prior to, during and following construction, various reports will be prepared to fulfil internal TfNSW and Georgiou reporting needs, and requirements under the Project approval. Table 8-4 sets out the reporting requirement applicable to the Project, timing of the reporting, who is responsible for managing preparation of the reports and the intended recipient(s).

Additional reporting may be necessary as the works progress. In such a circumstance, Table 8-4 will be amended to reflect these changes.

Table 8-4 Reporting Requirements

No.	Report	Requirement	Timing	Responsibility	Recipient
1	Monthly environmental report	For incorporation in Project Monthly Reports including environmental statistics (i.e. incidents, regulatory action, complaints on environmental issues), regulatory and authority considerations, monitoring program performance and key environmental issues.	Monthly	Environmental Manager, Environmental Site Representative	TfNSW
2	ER monthly report	Report of site environmental performance following routine inspections.	Monthly	Environmental Representative	TfNSW /DPIE
3	Environmental risk assessment	Conducted for each construction phase, Project changes and significant issues.	Prior to construction during development of CEMP and as required thereafter.	Environmental Manager, Environmental Site Representative Construction Manager	TfNSW
4	Monitoring results	Report on monitoring data recorded and potential exceedances against criteria.	As required	Environmental Manager, Environmental Site Representative	TfNSW
5	TfNSW environmental inspection reports	Response to matter raised in TfNSW site inspections.	As required. Typically every two weeks for TfNSW inspection reports.	Environmental Manager, Environmental Site Representative	TfNSW

8.6 Non-conformity, corrective and preventative actions

Any member of the Project team may raise a non-conformance or improvement opportunity. The Quality Management Plan describes the process for managing non-conforming work practises and initiating corrective/preventative actions or system improvements.

The Environmental Representative, TfNSW Representative or public authority may also raise a non-conformance or improvement opportunity using the same process.

A non-conformance is the failure or refusal to comply with the requirements of this CEMP and Georgiou's Nonconformity and Corrective and Preventive Action Procedure (Appendix A6).

For each non-conformance identified a corrective/preventative action (or actions) must be implemented. In addition any environmental management improvement opportunities can be initiated as a result of incidents or emergencies, monitoring and measurement, audit findings or other reviews. Improvement opportunities may also result in the implementation of corrective/preventative actions.

Corrective/preventative actions and improvement opportunities will be entered into Georgiou's quality system database (QHEST) and include detail of the issue, action required and timing and responsibilities. The record will be updated with date of close out and any necessary notes. The database will be reviewed regularly to ensure actions are closed out as required.

Non-conforming activities may be stopped, if necessary, by the Environmental Site Representative, Environmental Manager or Project / Site Engineer following consultation with the Construction Manager or delegate. The works will not commence until a corrective / preventative action has been closed out. In such circumstances a non-conformance report must be prepared in accordance with the Quality Plan.

9 Review and improvement

As a minimum the CEMP will be reviewed annually by the ESR. At any other time the ESR may propose that the CEMP requires updating. If the revision of the CEMP results in minor changes to the document, the amended CEMP will be sent to TfNSW and the ER for approval in accordance with the process detailed in Section 1.6. If the revision results in major changes to the CEMP then this will be submitted to the Planning Secretary for approval.

All staff will be educated in the relevant CEMP amendments through the induction process and toolbox talks.

Additionally, management reviews will be undertaken as part of the continual improvement process. A review is initiated by the Environmental Manager and includes relevant Project team members and Roads and Maritime.

Management reviews will occur as a minimum quarterly with TfNSW invited to participate. The management reviews must comprise as a minimum the following:

- Identification of areas of opportunity for improved environmental performance.
- Analysis of the causes of nonconformities and deficiencies, including those identified in environment inspections and audits.
- Verification of the effectiveness of corrective and preventative actions.
- Highlighting any changes in procedures resulting from process improvement.

The outcomes of the management reviews could include amendments to this CEMP and related documentation, revision to the Project's environmental management system, risk assessment review, re-evaluation of the Project objectives and targets as well as feeding into other Project documents.

10 Documentation

10.1 Environmental records

Georgiou's Health, Safety and Environment Policies, Standards, Procedures, Safe Work Instructions, References, Guidelines, Forms, Templates are all accessible via the Company's Intranet - GENIE. GENIE will maintain the current and only authorised versions for use. Environment management documentation that has been specifically developed for the site will be controlled on site and recorded in the sites document management system.

The Environmental Manager is responsible for maintaining all environmental management documents as current at the point of use. Types of records include:

- All monitoring, inspection and compliance reports/records.
- Correspondence with public authorities.
- Induction and training records.
- Reports on environmental incidents, other environmental non-conformances, complaints and follow-up action.
- Community engagement information.
- Minutes of CEMP and construction environmental management system review meetings and evidence of any action taken.
- All identified records listed in G36 annexure C (C2).

All environmental management documents are subject to ongoing review and continual improvement. This includes times of change to scheduled activities or to legislative or licensing requirements.

Only the Environmental Manager or Site Environmental Representative, has the authority to change any of the environmental management documentation.

10.2 Document control

Georgiou or TfNSW where relevant, will coordinate the preparation, review and distribution, as appropriate, of the environmental documents listed above. During the Project, the environmental documents will be stored at the main site compound.

Georgiou will implement a document control procedure to control the flow of documents within and between Roads and Maritime, stakeholders and subcontractors.

The procedure will also ensure that documentation is:

- Developed, reviewed and approved prior to issue.
- Issued for use.
- Controlled and stored for the legally required timeframe.
- Removed from use when superseded or obsolete.
- Archived.

Each document will have a table detailing a distribution list of the controlled copies and current revision details, presented on the title page.

Appendix A1

Compliance Tracking Register

Legal and contractual for construction

Appendix A2

Environmental aspects and impacts

Appendix A3

Georgiou Environmental policy and ISO 14001 certification



Certificate AU16/04831.00

The management system of

Georgiou Group Pty Ltd

68 Hasler Road, Osborne Park, WA 6017
Australia

has been assessed and certified as meeting the requirements of

ISO 14001:2015

For the following activities

**Project management and construction of civil engineering projects
including roads and bridges; manufacture and supply of precast
concrete and ancillary equipment; electrical infrastructure civil works;
and building and construction management.**

This certificate is valid from 14 December 2017 until 01 December 2018
and remains valid subject to satisfactory surveillance audits.

Re certification audit due before 01 November 2018
Issue 4. Certified since December 2015

Multiple certificates have been issued for this scope
The main certificate is numbered Certificate AU16/04831.00
This is a multi-site certification.
Additional site details are listed on the subsequent page.

Authorized by

SSC Systems & Services Certification Australia Pty Ltd
10/585 Blackburn Road, Notting Hill VIC 3168, Australia
t (61-3) 9574 3200 f (61-3) 9574 3399 www.au.sgs.com

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JAS-ANZ



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Appendix A4

Sensitive Area Plans

Appendix A5

TFNSW incident classification and reporting procedure

Appendix A6

Georgiou nonconformity and corrective and preventative action procedure

Appendix A7

Georgiou auditing, review and inspection standard

Appendix A8

CEMP consultation with relevant agencies

CoA D4 - CEMP developed in consultation with relevant agencies Sub plan

	Agency	Form	Date Received	Review Comment	TFNSW / Contractor response
CEMP	EPA	Email	4 th May 2018	Email response from EPA to Roads and Maritime. It is not EPA policy to review or endorse construction environment management plans or their sub-plans. The EPA encourages the development of such plans to ensure that proponents have determined how they will meet their statutory obligations and designated environmental objectives. The EPA's role is to set environmental objectives/requirements for environmental management, rather than being directly involved in the development of strategies to achieve those objectives/requirements.	No action required
CEMP	OEH (Aboriginal heritage)	Email	11 th July 2018	Email from Greater Sydney Branch OEH indicated that they would not be providing comments on the plans and this should not be taken as OEH support for the plans as the plans may still need to be assessed by the relevant consent authority.	No action required
CEMP	OEH ROG Greater Sydney Region Planning	Email	6 th August 2018	Email from the Greater Sydney Branch in OEH confirming that they have decided not to provide comments on the plans. This should not be taken as OEH support for the plans, and the plans may still need to be assessed by the relevant consent authority.	No action required
CEMP	OEH (Heritage Division, as a delegate of the	Email	3 rd August 2018	Email response from OEH, Heritage Division to TfNSW Vibration management guidance for heritage structures is specified by CoA C19 with reference to compliance with the <i>German Standard DIN 4150-3 Structural</i>	Noise and Vibration Management Plan and Heritage Management Plan have been reviewed

	Agency	Form	Date Received	Review Comment	TFNSW / Contractor response
	Heritage Council of NSW)			<i>Vibration – effects of vibration of structures.</i> There is inconsistency between these plans for the management of this aspect of the project and this should be rectified prior to finalisation of the CEMP as well as the Heritage Management and Noise and Vibration Management sub plans.	and updated to ensure consistency across the all plans in accordance with CoA C19.
CEMP	OEH (Heritage Division, as a delegate of the Heritage Council of NSW)	Email	3 rd August 2018	Email response from OEH, Heritage Division to TfNSW Section 2 project description should identify the significant historical archaeological remains uncovered during historical salvage including the 1814 barrel and box drains.	Section 2 of the CEMP has been updated to include these significant historical archaeological remains uncovered during historical salvage.
Sensitive Area Plans	OEH (Heritage Division, as a delegate of the Heritage Council of NSW)	Email	3 rd August 2018	Email response from OEH, Heritage Division to TfNSW <i>Appendix A4 Sensitive Area Plans</i> requires some information to show the location of noise and vibration monitoring receivers for heritage items. Greater clarity in this plan is also needed for managing historical archaeological sensitivity within different ‘archaeological zones’ during construction. This plan does not show or mention these archaeological zones, however this detail is critical to managing the project for no/go areas as works progress.	Appendix A4 Sensitive Area Plan has been updated to show vibration monitoring locations and archaeological zones.

CoA D5 (a) - Construction Traffic Management Sub-plan developed in consultation with the relevant council

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW / Contractor response
Traffic	Hawkesbury City Council	Email	6 th July 2018	It is noted that parking for workers other than accessing shops will not be permitted in the Windsor town centres and surrounding roads. It would be appreciated that this is maintained as general on-street parking is in high demand.	Noted by Georgiou
Traffic	Hawkesbury City Council	Email	6 th July 2018	Stage 1 (p.13) refers to the removal and relocation of the 2 disabled parking spaces from the small car park to the existing eastern car park. Please advise if mobility access has been considered to and from the Wharf and the surrounding area.	Georgiou met with the proprietor of the Paddle Steamer, Mr Ian Burns. Mr Burns advised Georgiou that he would be able to provide notice for when he will have a passenger who requires mobility access. Georgiou will provide a means of getting the passengers down to the wharf. All other access to the wharf will be closed to the public as it will be a construction zone.
Traffic	Hawkesbury City Council	Email	6 th July 2018	Stage 2 (p15-16) refers to the eastern car park and the Windsor Wharf area being closed off to pedestrians and general access. The plan does not stipulate the time frame that the closure will be in place. It appears that there will be no public access to the Wharf during this period.	There will be no public access to the wharf during this period.
Traffic	Hawkesbury City Council	Email	6 th July 2018	Stage 2 (p15-16) refers to the Windsor Wharf area being closed and access for passengers wanting to	Mobility access is as per the detail above.

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW / Contractor response
				access the Wharf to the Paddle Steamer will be from the western side of The Terrace and by utilising the underpass for the Bridge. Please ensure that the condition of the underpass is assessed first as TFNSW may need to undertake any necessary upgrade of this area or ongoing works are required. Furthermore if this underpass is to be used will it satisfy Mobility access to the Wharf.	The walkway has been assessed as suitable. It is noted that it is currently in use.
Traffic	Hawkesbury City Council	Email	6 th July 2018	Section 5.1.7 (p25-26) refers to the Site compound and access to the Site which is located between the River and Wilberforce Road. The Ancillary Facility referred to in Appendix C should be referred to in this section explaining the movement of vehicles and in particular the movement of heavy vehicles for the Stock pile site. It appears from the Diagram in Appendix C that access at Wilberforce Road will be ingress only, with egress onto Freemans Reach Road. It is noted from the Pavement diagram that Freemans Reach Road will be upgraded as also indicated in the Minutes from the meeting held on 31 May 2018 Section 6. Until this section of Freemans Reach Road (to Ch 115) is reconstructed, please ensure that this section of road provides a satisfactory level of service for motorists and does not deteriorate due to the nature of vehicles utilising the Ancillary-Stock Pile site.. This section of road will be picked up as part of the dilapidation report and needs to be monitored by the Contractor/TFNSW .	Noted by Georgiou

CoA D5 (b) - Construction Flora and Fauna Management Sub-plan developed in consultation with the OEH and DPI (Fishing and Aquaculture)

Sub plan	– Agency	Form	Date Received	Review Comment	TFNSW / Contractor response
Flora and Fauna	DPI Fisheries	Email	9 th July 2018	Email response from DPI Fisheries to TfNSW identified that DPI fisheries reviewed the Flora and Fauna Management Plan and had no objections to the plan or any amendments to request.	No action required
Flora and Fauna	OEH ROG Greater Sydney Region Planning	Email	6 th August 2018	Email from the Greater Sydney Branch in OEH confirming that they have decided not to provide comments on the plans. This should not be taken as OEH support for the plans, and the plans may still need to be assessed by the relevant consent authority.	No action required

CoA D5 (c) - Construction Noise and Vibration Management Sub-plan developed in consultation with the EPA

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW / Contractor response
Noise and Vibration	EPA	Email	4 th May 2018	<p>Email response from EPA to Roads and Maritime.</p> <p>It is not EPA policy to review or endorse construction environment management plans or their sub-plans. The EPA encourages the development of such plans to ensure that proponents have determined how they will meet their statutory obligations and designated environmental objectives. The EPA's role is to set environmental objectives/requirements for environmental management, rather than being directly involved in the development of strategies to achieve those objectives/requirements.</p>	No action required
Noise and Vibration	OEH Heritage Division as a delegate of the Heritage council of NSW	Email	3 rd August	<p>Email response from OEH, Heritage Division to TfNSW</p> <p>Vibration management guidance for heritage structures is specified by CoA C19 with reference to compliance with the <i>German Standard DIN 4150-3 Structural Vibration – effects of vibration of structures</i>. There is inconsistency between these plans for the management of this aspect of the project and this should be rectified prior to finalisation of the CEMP as well as the Heritage Management and Noise and Vibration Management sub plans.</p>	Noise and Vibration Management Plan and Heritage Management Plan have been reviewed and updated to ensure consistency across the all plans in accordance with CoA C19.
Noise and Vibration	OEH Heritage Division as a delegate of the Heritage	Email	3 rd August	<p>Section 4 of the Subplan sets out the existing environment and buildings where noise and vibration receivers have been established. There appear to be 11 receivers on heritage listed buildings. These are mapped in Appendix 4. The Assessment of the type of noise and vibration scenarios anticipated by this project are discussed in Section 7 and the Construction Vibration</p>	The sensitive area plans (Appendix A4 CEMP) have been updated to include

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW / Contractor response
	council of NSW			assessment is included in Section 7.3. The sub plan requires some additional detail and clarifications around the management of exceedances in the structural vibration monitoring and detail should be included for all heritage items including the brick barrel drain.	potential vibration monitoring locations. Section 7.5 and 9.3.2 of the CNVMP has been updated to provide further detail on vibration monitoring and the management of exceedances.

CoA D5 (d) – Soil and Water Quality Management Sub-plan developed in consultation with the OEH, EPA, DPI (Fishing and Aquaculture) and NOW

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW Contractor response	/
Soil and Water	OEH ROG Greater Sydney Region Planning	Email	6 th August 2018	Email from the Greater Sydney Branch in OEH confirming that they have decided not to provide comments on the plans. This should not be taken as OEH support for the plans, and the plans may still need to be assessed by the relevant consent authority.	No action required	
Soil and Water	EPA	Email	4 th May 2018	Email response from EPA to Roads and Maritime. It is not EPA policy to review or endorse construction environment management plans or their sub-plans. The EPA encourages the development of such plans to ensure that proponents have determined how they will meet their statutory obligations and designated environmental objectives. The EPA's role is to set environmental objectives/requirements for environmental management, rather than being directly involved in the development of strategies to achieve those objectives/requirements.	No action required	
Soil and Water	DPI Fisheries	Email	9 th July 2018	Email response from DPI Fisheries to TfNSW identified that DPI fisheries reviewed the Soil and Water Quality Management Plan and had no objections to the plan or any amendments to request.	No action required	
Soil and Water	Natural Resources Access Regulator (NRAR) – previously NOW	Email	27 th July 2018	Letter response to TfNSW from the Manager, Water Regulation Branch (East), Natural Resources Access Regulator to advise that the Construction Environmental Management Plan and specifically Appendix B4 Soil and Water Management Sub-Plan documents adequately satisfy the NRAR requirements.	No action required	

CoA D5 (e) – Construction Heritage Management Sub-plan developed in consultation with registered Aboriginal stakeholders

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW response / Contractor
Heritage	OEH (Aboriginal heritage)	Email	11 th July 2018	Email from the Greater Sydney Branch in OEH indicated that they would not be providing comments on the plans and this should not be taken as OEH support for the plans as the plans may still need to be assessed by the relevant consent authority.	No action
Heritage	OEH Heritage Division as a delegate of the Heritage council of NSW	Email	3 rd August	Email from the OEH Heritage Division: CEMP Heritage Management Subplan: This Subplan is designed to provide guidance to manage heritage for the project during construction. However, as currently drafted, it is unclear from the onset that the subplan includes management of built heritage items listed on the State Heritage Register within Thompson Square Conservation Area. Notably the built environment (SHR Thompson Square conservation Area) is not discussed until section This needs resolution. Overall there needs to be greater links to relevant heritage management documents supporting this project, including the Strategic Conservation Management Plan (SCMP). This subplan also needs to include a plan which shows all heritage items relevant to the project boundary, not just archaeologically significant areas and zones.	Management measures for built heritage are detailed at length in Table 6-2, for all heritage items identified in the MCoAs, which links directly to the SCMP. Specific construction measures, such as noise and vibration monitoring and mitigation are contained in the specific sub-plans. Paragraph mentioning the Conservation Area and built heritage added to Section 1. Relevant plans of heritage items from the SCMP have been inserted in Section 1

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW response / Contractor
Heritage	OEH Heritage Division as a delegate of the Heritage council of NSW	Email	3 rd August	<p>Section 6 - Built Heritage:</p> <ul style="list-style-type: none"> • Additional background text is needed in this section before Table 6-2. • Table 7-1 (ID HH8) monitoring and inspection requirements need to be consistent with the supporting Noise and Vibration management subplan. 	<p>Paragraph added before the table.</p> <p>Note added under HH7</p>
Heritage	OEH Heritage Division as a delegate of the Heritage council of NSW	Email	3 rd August	<p>Historical Archaeology:</p> <ul style="list-style-type: none"> • Section 5 requires further discussion of significance for remains identified during testing. It should also identify how the barrel drain will be managed other than through archival recording as stated in Section 6.4.2. No mention of its protection is made. This is inconsistent with the understood approach to manage the item. • Section 6.4.2 There should be a section at the front of section 6.4.2 summarising the management approach to archaeology in addition to detail in Table 6-4. • It is not clear that unexpected finds require notification under s146 of the Heritage Act 1977. 	<p>Section 6.5.4 added re barrel and box drains</p> <p>Paragraph added.</p> <p>While notification will occur as a matter of course in accordance with the Incident Management Procedure, it is arguable that the Detailed Salvage Strategy, Strategic Conservation Management Plan and other project documentation has given TFNSW "reasonable grounds" to believe the Heritage Council is aware of</p>

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW response / Contractor
					the location of and relics (Heritage Act section 146(a).
Heritage	OEH Heritage Division as a delegate of the Heritage council of NSW	Email	3 rd August	<p>Section 6 - Maritime Archaeology:</p> <ul style="list-style-type: none"> • Section 6.4.3: Further detail is required around management post initial salvage works including ongoing monitoring commitments which are not outlined in this subplan. These require inclusion as these will form part of the ongoing management of maritime heritage resources throughout the life of this project. • It is unclear if Maritime expected finds (archaeological relics) are included in the current protocol. They must be included as for terrestrial finds 	<p>Section 6.5.3 (previously Section 6.4.3) has been updated to include ongoing monitoring commitments as outlined in the Maritime DSS. Mitigation measure MA4 has also been included in Table 7.1.</p> <p>The TFNSW Standard Management Procedure – Unexpected Heritage Items (Appendix E) will be followed for any newly exposed maritime remains. This has been updated throughout the CHMP.</p>
Heritage	OEH Heritage Division as a delegate of the Heritage council of NSW	Email	3 rd August	Appendix A: Heritage Education and Training package. Detailed comments are provided in the Annexure around this. It is recommended these aspects are addressed in the revised subplan to provide greater clarity to this package.	Suggested comments have been addressed in the Heritage Education and Training package.
Heritage	Registered Aboriginal stakeholders	Email	10 th July	Email from Justine Coplin (Darug Custodian Aboriginal Corporation) acknowledged that she had received and reviewed the plan and had had	No action required

Sub plan	Agency	Form	Date Received	Review Comment	TFNSW response / Contractor
				no review comments regarding the content of the document	
Heritage	Registered Aboriginal stakeholders	Email	16 th July	<p>Email from Barry Corr with review comments on the Heritage Management Sub Plan.</p> <ul style="list-style-type: none"> • Page 13, I am not mentioned in the list of RAPs. • There are no page numbers in Appendix A AAJV Heritage Education and Training Package. 	These comments have been addressed.
Heritage	Registered Aboriginal stakeholders	Email	13 th July	Email from John Reilly (Darug Tribal Aboriginal Corp) acknowledged that he received the plan and had no review comments regarding the content of the document.	No action required
Heritage	Registered Aboriginal stakeholders	Email	2 nd July	Email from Desmond Dyer (Darug Aboriginal Landcare) acknowledged that he received the plan and had no review comments regarding the content of the document.	No action required

Appendix B1

Construction traffic management sub plan

Appendix B2

Construction flora and fauna management sub plan

Appendix B3

Construction noise and vibration management sub plan

Appendix B4

Construction soil and water quality management sub plan

Appendix B5

Construction heritage management sub plan

Appendix B6

Construction air quality management sub plan

Appendix B7

Construction waste management sub plan

Appendix B8

Construction contaminated land management plan

Appendix B9

Coal tar management plan

Appendix B10

Construction acid sulfate soils management plan

Appendix B11

Vegetation management plan

Appendix B12

Pollution incident response management plan