



Staging Report

Western Harbour Tunnel and Warringah Freeway
Upgrade (SSI 8863)

Contents

1	Introduction	7
1.1	Purpose of this Staging Report	7
1.2	Background	8
1.3	Project Description	8
2	Project Staging.....	11
2.1	Overview	11
2.1.1	The Staging Rationale	11
2.2	Construction Stages	12
2.2.1	Early and enabling works	12
2.2.2	Warringah Freeway Upgrade project.....	13
2.2.3	Western Harbour Tunnel Project (WHT)	14
2.3	Operation Stages.....	15
2.4	Indicative timing	15
2.5	Changes to the Staging	15
2.6	Cumulative impacts	17
2.6.1	Traffic management	17
2.6.2	Noise mitigation	18
2.6.3	Interface management	18
2.6.4	Visual amenity and landscape mitigation	18
2.6.5	Other measures to minimise cumulative impacts	18
3	Compliance.....	20
3.1	CoA and REMMs.....	20
3.2	Construction Environmental Management Framework	20
3.3	Environmental management approach	20
3.4	Compliance Monitoring.....	23
3.5	Independent Environmental Auditing	23
	Appendix A Applicability of Conditions of Approval to each stage	24
	Appendix B Applicability of REMMs to each stage	34
	Appendix C Applicability of CEMF to each stage	40

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Glossary / Abbreviations

Abbreviation	Expanded Text
AA	Acoustic Advisor
BL	Beaches Link (proposed project)
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CGC	Cammeray Golf Course adjustment works, Stage 1B of the Western Harbour Tunnel and Warringah Freeway Upgrade
CoA	Conditions of approval
CNVIS	Construction Noise and Vibration Impact Statement
COVID-19	Coronavirus disease
CUT	Critical utility installation, relocation and protection, Stage 1A of the Western Harbour Tunnel and Warringah Freeway Upgrade
DPIE	NSW Department of Planning, Industry and Environment
EIS	Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement (January 2020)
EPA	NSW Environment Protection Authority
ER	Environmental Representative
ITS	Intelligent Transport System
Low Impact Work	<p>Low impact work as defined in the Conditions of Approval includes:</p> <ul style="list-style-type: none"> (a) site establishment work approved under a Site Establishment Management Plan; (b) operation of ancillary facilities if the ER has determined the operational activities will have minimal impact on the environment and community; (c) minor clearing and relocation of native vegetation, as identified in the documents listed in Condition of Approval A1; (d) installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and at-property treatments (including the implementation of the NIP);

Abbreviation	Expanded Text
	<ul style="list-style-type: none"> (e) property acquisition adjustment work including installation of property fencing, and relocation and adjustments of utilities to property including water supply and electricity; (f) relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER; (g) archaeological testing under the Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010) or archaeological monitoring undertaken in association with (a) – (f) above to ensure that there is no impact on heritage items; (h) the relocation of Cape Don and Baragoola historic vessels as permitted subject to Condition of Approval E53; (i) adjustment of Cammeray Golf Course as identified in Condition of Approval E101 and relocation of the Cammeray Golf Club dam / harvesting scheme subject to Condition of Approval E209; (j) noise barrier / wall between Massey and Amherst Street, Cammeray as identified in Condition of Approval E183 and Appendix C; (k) maintenance of existing buildings and structures required to facilitate the carrying out of the CSSI; and (l) other activities determined by the ER to have minimal environmental impact which may include but not be limited to construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access. <p>Notwithstanding the following works are not Low Impact Work:</p> <ul style="list-style-type: none"> (a) where heritage items (excluding those impacted by activities (i) and (j) above), or threatened species or threatened ecological communities (within the meaning of the <i>Biodiversity Conservation Act 2016</i> or <i>Environment Protection and Biodiversity Conservation Act 1999</i>) are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with Heritage NSW, EESG or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation); and (b) any night time (hours as defined by the ICNG) work that exceeds noise management levels as identified in Condition of Approval E68(b)(i)

Abbreviation	Expanded Text
	The low impact work described in this definition becomes construction with the approval of a Construction Environmental Management Plan.
Minister, the	Minister for Planning and Public Space (or delegate)
NSW	New South Wales
OOHW	Out of Hours Works
Project, the	Western Harbour Tunnel and Warringah Freeway Upgrade Project
REMM	Revised Environmental Management Measure as outlined in the project RtS documentation.
ROL	Road Occupancy Licence
RtS	Western Harbour Tunnel and Warringah Freeway Upgrade Response to Submissions (September 2020)
SCO	Sydney Coordination Office
SSI	State Significant Infrastructure
TfNSW	Transport for New South Wales
TMC	Transport Management Centre
WFUEW	Warringah Freeway Upgrade early works, Stage 2A of the Western Harbour Tunnel and Warringah Freeway Upgrade
WFUMW	Warringah Freeway Upgrade main works, Stage 2B of the Western Harbour Tunnel and Warringah Freeway Upgrade
WHT	Western Harbour Tunnel project, Stage 3 of the Western Harbour Tunnel and Warringah Freeway Upgrade
WHTWFU	Western Harbour Tunnel and Warringah Freeway Upgrade (SSI 8863)

1 Introduction

1.1 Purpose of this Staging Report

This Staging Report has been prepared and structured to address the requirements of Conditions of Approval (CoA) A10 to A14 of the Western Harbour Tunnel and Warringah Freeway Upgrade (SSI 8863) (WHTWU/ the project) planning approval. Table 1 cross-references sections in this report that address each applicable planning approval requirement relating to the Staging Report.

The Department of Planning, Industry and Environment (DPIE) has been advised of the status of the project prior to the commencement of each stage.

Updates to this Staging Report will be made as required, particularly following the determination of any project modifications or changes to the delivery strategy (refer to Sections 2.2). Where amendments to the proposed staging occur, a revised Staging Report will be prepared in consultation with DPIE and will be submitted in accordance with CoA A14.

Table 1: Staging Report Planning Approval condition cross references

CoA	Condition requirement(s)	Staging Report Section
A10	The CSSI may be constructed and operated in stages. Where staged construction or operation is proposed, a Staging Report (for either or both construction and operation as the case may be) must be prepared and submitted to the Planning Secretary for information. The Staging Report must be Endorsed by the ER and then submitted to the Planning Secretary before the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one month before the commencement of operation of the first of the proposed stages of operation).	This report must be submitted to the Planning Secretary for information prior to the commencement of the first stage.
A11	The Staging Report must:	
	(a) if staged construction is proposed, set out how the construction of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish;	Sections 2.2 and 2.4 outline the activities which will occur within each construction stage and an indicative program for the works.
	(b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when operation of each stage will commence and finish (if relevant);	Sections 2.3 and 2.4 outline the activities which will occur within each operational stage and an indicative program for the works.
	(c) specify how compliance with conditions will be achieved across and between each of the stages of the CSSI; and	Section 3 discusses the environmental management system which would be implemented on the project to manage compliance across the stages of the Project.
	(d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.	Section 2.6 includes details on how cumulative impacts will be managed.
A 12	The CSSI must be staged in accordance with the Staging Report, as approved by the Planning Secretary.	The project will be staged in accordance with this report which will be submitted for information to the Planning Secretary prior to the commencement of the stage.

CoA	Condition requirement(s)	Staging Report Section
A13	Where staging is proposed, the terms of this approval that apply or are relevant to the works or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.	Appendix A and Appendix B allocate the applicability of each CoA and Revised Environmental Mitigation Measures (REMMs) to each stage of the project.
A14	Where changes are proposed to the staging of construction or operation, a revised Staging Report must be prepared and submitted to the Planning Secretary for approval no later than one month prior to the proposed change in the staging.	This report will be revised, endorsed by the ER and submitted to the Planning Secretary no later than one month prior to the proposed change in the staging.

1.2 Background

The Western Harbour Tunnel and Warringah Freeway Upgrade (WHTWUFU) project comprises a new tolled motorway tunnel connection across Sydney Harbour, and an upgrade of the Warringah Freeway to integrate the new motorway infrastructure with the existing road network and to connect to the future proposed Beaches Link and Gore Hill Freeway Connection project.

Due to its importance, the WHTWUFU was declared to be critical state significant infrastructure (CSSI) by the Minister for Planning and Public Spaces on 9 November 2020.

On 21 January 2021, the Department of Planning, Industry and Environment (DPIE) approved the construction and operation of the WHTWUFU.

1.3 Project Description

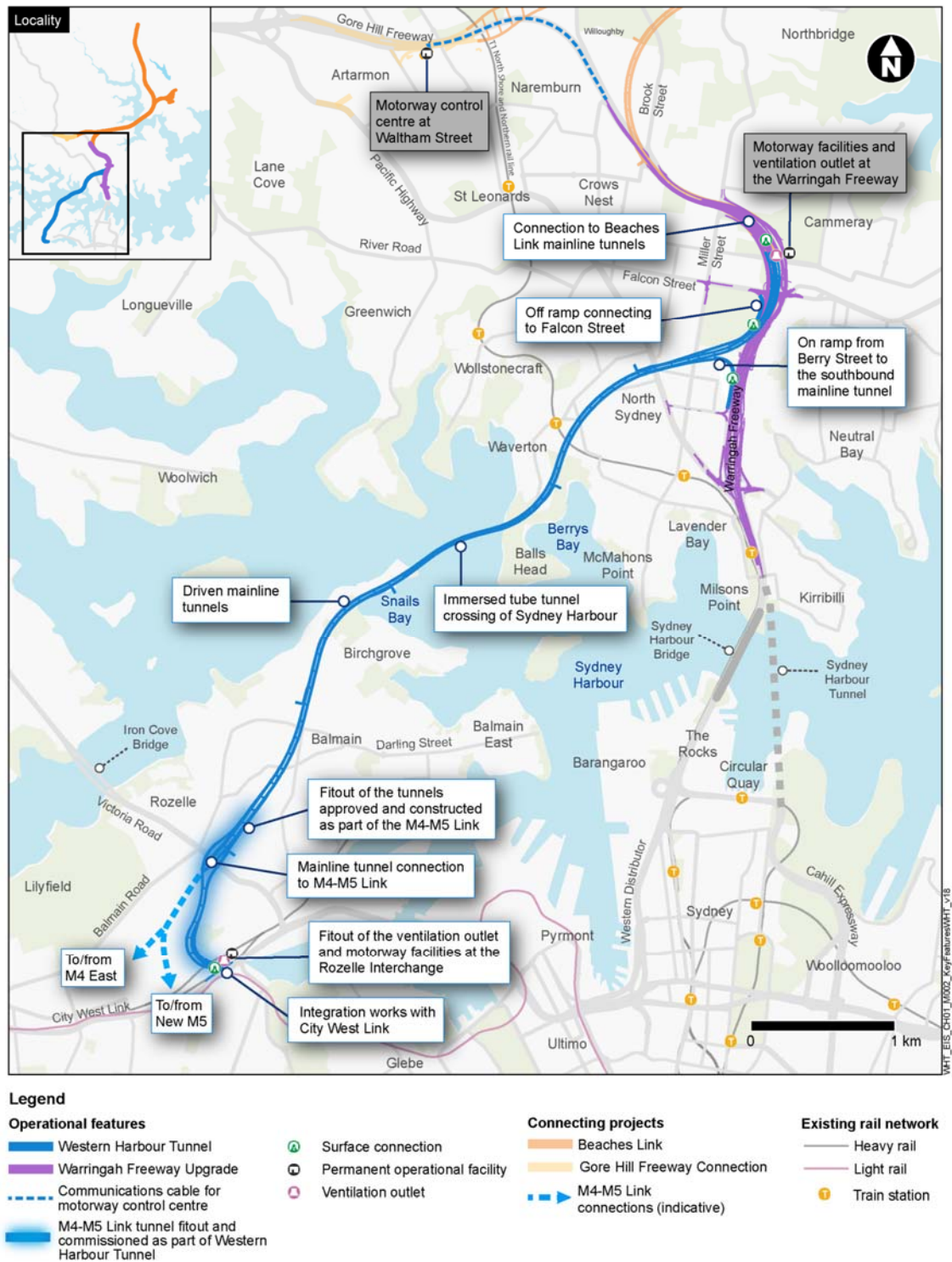
The WHTWUFU project comprises of two main components:

- A new crossing of Sydney Harbour involving twin tolled motorway tunnels connecting the M4-M5 Link at Rozelle and the existing Warringah Freeway at North Sydney (the Western Harbour Tunnel (WHT)) (refer to Figure 1)
- Upgrade and integration works along the existing Warringah Freeway, including infrastructure required for connections to the future proposed Beaches Link and Gore Hill Freeway Connection project (the Warringah Freeway Upgrade (WUFU)) (refer to Figure 2).

The WHTWUFU project has been split into two separate projects, which will be delivered by TfNSW (WUFU) and its Development Partner (WHT).

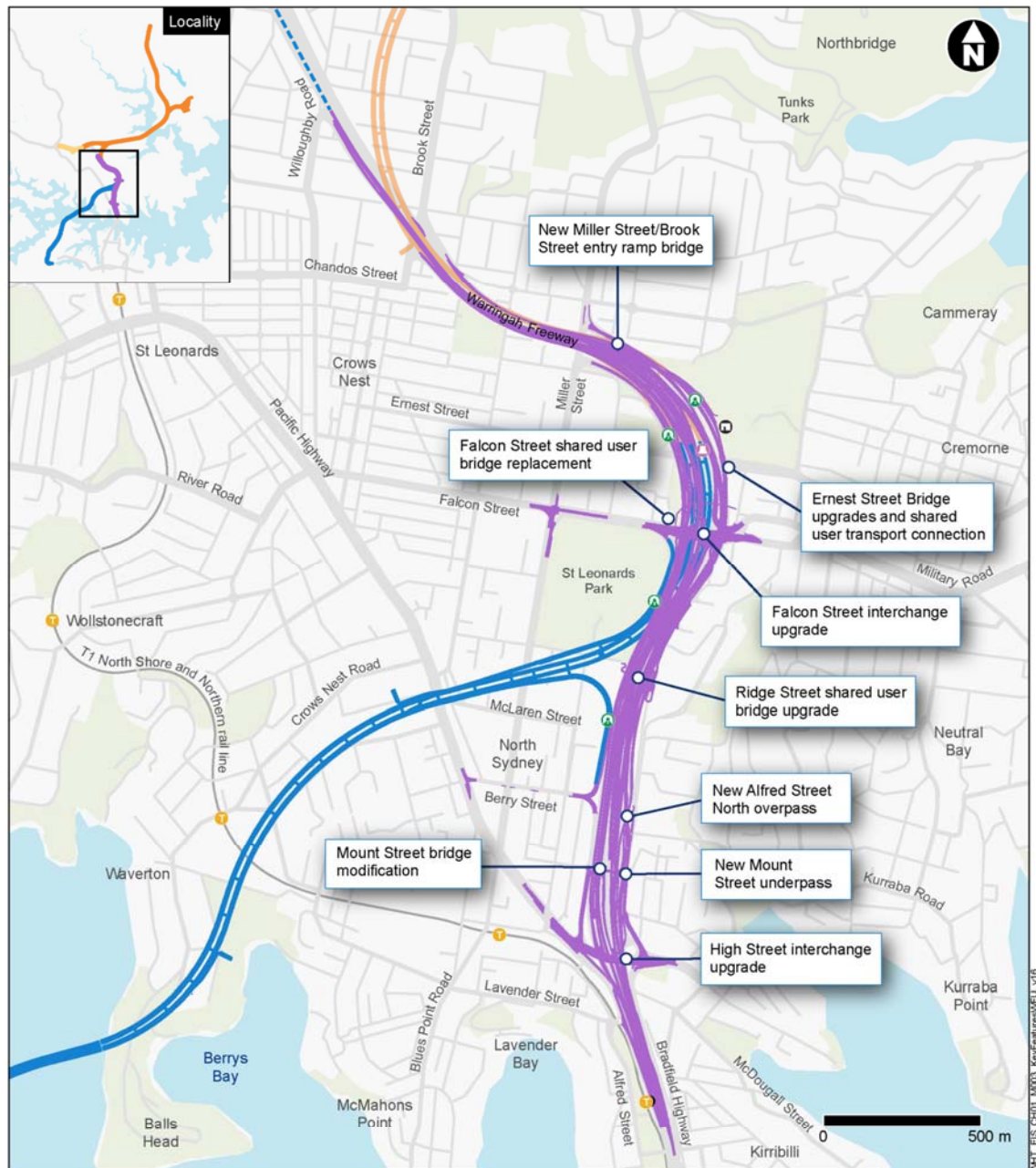
The Development Partner will focus on managing the procurement and delivery of Western Harbour Tunnel but not the financing of the project. The Development Partner will be responsible for the management of the contractors engaged to build the project. The Development Partner will be focused on achieving the best outcomes for NSW, to leverage industry expertise, innovation and value for money.

A detailed description of the Project is provided in Chapter 5 of the Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement (EIS).



(Reference: Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement, Figure 1-2)

Figure 1: Key features of the Western Harbour Tunnel component of the project



Legend

Operational features

- Warringah Freeway Upgrade
- Western Harbour Tunnel
- Communications cable for motorway control centre
- Surface connection
- Permanent operational facility
- Ventilation outlet

Connecting projects

- Beaches Link

Existing rail network

- Heavy rail
- Train station

(Reference: Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement, Figure 1-3)

Figure 2: Key features of the Warringah Freeway Upgrade component of the project

2 Project Staging

2.1 Overview

TfNSW has elected to stage portions of the project in response to further planning and feedback received from stakeholders and industry consultation.

The staging strategy for the project focuses on balancing the need for construction to occur in a safe and efficient manner, while managing constructability constraints, reducing the cumulative impacts and minimising impacts on local communities, the environment, and users of the surrounding road and other transport networks.

The duration of construction is significantly influenced by the complexity and magnitude of the interfaces between the various scopes of work. The staging strategy seeks to minimise the risk to delivery timing and impacts on nearby communities, including cumulative impacts from construction at North Sydney and Neutral Bay (refer to Section 2.5).

The stages of the project comprise of:

Stage 1 - Early and enabling works:

- Stage 1A – Critical utility installation, relocation and protection (CUT)
- Stage 1B – Cammeray Golf Course adjustment works (CGC)

Stage 2 - Warringah Freeway Upgrade project:

- Stage 2A – Warringah Freeway Upgrade early works (WFUEW)
- Stage 2B – Warringah Freeway Upgrade main works (WFUMW)

Stage 3 - Western Harbour Tunnel project (WHT).

- Supplementary stages to be confirmed at a later stage (upon procurement of the WHT Development Partner)

Further information on the works comprising each stage is contained in Section 2.2.

2.1.1 The Staging Rationale

The rationale for the staged construction and operation of the project is based on the following considerations:

- Making the scope of the project more manageable by dividing the works into numerous construction contracts
- Ensure the following pre-construction activities are carried out ahead of main construction activities, to ensure they can continue unhindered:
 - Critical utility installation, relocation and protection
 - Cammeray Golf Course adjustment works
- Minimising impacts on key stakeholders by relocating utilities and golf course facilities prior to the main works
- Limit as far as possible concurrent activities at any one time, minimising cumulative impacts within the construction footprint

- Action and satisfy proposed REMMs as detailed in the project EIS/RtS. This approach is intended to mitigate impacts on the community and environment, ahead of expected construction impacts
- Keeping with Government advice on staggering activities to limit the potential spread of COVID 19
- Result in a shorter construction program overall, as well as earlier completion of the asset.

The project will be operated in two stages, with the operation of the WFU and WHT projects commencing in accordance with the staged construction strategy.

2.2 Construction Stages

2.2.1 Early and enabling works

The early and enabling works comprise the following two stages:

- Critical utility installation, relocation and protection (CUT)
- Cammeray Golf Course adjustment works (CGC)

2.2.1.1 Critical utility installation, relocation and protection (CUT)

The critical utility installation, relocation and protection stage of the project will include the following works:

- Alfred Street North, Neutral Bay
 - Relocation of existing in-ground Sydney Water sewer mains
 - Relocation and undergrounding of existing Ausgrid overhead and in-ground assets
 - Relocation of existing communication provider assets, including Telstra (in-ground), Optus (including overhead and in-ground assets), TPG (in-ground assets) and NBN (in-ground assets)
- Arthur Street/High Street, North Sydney
 - Relocation of existing in-ground Ausgrid assets
 - Relocation of various in-ground communication provider assets, including Vocus, Optus, Verizon, TPG, UeComm and Telstra
 - Relocation of two (2) existing Sydney Harbour Tunnel fire hydrant booster stations on Arthur Street and Mount Street
 - Relocation of existing in-ground 415V feed to Sydney Harbour Tunnel control room
- Cammeray Avenue / Ernest Street / Cammeray Golf Course
 - Relocation of existing in-ground Ausgrid assets
 - Removal of existing disused in-ground 132kV and 33kV Ausgrid assets

- Relocation of existing in-ground Sydney Water sewer and potable water mains
- Relocation of existing in-ground UeComm communication provider assets
- Installation of new permanent Intelligent Transport System (ITS) node and temporary connections
- Installation of temporary construction power supply along Ernest Street from Ben Boyd Road to the Cammeray Golf Course site (WHT10).

2.2.1.2 Cammeray Golf Course adjustment works (CGC)

The Cammeray Golf Course adjustment works include works required under REMMs WQ8 and LP7 and CoA E1209, including:

- Install a new permanent replacement storage dam (and associated infrastructure) within Cammeray Golf Course prior to decommissioning of the existing dam, and
- Adjustments to the golf course to maintain its viability.

2.2.2 Warringah Freeway Upgrade project

The Warringah Freeway Upgrade project comprises the following two stages:

- Warringah Freeway Upgrade early works (WFUEW)
- Warringah Freeway Upgrade main works (WFUMW)

2.2.2.1 Warringah Freeway Upgrade early works (WFUEW)

The Warringah Freeway Upgrade early works will occur during the first 12 months of works and will include:

- Assessment and installation of at-property treatments and noise walls to mitigate construction noise from the project
- Site preparation works including clearing of vegetation, installation of temporary fencing and hoarding, installation of environmental controls including erosion and sedimentation controls
- Establishment and operation of ancillary facilities at Blue Street (WFU1), High Street south (WFU2), High Street north (WFU3), Arthur Street east (WFU4), Berry Street east (WFU5), Ridge Street east (WFU6), Merlin Street (WFU7), Cammeray Golf Course (WFU8) and Rosalind Street (WFU9)
- Preparation of the Cammeray Golf Course construction support site for the benefit of the WHT works and BL works
- Utility installation, relocation and protection (in addition to the CUT stage works), including installation of Intelligent Transport System and new and relocated drainage
- Construction of retaining walls
- Construction of the new Ridge Street Pedestrian Bridge, including localised excavation, piling, concrete works, roadworks, installation of bridge spans, stairs and ramp and demolition works

- Realignment of traffic including demolition of existing barriers, rock walls, drainage, lighting and signage, asphaltting works
- Modifications to the Falcon Street bridge and entry and exit ramps including installation of traffic barriers, concrete works, installation of structural steel, installation of drainage, asphaltting and line marking

2.2.2.2 Warringah Freeway Upgrade main works (WFUMW)

The Warringah Freeway Upgrade main works will commence after the first 12 months of early works and will include all works remaining to complete the project such as:

- Construction of the bridge over Alfred Street exit ramp including excavation and concrete works
- High Street bridge widening and ramps including piling and concrete works
- Bulk earthworks for the widening of the Warringah Freeway into the Cammeray Golf Course
- Construction of Warringah Freeway southbound bus lanes including piling and concrete works
- Construction of the Ernest Street underpass including excavation, piling and concrete works.
- Installation of stormwater drainage
- Upgrade or capacity improvements of other cross drainage structures which cross underneath the Warringah Freeway
- Upgrade and capacity improvements to the drainage pipelines along the on and off ramps connecting the Warringah Freeway with the existing culvert crossing near Brook Street at Cammeray/Crows Nest
- Road pavement works
- Installation of shared user paths and cycleways
- Surface finishing works such as linemarking and the installation of directional signage and other roadside furniture
- Final landscape treatments and rehabilitation works

2.2.3 Western Harbour Tunnel Project (WHT)

The Western Harbour Tunnel project includes:

- Twin mainline tunnels about 6.5 kilometres long connecting the M4-M5 Link at Rozelle to the Warringah Freeway, near Cammeray
- An immersed tube tunnel crossing of Sydney Harbour between Birchgrove and Balls Head
- Underground connections to the M4-M5 Link project beneath Rozelle

- Tunnelled ramps and surface connections at Rozelle, North Sydney and Cammeray, including direct connections to and from the Warringah Freeway (including integration with the Warringah Freeway Upgrade), an off ramp to Falcon Street and an on ramp from Berry Street at North Sydney
- Tunnelled stubs for future underground connections to the future proposed Beaches Link and Gore Hill Freeway Connection project under the Warringah Freeway near Cammeray
- Fitout and commissioning of a ventilation outlet and motorway facilities at the Rozelle Interchange
- Construction of a ventilation outlet and motorway facilities at the Warringah Freeway in Cammeray
- Operational facilities including a motorway control centre at Waltham Street, in the Artarmon industrial area, and tunnel support facilities at the Warringah Freeway in Cammeray
- Other operational infrastructure including groundwater and tunnel drainage management and treatment systems, signage, tolling infrastructure, fire and life safety systems, lighting, emergency evacuation and emergency smoke extraction infrastructure, CCTV and other traffic management systems.

2.3 Operation Stages

Operation of the project would be staged as per construction staging, with the WFU stage to commence operation (2025) prior to the WHT stage (2026).

The staging report is focussed on construction and any further proposed staging of operation will be addressed by revising the report as per CoA A14 (refer Section 2.5).

2.4 Indicative timing

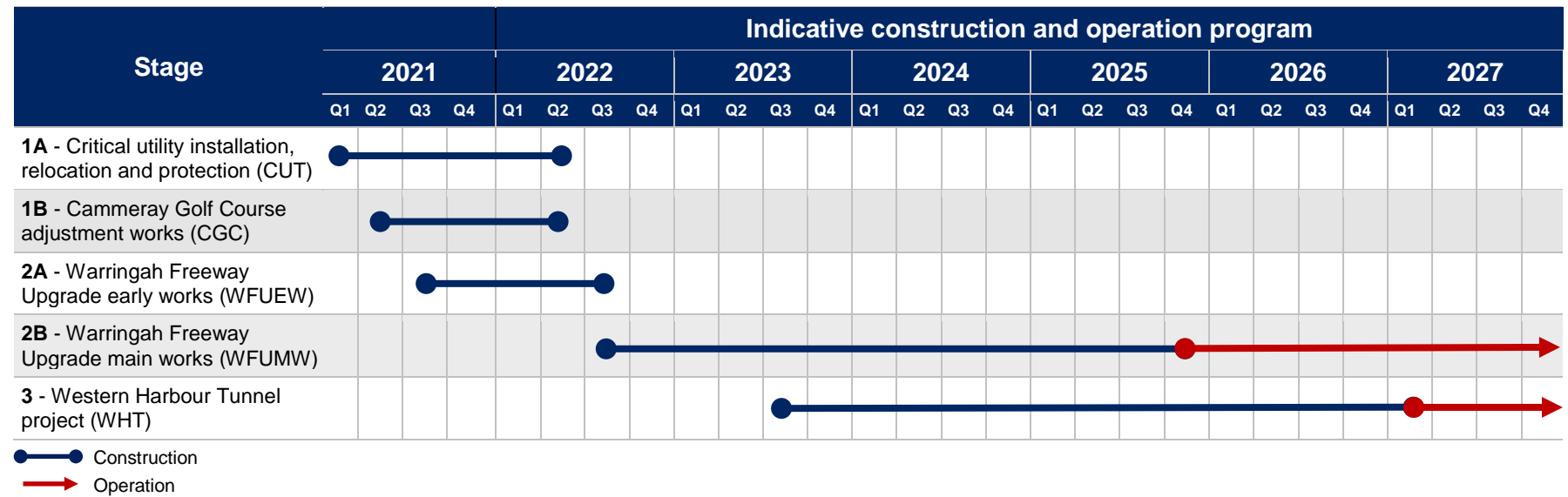
Construction of the WHTWFU project is planned to commence in 2021, with completion of construction in 2026. Early and enabling works and site establishment would be the first works carried out for the project, with substantial construction starting in 2022.

An indicative construction and operational program is shown in Table 2 for each stage. The timing specific to each stage will be subject to review as the procurement processes evolve.

2.5 Changes to the Staging

Where changes are proposed to the staging of construction or operation, a revised Staging Report will be prepared, endorsed by the ER and submitted to the Planning Secretary for information no later than one month prior to the proposed change in the staging.

Table 2: Indicative construction and operation stage timeframes



2.6 Cumulative impacts

Cumulative impacts may occur as a result of the project stages being constructed concurrently, or consecutively, with other stages of the project and/ or other approved CSSI or SSI projects in the area, including the M4-M5 Link at Rozelle and the proposed Beaches Link and Gore Hill Freeway Connection project at Naremburn (subject to approval).

TfNSW has elected to stage the Project in an effort to reduce cumulative impacts from the Project overall. This will result in a shorter construction program, reducing the impact and duration in any one work area, as well as an earlier completion of the asset.

Cumulative impacts during construction of the project stages will be managed through compliance with the relevant CoAs, coordination meetings between TfNSW, its contractors, external agencies and stakeholders, and environmental management measures related to key environmental impacts including traffic and access, noise and vibration and construction fatigue.

Key CoAs established to manage cumulative impacts during construction of the project stages include but are not limited to:

- E69 (Out-Of-Hours Work Protocol) to facilitate the coordination of out-of-hours work to ensure appropriate respite is provided to the community
- E82 (Utility Coordination and Respite) to coordinate and ensure respite periods are provided for all work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations)
- E83 (Out-of-Hours Works – Community Consultation on Respite) to ensure appropriate respite periods for out-of-hours work are implemented in consultation with the community at each affected location on a regular basis
- E139 (Construction Parking Management) to manage light and heavy vehicle use associated with the CSSI and impacts to the community
- E140 (Construction Parking and Access Strategy) to manage impacts resulting from on- and off-street parking changes during construction of the CSSI
- E154 (Utility Coordination Manager) to manage and coordinate all utility work associated with the delivery of the CSSI and to ensure respite is provided to the community

Further details of how compliance with these requirements will be achieved, monitored and reported during construction are provided in section 3.

Other mechanisms to mitigate cumulative impacts from the CSSI and its multiple stages are provided in sections 2.6.1 to 2.6.5.

2.6.1 Traffic management

Coordination meetings between TfNSW, Contractors and Transport Management Centre (TMC)/ Sydney Coordination Office (SCO) will occur on a regular basis throughout the delivery of the CSSI and its multiple stages. Key issues for discussion at the traffic coordination meetings will include ROLs and any other traffic changes or impacts as a result from the CSSI.

2.6.2 Noise mitigation

OOHW coordination meetings chaired by TfNSW, with representatives from other Contractors (and other projects stages and CSSI projects), including Utility Authorities, working in the vicinity of the project will occur on a weekly basis. The purpose of these meetings is to coordinate out of hours works, to minimise cumulative noise and vibration impacts and maximise respite for affected sensitive receivers as required by the Planning Approval.

TfNSW has also taken the proactive approach and has started to implement a project specific Noise Insulation Program for at property treatment to minimise noise impacts as a result of the CSSI. For further information on noise mitigation and the Noise Insulation Program, refer to <https://v2.communityanalytics.com.au/rms/wht/noise>.

2.6.3 Interface management

The project has multiple interfaces that will be managed and specific interface agreements will be required for the purpose of facilitating and promoting coordination with relevant third parties such as utility providers and other CSSI/SSI projects.

TfNSW contractor's will be required to enter into an Interface Deed with Contractors and Utility Providers in which they interact with i.e. WFU Contractor will be required to enter into an Interface Deed with the WHT Contractor and the BL Contractor, to coordinate works and minimise cumulative impacts.

2.6.4 Visual amenity and landscape mitigation

The WHTWFU project elements at Cammeray will be constructed in close proximity to elements for the proposed BL project. When preparing the Beaches Link and Gore Hill Freeway Connection environmental impact statement operational landscape and visual amenity impacts were assessed cumulatively with the WFU project. The urban and landscape designs for both projects in this area will be developed to be sympathetic with and consistent with each other, thus minimising cumulative impacts from the projects.

2.6.5 Other measures to minimise cumulative impacts

In order to minimise cumulative impacts TfNSW will have oversight of projects' construction programs and the ability to identify potential cumulative impacts as to the duration and nature (visual, noise, traffic, business disruptions). Once the potential impacts are identified, TfNSW (WFU) and its Development Partner (WHT) will trigger appropriate management measures including; for example, hours of operation, respite and other noise mitigation measures (screening, community consultation as to alternate work programs etc.).

The suite of management measures best adapted to the impacted zone will be determined through community consultation. The steps to managing cumulative impacts are:

- Community Consultation Managers' and Environment Managers' to identify suite of REMMs to address cumulative impact via liaison with Sydney Coordinating Office, Councils and other stakeholders or sensitive receivers
- Develop suitable suite of management measures applicable to the area
- Separation of time and place, staging/phasing works to minimise cumulative impacts

- Progressively build cumulative management measures into the respective CEMP/ Sub plans, for example CNVIS, and Traffic Management Plans for specific areas
- Monitor complaints to identify unexpected/emerging cumulative impacts
- Up-date approach and revised CEMP and specific sub-plan updates, as needed

3 Compliance

3.1 CoA and REMMs

The applicability of the CoA and REMMs to each stage of the project has been assessed, allocated and confirmed. These allocations to each stage of the project are tabled in Appendix A and Appendix B respectively:

- Where a CoA or REMM has been determined to be relevant to a stage, it is defined as **Applicable** to that stage. This indicates that the CoA or REMM will be fully complied with during the stage
- Where a CoA or REMM does not relate to the stage, it is defined as **Not Applicable**. This indicates that the CoA or REMM may not be complied with during the stage
- Where only part of a CoA or REMM relates to the stage, it is defined as **Partial**. This indicates that the CoA or REMM will be at least partially complied with during the stage to the degree explained in Appendix A or Appendix B.

3.2 Construction Environmental Management Framework

Consistency in environmental management across each stage of the project will be achieved through the implementation of the *WHTWUFU Construction Environmental Management Framework* (CEMF). The CEMF formed part of the Western Harbour Tunnel and Warringah Freeway Upgrade Response to Submissions Report (RtS) and provides a linking document to the Construction Environmental Management Plans (produced by the Proponent and contractors). A link to the CEMF contained in the RtS is provided in Appendix C.

The CEMF provides a whole-of-construction life-cycle approach to construction environmental management and sets the environmental and community engagement requirements for construction. More specifically, it details:

- The Construction Environmental Management Plans (CEMPs), sub-plans and other supporting documentation for each environmental management category (i.e. noise and vibration, visual amenity, etc.)
- Key issues that each sub plan would address, along with the relevant guidelines or requirements each plan would be prepared in accordance with.

The requirements of the CEMF have been allocated to each stage of the project by indicating the applicability of each section of the CEMF to each stage. These allocations are provided in Appendix C.

Compliance with the CEMF will help achieve the environmental performance outcomes for the project. These performance outcomes outline the broader objectives to be achieved by TfNSW in the design, construction and operation of the project.

3.3 Environmental management approach

The project contractors are required to adhere to and implement the requirements of the CEMF to a degree that is appropriate to the applicable stage of construction / operation. The applicability of the CEMF to each stage allows for effective and efficient management of environmental issues that is commensurate to the impacts of each project stage on each environmental management category.

Table 3 indicates the applicability of the requirements relating to each CEMF environmental management category to each stage of the project. This includes for each environmental management category:

- Whether a stand-alone sub-plan will be prepared ('Sub-plan')
- Whether the category risks will be addressed in the main CEMP document in the form of a procedure ('P'), or
- Whether the risk is not relevant to the scope of work and is not addressed within the CEMP (Not Applicable).

This assessment was based on each project stage's scope of work, relevant CoA and REMMs requirements. The corresponding CoA for each management plan or monitoring program are identified within the table. Additional plans and programs identified in the CoA, not specifically referenced in the CEMF have also been included. Table 3 also outlines the tool which would be used to manage environmental requirements during the construction stages of the project.

Each stage of the project would include some "low impact work" (refer to definitions section and CoA), which would become "construction" following approval of the CEMP for that applicable stage. In some instances "low impact work" for a later stage may occur following approval of a CEMP for an earlier, separate stage, e.g. "low impact work" undertaken as part of the Warringah Freeway Upgrade Early Works stage may occur following approval of the CEMP for the Critical utility installation, relocation and protection stage.

Table 3: CEMF and Construction Environmental Management Tool Applicable to each Stage.

CEMF Environmental Management Category (relevant CoA)	CUT	CGC	WFUEW	WFUMW	WHT
Construction Environmental Management Tool	CEMP	Low-impact assessment	CEMP	CEMP	CEMP
Traffic, Transport and Access (CoA C4(a))	Sub-plan	P	Sub-plan	Sub-plan	Sub-plan
Noise and vibration (CoA C4(b))	Sub-plan	P	Sub-plan	Sub-plan	Sub-plan
Flora and Fauna (CoA C4(c))	P	P	Sub-plan	Sub-plan	Sub-plan
Air Quality and Odour (CoA C4(d))	P	P	P	P	Sub-plan
Soil and Surface Water (CoA C4(e))	P	P	Sub-plan	Sub-plan	Sub-plan
Groundwater (CoA C4(f))	Not Applicable	Not Applicable	P	P	Sub-plan
Maritime Heritage (CoA C4(g))	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Sub-plan
Non-Aboriginal Heritage (CoA C4(h))	P	P	Sub-plan	Sub-plan	Sub-plan
Aboriginal Cultural Heritage (CoA C4(i))	P	P	P	P	Sub-plan
Dredging and Disposal (CoA C4(j))	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Sub-plan
Noise and vibration monitoring program (CoA C11(a))	Included in sub-plan	P	Monitoring Program	Monitoring Program	Monitoring Program
Air Quality (including Odour) Monitoring Program (CoA C11(b))	P	P	Monitoring Program	Monitoring Program	Monitoring Program
Surface Water Monitoring Program (CoA C11(c))	P	P	Monitoring Program	Monitoring Program	Monitoring Program
Groundwater Monitoring Program (CoA C11(d))	Not Applicable	Not applicable	P	P	Monitoring Program
Marine Monitoring Program (CoA C11(e))	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Monitoring Program
Dredging Monitoring Program (CoA C11(f))	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Monitoring Program

3.4 Compliance Monitoring

Several layers of compliance checking will be applied during the construction of the CSSI. Contractors will maintain their own internal audit program to ensure they meet the requirements set out in the CoA and contract. TfNSW will conduct an additional auditing program across all stages with a specific focus on compliance with the conditions of approval. TfNSW will monitor compliance with the Planning Approval across all stages through surveillance, environmental inspections, record-keeping and contractor compliance reporting.

TfNSW has engaged an independent ER for WFU and the Development Partner will engage an independent ER for WHT. The ERs will:

- Undertake regular site inspections with the Contractor's environmental managers and TfNSW representatives
- Review compliance with the approvals on a periodic basis
- Review management plans and provide advice in relation to the level of risk associated with construction works
- Provide independent advice on matters relating to compliance to the Contractors, TfNSW and DPIE if requested.

3.5 Independent Environmental Auditing

Independent Audits of the CSSI will be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements (DPIE, 2020)*.

The purpose of an Independent Audit is to obtain an independent and objective assessment of the environmental performance and compliance status of a project. Independent Audits differ from other compliance reporting requirements that may apply as they are undertaken and reported by an independent auditor, rather than an Authorised Reporting Officer. Proposed independent auditors will be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.

Appendix A Applicability of Conditions of Approval to each stage

Table 4 has been based on the WHTWUFU conditions of approval as issued by DPIE on 21 January 2021. This document is attached at the end of this table.

Table 4: Applicability of Conditions of Approval to each stage

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
General	A1	Applicable	Applicable	Applicable	Applicable	Applicable
	A2	Applicable	Applicable	Applicable	Applicable	Applicable
	A3	Applicable	Applicable	Applicable	Applicable	Applicable
	A4	Applicable	Applicable	Applicable	Applicable	Applicable
	A5	Applicable	Applicable	Applicable	Applicable	Applicable
	A6	Applicable	Applicable	Applicable	Applicable	Applicable
	A7	Applicable	Applicable	Applicable	Applicable	Applicable
	A8	Applicable	Applicable	Applicable	Applicable	Applicable
Noise Insulation Program	A9	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Staging	A10	Applicable	Applicable	Applicable	Applicable	Applicable
	A11	Applicable	Applicable	Applicable	Applicable	Applicable
	A12	Applicable	Applicable	Applicable	Applicable	Applicable
	A13	Applicable	Applicable	Applicable	Applicable	Applicable
	A14	Applicable	Applicable	Applicable	Applicable	Applicable
	A15	Applicable	Applicable	Applicable	Applicable	Applicable
Ancillary Facilities	A16	Applicable	Applicable	Applicable	Applicable	Applicable
Site Establishment Works	A17	Applicable – where a construction ancillary facility is required (in addition to minor construction ancillary facilities) it would be established and operated in accordance with the CEMP for the works	Applicable – where a construction ancillary facility is required (in addition to minor construction ancillary facilities)	Applicable	Applicable	Applicable
	A18	Applicable	Applicable	Applicable	Applicable	Applicable
	A19	Applicable	Applicable	Applicable	Applicable	Applicable
	A20	Applicable	Applicable	Applicable	Applicable	Applicable
Independent Appointment	A21	Applicable	Applicable	Applicable	Applicable	Applicable
	A22	Applicable	Applicable	Applicable	Applicable	Applicable
	A23	Applicable	Applicable	Applicable	Applicable	Applicable
Environmental Representative	A24	Applicable	Applicable	Applicable	Applicable	Applicable
	A25	Applicable	Applicable	Applicable	Applicable	Applicable
	A26	Applicable – the Proponent will engage two Environmental Representatives (and their alternate) – one for Stage 1 (Early and enabling works and Stage 2 Warringah Freeway Upgrade project, and one for the Western Harbour Tunnel project.	Applicable – the Proponent will engage two Environmental Representatives (and their alternate) – one for Stage 1 Early and enabling works and Stage 2 Warringah Freeway Upgrade project, and one for the Western Harbour Tunnel project.	Applicable – the Proponent will engage two Environmental Representatives (and their alternate) – one for Stage 1 Early and enabling works and Stage 2 Warringah Freeway Upgrade project, and one for the Western Harbour Tunnel project.	Applicable – the Proponent will engage two Environmental Representatives (and their alternate) – one for Stage 1 Early and enabling works and Stage 2 Warringah Freeway Upgrade project, and one for the Western Harbour Tunnel project.	Applicable – the Proponent will engage two Environmental Representatives (and their alternate) – one for Stage 1 Early and enabling works and Stage 2 Warringah Freeway Upgrade project, and one for the Western Harbour Tunnel project.
	A27	Applicable	Applicable	Applicable	Applicable	Applicable
Acoustics Advisor	A28	Applicable	Applicable	Applicable	Applicable	Applicable
	A29	Applicable	Applicable	Applicable	Applicable	Applicable
	A30	Applicable	Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
Notification of Commencement	A31	Applicable	Applicable	Applicable	Applicable	Applicable
	A32	Applicable – the Proponent will engage two Acoustic Advisors (and their alternate) – one for Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade project), and one for the Western Harbour Tunnel project.	Applicable – the Proponent will engage two Acoustic Advisors (and their alternate) – one for Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade project), and one for the Western Harbour Tunnel project.	Applicable – the Proponent will engage two Acoustic Advisors (and their alternate) – one for Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade project), and one for the Western Harbour Tunnel project.	Applicable – the Proponent will engage two Acoustic Advisors (and their alternate) – one for Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade project), and one for the Western Harbour Tunnel project.	Applicable – the Proponent will engage two Acoustic Advisors (and their alternate) – one for Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade project), and one for the Western Harbour Tunnel project.
	A33	Applicable	Applicable	Applicable	Applicable	Applicable
	A34	Applicable	Applicable	Applicable	Applicable	Applicable
	A35	Applicable	Applicable	Applicable	Applicable	Applicable
	A36	Applicable	Applicable	Applicable	Applicable	Applicable
Auditing	A37	Applicable	Applicable	Applicable	Applicable	Applicable
Incident and Non-Compliance Notification and Reporting	A38	Applicable – the Proponent will independently audit the Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade) separately to Stage 3 Western Harbour Tunnel Project.	Applicable – the Proponent will independently audit the Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade) separately to Stage 3 Western Harbour Tunnel Project.	Applicable – the Proponent will independently audit the Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade) separately to Stage 3 Western Harbour Tunnel Project.	Applicable – the Proponent will independently audit the Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade) separately to Stage 3 Western Harbour Tunnel Project.	Applicable – the Proponent will independently audit the Stage 1 (Early and enabling works) and Stage 2 (Warringah Freeway Upgrade) separately to Stage 3 Western Harbour Tunnel Project.
	A39	Applicable	Applicable	Applicable	Applicable	Applicable
	A40	Applicable	Applicable	Applicable	Applicable	Applicable
	A41	Applicable	Applicable	Applicable	Applicable	Applicable
	A42	Applicable	Applicable	Applicable	Applicable	Applicable
	A43	Applicable	Applicable	Applicable	Applicable	Applicable
	A44	Applicable	Applicable	Applicable	Applicable	Applicable
	A45	Applicable	Applicable	Applicable	Applicable	Applicable
	A46	Applicable	Applicable	Applicable	Applicable	Applicable
Identification of Workforce and Compounds	A47	Not Applicable – spoil is generated during excavation of the tunnel and large bulk earthworks; this stage does not include tunnel exavation or large bulk earthworks.	Not Applicable – spoil is generated during excavation of the tunnel and large bulk earthworks; this stage does not include tunnel exavation or large bulk earthworks.	Applicable	Applicable	Applicable
Community Information, Consultation and Involvement	A48	Applicable	Applicable	Applicable	Applicable	Applicable
	B1	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage
	B2	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage
	B3	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage
	B4	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage
Complaints Management System	B5	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage	Applicable – WHTWFO Overarching Community Communication Strategy for all works in this stage
	B6	Applicable	Applicable	Applicable	Applicable	Applicable
	B7	Applicable	Applicable	Applicable	Applicable	Applicable
	B8	Applicable	Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
Provision of Electronic Information	B9	Applicable	Applicable	Applicable	Applicable	Applicable
	B10	Applicable	Applicable	Applicable	Applicable	Applicable
	B11	Applicable	Applicable	Applicable	Applicable	Applicable
	B12	Applicable	Applicable	Applicable	Applicable	Applicable
	B13	Applicable	Applicable	Applicable	Applicable	Applicable
	B14	Applicable	Applicable	Applicable	Applicable	Applicable
Provision of Electronic Information	B15	Applicable	Applicable	Applicable	Applicable	Applicable
Construction Environmental Management Plan	C1	Applicable – Refer to Appendix C for applicable CEMF requirements for each stage	Not Applicable – the CGC works are defined as 'low impact works' and are not construction; environmental risks associated with the works will be addressed in accordance with Table 3.	Applicable – Refer to Appendix C for applicable CEMF requirements for each stage	Applicable – Refer to Appendix C for applicable CEMF requirements for each stage	Applicable – Refer to Appendix C for applicable CEMF requirements for each stage
	C2	Applicable	Not Applicable – the CGC works are defined as 'low impact works' and are not construction; environmental risks associated with the works will be addressed in accordance with Table 3.	Applicable	Applicable	Applicable
	C3	Applicable	Not Applicable – the CGC works are defined as 'low impact works' and are not construction; environmental risks associated with the works will be addressed in accordance with Table 3.	Applicable	Applicable	Applicable
	C4	Partial - C4 (a) and (b) will be complied with fully (to address key risks). Risks associated with the remaining aspects of this condition will be addressed in accordance with Table 3.	Not Applicable – the CGC works are defined 'low impact works' and are not construction; environmental risks associated with the works will be addressed in accordance with Table 3.	Partial - C4 (a), (b), (c), (d), (e), (h) and (i). will be complied with fully (to address key risks). Risks associated with the remaining aspects of this condition will be addressed in accordance with Table 3.	Partial - C4 (a), (b), (c), (d), (e), (h) and (i). will be complied with fully (to address key risks). Risks associated with the remaining aspects of this condition will be addressed in accordance with Table 3.	Applicable
	C5	Applicable	Not Applicable	Applicable	Applicable	Applicable
	C6	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Construction Monitoring Programs	C7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	C8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	C9	Applicable	Not Applicable	Applicable	Applicable	Applicable
	C10	Applicable	Not Applicable	Applicable	Applicable	Applicable
	C11	Partial - C11 (a) will be complied with fully (to address key risks). Risks associated with the remaining aspects of this condition will be addressed in accordance with Table 3.	Not Applicable – Risks associated with the aspects in this condition will be addressed in accordance with Table 3.	Partial – C11 (a), (b) and (c). will be complied with fully (to address key risks). Risks associated with the remaining aspects of this condition will be addressed in accordance with Table 3.	Partial – C11 (a), (b) and (c) will be complied with fully (to address key risks). Risks associated with the remaining aspects of this condition will be addressed in accordance with Table 3.	Applicable
	C12	Applicable	Not Applicable	Applicable	Applicable	Applicable
	C13	Applicable	Not Applicable	Applicable	Applicable	Applicable
	C14	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	C15	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	C16	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	C17	Applicable	Not Applicable	Applicable	Applicable	Applicable
	C18	Applicable	Not Applicable	Applicable	Applicable	Applicable
	C19	Applicable	Not Applicable	Applicable	Applicable	Applicable
	C20	Applicable	Not Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
Operational Environmental Management	C21	Applicable	Not Applicable	Applicable	Applicable	Applicable
	D1	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	D2	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	D3	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Operational Monitoring Program	D4	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	D5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D10	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D11	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D12	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Air Quality and Odour	D13	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E1	Applicable	Applicable	Applicable	Applicable	Applicable
	E2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E10	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E11	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E12	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E13	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E14	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E15	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E16	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E17	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E18	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E19	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E20	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E21	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E22	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E23	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E24	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Ambient Air Quality	E25	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E26	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E27	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
Biodiversity	E28	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E29	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E30	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E31	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E32	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E33	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E34	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E35	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E36	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E37	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E38	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E39	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E40	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E41	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E42	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E43	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E44	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E45	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E46	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E47	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E48	Applicable	Applicable	Applicable	Applicable	Applicable
Flooding	E49	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Aboriginal Cultural Heritage	E50	Applicable	Applicable	Applicable	Applicable	Applicable
Non-Aboriginal Heritage	E51	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	E52	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E53	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E54	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E55	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E56	Applicable	Not Applicable	Applicable	Applicable	Applicable
	E57	Applicable	Not Applicable	Applicable	Applicable	Applicable
	E58	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E59	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E60	Not Applicable – unless an unexpected artefact or relic is discovered	Not Applicable – unless an unexpected artefact or relic is discovered	Applicable	Applicable	Applicable
	E61	Not Applicable – unless an unexpected artefact or relic is discovered	Not Applicable – unless an unexpected artefact or relic is discovered	Applicable	Applicable	Applicable
	E62	Not Applicable – unless an unexpected artefact or relic is discovered	Not Applicable – unless an unexpected artefact or relic is discovered	Applicable	Applicable	Applicable
	E63	Applicable	Applicable	Applicable	Applicable	Applicable
	E64	Applicable	Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
Noise and Vibration	E65	Applicable	Applicable – survey will be included in the Noise and Vibration Procedure	Applicable	Applicable	Applicable
	E66	Applicable	Applicable	Applicable	Applicable	Applicable
	E67	Applicable	Applicable	Applicable	Applicable	Applicable
	E68	Applicable	Applicable	Applicable	Applicable	Applicable
	E69	Applicable	Applicable	Applicable	Applicable	Applicable
	E70	Applicable	Applicable – works exceeding noise management levels and / vibration criteria would be managed in accordance with Noise and Vibration Procedure	Applicable	Applicable	Applicable
	E71	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E72	Applicable	Applicable	Applicable	Applicable	Applicable
	E73	Applicable	Applicable	Applicable	Applicable	Applicable
	E74	Applicable	Applicable	Applicable	Applicable	Applicable
	E75	Applicable	Applicable	Applicable	Applicable	Applicable
	E76	Applicable	Applicable – properties would be identified in the Noise and Vibration Procedure	Applicable	Applicable	Applicable
	E77	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E78	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E79	Applicable	Applicable	Applicable	Applicable	Applicable
	E80	Applicable	Applicable	Applicable	Applicable	Applicable
	E81	Applicable	Applicable	Applicable	Applicable	Applicable
	E82	Applicable	Applicable	Applicable	Applicable	Applicable
	E83	Applicable	Applicable	Applicable	Applicable	Applicable
	E84	Applicable	Applicable	Applicable	Applicable	Applicable
	E85	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E86	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E87	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E88	Applicable	Not Applicable	Applicable	Applicable	Applicable
	E89	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E90	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E91	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E92	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E93	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E94	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E95	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E96	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E97	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E98	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E99	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Socio-Economic, Land Use and Property	E100	Applicable	Not Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
Cammeray Golf Course	E101	Not Applicable	Applicable	Applicable	Applicable	Not Applicable
Settlement	E102	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E103	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E104	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E105	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E106	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Condition Survey	E107	Applicable	Applicable	Applicable	Applicable	Applicable
	E108	Applicable	Applicable	Applicable	Applicable	Applicable
	E109	Applicable	Applicable	Applicable	Applicable	Applicable
	E110	Applicable	Applicable	Applicable	Applicable	Applicable
	E111	Applicable	Applicable	Applicable	Applicable	Applicable
	E112	Applicable	Applicable	Applicable	Applicable	Applicable
	E113	Applicable	Applicable	Applicable	Applicable	Applicable
Soils	E114	Applicable	Applicable	Applicable	Applicable	Applicable
Contaminated sites	E115	Applicable	Applicable	Applicable	Applicable	Applicable
	E116	Applicable	Applicable	Applicable	Applicable	Applicable
	E117	Applicable	Applicable	Applicable	Applicable	Applicable
	E118	Applicable	Applicable	Applicable	Applicable	Applicable
	E119	Applicable	Applicable	Applicable	Applicable	Applicable
	E120	Applicable	Applicable	Applicable	Applicable	Applicable
	E121	Applicable	Applicable	Applicable	Applicable	Applicable
	E122	Applicable	Applicable	Applicable	Applicable	Applicable
	E123	Applicable	Applicable	Applicable	Applicable	Applicable
	E124	Applicable	Applicable	Applicable	Applicable	Applicable
	E125	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Sustainability	E126	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E127	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Traffic and Transport	E128	Applicable	Applicable	Applicable	Applicable	Applicable
	E129	Applicable	Applicable	Applicable	Applicable	Applicable
	E130	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E131	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E132	Applicable	Applicable	Applicable	Applicable	Applicable
	E133	Applicable	Applicable	Applicable	Applicable	Applicable
	E134	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E135	Not Applicable – spoil is generated during excavation of the tunnel and large bulk earthworks; this stage does not include tunnel exavation or large bulk earthworks.	Not Applicable – spoil is generated during excavation of the tunnel and large bulk earthworks; this stage does not include tunnel exavation or large bulk earthworks.	Applicable	Applicable	Applicable
	E136	Applicable	Applicable	Applicable	Applicable	Applicable
	E137	Applicable	Applicable	Applicable	Applicable	Applicable
	E138	Applicable	Applicable	Applicable	Applicable	Applicable
	E139	Applicable	Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
	E140	Applicable	Not Applicable	Applicable	Applicable	Applicable
	E141	Applicable	Applicable	Applicable	Applicable	Applicable
	E142	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	E143	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	E144	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E145	Applicable	Applicable	Applicable	Applicable	Applicable
	E146	Applicable	No Applicable	Applicable	Applicable	Not Applicable
	E147	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E148	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E149	Applicable	Not Applicable	Applicable	Applicable	Applicable
	E150	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E151	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E152	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E153	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Utilities Management	E154	Applicable	Not Applicable	Applicable	Applicable	Applicable
Place Design and Visual Amenity	E155	Applicable	Applicable	Applicable	Applicable	Applicable
	E156	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E157	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E158	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E159	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	E160	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E161	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	E162	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E163	Applicable	Applicable	Applicable	Applicable	Applicable
	E164	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E165	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E166	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E167	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E168	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E169	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E170	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E171	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E172	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E173	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E174	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E175	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E176	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E177	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E178	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E179	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E180	Not Applicable	Not Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
Waste	E181	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E182	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E183	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E184	Applicable	Applicable	Applicable	Applicable	Applicable
	E185	Applicable	Applicable	Applicable	Applicable	Applicable
	E186	Applicable	Applicable	Applicable	Applicable	Applicable
	E187	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E188	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E189	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E190	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E191	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E192	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E193	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E194	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E195	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E196	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E197	Not Applicable	Applicable	Applicable	Applicable	Applicable
	E198	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	E199	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	E200	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
Water	E201	Applicable	Applicable	Applicable	Applicable	Applicable
	E202	Applicable	Applicable	Applicable	Applicable	Applicable
	E203	Applicable	Applicable	Applicable	Applicable	Applicable
	E204	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E205	Applicable	Applicable	Applicable	Applicable	Applicable
	E206	Applicable	Applicable	Applicable	Applicable	Applicable
	E207	Applicable	Applicable	Applicable	Applicable	Applicable
	E208	Not Applicable	Applicable	Applicable	Applicable	Applicable
	E209	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable
	E210	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E211	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E212	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E213	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E214	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E215	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E216	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E217	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E218	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E219	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E220	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E221	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable

CoA Topic	CoA	CUT	CGC	WFUEW	WFUMW	WHT
	E222	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E223	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E224	Not Applicable	Not Applicable	Applicable	Applicable	Applicable

Appendix B Applicability of REMMs to each stage

Table 5 has been based on the latest version of the Revised Environmental Management Measures taken from Part D of the RtS. This document can be found here:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=EXH-2682%2120200914T005951.156%20GMT>

Table 5: Applicability of REMMs to each stage

REMM Topic	REMM	CUT	CGC	WFUEW	WFUMW	WHT
Traffic and Transport – Construction	CTT1	Applicable	Applicable	Applicable	Applicable	Applicable
	CTT2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	CTT3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	CTT4	Applicable	Applicable	Applicable	Applicable	Applicable
	CTT5	Applicable	Applicable	Applicable	Applicable	Applicable
	CTT6	Applicable	Applicable	Applicable	Applicable	Applicable
	CTT7	Applicable	Applicable	Applicable	Applicable	Applicable
	CTT8	Applicable	Applicable	Applicable	Applicable	Applicable
	CTT9	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	CTT10	Applicable	Not Applicable	Applicable	Applicable	Applicable
	CTT11	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	CTT12	Applicable	Applicable	Applicable	Applicable	Applicable
	CTT13	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	CTT14	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	CTT15	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	CTT16	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	CTT17	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	CTT18	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	CTT19	Applicable	Applicable	Applicable	Applicable	Applicable
Traffic and Transport - Operation	OT1	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	OT2	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	OT3	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	OT4	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
Noise And Vibration	CNV1	Applicable	Not Applicable - noise and vibration mitigation measures to be implemented during this activity will be managed through a procedure as identified in Table 3.	Applicable	Applicable	Applicable
	CNV2	Applicable	Applicable	Applicable	Applicable	Applicable
	CNV3	Applicable	Applicable	Applicable	Applicable	Applicable
	CNV4	Applicable	Applicable	Applicable	Applicable	Applicable
	CNV5	Applicable	Applicable	Applicable	Applicable	Applicable
	CNV6	Applicable	Applicable	Applicable	Applicable	Applicable
	CNV7	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	CNV8	Applicable	Not Applicable	Applicable	Applicable	Applicable
	CNV9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable

REMM Topic	REMM	CUT	CGC	WFUEW	WFUMW	WHT
	CNV10	Applicable	Applicable	Applicable	Applicable	Applicable
	ONV1	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	ONV2	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	ONV3	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Air Quality	AQ1	Applicable	Applicable	Applicable	Applicable	Applicable
	AQ2	Applicable	Applicable	Applicable	Applicable	Applicable
Human Health	HH1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	HH2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Non Aboriginal Heitage	NAH1	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	NAH2	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	NAH3	Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	NAH4	Applicable	Not Applicable	Applicable	Applicable	Applicable
	NAH5	Applicable	Applicable	Applicable	Applicable	Applicable
	NAH6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH8	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable
	NAH9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH10	Applicable	Applicable	Applicable	Applicable	Applicable
	NAH11	Applicable	Applicable	Applicable	Applicable	Applicable
	NAH12	Applicable	Applicable	Applicable	Applicable	Applicable
	NAH13	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH14	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	NAH15	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH16	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH17	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH18	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH19	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH20	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH21	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH22	Applicable	Applicable	Applicable	Applicable	Applicable
	NAH23	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH24	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	NAH25	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Aboriginal Cultural Heritage	AH1	This REMM was deleted in the Response to Submission Report				
	AH2	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	AH3	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	AH4	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	AH5	Applicable	Applicable	Applicable	Applicable	Applicable
	AH6	Applicable	Applicable	Applicable	Applicable	Applicable
	AH7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable

REMM Topic	REMM	CUT	CGC	WFUEW	WFUMW	WHT
Geology Soils and Groundwater	AH8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	AH9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	AH10	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG1	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	SG2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG3	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	SG4	Applicable	Applicable	Applicable	Applicable	Applicable
	SG5	Applicable	Applicable	Applicable	Applicable	Applicable
	SG6	Applicable	Applicable	Applicable	Applicable	Applicable
	SG7	Applicable	Applicable	Applicable	Applicable	Applicable
	SG8	Applicable	Applicable	Applicable	Applicable	Applicable
	SG9	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	SG10	Not Applicable – waste mitigation measures to be implemented during this activity will be managed through a procedure in the CEMP	Not Applicable – waste mitigation measures to be implemented during this activity will be managed through a procedure as identified in Table 3.	Not Applicable – waste mitigation measures to be implemented during this activity will be managed through a procedure in the CEMP	Applicable	Applicable
	SG11	Applicable	Applicable	Applicable	Applicable	Applicable
	SG12	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG13	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG14	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG15	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG16	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG17	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	SG18	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	SG19	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	SG20	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG21	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG22	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	SG23	Applicable	Applicable	Applicable	Applicable	Applicable
Hydrodynamics and Water Quality	WQ1	Applicable	Applicable	Applicable	Applicable	Applicable
	WQ2	Applicable	Applicable	Applicable	Applicable	Applicable
	WQ3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	WQ4	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	WQ5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	WQ6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	WQ7	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	WQ8	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	WQ9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	WQ10	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	WQ11	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	WQ12	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable

REMM Topic	REMM	CUT	CGC	WFUEW	WFUMW	WHT
Flooding	WQ13	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	F1	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	F2	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	F3	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	F4	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	F5	Applicable	Applicable	Applicable	Applicable	Applicable
	F6	Applicable	Applicable	Applicable	Applicable	Applicable
	F7	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	F8	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	F9	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Biodiversity	B1	Applicable	Applicable	Applicable	Applicable	Applicable
	B2	Applicable	Applicable	Applicable	Applicable	Applicable
	B3	Applicable	Applicable	Applicable	Applicable	Applicable
	B4	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	B5	Applicable	Applicable	Applicable	Applicable	Applicable
	B6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B7	This REMM was deleted in the Response to Submission Report				
	B8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B10	Applicable	Applicable	Applicable	Applicable	Applicable
	B11	Applicable	Applicable	Applicable	Applicable	Applicable
	B12	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B13	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B14	Applicable	Applicable	Applicable	Applicable	Applicable
	B15	Applicable	Applicable	Applicable	Applicable	Applicable
	B16	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B17	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B18	Applicable	Not Applicable	Applicable	Applicable	Applicable
	B19	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B20	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B21	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B22	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B23	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B24	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B25	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B26	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B27	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B28	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	B29	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable
	B30	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable

REMM Topic	REMM	CUT	CGC	WFUEW	WFUMW	WHT
Land Use and Property	LP1	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	LP2	Applicable	Applicable	Applicable	Applicable	Applicable
	LP3	Applicable	Not Applicable	Applicable	Applicable	Applicable
	LP4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	LP5	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	LP6	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	LP7	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	LP8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	LP9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Socio Economics	SE1	Applicable	Applicable	Applicable	Applicable	Applicable
	SE2	Applicable	Applicable	Applicable	Applicable	Applicable
	SE3	Applicable	Applicable	Applicable	Applicable	Applicable
	SE4	Applicable	Applicable	Applicable	Applicable	Applicable
Business	BU1	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	BU2	Applicable	Applicable	Applicable	Applicable	Applicable
	BU3	Applicable	Applicable	Applicable	Applicable	Applicable
Landscape Character and Visual Amenity	V1	Applicable	Applicable	Applicable	Applicable	Applicable
	V2	Applicable	Applicable	Applicable	Applicable	Applicable
	V3	Applicable	Applicable	Applicable	Applicable	Applicable
	V4	Applicable	Applicable	Applicable	Applicable	Applicable
	V5	Applicable	Applicable	Applicable	Applicable	Applicable
	V6	Applicable	Applicable	Applicable	Applicable	Applicable
	V7	Applicable	Applicable	Applicable	Applicable	Applicable
	V8	Applicable	Applicable	Applicable	Applicable	Applicable
	V9	Applicable	Applicable	Applicable	Applicable	Applicable
	V10	Applicable	Applicable	Applicable	Applicable	Applicable
	V11	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	V12	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Hazards and Risks	HR1	Applicable	Applicable	Applicable	Applicable	Applicable
	HR2	Applicable	Applicable	Applicable	Applicable	Applicable
	HR3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	HR4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	HR5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	HR6	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	HR7	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	HR8	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	HR9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Resource and Waste Management	WM1	Applicable	Applicable	Applicable	Applicable	Applicable
	WM2	Applicable	Applicable	Applicable	Applicable	Applicable
	WM3	Applicable	Applicable	Applicable	Applicable	Applicable

REMM Topic	REMM	CUT	CGC	WFUEW	WFUMW	WHT
	WM4	Applicable	Applicable	Applicable	Applicable	Applicable
	WM5	Applicable	Applicable	Applicable	Applicable	Applicable
	WM6	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	WM7	Applicable	Applicable	Applicable	Applicable	Applicable
	WM8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Sustainability	SU1	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	SU2	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Climate change Risks	CC1	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Greenhouse Gas Assessment	GHG1	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	GHG2	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Cumulative impacts	CI1	Applicable	Applicable	Applicable	Applicable	Applicable
	CI2	Applicable	Applicable	Applicable	Applicable	Applicable
	CI3	Applicable	Applicable	Applicable	Applicable	Applicable
	CI4	Applicable	Applicable	Applicable	Applicable	Applicable

Appendix C Applicability of CEMF to each stage

Table 6 has been based on the latest version of the Construction Environmental Management Framework that was included in Part D of the RtS. This document can be found here:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=EXH-2682%2120200914T005951.156%20GMT>

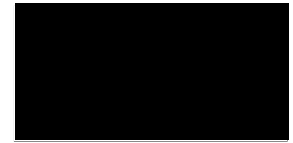
Table 6: Applicability of CEMF to each stage

CEMF Topic	Key issue	CUT	CGC	WFUEW	WFUMW	WHT
Traffic management plan	Construction traffic and access management objectives	Applicable	Not Applicable	Applicable	Applicable	Applicable
	Construction traffic and access management implementation including:					
	• Traffic staging plans	Applicable	Not Applicable	Applicable	Applicable	Applicable
	• Traffic control plans and identification of truck marshalling areas	Applicable – traffic control plans Not applicable – truck marshalling areas	Applicable – traffic control plans Not applicable – truck marshalling areas	Applicable	Applicable	Applicable
	• Pedestrian management plans	Applicable	Not Applicable	Applicable	Applicable	Applicable
	• Parking management plans	Applicable	Not Applicable	Applicable	Applicable	Applicable
	• Heavy vehicle hauling routes	Applicable	Not Applicable	Applicable	Applicable	Applicable
	• Construction traffic and access mitigation including: • Monitoring and inspection requirements • Compliance records • Driver certification requirements	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Marine works and marine traffic management plans	Marine works and marine traffic management objectives	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	Marine works and marine traffic implementation including: • Works approval requirements • Exclusion zones • Temporary mooring locations	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	Marine works and marine traffic mitigation including requirements for vessel movements and navigational restrictions	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Noise and vibration management plan	Hours of construction	Applicable	Applicable	Applicable	Applicable	Applicable
	Construction noise and vibration management objectives	Applicable	Applicable	Applicable	Applicable	Applicable
	Construction noise and vibration management implementation including the requirements of environmental management measure CNV1 (refer to Table D2-1 of this submissions report)	Applicable	Applicable	Applicable	Applicable	Applicable
	Construction noise and vibration impact statements for all construction support sites and major construction works required for the project as required by environmental management measure CNV2	Applicable	Applicable	Applicable	Applicable	Applicable

CEMF Topic	Key issue	CUT	CGC	WFUEW	WFUMW	WHT
	Out of hours works protocol as required by environmental management measure CNV3 including: <ul style="list-style-type: none"> Details of works required outside standard construction hours, including acceptable justifications for works outside of standard construction hours, what types of works are allowed to take place outside of construction hours, and justifications of why the activities are required outside standard construction hours Details of the assessment and approval process (internal and external) for works proposed outside standard construction hours Noise and vibration mitigation and management measures that are to be considered and implemented where appropriate to manage potential impacts associated with works outside standard construction hours The noise and vibration impact assessment processes that will be followed to identify potentially affected receivers, clarify potential impacts and determine appropriate mitigation and management measures 	Applicable	Applicable	Applicable	Applicable	Applicable
	Construction noise and vibration mitigation including: <ul style="list-style-type: none"> Monitoring and inspection requirements Compliance records 	Applicable	Applicable	Applicable	Applicable	Applicable
	Blast Management Strategy as required by environmental management measure CNV9 which will: <ul style="list-style-type: none"> Detail the blasting to be performed including location, method and justification of the need to blast Identify any potentially affected noise and vibration sensitive sites including heritage buildings and utilities Establish appropriate criteria for blast overpressure and ground vibration levels at each category of noise sensitive site Detail storage and handling arrangements for explosive materials and the proposed transport of those materials to the construction support site Identify hazardous situations that may arise from the storage and handling of explosives, the blasting process and recovery of the blast site after detonation of the explosives Determine potential noise and vibration and risk impacts from blasting and appropriate best management practices Detail community consultation procedures. Note – the Blasting Management Strategy may not form part of the CNVMP and may be a separate plan 	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Air quality management plan	Air Quality Objectives	Applicable	Applicable	Applicable	Applicable	Applicable
	Air quality management implementation including: <ul style="list-style-type: none"> Details of standard construction air quality mitigation and management measures required by environmental management measure AQ1 (refer to Table D2-1 of this submissions report Odour management measures for odour from sediments and acid sulfate soils (if confirmed) 	Applicable	Applicable	Applicable	Applicable	Applicable
	<ul style="list-style-type: none"> Air quality mitigation including: Compliance records Monitoring and inspection requirements 	Applicable	Applicable	Applicable	Applicable	Applicable
	Waste and spoil management objectives	Applicable	Applicable	Applicable	Applicable	Applicable

CEMF Topic	Key issue	CUT	CGC	WFUEW	WFUMW	WHT
Waste and resource use	Waste and spoil management implementation including procedures for handling and storing potentially contaminated substances	Applicable	Applicable	Applicable	Applicable	Applicable
	Waste and spoil mitigation including: <ul style="list-style-type: none"> Monitoring and inspection requirements Compliance records 	Applicable	Applicable	Applicable	Applicable	Applicable
Soil and water management plan	Soil, surface water and contamination management objectives	Applicable	Applicable	Applicable	Applicable	Applicable
	Soil, surface water and contamination management implementation including: <ul style="list-style-type: none"> Erosion and sediment control plans 	Applicable	Applicable	Applicable	Applicable	Applicable
	<ul style="list-style-type: none"> Management responses to contaminated sediments (if confirmed), including remediation action plans (in accordance with environmental management measure SG2). 	Applicable	Applicable	Applicable	Applicable	Applicable
	<ul style="list-style-type: none"> Acid sulfate soil management plans 	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	<ul style="list-style-type: none"> Emergency spill procedures 	Applicable	Applicable	Applicable	Applicable	Applicable
	<ul style="list-style-type: none"> Dewatering plans (including aquatic fauna relocation requirements) 	Applicable – excluding aquatic fauna relocation requirements	Applicable	Applicable – excluding aquatic fauna relocation requirements	Applicable – excluding aquatic fauna relocation requirements	Applicable
	<ul style="list-style-type: none"> Water quality monitoring and management 	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	Soil, surface water and contamination mitigation including: <ul style="list-style-type: none"> Monitoring and inspection Compliance records 	Applicable	Applicable	Applicable	Applicable	Applicable
	Construction flood emergency management measures including requirements for construction support sites to manage risks to adjoining properties.	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Groundwater management plan	Groundwater management objectives	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	Groundwater management implementation including: <ul style="list-style-type: none"> Additional modelling requirements Acceptable groundwater inflow levels Ground movement management and minimisation requirements 	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	Groundwater mitigation including: <ul style="list-style-type: none"> Monitoring and inspection requirements Compliance records 	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Dredging management plan	Dredging management objectives	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	Dredging management implementation including contamination management and contingency measures	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	Dredging mitigation including: <ul style="list-style-type: none"> Backhoe dredging operations would be completed within a floating silt curtain, as described in Appendix P (Technical working paper: Hydrodynamics and dredge plume modelling) No overflow would be permitted from transport barges taking material not suitable for offshore disposal to White Bay for unloading and land disposal Additional silt curtains would be located around sensitive foreshore areas eg seagrass areas Works would be completed under a full time supervision and inspection regime 	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable

CEMF Topic	Key issue	CUT	CGC	WFUEW	WFUMW	WHT
Flora and fauna management plan	Flora and fauna management objectives	Applicable	Applicable	Applicable	Applicable	Applicable
	Flora and fauna management implementation including:					
	• Seagrass monitoring and management	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	• Intertidal and rocky reef management	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	• Marine mammals and reptile management	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	• Unexpected flora and fauna finds procedure	Applicable	Applicable	Applicable	Applicable	Applicable
	• Stop works procedure	Applicable	Applicable	Applicable	Applicable	Applicable
	• Weed management measures	Applicable	Applicable	Applicable	Applicable	Applicable
	• Dewatering management	Applicable	Applicable	Applicable	Applicable	Applicable
	• Large Bent-winged Bat management	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Heritage management plan	Flora and fauna mitigation including: • Monitoring and inspection requirements • Compliance records	Applicable	Applicable	Applicable	Applicable	Applicable
	Heritage management objectives	Applicable	Applicable	Applicable	Applicable	Applicable
	Heritage management implementation including Aboriginal and non-Aboriginal heritage unexpected finds procedures	Applicable	Applicable	Applicable	Applicable	Applicable
	Maritime heritage management detailing the objectives and methodologies to conserve maritime heritage and mitigate impacts. As required by environmental management measure NAH15 (refer to Table D2-1 of this submissions report).	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Heritage mitigation including: • Monitoring and inspection requirements • Compliance records	Applicable	Applicable	Applicable	Applicable	Applicable



1 March 2021

Ref: 2011.2b

Transport for NSW
Attention: Mark Russell

Dear Mark

**Environmental Representative (ER) - Review of Staging Report
SSI8863 - Western Harbour Tunnel and Warringah Freeway Upgrade (WHTWUFU)**

Pursuant to SSI8863 Condition of Approval A27 (d), as the approved Environmental Representative, I confirm that I have reviewed the following documentation to be submitted to the Planning Secretary for information:

- Staging Report - 20210301_WHTWUFU_A10_RPT_Staging Report_Rev 0

In my opinion, the document satisfies the requirements of CoA A11 and is consistent with the requirements under the terms of the Conditions of Approval SSI8863.

In addition, I seek to draw the attention of the Planning Secretary to Table 3 of the Staging Report. Table 3 indicates the applicability of the CEMP requirements relating to each environmental management category to each stage of the project. This includes for each environmental management category whether:

- a stand-alone category specific sub-plan will be prepared
- the category risks will be addressed in the main CEMP document in the form of a procedure, or
- the risk is not relevant to the scope of work and is not addressed within the CEMP.

Table 3 will be used as a guide in the preparation of the CEMP documents for each stage of the project.

Yours sincerely,

Maurice Pignatelli
Environmental Representative – Warringah Freeway Upgrade
OptimE Pty Ltd

