

WEST GATE TUNNEL PROJECT

Independent Reviewer and Environmental Auditor
Report for Submission to the Minister for Planning –
September 2018 to February 2019



PROJECT

West Gate Tunnel Project

Audit Report for Minister of Planning

Author	Author Name	Camilla Freestone, Sam Withers, Darcy Wall
Checker	Checker Name	Elizabeth Hurst
Approver	Approver Name	Simon O'Hana
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Arcadis Pty Ltd

ABN 76 104 485 289

32/140 William Street

Melbourne VIC 3000

AUSTRALIA

Tel: +61 3 8823 4000

www.arcadis.com



APP Corporation Pty Ltd

ABN: 29 003 764 770

7/420 St Kilda Road

Melbourne VIC 3004

AUSTRALIA

Ph: +61 3 8866 0200

www.app.com.au



WSP Australia Pty Limited

ABN: 80 078 004 798

Level 15, 28 Freshwater Place

SOUTHBANK VIC 3006

AUSTRALIA

Ph: +61 3 9861 1111

www.wsp.com

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EPR Auditing Scope 2018-2019

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EXECUTIVE SUMMARY

Introduction

This report summarises the environmental audit findings of the Independent Reviewer and Environmental Auditor (IREA) for the West Gate Tunnel Project (the Project) in Melbourne, Victoria. It covers the construction period from September 2018 to February 2019. This is the second IREA report, which IREA is required to issue biannually to the Victorian Minister for Planning, and made available to the public on the Project website.

The IREA has been jointly appointed by West Gate Tunnel Authority (WGTA) and Transurban WGT Co Pty (Project Co) to provide independent oversight of design engineering, construction, program and environmental performance of the Project. The IREA undertakes audits and surveillance of Project activities to assess whether conformance with Project requirements are being achieved. This includes the Environmental Performance Requirements (EPRs) issued by the Minister for Planning in December 2017.

Construction on the Project has been underway since March 2018. Recent activities have been concentrated on the West Gate Freeway, northern (tunnel) portal, southern portal, North Yarra Main Sewer (NYMS) diversion, Footscray Road, and other utility service works.

Scope and Conduct of Audits

This report summarises the results of environment audits between September 2018 to February 2019. This includes six monthly audits of the Environmental Management Strategy (the Strategy), quarterly Construction Environmental Management Plan (CEMP) audits, and monthly audits of the Worksite Environmental Management Plans (WEMPs).

The IREA is required to provide a six monthly “audit report” to the Minister for Planning which must be made available to the public (this report). The audits considered in this report are identified under the Project’s EPRs (specifically EMP3) required by the Project’s Planning Scheme Amendment (PSA) (GC93) and the Project Agreement between the State of Victoria (represented by WGTA) and Project Co.

To meet the requirements of EPR EMP3, the IREA has audited all three Project Parties. This includes:

1. **Project Co** which is responsible for delivering the Project in accordance with the Environmental Management Strategy. Project Co manage the design and construction subcontractor, CPB John Holland Joint Venture, and are the future road and tunnel operator. This means that Project Co are ultimately responsible for delivery of the project, including work undertaken by the D&C Subcontractor. This shared contractual responsibility is sometimes referred to in this report as belonging to “Project Co / and the D&C Subcontractor”.
2. **CPB John Holland Joint Venture** (D&C Subcontractor) which is required to design and construct the Project in accordance with the CEMP, EPRs and WEMPs.
3. **West Gate Tunnel Authority** (the State) which has responsibility for delivering a select number of EPRs.

The IREA determines the scope of the audits based on which Project issues, activities, and environmental risks are considered to be significant at the time of audit. Considerations include:

- Status of ongoing development, updates, and implementation of the CEMP and associated management system and tools
- Completion of baseline environmental monitoring, focussing on groundwater, noise, vibration, surface water, and air
- Environmental risks relating to current design status and construction activities
- Concerns of the community
- Compliance status of EPRs.

In scoping and conducting each audit, the IREA reviews a sample of environmental requirements (and evidence of compliance) over the auditing period. In this last six-month reporting period, 75 of the 117 EPRs were audited by the IREA. Therefore, at the completion of the first 12 months of the project, 111 relevant

EPRs have been audited. This excludes six EPRs that relate to the post construction-operational phase and are therefore not relevant.

The environmental requirements audited and checked over the last 12 months by the IREA are summarised below and shown in Appendix A. The objective of the audits summarised in this report is to assess conformance with the current Strategy, the CEMP, and the WEMPs based on the requirement of EPR EMP3. This includes conformance with the primary approvals (refer section 1.2.2). There are five possible finding classifications the IREA uses when assessing for conformance:

- Conformances (findings are reported by exception only, and as such Conformances are not detailed within this report)
- Non-conformance
- Area for improvement
- Observation (The IREA does not require observations to be formally closed out after they have been issued and therefore will not report these in subsequent audit reports)
- Not applicable

A full description of these classifications can be found in section 2.4 of the report.

Overview of Findings

Project Co is currently meeting their obligations under the Strategy. There were several findings made around Project Co's involvement in closing out IREA findings; facilitating updates and improvements to the CEMP and sub-plans; and the need to clarify its responsibilities in relation to Emergency and Incident Response Preparedness. No non-conformances were raised with Project Co during the Strategy audit.

In this audit period, 75 of the 117 EPRs were audited by the IREA, with 111 EPRs audited during the twelve-month period. The remaining six EPRs are not relevant to this stage of the works.

Project Co / the D&C Subcontractor continues to make progress on the establishment of environmental management systems and processes. The Project is generally compliant with the EPRs, with exception to NVP10. Current findings highlight the need for Project Co / the D&C Subcontractor to better document compliance with EPRs, in particular, to demonstrate regular analyses of environmental monitoring data and use of these analyses to influence environmental management. Furthermore, the CEMP and sub-plans are now out of date and need to be reviewed and updated to ensure they reflect the risk profile of works being undertaken.

The IREA's future auditing program will continue to focus on how Project Co / the D&C Subcontractor demonstrate compliance with Project environmental requirements, as well as how they manage timely close out of IREA audit findings. Of the 33 non-conformances closed across all audit types to date, the time taken to close ranges from 3 days to 224 days (at the end of the reporting period). The average time is 65 days. At the completion of the February 2019 audit there were three non-conformances that have been outstanding since June 2018.

The State was also compliant with EPRs for which it is responsible for.

Environmental Management Strategy

Project Co is currently meeting their obligations under the Strategy. Project Co rely on a number of corporate and project specific management systems, processes and documents to assist them in implementing the Strategy.

No non-conformances were identified. The IREA identified the following broad opportunities, which consisted of one new area for improvement and four observations:

- Developing and documenting (in Project Co systems) a process for tracking and responding to environmental audit findings other than non-conformances. The IREA raises findings at a number of levels, i.e. non-conformance, areas for improvement, observation. Project Co primarily focus on addressing non-conformances, deferring to the D&C Subcontractor when it comes to deciding whether to address areas for improvement and observations. The Strategy does not differentiate between different

types of findings, nor does it allow Project Co to entirely delegate responsibility to the D&C Subcontractor for ensuring IREA findings are addressed. This was raised as an area for improvement.

- Project Co to clarify the minimum level of (regular) environmental monitoring and performance records it expects to receive from the D&C Subcontractor and what actions/tasks need to be taken to review and report this information to other Project Parties e.g. the State.
- Project Co to consider defining their minimum expectations of the D&C Subcontractor regarding updates and improvements to the CEMP, CEMP sub-plans and WEMP process, noting there have been delays in updating this documentation to reflect current project practices.
- A number of previous IREA findings have not been closed out or addressed from the first audit period, which include one area for improvement and a number of observations. The outstanding area for improvement relates to Project Co needing to clarify responsibilities of the Environmental Representative with respect to Emergency and Incident Response and Preparedness.

Environmental Performance Requirements

Over the last 6-month reporting period, the IREA has formally audited 75 EPRs. The majority of EPRs audited during the reporting period were deemed compliant. The IREA raised one non-conformance, 13 areas for improvement, and 17 observations.

The one non-conformance for this period was raised against EPR NVP10, relating to the vibration (for amenity) and the lack of sufficient documentation to demonstrate compliance. Amenity vibration monitoring results and details of compliance assessments were not available for the activities identified as high risk i.e. likely to exceed recommended vibration levels. Furthermore, the Construction Noise and Vibration Management Plan (CNVMP) is out of date with respect to vibration modelling relevant to this EPR. It should be noted that the project is compliant with EPRs relating to other types of vibration monitoring, such as NVP11 which measure structural impacts on residential houses and other buildings.

Other findings raised by the IREA (areas for improvement and observations) generally relate to:

- a. demonstrating compliance with an EPR through provision of data, supporting records, and analyses; and
- b. inadequate or unclear definitions of compliance in Project Documentation.

The IREA is responsible for interpreting how compliance with EPRs is achieved. It has become evident that differences are emerging in the way Project Co / the D&C Subcontractor interpret these requirements compared with the IREA. The auditing process has identified a number of opportunities for the Project Co / the D&C Subcontractor to update the CEMP, subplans, and other documentation to articulate in more detail how compliance (or non-compliance) is defined and achieved.

Project Co/ the D&C Subcontractor has closed out all three EPR non-conformances from the previous reporting period. However, this audit period has revealed delays in Project Co/ the D&C Subcontractor closing out other EPR audit findings relating to areas for improvement. Of the 12 areas for improvement raised in the previous reporting period, 11 remain to be closed.

The State was compliant with the EPRs for which it is responsible.

Over the first 12 months of this project, the IREA has formally audited the majority of EPRs -111 of 117 EPRs. Six EPRs were not audited in the first 12 months as they are not relevant to the current period of construction (refer Section 1.2 and Appendix A). The IREA audited both the D&C Subcontractor (for compliance with 106 EPRs) and the State (for compliance with five EPRs).

Refer to Appendix A for a summary of the EPRs audited over the last 12 months and how this relates to the status of the Project. Appendix B includes the proposed program for the next 12 months of EPR auditing.

Construction Environmental Management Plan

Project Co/ the D&C Subcontractor continues to demonstrate progress on the development and implementation of processes and procedures for environmental management. During this reporting period further steps were taken to establish a more rigorous monitoring system. This included for instance, the engagement of a third party to establish and operate a network of monitoring equipment, and live data streaming for air quality, groundwater, noise, vibration, and ground movement.

Four non-conformances were raised against the CEMP during this reporting period, which included escalation of two previous unresolved findings from the June 2018 CEMP audit (from lower level findings to non-conformances).

The CEMP audit findings for November 2018 are summarised below:

- One non-conformance against the Air Quality Management Plan (AQMP) raised due to the lack of detail of real-time continuous air quality monitoring in all construction zone documentation (i.e. WEMPs and construction procedures). The AQMP (and contract) requires construction documentation to define the location and type of dust monitoring equipment.
- Three areas for improvement were raised, one against the CEMP and two against the AQMP. Area for improvement findings included: lack of analysis of environmental monitoring data in the monthly report; insufficient application of dust controls during windy, dry conditions; and one finding raised in relation to only partial implementation of the air quality monitoring program.

The CEMP audit findings for February 2019 are summarised below:

- One non-conformance against the CNVMP was raised as the D&C Subcontractor was unable to demonstrate how monitoring data have been used to verify sound modelling and influence noise mitigation.
- Three areas for improvement were also raised in February 2019 against the CNVMP, and in part are reflective of a need to update this document to reflect current practices and available data.
- Two non-conformances were issued that directly related to previous lower level findings identified in June 2018. This includes one against the CEMP relating to systems for routinely and systematically analysing environmental monitoring data and one against the Water Management Plan relating to post rainfall monitoring.

A number of other observations (issued as formal audit findings) were made during both November 2018 and February 2019 against the CEMP and subplans, which mainly related to administrative and procedural issues. Again, these relate to the currency of these documents.

Project Co/ the D&C Subcontractor is now providing more evidence to close out selected areas for improvement (findings). This led to some findings being closed out during this reporting period, however there is an absence of a regimented process to address and report on these types of findings. It is the IREA's opinion that the D&C Subcontractor may not be maximising opportunities to drive continual improvement. This is reflected in the escalation of previous audit findings to non-conformances. At the completion of this reporting period there are still a significant number of CEMP findings remaining to be closed.

- Seven CEMP non-conformances remain open, comprised of five findings from the previous reporting period (two which were recently escalated), and one each from November 2018 and February 2019.
- There are 17 CEMP areas for improvement that remain open, consisting of six from this reporting period and 11 from the previous reporting period.

Project Co/ the D&C Subcontractor has opted not to provide comment on IREA observations (findings) to Project Parties. The IREA does not require observations to be closed out in the same way as non-conformances and areas for improvement findings and therefore data relating to observations is only discussed once i.e. in the audit report where they are first raised. It is worth noting that these findings do not represent material risks and generally provide advice on optimising performance.

The IREA will continue to work with Project Co/ the D&C Subcontractor to close out any outstanding non-conformances and areas for improvement findings, which largely relate to updating the CEMP and subplans.

Worksite Environment Management Plans

The construction activities audited during the reporting period represent a higher level of risk compared to the previous period, now that construction activities are no longer limited to site establishment. Environmental management has generally improved on site, seen through a decrease in findings, with 53 findings raised in the previous reporting period (17 non-conformances, 24 areas for improvement and 12 observations) compared to 25 findings raised in this reporting period (three non-conformances, seven areas for improvement and 15 observations).

The three non-conformances raised against WEMPs during the reporting period relate to:

- WEMPs not being consistent with activities and controls occurring on-site
- Dust monitoring not occurring at locations stated on the WEMP
- A number of environmental complaints have not been logged on the incident reporting program, Synergy.

The remaining findings (areas for improvement and observations) related to: inadequate erosion and sediment controls on site; and issues around the process of monitoring, modelling, and data validation for air quality and noise and vibration.

There is still a lag in responding to and closing out some findings. Clarity is to be established around the process for formally closing out WEMP findings, noting that the majority of actions raised have been addressed on site. All non-conformances and areas for improvement raised in this reporting period remain open, whilst four non-conformances and four areas for improvement raised in the previous reporting period also remain open.

Conclusions

The findings arising from the reporting period by the IREA has not identified any immediate significant or material risks to the environment.

GLOSSARY OF TERMS & ABBREVIATIONS

AQMP	Air Quality Management Plan
BIP	Business Improvement Plan
CPBJH	Design and Construction Subcontractor
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CD	Certified Design
CHMP	Cultural Heritage Management Plan
EES	Environment Effects Statement
EMF	Environmental Management Framework
EMS	Environmental Management Strategy
EPR	Environmental Performance Requirements
FFMP	Flora and Fauna Management Plan
GHG	Greenhouse Gas
GMMP	Ground Movement Management Pan
GWMP	Groundwater Management Plan
HMP	Heritage Management Plan
IREA	Independent Reviewer and Environmental Auditor
JASANZ	Joint Accreditation System of Australia and New Zealand
NML	Noise Management Levels
NYMS	North Yarra Main Sewer
PPP	Public Private Partnership
PSA	Planning Scheme Amendment
PSR	Project Scope & Requirements (Project Agreement or Contract)
SSMP	Soil and Spoil Management Plan
TBM	Tunnel boring machine
WGTA	West Gate Tunnel Authority
WEMP	Worksite Environment Management Plan
WGTP	West Gate Tunnel Project
WMP	Water Management Plan

1 INTRODUCTION

1.1 Purpose of this report

This report summarises the Independent Reviewer and Environmental Auditor (IREA) audit findings from the second six-month period of construction of the West Gate Tunnel Project (the Project) in Melbourne, Victoria.

The IREA has been jointly appointed by West Gate Tunnel Authority (WGTA) and Transurban WGT Co Pty (Project Co) to provide independent oversight of design engineering, construction, program and environmental performance of the Project. The IREA undertakes audits, review of documentation and site surveillance of Project activities to assess whether conformance with Project requirements are being achieved. This includes the Environmental Performance Requirements (EPRs) issued by the Minister for Planning in December 2017.

During the reporting period the IREA audited Project Co (responsible for delivering the Project and future operator of the road) to determine conformance with the Environmental Management Strategy (the Strategy). Similarly, the IREA has audited the CPB John Holland Joint Venture (D&C Subcontractor) to determine conformance with the Construction Environmental Management Plan (CEMP), EPRs, and Worksite Environment Management Plans (WEMPs). In this reporting period, the IREA has also audited the State for compliance with a select number of EPRs for which it is responsible.

Prior to starting construction, the IREA reviewed the Strategy and approved the CEMP (and associated subplans). The WEMPs are approved by Project Co. The audits considered in this report are identified under the Project's EPRs (specifically EMP3) required by the Project's Planning Scheme Amendment (PSA) (GC93) and the Project Agreement between the State of Victoria (represented by (WGTA) and Project Co.

The IREA is required to provide a six monthly "audit report" for submission to the Minister for Planning which must be made available to the public (this report).

1.2 Project Background

1.2.1 West Gate Tunnel Project

On 11 December 2017, the Victorian State Government (the State), as part of a Public Private Partnership (PPP), entered into contracts with Project Co for the construction and operation of the Project.

Project Co is responsible for the design, partial financing, construction, tolling, operation and maintenance of the Project. Project Co has ultimate responsibility to the State for delivering the Project to the requirements in the contract and for ensuring the D&C Subcontractor fulfils their obligations including the EPRs.

The D&C Subcontractor has been contracted to complete the detailed design and construction of the Project.

The WGTA is an administrative office established to manage the delivery of the Project in accordance with the contracts on behalf of the State Government. The Project has three components:

1. West Gate Freeway – upgrade and widening works between the M80 Ring Road interchange and Princes Freeway to the southern portals of the tunnels, including connections to Grieve Parade, Millers Road, Williamstown Road, Hyde Street, and the West Gate Bridge
2. Twin tunnels – two tunnels, one inbound and one outbound, under Yarraville catering for three lanes between the southern and northern portals and connecting to the new bridge over the Maribyrnong River. The outbound tunnel will be approximately 4.0 kilometres long and the inbound tunnel will be approximately 2.8 kilometres long. A tunnel ventilation structure will be located at each exit portal
3. Port, CityLink, and city connections – connects from the northern tunnel portal to the central city and includes the Maribyrnong River crossing, connections to the Port of Melbourne, elevated roads along Footscray Road, and connections to CityLink and the north west of the central city. Connections are also provided to both sides of the Port of Melbourne via MacKenzie Road and Appleton Dock Road. A widened Wurundjeri Way is connected to Dynon Road.

Early (preparatory) works started in December 2017 in preparation for construction. This included for instance, low environmental impact works such as completion of environmental surveys and investigations required prior to construction start. The Project started full construction in March 2018 on approval of the CEMP. Since then, construction work sites have been established at the southern inbound and northern portal sites in preparation for tunnelling (likely to start in mid-2019). Works to divert the NYMS is well-progressed, as are other utility realignments across the Project. The majority of site clearance and site preparation works are complete, clearing the way for construction along the West Gate Freeway and along Footscray Road.

A publicly accessible Project Information Centre located on Whitehall Street in Yarraville (known as the Pivot site) has been open to the public. This Project Information Centre includes interactive displays, printed information packs and is staffed during the day by members of the D&C Subcontractor Communications Team.

1.2.2 Planning and Environment Approvals

The Project was declared 'public works' under the *Environment Effects Act 1978* in December 2015, requiring the preparation of an Environment Effects Statement (EES) to inform the Minister for Planning's assessment of the environmental effects of the Project. The EES was publicly exhibited in late May 2017 and public hearings undertaken between mid-August and late September 2017. The Minister for Planning publicly released his Assessment on 27 November 2017 to complete the EES process – concluding that the Project would deliver substantial transport and related benefits.

Three key (primary) approvals have been granted for the Project under Victorian legislation, including:

- Planning Scheme Amendment (PSA) and Incorporated Document issued by the Victorian Minister for Planning requires the project to be constructed and operated according to the Minister's requirements. The Minister approved the project under PSA GC65 on 7th December 2017. This PSA was revoked by Parliament on 7th March 2018 and remade with PSA GC93 on 8th March 2018. The PSA has been incorporated into six separate local Planning Schemes: Brimbank, Hobsons Bay, Maribyrnong, (City of) Melbourne, Port of Melbourne and Wyndham.
- Works Approval issued by the Victorian Environment Protection Authority for design and construction of the tunnel ventilation structures.
- Cultural Heritage Management Plan (CHMP) issued by Aboriginal Victoria for works potentially affecting known areas of Aboriginal Cultural Heritage Significance.

These approvals include a range of obligations and conditions, including the PSA which requires the Project to be carried out in accordance with the approved "*West Gate Tunnel Project Environmental Performance Requirements, December 2017*". The EPRs define the project-wide environmental outcomes that must be achieved during design, construction and operation of the Project (refer Appendix A for a summary list of these EPRs and the Project website for a full version - <http://westgatetunnelproject.vic.gov.au/keyapprovals/>).

The Environmental Management EPRs set out the following requirements:

- EPR EMP1 requires the preparation of an Environmental Management Strategy (the Strategy) to provide an overarching framework to address environmental requirements including relevant environmental laws, key approvals, approval conditions and the EPRs.
- EPR EMP2 requires the preparation and implementation of a CEMP, Worksite Environmental Management Plan (WEMP), Operational Environmental Management Plan (OEMP) and other plans as required by the EPRs in accordance with the Strategy.
- EPR EMP3 requires the appointment of an Independent Reviewer and Environmental Auditor (the IREA) to ensure compliance with the Strategy and EPRs and conduct 6-monthly compliance audits of the approved Strategy, CEMP and WEMPs. The WGTA must forward the audit reports to the Minister for Planning and other approval agencies as appropriate.

The EPRs set standards for the Project and are put in place to mitigate any adverse local effects of the Project on people and the environment. The EPRs have been incorporated into the Project Agreement

between the State and Project Co and are included in the subcontract between Project Co and the D&C Subcontractor.

The relationship between the various Project parties and key planning and environment documents, including the Strategy, are summarised in Figure 1 below. This diagram shows the role of the Minister for Planning and other regulatory authorities in issuing approvals for the Project while continuing their role as regulator (blue boxes). These requirements, which include regulatory approvals and EPRs, are then incorporated into a series of Project Agreements (contracts) between WGTA (representing the State of Victoria), Project Co, and the D&C Subcontractor. Project Co delegate the direct responsibility for delivering these environmental requirements to the D&C Subcontractor via the Strategy.

The Strategy lists the Project environmental requirements and minimum requirements for both Project Co and the D&C Subcontractor. In the case of the D&C Subcontractor, this includes the requirements to develop environmental documentation such as a CEMP which outlines how environmental requirements will be met during design and construction; and WEMPs, which are used on the construction site as a practical guide to manage environmental issues. The D&C Subcontractor is also required to maintain an Environmental Management System that complies with the international standard ISO14001 Environmental Management Systems. This requires the D&C Subcontractor to develop and maintain various management systems, procedures and processes that facilitate continual improvements in environmental management.

The responsibility of WGTA, Project Co and the D&C Subcontractor for delivery of the environmental management framework is summarised in Figure 2. The figure also shows how environmental requirements are incorporated into design and construction documentation. Project Co is responsible for the preparation and implementation of the Strategy in accordance with EPR EMP1. The obligation for the preparation and implementation of the CEMP (including subplans), WEMP and any other project plans required to achieve the EPRs is the responsibility of the D&C Subcontractor. Design and construction documentation is prepared by the D&C Subcontractor in accordance with relevant environmental requirements and EPRs.

Construction on the Project commenced in March 2018 following the approval of the Strategy by the IREA and the Minister for Planning and the CEMP (and subplans) by the IREA and WGTA. Further information on the Strategy, CEMP, WEMP, and the audit and review processes is provided in the following sections.

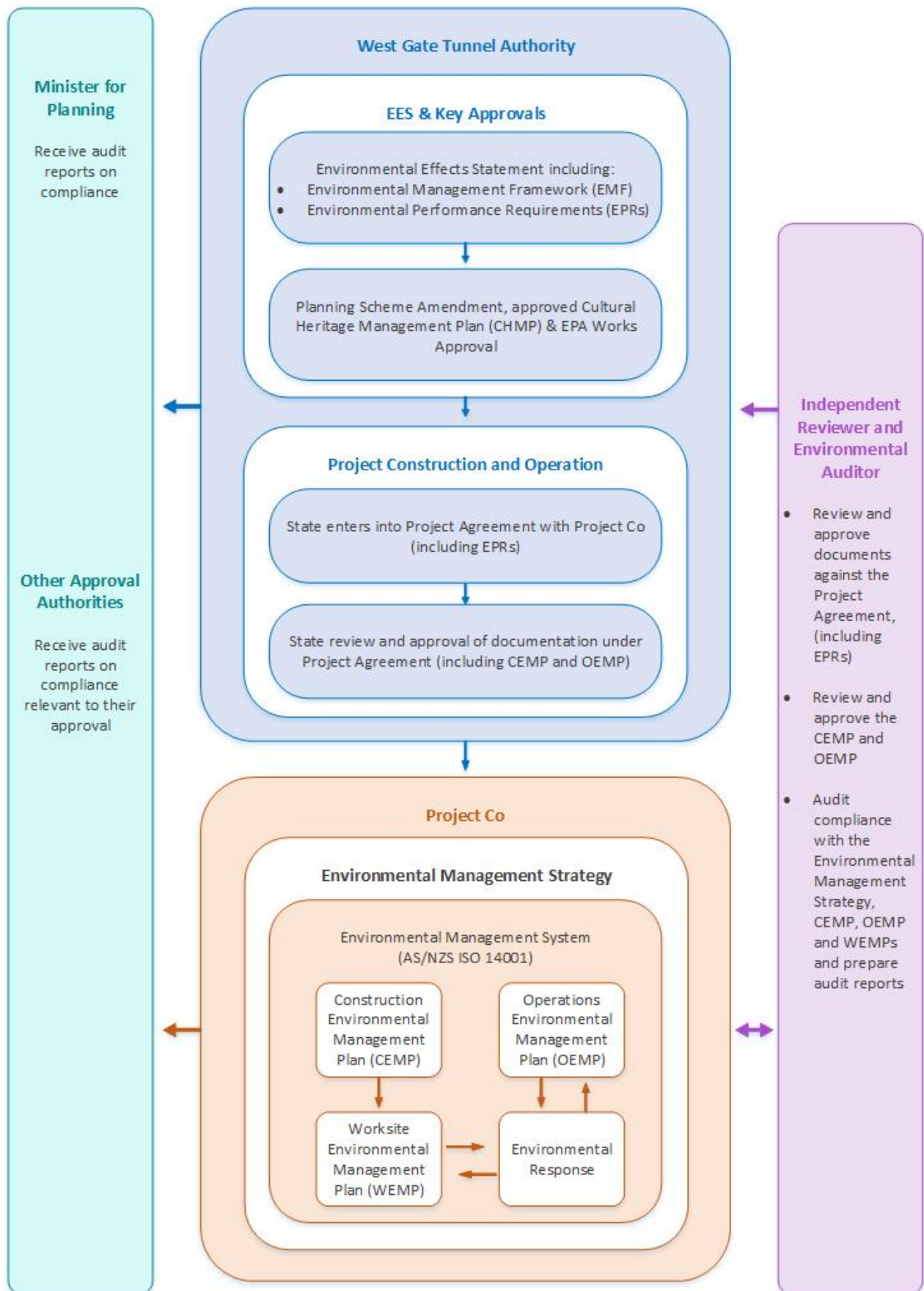


Figure 1 - Governance Framework for the Project (adapted from Strategy 2018) Environmental Management Strategy

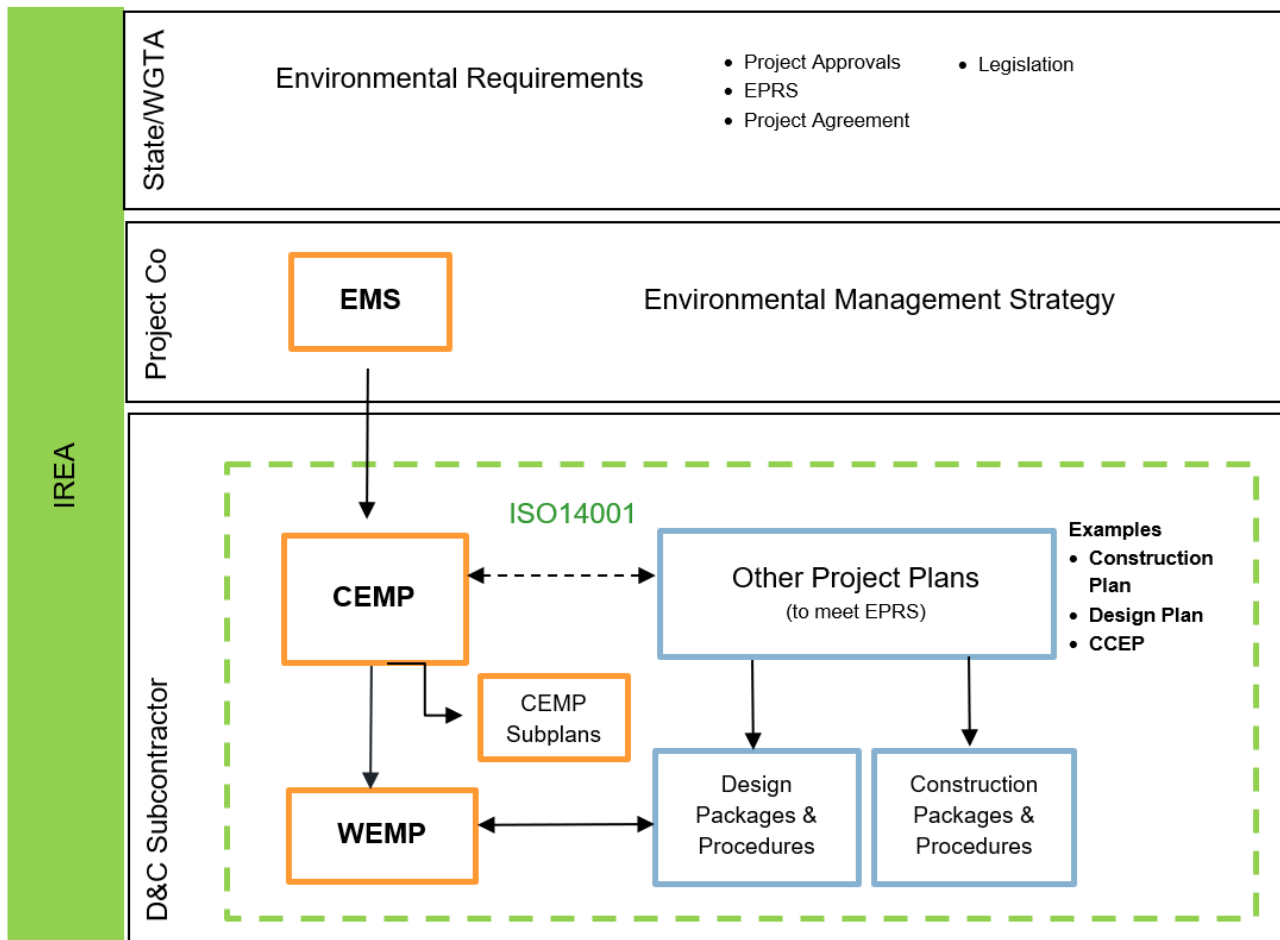


Figure 2 - Relationship between environmental management framework and project design and construction documentation

1.2.3 Environmental Management Strategy

The Strategy provides an overarching framework to address all environmental requirements and manage environmental outcomes for the Project. Project Co is responsible for ensuring compliance with the Strategy which sets out the framework for delivering and complying with the EPRS, CEMP and other environmental requirements.

The Strategy was developed in early 2018, finalised on 31 January 2018, and approved by the Minister for Planning on 20 February 2018 (under PSA GC65). It was prepared in consultation with councils and other key stakeholders and reviewed by the IREA. PSA GC65 was revoked by the Parliament of Victoria on 7 March 2018, a new PSA (PSA GC93) was approved by the Minister for Planning, including re-approval of the Strategy by the Minister for Planning on 8 March 2018 in exactly the same form.

The Strategy outlines the Project's overall Environmental Management System, including responsibilities shared by the WGTA, Project Co, and the D&C Subcontractor. The Strategy is consistent with the Australian Standard for Environmental Management Systems (AS/NZ ISO 14001), which includes, but is not limited to project legal requirements, environmental management documents, roles and responsibilities, communication requirements, reporting, auditing, and processes for evaluating compliance. It is designed to provide an overarching framework to address the EPRS, which are largely delegated to the D&C Subcontractor to deliver (via the CEMP and Design Management Plans).

1.2.4 Construction Environmental Management Plan

The D&C Subcontractor's CEMP and subplans were developed in March 2018 and approved by the IREA and WGTA for implementation. The CEMP outlines how the D&C Subcontractor will achieve the environmental requirements for the construction phase of the Project. This includes requirements outlined under the legislation (including permits and approvals), the project EPRs, and requirements set out under the Project Agreement. The CEMP includes control measures for implementation during construction in order to manage, minimise or avoid environmental impacts in carrying out construction activities. The following subplans have also been developed to manage environmental risk associated with D&C Subcontractor activities and to address the requirements of EPRs:

Table 1 - Status of CEMP and sub-plans

Plan	Update status
Construction Environmental Management Plan Rev 6 – 28 March 2018	Rev 7 – for review
Air Quality Management Plan Rev 5 – 26 March 2018	Rev 6 – for review
Water Management Plan Rev 6 – 26 March 2018	Rev 7 – for review
Groundwater Management Plan Rev 7 – 29 March 2018	Rev 8 – for review
Ground Movement Management Plan Rev5 – 3 April 2018	Rev 6 – for review
Flora and Fauna Management Plan Rev 7 – 3 April 2018	Rev 8 – for review
Construction Noise and Vibration Management Plan Rev 5 – 3 April 2018	Rev 6 – for review
Heritage Management Plan Rev 4 – 3 April 2018	Rev 5 – for review
Soil and Spoil Management Plan Rev 4 – 26 March 2018	Rev 5 – for review
Energy Management Plan Rev 5 – 21 March 2018	Rev 7 – for review
Hazardous Substances Management Plan Rev 5 – 14 March 2018	Rev 6 – for review
Lighting Management Plan Rev 5 – 14 March 2018	Rev 7 – for review
Waste Management Plan Rev 5 – 27 March 2018	Rev 7 – for review

These sub plans do not address the entire scope of all EPRs for the Project. The CEMP makes reference to a suite of other management plans which are required to demonstrate how these and other EPRs will be complied with e.g. Design Management Plan, Construction Management Plan, Communications and Community Engagement Plan (CCEP). The CEMP (and auditing process) is the main framework document used to audit conformance with the project EPRs (noting it delegates these requirements to other parts of the D&C Subcontractor Management Systems).

1.2.5 Worksite Environmental Management Plans

The D&C Subcontractor's WEMPs are prepared in order to manage discrete construction stages or work packages (by type) that may have an adverse impact on the environment. The WEMPs are subsidiary to the CEMP and are implemented at specific worksites to minimise potential impacts of construction activities on the environment and community. Each WEMP will include a map showing the location and scope of works to be managed and include environmental management measures (controls) required to be implemented. The WEMPs are for use by site personnel, consultants, and subcontractors, and a copy of the relevant WEMP is to be displayed at each site compound. Some EPRs require engagement with regulators (including Councils) where it is considered appropriate e.g. when Council land is affected.

1.3 Role of the IREA

The IREA was jointly appointed by WGTA and Project Co on 30 May 2017 to provide independent oversight of design engineering, construction, and environmental performance of the Project. The IREA undertakes audits and surveillance of Project activities to assess whether compliance with WGTA contract documents is

being achieved. This includes EPR EMP3 which requires the IREA to complete environmental audits of conformance with the approved Strategy (six-monthly), CEMP (quarterly) and WEMPs (monthly).

The IREA started work on the Project in late 2017, through review of design and construction packages associated with 'early works' (limited to low impact investigations and site set up), site surveillance of early works, and reviews of draft environmental management documentation.

Following Financial Close and the issuing of key approvals, the IREA and WGTA approved the CEMP (including subplans) prior to construction starting in March 2018. The IREA and WGTA are also responsible for reviewing subsequent revisions of the CEMP and subplans.

Now that construction has commenced, the IREA is responsible for undertaking a number of activities, described in the following sections.

1.3.1 Regular Site Inspections / Surveillance

The IREA undertakes regular inspections of the construction site (at least daily). IREA representatives are based on site in each of the three construction zones – tunnels, east, and west. The surveillance process is not the same as a formal audit as it may only address (in one inspection) part of an EPR. This information is made available to the D&C Subcontractor and summarised in weekly and monthly reports by the IREA. This surveillance assists the IREA in identifying key issues and risks which is used to inform future surveillance and auditing effort. These inspections are designated by "CS" in Appendix A, which summarises the activities that the IREA has undertaken over the last six months in relation to checking compliance with the EPRs. This shows that while not every EPR is formally 'audited' by the IREA every day, it is subject to regular surveillance.

1.3.2 Design and Construction Documentation Review

The IREA reviews all design and construction packages (designated "DR" and "CR" in Appendix A). This includes, but is not limited to, reviews of documents such as design drawings, technical information packages, design packages (outlining the basis of design), construction packages, and construction procedures. These documents are reviewed by one, or more representatives of the IREA considered a specialist in their field e.g. hydrogeologist, bridge engineer, ecologist. The IREA reviews these documents against all Project environmental requirements. These reviews are sent to all Project parties for consideration and action (by the D&C Subcontractor). The IREA is required to certify design packages which means that these are not signed off until the environmental requirements are addressed. Construction packages are reviewed by the IREA and checked for compliance on site during site surveillance (refer Section 1.3.1). The outcomes of these reviews do not represent a formal audit but can provide (in part or in full) inputs into the quarterly CEMP audit which is the formal mechanism for auditing and reporting on EPR conformance.

1.3.3 Management Plan Review

The IREA is responsible for reviewing and/or approving management plans and documentation (designated 'MP' in Appendix A). In approving the CEMP and subplans required prior to construction start (in March 2018), the IREA has checked compliance with the EPR linked to these CEMP subplans. Though not a formal audit, these reviews are documented in the EPR compliance table in Appendix A as they go some way to demonstrating conformance. The IREA has also reviewed a number of other plans that do not necessarily need to be included in the CEMP but remain a requirement of the EPR, such as the Communications and Community Engagement Plan (CCEP). The review process for these plans is similar to the process used for design and construction packages, whereby the IREA's comments are documented and the D&C Subcontractor is obliged to address these in subsequent revisions of the plan before it is issued for use.

Revised versions of the CEMP and subplans were reissued to all project parties in Q3 2018 for review and comment. None of the revised documents have been approved for revision by the IREA. The D&C Subcontractor have committed to reissuing a full set of revised plans for further review (and approval) in Q2 2019 which need to take into account comments issued by all Project parties.

1.3.4 Audit

EPR EMP3 requires formal auditing of the Strategy, the CEMP, and WEMPs (refer Section 2 for further detail on the conduct and scope of auditing). Audits of the CEMP and EPRs are undertaken every quarter (identified under the 'Audit' columns in Appendix A). The IREA's indicative schedule for auditing EPRs is included in Appendix A. Through this program all applicable EPRs are audited at least once over a twelve-month period via the quarterly CEMP audits.

1.3.5 Minister's Report

The IREA in its role as independent auditor is responsible for preparing a summary audit report which WGTA must forward to the Minister for Planning during construction and other approval authorities as appropriate. This audit report draws from audits undertaken over a six-month period, in this case the second six months of construction September 2018 – February 2019. The formal audits described in this Minister's Report have been undertaken by the lead IREA Environment Auditor, Elizabeth Hurst and Assistant Environment Auditors, Camilla Freestone and Sam Withers. The Lead Auditor was supported by a team of specialists listed in Appendix B.

1.4 Report Structure

This report is divided into the following sections:

- Section 2: Conduct of Audits – details the scope of the IREA's audit activities undertaken prior to, during and after the audit.
- Section 3 & 4: Audit Findings and Conclusion – provides the IREA's findings from the audit and conclusions on the D&C Subcontractor's conformance with the requirements of the Strategy, CEMP and WEMPs.
- Appendices
 - Appendix A – Auditing Scope (2018/2019)
 - Appendix B – Auditing Scope (2019/2020)
 - Appendix C – IREA Specialist Team
 - Appendix D – Limitations

2 CONDUCT OF AUDITS

2.1 Audit Objectives

The objective of the audits summarised in this report is to assess conformance with the current Strategy, the CEMP, and the WEMPs based on the requirement of EPR EMP3. This includes conformance with the primary approvals (refer section 1.2.2 above). The objective of these audits is to sample compliance with requirements over the period of September 2018 to February 2019 (inclusive).

2.2 IREA Auditing Process

Figure 3 below details the key steps of the IREA environmental auditing process.

2.3 Audit Scope

The IREA determines the scope of these audits, which changes based on which Project issues, activities and environmental risks are considered to be significant at the time of audit. Considerations may include:

- Establishment, development and implementation of the CEMP and associated management system and tools.
- Completion of baseline environmental monitoring, focussing on groundwater, noise, vibration, surface water, and air.
- Environmental risks relating to current construction activities.
- Concerns of the community.
- Compliance status of EPRs.

The IREA reviews a sample of environmental requirements (and evidence of compliance) over the auditing period. It is not feasible or necessary to fully audit all requirements in a six-month period (there are thousands of requirements e.g. legislation, EPRs, contract, CEMP, subplans). For example, the IREA excludes requirements, such as operational EPRs, which are not part of the current scope of work. Conversely, the February 2019 CEMP audit focussed on the capture, management, and analysis of environmental monitoring data considered highly relevant to the stage of construction.

It should be noted that while all environmental requirements are not formally audited over a six-month period, the IREA is required to “check” compliance with environmental requirements through activities such as formal review of documentation and inspection of the construction site (refer Section 1.3). This means that a much larger set of requirements relevant to the project period will be checked by the IREA for compliance during this period.

During the second six months (this audit reporting period), a total of 75 of the EPRs were audited, 35 in November and 40 in February. Therefore, over the first twelve months of construction, 111 of the 117 EPRs were either audited or checked by the IREA. Six operational EPRs have not been audited as they are not relevant to this phase of construction. The state was audited for compliance against five of the audited EPRs.

The environmental requirements audited and checked over the last 12 months by the IREA (including the June 2018 to February 2019 audit program) is summarised in Appendix A. The future EPR audit program starting May 2019 and ending in February 2020 is included in Appendix B.

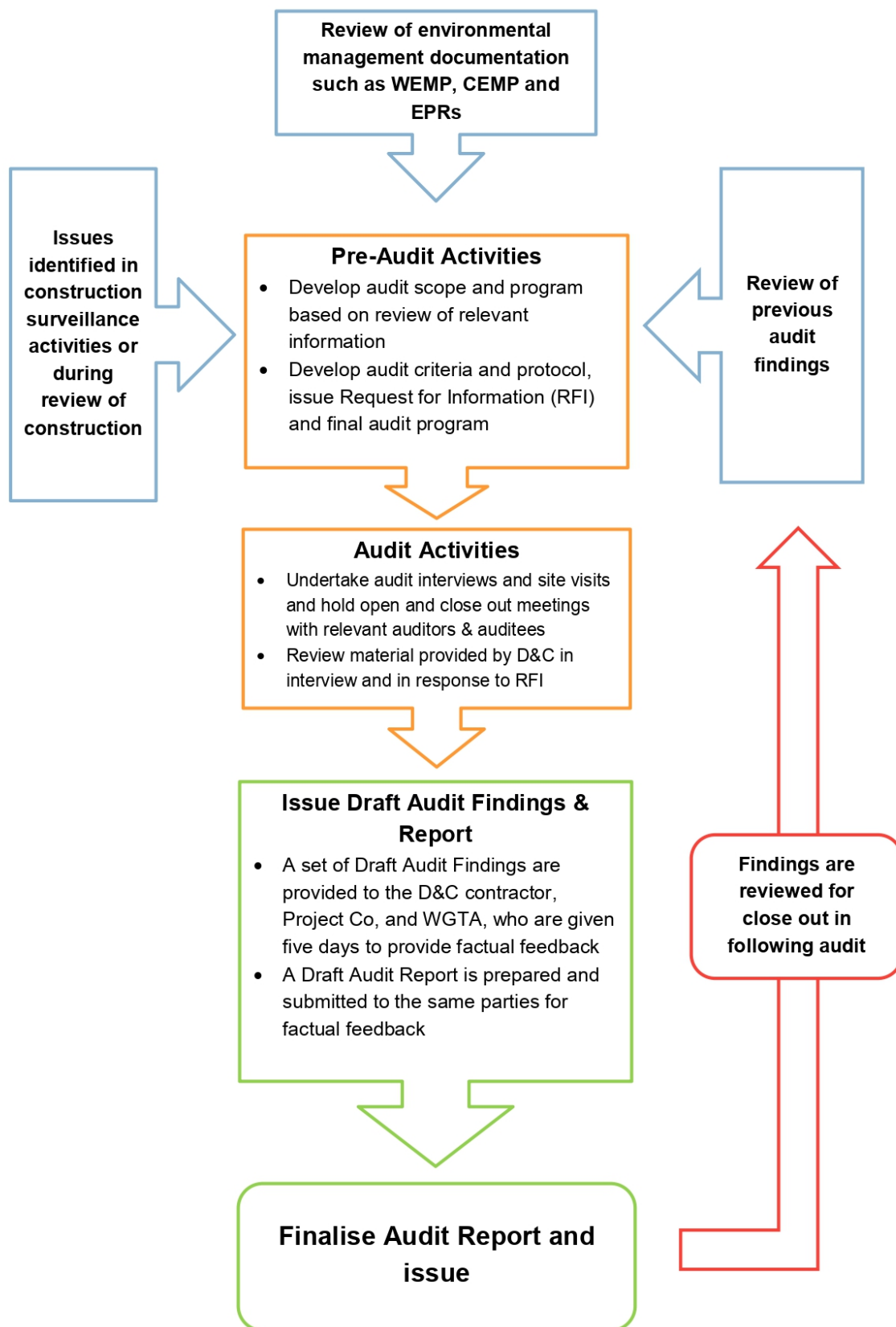


Figure 3 - Overview of environmental audit process

A summary of the scope of the audits conducted by the IREA is provided in below.

Table 2 – Summary of Audits Conducted During Reporting Period – September 2018 to February 2019

Audit Type	Date	Scope
Strategy Audit	February 2019	<ul style="list-style-type: none"> Strategy (revision 6) dated 31 January 2018 and the legislation, approvals, consents, guidelines and standards relevant to its implementation.
CEMP Audit	November 2018 & February 2019	<ul style="list-style-type: none"> CEMP (revision 6) dated 28 March 2018 and relevant documentation including relevant CPBJH management plans and subplans such as the Design Management Plan and the Construction Communications and Community Engagement Plan. A selection of EPRs relevant to the current stage of design and construction (as defined in Appendix A).
WEMP Audit	September 2018 – Tunnel Zone	<ul style="list-style-type: none"> Site audit of sediment and erosion controls, hazardous material storage, waste soil and slurry management and review of noise data at the North Portal and Pivot site.
	October 2018 – West Zone	<ul style="list-style-type: none"> Site audit of sediment and erosion controls, waste management, soil and spoil management, vegetation clearance and CHMP implementation at the Williamstown Road and Millers Road work areas.
	November 2018 – East Zone	<ul style="list-style-type: none"> Site audit of minor established works, preparation for demolition at F-gate (including clearing and grubbing) and shared user path construction.
	December 2018 – Tunnel Zone	<ul style="list-style-type: none"> Site audit of spoil shed construction at Pivot, continuous flight augur piling at the downstream NYMS shaft site, bulk excavation continuing at North Portal as well as capping beam construction, steel fixing and NYMS pipe jack works.
	January 2019 – East Zone	<ul style="list-style-type: none"> Site audit of Ongoing site establishment works and drainage works along Footscray Road.
	February 2019 – West Zone	<ul style="list-style-type: none"> Site audit of sediment and erosion controls, air quality monitoring and noise and vibration management at the inbound carriageway (Kyle to Williamstown Road).

The IREA's view on conformance was informed by interviews with staff from the D&C Subcontractor, and review of relevant systems, tools and documentation developed and implemented.

2.3.1 Design and Construction Activities – September 2018 to February 2019

Overall design for the Project is 79% complete based on the issue of Certified Design (CD) packages and earned value¹.

Construction activities continue to progress in the West and Tunnels and Portals sites, with a ramping up of activities in the East over the last six months. Key activities include:

- West
 - Completion of the Millers, Beevers and Grieves site compounds.
 - Continued progress on the Williamstown Road bridge works, and commencement of bridge works at Newport Rail, Muir Street and Rosala Avenue.
 - Permanent and temporary ramp works.
 - Construction of permanent and temporary noise walls along the inbound and outbound verges.
 - Retaining wall installation at Millers Road.

¹WGT-100-000-PRO-CJH-100-000-0008 Report Date 20 Feb 2019

- Utility relocations, and drainage and sewer works.
- Tunnels and Portals
 - Taken delivery and commenced assembly of the first TBM.
 - Continued bulk excavation and temporary propping of the north portal.
 - Installed the monitoring array and gantry crane.
 - Erection of the soil and spoil shed, conveyors, pedestrian bridge, and water treatment plant at the Pivot site.
 - Completion of pipe-jacking for the North Yarra Mains Sewer (NYMS) from the launch shaft, and construction of the upstream and downstream shafts.
 - Grouting has commenced at the inbound south portal and soil nailing is ongoing at the outbound south portal.
- East
 - Site office establishment and investigations are progressing.
 - Construction of the shared user path along Footscray Road is ongoing.
 - Demolition works continued.
 - Drainage, high voltage (HV) electrical and water main relocation has commenced along Footscray Road.



Photo 1 – Gantry crane and TBM assembly – Tunnel Zone (Source: WGTA, 19 February 2019)

2.4 Audit Findings Classification

Audit findings are classified in each audit according to the following definitions which are aligned to classifications provided by AS/NZS ISO14001: 2015; the Joint Accreditation System of Australia and New Zealand (JAS-ANZ), and audit classifications utilised on previous high-profile Victorian infrastructure

projects. The definitions of 'conformance', 'non-conformance', 'area for improvement', 'observation', and 'not applicable' are provided below.

Conformance

There is suitable evidence to confirm that actions have been undertaken, prepared and/or implemented in full conformance with the requirements of the auditable element. Findings are reported by exception only, and as such conformances are not detailed within this report.

Non-conformance

An instance, event or occurrence that has not-fulfilled a requirement that has been specified in the Strategy, CEMP, WEMP, EPRs, legislation, and approval conditions. A situation, which would, on the basis of available objective evidence raise significant doubt as the effectiveness of environmental management.

(Note 1: A non-conformance may be an individual non-conformance or a number of minor but related audit findings, which when considered in total are judged to constitute a non-conformance.)

Area for Improvement

A deficiency in the implementation of the Strategy, CEMP, WEMPs, or associated documentation judged to be a risk to the environment, or to environmental management, without constituting an overall failure in the area concerned.

Observation

An audit finding which may relate to an incidental or isolated system discrepancy, which does not compromise the effectiveness of environmental management, or constitute an actual or potential environmental risk.

Not Applicable

The auditable element falls outside the scope of the audit, e.g. work relevant to the element being audited has not yet commenced. Findings are reported by exception only, and as such 'Not Applicable' findings are not detailed within this report.

It should be noted that the audit only reports on non-conformances, areas for improvement and observations against the CEMP findings. All other areas within the scope of the audit should be assumed to be compliant. Where EPRs have been audited, compliance findings are also included.

IREA does not require observations to be formally closed out after they have been issued and therefore will not report these in subsequent audit reports. It is the responsibility of the D&C Subcontractor and Project Co to address these findings.

Significance of Findings

The nature of findings may vary. In reviewing the results of audit findings, it is necessary to understand the context in which they have been issued. For instance, some findings may be administrative in nature compared with those that pose an immediate and/or significant risk to the environment. An example of an administrative finding might include the requirement for the D&C Subcontractor to use a particular system to record incidents, where this is defined in the CEMP. However, if the D&C Subcontractor has upgraded this system and replaced it with an alternative, this means the CEMP is now out of date and does not reflect current practices. The D&C Subcontractor in this case may not be conforming with the original CEMP (which is captured as a non-conformance in an audit), but it does not necessarily mean that incidents are not being reported. This requirement is likely to be modified in the next version of the CEMP. Administrative findings therefore do not always pose a significant risk to the environment.

Alternatively, if the D&C Subcontractor was found to have caused an incident resulting in a discharge to the river, this would be viewed as an environmental non-conformance of greater significance.

Similarly, some findings are localised (rather than systemic) in nature. For example, a non-conformance raised against a WEMP may reflect an immediate issue at a particular worksite, which can be addressed and closed out by taking immediate on-site action.



Photo 2 – Inspection by construction worker – Tunnel Zone (Source: WGTA, 19 February 2019)

3 SIX-MONTHLY AUDIT FINDINGS

The key findings arising from the IREA's second six months of auditing are included in the sub-sections below.

- Section 3.1 summarises audit findings of the Strategy
- Section 3.2 outlines findings of formal auditing and checking of EPRs
- Section 3.3 describes audit findings against the CEMP and subplans
- Section 3.4 provides findings of the WEMP audits.

3.1 Environmental Management Strategy

Audits of the Strategy are conducted 6-monthly, with one conducted during the reporting period. Overall, Project Co was found to be compliant with the Strategy. No non-conformances were raised against Project Co during the Strategy audit.

One new area for improvement was raised concerning:

- Developing and documenting (in Project Co systems) a process for tracking and responding to environmental audit findings other than non-conformances. The IREA raises findings at a number of levels, i.e. non-conformance, areas for improvement, observation. Project Co primarily focus on addressing non-conformances, deferring to the D&C Subcontractor when it comes to deciding whether to address areas for improvement and observations. The Strategy does not differentiate between different types of findings, nor does it allow Project Co to entirely delegate responsibility to the D&C Subcontractor for ensuring IREA findings are addressed.

Four observations were made as follows:

- The Strategy does not accurately reflect how EPRs which are the responsibility of the State will be achieved e.g. SP5 and NVP19. This administrative inconsistency is not considered a high risk, given that the State does not rely on directions in the Strategy to deliver their responsibilities i.e. it is too high level to provide specific guidance on delivery of each EPR.
- Project Co has identified a number of issues during its internal Annual Environmental Management Strategy Review (a requirement of the Strategy) and in discussions with the IREA during the Strategy audit. The review involved assessment of the D&C Subcontractor and Project Co's performance against the Strategy. Project Co identified a number of issues including the (1) lack of analyses of environmental monitoring data and (2) delays in updating the CEMP and subplans.
 - Project Co may wish to consider outlining their obligations with regards to reviewing environmental monitoring data, how this information will be reported to the State, and what actions (if any) may be taken if data are not provided.
 - The IREA notes that the program for reissuing updates and improvements to these plans has been delayed for up to five months. Project Co may wish to consider defining their expectations regarding minimum timeframes and/or processes for updating and reissuing the CEMP and subplans following receipt of comments from all parties.
 - The IREA has identified opportunities to update the Project Co internal management system and documentation to reflect how it will manage (and document the requirements for managing) these issues.
- Project Co is responsible for ensuring environmental requirements are met. The Strategy requires that Project Co ensure that CEMP and subplans are reviewed (but not approved) by the D&C Subcontractor on a six-monthly basis. The D&C Subcontractor reviewed and reissued the CEMP and subplans in August 2018. However, none of these management plans have been updated and subsequently approved for use. This is not a strict requirement of the Strategy, but it remains an area of concern.
- Project Co is currently reviewing construction packages and WEMPs that include an additional document - the Site Environment Plan (SEP). A new process for developing WEMPs (which includes this additional SEP) is currently in discussion between all project parties in order to address an outstanding finding

issued to the D&C Subcontractor (Jun-18_CEMP_11) but has not been agreed by the State or IREA. Delays in the D&C Subcontractor resolving this new process (and closing out the Non-Conformance issued against the D&C Subcontractor) are creating a potential risk to environmental management. Project Co may wish to consider escalating this issue with the D&C Subcontractor to assist the D&C Subcontractor in arriving at an agreed position. Refer CEMP WEMP finding outstanding from June 18 (Jun-18_CEMP_11).

3.2 Environmental Performance Requirements

The majority of EPRs formally audited during the reporting period were considered compliant, with the exception of one non-conformance against noise and vibration EPR NVP10. A number of areas for improvement and observations were also raised, noting that the following section focuses on non-conformances and areas for improvement. Details of these findings are discussed in more detail below.

Project Co/ the D&C Subcontractor is responsible for delivering the majority of EPRs listed below unless otherwise specified (as being delivered by the State).

3.2.1 Environmental Management

No Environmental Management EPRs were formally audited during this period. Noting that compliance with these EPRs is considered in the CEMP.

Previous reporting period

One area for improvement was previously raised against EMP4 regarding categorisation of complaints within the complaints management system. This remains open awaiting update of the D&C Subcontractor's Communications and Community Engagement Plan.

Refer also to related CEMP findings in Section 3.3.

3.2.2 Air Quality

Five air quality EPRs were audited during this period, namely EPRs AQP1-4, and AQP6. The frequency and extent of air quality monitoring has increased across the project over the reporting period with the establishment of a monitoring network managed by an external provider, Sixense.

One area for improvement was raised against AQP6, which requires an Air Quality Management and Monitoring Plan (AQMP) to be developed and implemented by the D&C Subcontractor. The D&C Subcontractor had not implemented a number of requirements outlined in the AQMP including continuous dust monitoring in the Tunnels zone, air quality data not being used in the monthly reports, and inadequate air quality details in construction packages.

Two observations were raised, one against AQP3, relating to the design of the in-tunnel ventilation system, and one against AQP4 around the delays in issuing air quality monitoring results provided on the project website. AQP1 and AQP2 were deemed compliant.

The remaining Air Quality EPRs, AQP5 and AQP7, are operational EPRs and will not be audited during this phase of the Project.

Previous reporting period

No non-conformances or areas for improvement for air quality EPRs were raised in the previous period.

Refer also to related AQMP findings in Section 3.3.5.



Photo 3 – Automated environmental monitoring station capturing air quality(dust), noise and vibration (structures data) – East Zone (Source: IREA, 4 April 2019)

3.2.3 Business

Six business EPRs were audited during this reporting period, namely BP2, BP4, BP6, BP7, BP8, and the State was audited against BP9.

One area for improvement was raised against BP7 where works by the D&C Subcontractor resulted in a breach of a gas utility exclusion zone. While this was reported through the D&C Subcontractor's incident management system it was not reported as a non-conformance against BP7 at the time it occurred. This finding remains open.

One observation was raised against BP8. In instances where temporary occupation of premises/land is occurring (such as the Footscray Road flower market), there was limited evidence that the D&C Subcontractor had interacted with the owner and surrounding local businesses regarding site access roads and project activities.

Previous reporting period

One area for improvement from the previous period (BP5) remains open relating to updates to the Business Involvement Plan. While one area for improvement has been closed (BP3) following adequate consultation with landowners and businesses regarding provisions for screening.

3.2.4 Cultural Heritage

Eleven cultural heritage EPRs were audited during this period, namely CHP2–12. Four areas for improvement were raised:

- CHP5 - the IREA highlighted the lack of management documentation to describe the archival recording process.
- CHP6 - it was found that the Port Phillip Monument was not addressed in all relevant design packages and was not yet being considered in the Heritage Interpretation Strategy.
- CHP7 - gaps were identified in the heritage interpretation strategy, and limited evidence was available to demonstrate progress in implementing the requirements.
- CHP9 - further work is required for the D&C subcontractor to clearly understand the requirements of this ERP. A number of design packages did not consistently identify historical infrastructure and services to be protected or managed.

Four observations were also raised against CHP8, CHP 10, CHP11 and CHP12. These observations broadly relate to information gaps in design packages when addressing these EPRs, such as failure to incorporate council consultation outputs in design packages and a lack of information on avoidance of impacts to built heritage.

Previous reporting period

The previous non-conformance against CHP1 was closed during the November quarterly CEMP audit, a result of the D&C Subcontractor updating the training program in consultation with Aboriginal Victoria to address requirements of the CHMP.

Refer also to related HMP findings in Section 3.3.6.

3.2.5 Contaminated Soil and Spoil Management

Three soil and spoil management EPRs were audited during this reporting period, namely CSP1, CSP3 and CSP4.

One observation was raised against CSP1 in relation to assessing the potential impacts of tunnelling additives on tunnelling spoil e.g. proprietary foam product. The project needs to assess the chemical properties and behaviours of these additives in order to categorise tunnel spoil prior to tunnelling commencing. This will influence the way spoil is stored, treated, and disposed of. As tunnelling has not yet commenced, this is raised as an observation to assist the D&C Subcontractor in preparing their response to the EPA and IREA.

Previous reporting period

The previous area for improvement raised against CSP2 in relation to the adequacy of spoil management documentation remains open, noting that the significant progress has been made on this finding. Soil and spoil work instructions are now issued on Aconex as controlled documents and the status of these documents are clearly “Approved”. The D&C Subcontractor has indicated that it intends to document the process for developing, updating, and implementing SAQPs and Soil and Spoil Work Instructions in the next version of the SSMP.

Refer also to related SSMP findings in Section 3.3.3.

3.2.6 Ecology

Five ecology EPRs were audited during the reporting period, namely EP3 - EP7. One area for improvement was raised against EP4 relating to the D&C Subcontractor not having a verbal position or documented process for reporting “management actions” to the IREA in the event of an accidental fauna injury or death, or what these management actions might include.

Two observations were also raised. One was raised against EP3 as the D&C Subcontractor had not properly identified the areas to which this EPR related to and were missing important areas for

reinstatement. The other observation was raised against EP7 as the D&C Subcontractor's documentation does not clearly define responsibilities for this EPR as it relates to works inside and outside of the project boundary. It should be noted that small areas of additional vegetation clearance works are required outside the Project Boundary (sanctioned by State under a separate approval obtained by the D&C Subcontractor).

Previous reporting period

No non-conformances or areas for improvement for ecology EPRs were raised in the previous period.

Refer also to related FFMP findings in Section 3.3.8.

3.2.7 Greenhouse Gas Emissions

One greenhouse gas (GHG) EPR was audited during the reporting period, namely GGP1 in November 2018. One observation was raised due to a lack of detail in design reports on how this EPR was addressed. Design reports were found to evaluate some energy efficient options as impractical but not detail why.

Previous reporting period

The previous area for improvement raised against GGP2 remains open. No evidence has been provided from the D&C Subcontractor to show that embodied GHG emissions of project materials are benchmarked or calculated, or how design decisions responding to GHG emission reduction processes are mapped to GHG reduction targets.

3.2.8 Ground Movement

Two ground movement EPRs were audited during the reporting period, namely GMP2 and GMP6. An observation was raised against GMP6 to highlight the importance of establishing and implementing a coordinated risk management approach in preparation for commencement of tunnelling operations.

Previous reporting period

Previous areas for improvement raised against GMP1, GMP3, and GMP5 remain open. A key outstanding issue in relation to GMP3 is the need to provide a consistent definition of "affected stakeholders" who may require conditions surveys.

Refer also to related GMMP findings in Section 3.3.7.

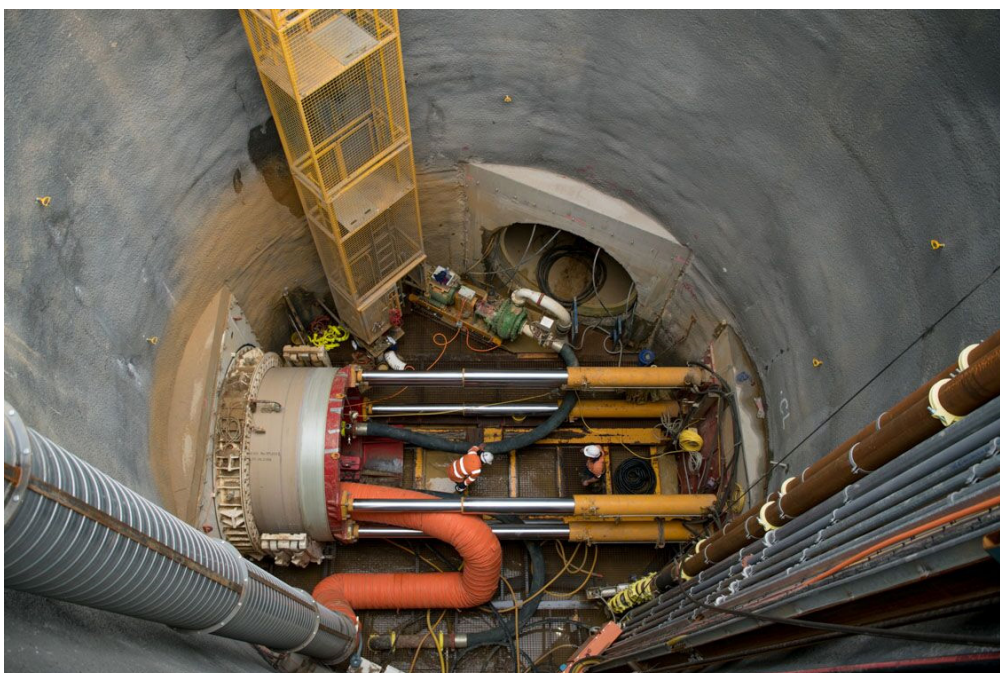


Photo 4 - NYMS pipe jacking works – Tunnel Zone (Source: WGTA, 19 February 2019)

3.2.9 Groundwater

Four groundwater EPRs were audited during the reporting period, namely GWP2, GWP3, GWP6, and GWP7. Of these, three areas for improvement were raised:

- GWP2 – there are no details or associated documentation in the CEMP or GWMP on tunnelling additives, their environmental impacts and the suitability of their use. The CEMP and GWMP should both be updated to contain material safety data sheets and records of the additives/ materials used.
- GWP3 – The Trigger Action Response Plan (TARP) developed to manage groundwater displacement at the NYMS site has not been fully executed, as it does not contain sufficient detail on groundwater chemistry. The GWMP needs to be updated to reflect these requirements.
- GWP6 – The GWMP contains a number of requirements and management methods that are generic and need to be updated to address in detail the current project construction activities. The GWMP has not been formally reissued with updates since March 2018.

Previous reporting period

The previous area for improvement against GWP5 remains open. While groundwater level monitoring is in place, a trigger action and alert plan is yet to be implemented for groundwater quality baseline data (contamination) and flow rate (dewatering and injection rates). Processes for managing groundwater quality needs to be described in more detail in the GWMP.

Refer also to related GWMP findings in Section 3.3.2.

3.2.10 Land Use

Three land use EPRs were audited during this period, namely LPP2, LPP4, and LPP5. All EPRs were deemed compliant. The D&C Subcontractor demonstrated integration of these EPRs into the design and construction processes.

Previous reporting period

No non-conformances or areas for improvement were raised in the previous period.

3.2.11 Landscape and Visual

Four landscape and visual EPRs were audited during the reporting period, namely LVP1, LVP2, LVP4, and the State was audited against LVP5. Two observations were raised. One was raised against LVP1 relating to a lack of consideration/attention to urban design elements such as retaining walls and noise walls within structural packages. The second observation was raised against LVP4, as the EPR was not always addressed within relevant design packages.

Previous reporting period

No non-conformances or areas for improvement for landscape and visual EPRs were raised in the previous period.

3.2.12 Noise and Vibration

Eleven noise and vibration EPRs were audited during the reporting period, namely NVP1, NVP2, NVP9-14, NVP16-17, and the State was audited against NVP19.

One non-conformance for this period was raised against EPR NVP10, relating to vibration (for amenity²) and the lack of sufficient documentation to demonstrate compliance. Vibration monitoring results and details of a

² It should be noted that the project is compliant with EPRs relating to other types of vibration monitoring, such as NVP11 which measure structural impacts on residential houses and other buildings.

compliance assessments were not available for the activities identified as high risk i.e. likely to exceed recommended vibration levels. Furthermore, the Construction Noise and Vibration Management Plan (CNVMP) is out of date with respect to vibration modelling relevant to this EPR.

Previous reporting period

The three areas for improvements raised against NVP7, 8 and 18 from the previous reporting period remain open. The D&C Subcontractor stated in the November 2018 CEMP audit that these findings will be addressed in the updated CNVMP. By the end of the reporting period the IREA had not received an updated version of the CNVMP which is an increasing area of concern.

Refer also to CNVMP findings in Section 3.3.1.

3.2.13 Social

Two social EPRs were audited during the reporting period, namely SP1 and the State was audited against SP5. One area for improvement was raised against the State's compliance with SP5 regarding the documentation of outcomes of consultation and timing of development of the Community Involvement Participation Plan (CIPP). The State has demonstrated that they have undertaken consultation with relevant stakeholders; however limited information on councils' feedback on development of the plan was available and/or documented. The auditor also noted that the CIPP was not issued at the commencement of construction. This finding is viewed as administrative in nature and is not expected to affect the States' ability to fully implement the Plan. the implementation period for this plan is sufficient to enable full delivery of this EPR i.e. remaining period of construction.

One observation was also raised for SP1 in November 2018 based on the lack of information in design packages relating to (compliance with) this EPR as relevant.

Previous reporting period

No non-conformances or areas for improvement for Social EPRs were raised in the previous period.

3.2.14 Surface Water

Eleven surface water EPRs were audited during the reporting period, namely SWP1-3, SWP5, SWP6, SWP8-10, and SWP13-15. One area for improvement was raised against SWP1 due to inadequacy of the design and construction of temporary drainage, particularly at the Pivot site. One observation was also raised against SWP6 relating to a lack of consideration of additional contingency arrangements for 24-hour spill response for works on major waterways.

Previous reporting period

Previous non-conformances against SWP11 and SWP12 have been closed following the provision of evidence of relevant works concerning flood risk and floodplain storage capacity being to satisfaction of Melbourne Water and in consultation with City of Maribyrnong Council.

Refer also to WMP findings in Section 3.3.4.

3.2.15 Transport

Six transport EPRs were audited during the reporting period, namely TP1, 4-6, 8 and 9. One area for improvement was raised in November 2018 against TP1 due to the absence of a formal strategy agreement with PTV to minimise impacts on public transport and enhance services that cross or run parallel with the project. This finding was closed during the February CEMP audit upon provision of a letter from PTV acknowledging the approach for the Transport Impact Minimisation Strategy. An observation was also raised against TP9 to highlight the potential for improved consultation to minimise the cumulative impact of construction vehicles between the D&C Subcontractor and other major projects affecting the road network.

Previous reporting period

No non-conformances or areas for improvement for Transport EPRs were raised in the previous period.



Photo 5 - Footscray Road shared user path construction – East Zone (Source: WGTA, 19 February 2019)

3.2.16 Waste Management

Environmental Performance Requirement WMP1 was audited during this reporting period and was deemed complaint. The IREA noted that the WstMP contains measures which are consistent with the waste management hierarchy, and these measures are being implemented on site.

Previous reporting period

WMP1 is the only waste EPR and was not audited in the previous period.

3.3 Construction Environmental Management Plan

Overview

CEMP audits are conducted on a quarterly basis, with two CEMP audits conducted during the reporting period.

During the November 2018 audit the following management plans and sections were audited:

- CEMP (Section 3.7 Construction Documentation, Element 12 Auditing Review and Improvement)
- Air Quality Management Plan (Section 5 Typical Management Measures, Section 6 Monitoring Section 9 Training and Awareness)
- Heritage Management Plan (Section 5.1 Historical Heritage, Section 5.2 Management Controls – Historical Heritage, Section 6 Monitoring and Reporting, Section 9 Training and Awareness)

- Soil and Spoil Management Plan (Section 4 Management, Section 5 Monitoring and Inspections, Section 8 Training and Awareness)
- Waste Management Plan (Section 4 Management Measures, Section 5 Monitoring and Reporting, Section 8 Training and Awareness).

During the February 2019 audit the following management plans and sections were audited:

- CEMP (Section 1.2 Purpose and Scope of Plan, Element 2 Planning, Element 12 Auditing Review and Improvement)
- Construction Noise and Vibration Management Plan (Section 9 Monitoring, Reporting and Response to Complaints, Section 13 Auditing Review and Improvement, Appendix E Out of Hours Works Procedure)
- Water Management Plan (Section 6 Monitoring)

Current Reporting Period

There were six findings raised against the Construction Environmental Management Plan (excluding subplans) during the reporting period.

One non-conformance was raised, relating to limitations in the way environmental monitoring data is captured and analysed. This was originally a finding from June that was escalated from an area for improvement to a non-conformance.

One area for improvement was raised against gaps in the monthly environmental reporting, specifically with regards to the analysis of environmental monitoring data.

Four observations were raised, three were raised against gaps in the D&C Subcontractors auditing program, and one observation was raised against the need to undertake some minor updates to the CEMP regarding the scope to which it applies.

Previous Reporting Period

Two non-conformances from the previous period relating to section 3.5.4 and element 12.7 remain open. Some progress has been made in closing these out during the reporting period, with a new WEMP and NCR procedure in development and WEMPs containing more detail. However, these procedures are not complete and yet to be approved by the IREA or State.

Six areas for improvement remain open from the previous period. These relate to:

- CEMP element 3.4. To date the D&C Subcontractor have not included evidence to support delivery of objectives, targets, and KPIs.
- CEMP element 6.2. The D&C Subcontractor is yet to demonstrate it is undertaking adequate consultation with stakeholders in the development of WEMPs. The IREA notes the process for Consultation (such as responsibility and methods of consultation) is not adequately documented in the CEMP.
- CEMP element 11.1. This finding remains open, pending updates to the CEMP, sub-plans, and WEMP review process.
- CEMP element 11.12. The project Quality Program that this finding relates to is yet to be updated.
- CEMP element 3.6. This finding remains open as EPRs are not consistently considered in all design packages (or evidence provided to demonstrate this). Progress has been made with a CPS Procedure now drafted to support post-IFC design change in relation to EPRs. The Design Management Plan still does not address the design development process.
- CEMP element 3.6. The D&C subcontractor is required to coordinate meetings with councils and other stakeholders, records of these meetings have been referred to, however no evidence of this has been provided to close the finding out.

Findings raised against the subplans are discussed below.

3.3.1 Construction Noise and Vibration Management Plan

Five findings were raised against the CNVMP this reporting period. One non-conformance was raised against the CNVMP in February 2019. This finding was raised against validation and pro-active monitoring, and the lack of documentation held by the D&C Subcontractor to demonstrate compliance with this requirement. Specifically, there was no documentation to demonstrate how validation monitoring was being used to adjust noise models or to discuss / identify appropriate mitigation measures.

Three areas for improvement were raised relating to:

- Lack of documentation on how complaints are addressed and what actions are taken
- The CNVMP being out of date considering the works being undertaken, and it does not provide a representative picture of noise and vibration risk
- Lack of documentation held regarding the implementation of the out of hours works process, specifically which mitigation measures are assessed and adopted.

One observation was raised due to inconsistencies in documenting investigations where noise management levels (NMLs) are exceeded.

Previous reporting period

One non-conformance and one area for improvement that were raised during the previous reporting period in relation to a lack of baseline noise monitoring results remain open, as noise management levels are yet to be established for all areas and updated in the CNVMP.

Refer to Section 3.2.12 for findings relating to noise and vibration EPRs.

3.3.2 Groundwater Management Plan

The GWMP was not specifically audited during this reporting period.

Previous reporting period

Two areas for improvement remain open from the previous reporting period. It is not evident that data are being adequately compiled and presented in a manner consistent with the Conceptual Site Models (CSMs). In addition, the trigger, action, and alert plan is yet to be implemented for groundwater quality baseline data (contamination) and flow rate (dewatering and injection rates).

Refer to Section 3.2.9 for findings relating to groundwater EPRs.

3.3.3 Soil and Spoil Management Plan

Two findings were raised against the SSMP during this reporting period. Both were observations. One was raised against the need to update the SSMP to clarify content and purpose of some sections of the SSMP and one was raised against the process for development and communication of the Spoil Work Instructions.

Previous reporting period

One area for improvement remains open from the previous reporting period, as the materials tracking register does not identify the site domain (location) of excavated materials.

Refer also to Section 3.2.5 for findings relating to soil and spoil EPRs.



Photo 6 - North Portal bulk excavation and temporary support – Tunnel Zone (Source: WGTA, 19 February 2019)

3.3.4 Water Management Plan

Two findings were raised against the WMP during this reporting period.

One area for improvement from June was escalated to a non-conformance during the February audit. This finding highlights that the D&C Subcontractor is not conducting post-rainfall water quality monitoring in accordance with the WMP.

One observation was raised relating to ineffective implementation of sediment and erosion controls in the west zone.

Previous reporting period

No findings were raised against the WMP in the previous reporting period.

Refer to Section 3.2.14 for findings relating to surface water EPRs.

3.3.5 Air Quality Management Plan

Five findings were raised against the AQMP this reporting period. One non-conformance was raised due to the absence of real-time continuous air quality monitoring being identified on all construction documentation (i.e. WEMPs and construction procedures).

Two areas for improvement were raised. One due to dust controls being insufficient during windy, dry conditions as observed during the audit, and one was raised as the air quality monitoring program had not been fully implemented in accordance with the AQMP.

Two observations related to the need to update to the AQMP to reflect operational and maintenance requirements for air quality monitoring equipment, and timely provision of the monthly air quality monitoring results onto the West Gate Tunnel website.

The one non-conformance and two areas for improvement raised during this reporting period remain open.

Previous reporting period

One area for improvement from the previous reporting period that relating to a lack of real time dust monitoring equipment being set up across the project remains open. Progress has been made on this finding, as the appropriate equipment has now been set up at the Tunnels zone, however equipment has not yet been set up in the East zone.

3.3.6 Heritage Management Plan

The Heritage Management Plan was not specifically audited during this reporting period.

No findings remain open for the previous reporting period.

Refer to Section 3.2.4 for findings relating to cultural heritage EPRs.

3.3.7 Ground Movement Management Plan

The Ground Movement Management Plan was not specifically audited during this reporting period.

No findings remain open from the previous reporting period.

Refer to Section 3.2.8 for findings relating to ground movement EPRs.

3.3.8 Flora and Fauna Management Plan

The Flora and Fauna Management Plan was not specifically audited during this reporting period.

No findings remain open from the previous reporting period.

Refer to Section 3.2.6 for findings relating to ecology EPRs.

3.4 Worksite Environmental Management Plan

WEMP audits are conducted on a monthly basis, with six WEMP audits conducted during the reporting period. Environmental management has improved on site, seen through a decrease in findings, with 53 findings raised in the previous reporting period (17 non-conformances, 24 areas for improvement and 12 observations) compared to 25 findings raised in this reporting period (three non-conformances, seven areas for improvement and 15 observations).

The three non-conformances identified during this reporting period related to (1) air quality monitoring, (2) WEMPs held on site not consistent with activities and controls on-site, and (3) failure to report on incidents such as environmental complaints from the community.

Of all WEMP findings, 32% related to surface water, 20% related to noise and vibration and 20% percent related to environmental management which were administrative in nature. The remaining 28% related to a mix of issues such as air quality, cultural heritage, spoil and spoil, and groundwater.

The reporting period saw a reduction of findings compared to the previous reporting period. However, to date the close out of WEMP findings could be significantly improved, including establishment of a process to close out WEMP findings. Four areas for improvement and four non-conformances remain open from the previous reporting period, making a total of seven non-conformances and 19 areas for improvement open at the end of this reporting period.

3.4.1 East Zone

Works in the East Zone during the reporting period have stayed low risk in nature, mostly consisting of site establishment activities, demolition, and construction of the shared user path. Some higher risk activities have begun with utility relocation involving deep excavation along Footscray Road and a mass stockpiling of soil and spoil occurring.

Three findings were raised during WEMP audits of the East Zone in this reporting period, all were observations.

Two observations were raised against the process of updating WEMPs, which were found to be displayed on site with hand mark ups, this is not in accordance with the documented process.

One observation was raised against works occurring in a no-go zone/protected area without a permit (this was reported as a non-conformance by the D&C Subcontractor upon the incident occurring).

Previous reporting period

All of the four non-conformances raised in the previous reporting period have been closed.

Both of the two areas for improvement raised in the previous reporting period have been closed.



Photo 7 – East Zone site establishment – East Zone (Source: WGTA, 19 February 2019)

3.4.2 Tunnel Zone

Key works in the Tunnel Zone have consisted of the completion of pipe-jacking for the NYMS from the launch shaft, and construction of the upstream and downstream shafts, the continued bulk excavation and temporary propping of the north portal, taking delivery of and assembling the tunnel boring machine (TBM), erection of the soil and spoil shed, conveyors, pedestrian bridge, and water treatment plant at the Pivot site and grouting commencing at the inbound south portal.

Ten findings were raised during WEMP audits of the Tunnel Zone in this reporting period.

Two area for improvements were raised, one against inadequate sediment and erosion controls (sediment fencing at Pivot) and one against a lack of stabilised access (dirty water and mud being tracked onto Youell Street owing to an ineffective truck wash and drainage design at the Youell Street exit).

Eight observations were also raised, two against inadequate sediment and erosion controls, two against inadequate monitoring processes (dust and noise and data validation), one against WEMPs held on site not being consistent with activities and controls on-site, one against a minor non-compliance with the Trade Waste Agreement, one against inadequate measures in place for storing hazardous substances, one against soil and spoil being not being dealt with in accordance with the relevant Soil and Spoil Work Instruction.

Both areas for improvement raised this reporting period remain open.

Previous reporting period

Three of 10 non-conformances from the previous reporting period remain open.

Seven of 11 areas for improvement from the previous reporting period remain open.

3.4.3 West Zone

Works in the West Zone during the reporting period have focused on preparation for connections into the West Gate Freeway. Key activities have included completion of the Millers, Beevers and Grieves site compounds, continued progress on the Williamstown Road bridge works, and commencement of bridge works at Newport Rail, Muir Street and Rosala Avenue, permanent and temporary ramp works, construction of permanent and temporary noise walls along the inbound and outbound verges, retaining wall installation at Millers Road, utility relocations, and drainage and sewer works.

Twelve findings were raised during WEMP audits of the West Zone in this reporting period.

Three non-conformances were raised during WEMP audits of the West Zone, one against WEMPs held on site not consistent with activities and controls on-site, one against implementation of air quality monitoring (specifically dust monitoring not occurring at locations stated on the WEMP), and one raised against the failure to report environmental complaints (two dust complaints and one air quality complaint were made, these were not logged by the D&C subcontractor on Synergy).

Five areas for improvement were raised, namely noise monitoring not being undertaken in accordance with the WEMP, noise monitoring data not being utilised in accordance with the WEMP, CPR and CNVMP, failure to manage dust complaints in accordance with the WEMP, CPR and CNVMP, inadequate erosion and sediment controls and Out of Hours Works not being undertaken in accordance with the WEMP, CPR and CNVMP.

Four Observations were raised. These related to issues around categorisation of spoil, inadequate erosion and sediment controls, hand held noise monitoring not being undertaken in accordance with the WEMP, CPR and CNVMP, and inadequately stocked spill kits.

All three non-conformances and five areas for improvement remain open.



Photo 8 – Construction of retaining walls – West Zone (Source: WGTA, 10 October 2018)

Previous reporting period

Two of three non-conformances from the previous reporting period remain open.

Three of 11 areas for improvement from the previous reporting period remain open.

4 AUDIT CONCLUSIONS

4.1 Environmental Management Strategy

Project Co is currently meeting its obligations under the Strategy. There were several minor observations made around Project Co's involvement in closing out IREA findings and in facilitating update and improvements to the CEMP and sub-plans, and the need to clarify its responsibilities in relation to Emergency and Incident Response Preparedness. No non-conformances were raised with the Project Co during the Strategy audit.

4.2 Environmental Performance Requirements

In the second six-month period 75 of the 117 EPRs were audited by the IREA, with 111 EPRs audited during the last twelve-month period. The remaining six EPRs relate to pre-operational and operational requirements and are not relevant to this stage of the works.

Project Co/ the D&C Subcontractor and the State continue to make progress on the establishment of environmental management systems and processes to deliver against the EPRs. The Project is generally compliant with the EPRs, with the exception of NVP10. A number of findings highlight that further work is required by Project Co/ the D&C Subcontractor to document and record EPR compliance, and to document and analyse environmental monitoring data. Furthermore, the CEMP and sub-plans are now out of date and need to be reviewed and updated to ensure they reflect the risk profile of works being undertaken.

The IREA's future auditing program will continue to focus on how Project Co/ the D&C Subcontractor records performance, particularly with respect to demonstrating compliance with the Project environmental requirements, as well as how it manages timely close out of IREA audit findings. Of the 33 non-conformances closed across all audit types to date the time taken to close ranges from 3 days to 224 days. The average time is 65 days. At the completion of the February 2019 audit there were three NCs that have been outstanding since June 2018.

The findings arising from the last six months of auditing by the IREA has not identified any immediate significant or material risks to the environment.

4.3 Construction Environment Management Plan

Project Co/ the D&C Subcontractor continues to demonstrate progress on the development and implementation of processes and procedures for environmental management. During this reporting period further steps were taken to establish a more rigorous environmental monitoring system. This included for instance, the engagement of a third party to establish and operate a network of monitoring equipment, and selected live data streaming for air quality, groundwater, and noise for instance.

Four non-conformances were raised against the CEMP during this reporting period, which included escalation of two previous unresolved findings from the June 2018 CEMP audit (from lower level findings to non-conformances).

Project Co/ the D&C Subcontractor is now providing more evidence to close out selected areas for improvement (findings). This led to some findings being closed out during this reporting period. However, the IREA notes the ongoing absence of a regimented process to address these types of findings, and is of the opinion that by not addressing some of these findings, Project Co/ the D&C Subcontractor is potentially missing out possible opportunities to drive continual improvement. This is reflected in the escalation of previous audit findings to non-conformances and delays in updating the CEMP and subplans. At the completion of this reporting period there are still a large number of CEMP findings remaining to be closed.

4.4 Worksite Environment Management Plans

Environmental management has improved on site, seen through a decrease in findings, with 53 findings raised in the previous reporting period (17 non-conformances, 24 areas for improvement and 12

observations) compared to 25 findings raised in this reporting period (three non-conformances, seven areas for improvement and 15 observations).

The three non-conformances identified during this reporting period related to (1) air quality monitoring, (2) WEMPs held on site not consistent with activities and controls on-site, and (3) failure to report on incidents such as environmental complaints from the community.

4.5 Overall Conclusion

The findings arising from the reporting period by the IREA has not identified any immediate significant or material risks to the environment.



Photo 9 – Constructed TBM cutter head - Singapore (Source: WGTA, undated)

APPENDIX A- EPR AUDITING SCOPE 2018-2019

EPR Auditing Scope 2018-2019

Phase: D = Design; PC = Pre-construction; C = Construction; PC = Pre-operation; O = Operation

Type of review and surveillance: MP = Management Plan; DP = Design Package; CR = Construction Documentation Review; CS = Construction Surveillance

ENVIRONMENTAL PERFORMANCE REQUIREMENTS	REVIEW & SURVEILLANCE				AUDIT				PHASE	PROJECT AND AUDIT STATUS (MARCH 2018 TO FEBRUARY 2019)	RESPONSIBLE PARTY
	MP	DR	CR	CS	Jun -18	Aug -18	Nov -18	Feb -19			
ENVIRONMENTAL MANAGEMENT											
EMP1 Environmental Management Strategy	X					X			All	The IREA audited this EPR in August 2018 and it was deemed compliant	Project Co (WGTA will publish the Strategy)
EMP2 Environmental Management Plans	X		X	X	X	X			All	The IREA audited this EPR in August 2018 and it was deemed compliant	D&C / OpCo
EMP3 Environmental Compliance						X			PC, C, O	The IREA audited this EPR in August 2018 and it was deemed compliant	D&C / OpCo (WGTA will forward audit reports to Minister for Planning and will public audit reports only)
EMP4 Complaints Management System	X					X			PC, C	An area for improvement was raised in August 2018 (Aug-18_EPR_04) and remains open	D&C
AIR QUALITY											
AQP1 Tunnel Ventilation System Design		X					X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant	D&C
AQP2 Zero Portal Emissions		X					X		D, O	The IREA audited this EPR in November 2018 and it was deemed compliant	D&C / OpCo
AQP3 In Tunnel Air Quality		X					X		D, O	An observation was raised in November 2018 (Nov-18_EPR_03). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C / OpCo
AQP4 Ambient Air Quality Monitoring	X			X	X		X		C, O	An observation was raised in November 2018 (Nov-18_EPR_04). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C / OpCo
AQP5 In Tunnel Air Quality and Ventilation Structure Emissions Compliance									O	N/A - operational EPR	OpCo
AQP6 Air Quality During Construction	X		X	X	X		X		C	An area for improvement was raised in November 2018 (Nov-18_EPR_05) and remains open	D&C
AQP7 Roadside Air Quality Mitigation Strategy									O	N/A - operational EPR	WGTA (OpCo)
BUSINESS											
BP1 Damage or Impacts on Third Party Property and Infrastructure	X	X	X	X		X			D, C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
BP2 Access and Amenity for Business and Commercial Facilities		X	X	X			X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
BP3 Screening		X	X	X		X			C	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_06) – this has been closed as part of the February 2019 audit.	D&C
BP4 Impacts on Operation of Community, Private Recreation and Council Facilities and Services		X	X	X			X		All	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C / OpCo
BP5 Business Involvement Plan	X		X	X		X			PC, C	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_07) and remains open.	D&C
BP6 Utility Assets		X	X	X			X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
BP7 Gas Utilities		X	X	X			X		D, C	An area for improvement was raised in November 2018 (Nov-18_EPR_09) and remains open.	D&C
BP8 Business Disruption		X	X	X			X		D, C	An observation was raised in November 2018 (Nov-18_EPR_10). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C
BP9 Business Acquisition Process		X	X	X			X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	WGTA

ENVIRONMENTAL PERFORMANCE REQUIREMENTS	REVIEW & SURVEILLANCE				AUDIT				PHASE	PROJECT AND AUDIT STATUS (MARCH 2018 TO FEBRUARY 2019)	RESPONSIBLE PARTY
	MP	DR	CR	CS	Jun -18	Aug -18	Nov -18	Feb -19			
CULTURAL HERITAGE											
CHP1 Cultural Heritage Management Plan	X	X	X	X	X	X			D, C	The IREA audited this EPR in August 2018 and a non-conformance was raised (Aug-18_EPR_08) – this has been closed as part of the November 2018 audit.	D&C
CHP2 Design and Construction to Minimise Impacts on Heritage		X	X	X			X		D, PC, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
CHP3 Archaeological Management Plan	X		X	X			X		PC, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
CHP4 Monitoring of Heritage Sites and Places		X	X	X			X		C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
CHP5 Archival Photographic Records		X						X	PC	An area for improvement was raised in February 2019 (Feb-19_EPR_01)	D&C
CHP6 Port Phillip Monument		X						X	D, C	An area for improvement was raised in February 2019 (Feb-19_EPR_02)	D&C
CHP7 Heritage Interpretation Strategy	X	X						X	PC, C	An area for improvement was raised in February 2019 (Feb-19_EPR_03)	D&C
CHP8 Shipwrecks	X	X	X	X				X	PC, C	An observation was raised in February 2019 (Feb-19_EPR_04)	D&C
CHP9 Maribyrnong River Front (Footscray)		X	X	X				X	D	An area for improvement was raised in February 2019 (Feb-19_EPR_05)	D&C
CHP10 Bluestone Bridge		X						X	C	An observation was raised in February 2019 (Feb-19_EPR_06)	D&C
CHP11 Rail Turntables		X	X	X				X	D	An observation was raised in February 2019 (Feb-19_EPR_07)	D&C
CHP12 Flinders Street								X	C	An observation was raised in February 2019 (Feb-19_EPR_08)	D&C
CONTAMINATED SOIL & SPOIL MANAGEMENT											
CSP1 Contaminated Soil Requirements	X	X	X	X	X		X		C	An observation was raised in November 2018 (Nov-18_EPR_15). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C
CSP2 Contaminated Soil and Spoil Management	X	X	X	X		X			PC, C	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_06) and remains open.	D&C
CSP3 Acid Sulphate Soil	X		X	X	X		X		PC, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
CSP4 Odour Management	X		X	X			X		C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
ECOLOGY											
EP1 Minimise Vegetation Removal and Disturbance		X	X	X		X			D, PC, C	The IREA audited this EPR in August 2018 and an observation was raised (Aug-18_EPR_10). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C
EP2 Vegetation Protection Measures	X	X	X	X		X			PC, C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
EP3 Reinstatement		X	X	X				X	C	An observation was raised in February 2019 (Feb-19_EPR_09)	D&C
EP4 Fauna Management Measures	X	X	X	X				X	PC, C	An area for improvement was raised in February 2019 (Feb-19_EPR_10)	D&C
EP5 Works on Waterways		X	X	X			X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
EP6 Landscaping Plan		X					X		D, PC, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
EP7 Vegetation Offsets	X		X	X				X	C	An observation was raised in February 2019 (Feb-19_EPR_11)	WGTA
GREENHOUSE GAS EMISSIONS											
GGP1 Greenhouse Gas Emissions		X	X	X			X		D	An observation was raised in November 2018 (Nov-18_EPR_20). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C
GGP2 Emissions Reduction		X	X	X		X			D, C	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_12) and remains open.	D&C
GROUND MOVEMENT											
GMP1 Geotechnical Model and Assessment		X	X	X		X			PC, C	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_13) and remains open.	D&C

ENVIRONMENTAL PERFORMANCE REQUIREMENTS	REVIEW & SURVEILLANCE				AUDIT				PHASE	PROJECT AND AUDIT STATUS (MARCH 2018 TO FEBRUARY 2019)	RESPONSIBLE PARTY
	MP	DR	CR	CS	Jun -18	Aug -18	Nov -18	Feb -19			
GMP2 Tunnel and Portal Drainage		X	X	X			X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
GMP3 Condition Surveys and Determination of Settlement Criteria for Property and Infrastructure		X	X	X	X	X			PC, C, O	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_14) and remains open.	D&C / OpCo
GMP4 Settlement Criteria for Utilities		X	X	X		X			PC	The IREA audited this EPR in August 2018 and an observation was raised (Aug-18_EPR_15). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C
GMP5 Ground Movement Monitoring	X	X	X	X		X			PC, C, O	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_16) and remains open.	D&C / OpCo
GMP6 Mitigation of Ground Movement Impact	X	X	X	X				X	C, O	An observation was raised in February 2019 (Feb-19_EPR_12).	D&C / OpCo
GROUNDWATER											
GWP1 Groundwater Management Measures	X	X	X	X	X	X			PC, C, O	The IREA audited this EPR in August 2018 and an observation was raised (Aug-18_EPR_17) and remains open.	D&C / OpCo
GWP2 Protection of Groundwater Quality	X		X	X			X		C	An area for improvement was raised in November 2018 (Nov-18_EPR_22) and remains open.	D&C
GWP3 Tunnel Drainage Design and Construction Methods		X	X	X			X		D, PC, C	An area for improvement was raised in November 2018 (Nov-18_EPR_23) and remains open.	D&C
GWP4 Predictive Groundwater Model		X	X	X		X			PC, C	The IREA audited this EPR in August 2018 and an observation was raised (Aug-18_EPR_18) – this has been closed as part of the November 2018 audit.	D&C
GWP5 Groundwater Monitoring			X	X	X	X			PC, C, O	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_19) and remains open	D&C / OpCo
GWP6 Interception of Groundwater	X	X	X	X				X	C	An area for improvement was raised in February 2019 (Feb-19_EPR_13)	D&C
GWP7 Impacts on Groundwater Users		X	X	X				X	PC, C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
LAND USE											
LPP1 Minimise Design Footprint		X				X			D	The IREA audited this EPR in August 2018 and an observation was raised (Aug-18_EPR_20). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C
LPP2 Recreation Facilities		X	X	X			X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
LPP3 Future Development Opportunities		X				X			D	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
LPP4 Pedestrian and Bicycle Connections		X					X		D	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
LPP5 Public Land		X	X	X			X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
LANDSCAPE AND VISUAL											
LVP1 Urban Design Approach		X	X	X				X	D, C	An observation was raised in February 2019 (Feb-19_EPR_15)	D&C
LVP2 Reinstatement Following Temporary Works		X						X	D, C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
LVP3 Light Spillage	X	X	X	X		X			D, C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
LVP4 Vegetation Screening		X						X	C	An observation was raised in February 2019 (Feb-19_EPR_17)	D&C
LVP5 Design Review								X	D	The IREA audited this EPR in February 2019 and it was deemed compliant.	WGTA (on receipt of relevant design documentation in accordance with the design review process)
NOISE AND VIBRATION											
NVP1 Traffic Noise Limits		X	X	X				X	D, C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C

ENVIRONMENTAL PERFORMANCE REQUIREMENTS	REVIEW & SURVEILLANCE				AUDIT				PHASE	PROJECT AND AUDIT STATUS (MARCH 2018 TO FEBRUARY 2019)	RESPONSIBLE PARTY
	MP	DR	CR	CS	Jun-18	Aug-18	Nov-18	Feb-19			
NVP2 Traffic Noise Reduction of Open Space		X	X	X				X	D, C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
NVP3 Maintenance of Noise Mitigation Measures									O	N/A - operational EPR	OpCo (for the maintenance of noise mitigation measures in accordance with sections 18.4 and 18.5 of Part B, otherwise WGTA)
NVP4 Traffic Noise Reduction of Millers Road North of West Gate Freeway									PO	N/A - operational EPR	OpCo
NVP5 Construction of Noise Barriers		X	X	X		X			C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
NVP6 Traffic Noise Monitoring		X							PO, O	Based on Project status this is currently not relevant	OpCo (for the O&M phase in accordance with sections 18.4 and 18.5 of Part B, otherwise WGTA)
NVP7 Construction Noise, Vibration Management, and Monitoring	X		X	X	X	X			PC, C	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_24) and remains open	D&C
NVP8 Construction Noise Targets			X	X	X	X			C	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_25) and remains open	D&C
NVP9 Blasting Trials and Assessment								X	C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
NVP10 Construction Vibration Targets (Amenity)			X	X	X			X	C	Partially audited in June. Audited again in February 2019 and a non-conformance was raised (Feb-19_EPR_22)	D&C
NVP11 Construction Vibration Targets (Structures)			X	X				X	C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
NVP12 Ground-borne (Internal) Noise Targets								X	C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
NVP13 Utility Asset Protection		X	X	X				X	PC, C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
NVP14 Tunnel Ventilation System Noise Design							X		D, O	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C / OpCo
NVP15 Tunnel Ventilation System Noise Monitoring									O	N/A - operational EPR	OpCo
NVP16 Amenity Blast Vibration								X	C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
NVP17 Amenity Blast Overpressure Implement								X	C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
NVP18 Construction Noise Management	X		X	X	X	X			C	The IREA audited this EPR in August 2018 and an area for improvement was raised (Aug-18_EPR_26) and remains open.	D&C
NVP19 Traffic Noise of Hyde Street, South of Francis Street								X	C	The IREA audited this EPR in February 2019 and it was deemed compliant.	WGTA
SOCIAL											
SP 1 Urban Design Principles and Vision		X					X		D	An observation was raised in November 2018 (Nov-18_EPR_28). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C
SP2 Communications and Community Engagement Plan (CCEP)	X		X	X		X			PC, C, O	The IREA audited this EPR in August 2018 and an observation was raised (Aug-18_EPR_27). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C / OpCo
SP3 Community Liaison Group Participation						X			C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C / WGTA

ENVIRONMENTAL PERFORMANCE REQUIREMENTS	REVIEW & SURVEILLANCE				AUDIT				PHASE	PROJECT AND AUDIT STATUS (MARCH 2018 TO FEBRUARY 2019)	RESPONSIBLE PARTY
	MP	DR	CR	CS	Jun -18	Aug -18	Nov -18	Feb -19			
SP4 Social and Local Procurement	X					X			PC, C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
SP5 Community Involvement and Participation Plan (CIPP)	X							X	PC, C	An area for improvement was raised in February 2019 (Feb-19_EPR_15)	WGTA
SURFACE WATER											
SWP1 Design of Discharges and Runoff		X						X	D	An area for improvement was raised in February 2019 (Feb-19_EPR_30)	D&C
SWP2 Water Sensitive Road Design		X						X	D	The IREA audited this EPR in February 2019 and it was' deemed compliant.	D&C
SWP3 Tunnel Waste Water		X	X	X				X	PC	The IREA audited this EPR in February 2019 and it was' deemed compliant.	D&C
SWP4 Water Quality Monitoring	X		X	X	X	X			PC	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
SWP5 Spill Containment Design		X						X	D	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
SWP6 Management of Chemicals, Fuels, and Hazardous Materials			X	X				X	C	An observation was raised in February 2019 (Feb-19_EPR_34). As agreed on 1 February 2019 observations are to be closed once reported on initially.	D&C
SWP7 Surface Water Management During Construction	X		X	X	X	X			C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
SWP8 Use of non-potable water		X	X	X				X	C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
SWP9 Bank Stability		X	X	X			X		C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
SWP10 Waterway Modifications		X					X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
SWP11 Flood Levels, Flows and Velocities		X	X	X		X			D, PC, C	The IREA audited this EPR in August 2018 and a non-conformance was raised (Aug-18_EPR_32) – this has been closed as part of the February 2019 audit.	D&C
SWP12 Floodplain Storage Capacity		X	X	X		X			D	The IREA audited this EPR in August 2018 and a non-conformance was raised (Aug-18_EPR_33) – this has been closed as part of the February 2019 audit.	D&C
SWP13 Tunnel Portal Flood Risk		X					X		D, O	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C / OpCo
SWP14 Maintenance of Melbourne water and Other Drainage Assets		X	X	X				X	D	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
SWP15 North Yarra Main Sewer		X						X	D	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
TRANSPORT											
TP1 Optimise Design Performance		X					X		D	An area for improvement was raised in November 2018 (Nov-18_EPR_32) – this has been closed as part of the February 2019 audit.	D&C
TP2 Traffic Monitoring			X	X		X			PC, C, O	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C / OpCo
TP3 Traffic Management Plan	X		X	X		X			PC, C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
TP4 Public Transport		X	X	X			X		PC, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
TP5 Rail operations		X						X	D, C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
TP6 Design Standards		X					X		D, C	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C
TP7 Traffic Management Liaison Group			X	X		X			PC, C	The IREA audited this EPR in August 2018 and it was deemed compliant.	D&C
TP8 River Navigation		X	X	X				X	C	The IREA audited this EPR in February 2019 and it was deemed compliant.	D&C
TP9 Melbourne Metro Rail Authority Interface								X	C	An observation was raised in February 2019 (Feb-19_EPR_40)	D&C
WASTE MANAGEMENT											
WMP1 Waste Management	X	X	X	X			X		D, C, O	The IREA audited this EPR in November 2018 and it was deemed compliant.	D&C / OpCo

APPENDIX B- EPR AUDITING SCOPE 2019-2020

EPR Auditing Scope 2019-2020

Phase: D = Design; PC = Pre-construction; C = Construction; PC = Pre-operation; O = Operation

Type of review and surveillance: MP = Management Plan; DP = Design Package; CR = Construction Documentation Review; CS = Construction Surveillance

ENVIRONMENTAL PERFORMANCE REQUIREMENTS	REVIEW & SURVEILLANCE				AUDIT				PHASE	RESPONSIBLE PARTY
	MP	DR	CR	CS	May -19	Aug -19	Nov -19	Feb -20		
EMP1 Environmental Management Strategy	X								All	Project Co (WGTA will publish the Strategy)
EMP2 Environmental Management Plans	X		X	X	X				All	D&C / OpCo
EMP3 Environmental Compliance								X	PC, C, O	D&C / OpCo (WGTA will forward audit reports to Minister for Planning and will public audit reports only)
EMP4 Complaints Management System	X				X				PC, C	D&C
AQP1 Tunnel Ventilation System Design		X				X			D, C	D&C
AQP2 Zero Portal Emissions		X				X			D, O	D&C / OpCo
AQP3 In Tunnel Air Quality		X				X			D, O	D&C / OpCo
AQP4 Ambient Air Quality Monitoring	X			X	X				C, O	D&C / OpCo
AQP5 In Tunnel Air Quality and Ventilation Structure Emissions Compliance									O	OpCo
AQP6 Air Quality During Construction	X		X	X	X				C	D&C
AQP7 Roadside Air Quality Mitigation Strategy									O	WGTA (OpCo)
BP1 Damage or Impacts on Third Party Property and Infrastructure	X	X	X	X				X	D, C	D&C
BP2 Access and Amenity for Business and Commercial Facilities		X	X	X				X	D, C	D&C
BP3 Screening		X	X	X				X	C	D&C
BP4 Impacts on Operation of Community, Private Recreation and Council Facilities and Services		X	X	X				X	All	D&C / OpCo
BP5 Business Involvement Plan	X		X	X		X			PC, C	D&C
BP6 Utility Assets		X	X	X				X	D, C	D&C
BP7 Gas Utilities		X	X	X		X			D, C	D&C
BP8 Business Disruption		X	X	X				X	D, C	D&C
BP9 Business Acquisition Process		X	X	X				X	D, C	WGTA
CHP1 Cultural Heritage Management Plan	X	X	X	X	X				D, C	D&C
CHP2 Design and Construction to Minimise Impacts on Heritage		X	X	X			X		D, PC, C	D&C
CHP3 Archaeological Management Plan	X		X	X	X				PC, C	D&C
CHP4 Monitoring of Heritage Sites and Places		X	X	X			X		C	D&C
CHP5 Archival Photographic Records		X				X			PC	D&C
CHP6 Port Phillip Monument		X				X			D, C	D&C
CHP7 Heritage Interpretation Strategy	X	X				X			PC, C	D&C
CHP8 Shipwrecks	X	X	X	X			X		PC, C	D&C
CHP9 Maribyrnong River Front (Footscray)		X	X	X		X			D	D&C
CHP10 Bluestone Bridge		X					X		C	D&C
CHP11 Rail Turntables		X	X	X			X		D	D&C
CHP12 Flinders Street								X	C	D&C
CSP1 Contaminated Soil Requirements	X	X	X	X	X				C	D&C
CSP2 Contaminated Soil and Spoil Management	X	X	X	X	X				PC, C	D&C
CSP3 Acid Sulphate Soil	X		X	X			X		PC, C	D&C
CSP4 Odour Management	X		X	X		X			C	D&C
EP1 Minimise Vegetation Removal and Disturbance		X	X	X	X				D, PC, C	D&C
EP2 Vegetation Protection Measures	X	X	X	X	X				PC, C	D&C
EP3 Reinstatement		X	X	X				X	C	D&C
EP4 Fauna Management Measures	X	X	X	X		X			PC, C	D&C
EP5 Works on Waterways		X	X	X	X				D, C	D&C
EP6 Landscaping Plan		X					X		D, PC, C	D&C

ENVIRONMENTAL PERFORMANCE REQUIREMENTS	REVIEW & SURVEILLANCE				AUDIT				PHASE	RESPONSIBLE PARTY
	MP	DR	CR	CS	May -19	Aug -19	Nov -19	Feb -20		
EP7 Vegetation Offsets	X		X	X				X	C	WGTA
GGP1 Greenhouse Gas Emissions		X	X	X		X			D	D&C
GGP2 Emissions Reduction		X	X	X		X			D, C	D&C
GMP1 Geotechnical Model and Assessment		X	X	X	X				PC, C	D&C
GMP2 Tunnel and Portal Drainage		X	X	X				X	D, C	D&C
GMP3 Condition Surveys and Determination of Settlement Criteria for Property and Infrastructure		X	X	X	X				PC, C, O	D&C / OpCo
GMP4 Settlement Criteria for Utilities		X	X	X		X			PC	D&C
GMP5 Ground Movement Monitoring	X	X	X	X	X				PC, C, O	D&C / OpCo
GMP6 Mitigation of Ground Movement Impact	X	X	X	X			X		C, O	D&C / OpCo
GWP1 Groundwater Management Measures	X	X	X	X	X				PC, C, O	D&C / OpCo
GWP2 Protection of Groundwater Quality	X		X	X	X				C	D&C
GWP3 Tunnel Drainage Design and Construction Methods		X	X	X	X				D, PC, C	D&C
GWP4 Predictive Groundwater Model		X	X	X	X				PC, C	D&C
GWP5 Groundwater Monitoring			X	X	X				PC, C, O	D&C / OpCo
GWP6 Interception of Groundwater	X	X	X	X	X				C	D&C
GWP7 Impacts on Groundwater Users		X	X	X				X	PC, C	D&C
LPP1 Minimise Design Footprint		X				X			D	D&C
LPP2 Recreation Facilities		X	X	X				X	D, C	D&C
LPP3 Future Development Opportunities		X					X		D	D&C
LPP4 Pedestrian and Bicycle Connections		X					X		D	D&C
LPP5 Public Land		X	X	X				X	D, C	D&C
LVP1 Urban Design Approach		X	X	X				X	D, C	D&C
LVP2 Reinstatement Following Temporary Works		X					X		D, C	D&C
LVP3 Light Spillage	X	X	X	X			X		D, C	D&C
LVP4 Vegetation Screening		X						X	C	D&C
LVP5 Design Review								X	D	WGTA (on receipt of relevant design documentation in accordance with the design review process)
NVP1 Traffic Noise Limits		X	X	X		X			D, C	D&C
NVP2 Traffic Noise Reduction of Open Space		X	X	X		X			D, C	D&C
NVP3 Maintenance of Noise Mitigation Measures									O	OpCo (for the maintenance of noise mitigation measures in accordance with sections 18.4 and 18.5 of Part B, otherwise WGTA)
NVP4 Traffic Noise Reduction of Millers Road North of West Gate Freeway									PO	OpCo
NVP5 Construction of Noise Barriers		X	X	X		X			C	D&C
NVP6 Traffic Noise Monitoring		X							PO, O	OpCo (for the O&M phase in accordance with sections 18.4 and 18.5 of Part B, otherwise WGTA)
NVP7 Construction Noise, Vibration Management, and Monitoring	X		X	X	X				PC, C	D&C
NVP8 Construction Noise Targets			X	X	X				C	D&C
NVP9 Blasting Trials and Assessment						X			C	D&C
NVP10 Construction Vibration Targets (Amenity)			X	X		X			C	D&C
NVP11 Construction Vibration Targets (Structures)			X	X		X			C	D&C
NVP12 Ground-borne (Internal) Noise Targets						X			C	D&C
NVP13 Utility Asset Protection		X	X	X		X			PC, C	D&C
NVP14 Tunnel Ventilation System Noise Design						X			D, O	D&C / OpCo
NVP15 Tunnel Ventilation System Noise Monitoring									O	OpCo
NVP16 Amenity Blast Vibration						X			C	D&C

ENVIRONMENTAL PERFORMANCE REQUIREMENTS	REVIEW & SURVEILLANCE				AUDIT				PHASE	RESPONSIBLE PARTY
	MP	DR	CR	CS	May -19	Aug -19	Nov -19	Feb -20		
NVP17 Amenity Blast Overpressure Implement						X			C	D&C
NVP18 Construction Noise Management	X		X	X	X				C	D&C
NVP19 Traffic Noise of Hyde Street, South of Francis Street							X		C	WGTA
SP 1 Urban Design Principles and Vision		X					X		D	D&C
SP2 Communications and Community Engagement Plan (CCEP)	X		X	X	X				PC, C, O	D&C / OpCo
SP3 Community Liaison Group Participation					X				C	D&C / WGTA
SP4 Social and Local Procurement	X							X	PC, C	D&C
SP5 Community Involvement and Participation Plan (CIPP)	X						X		PC, C	WGTA
SWP1 Design of Discharges and Runoff		X				X			D	D&C
SWP2 Water Sensitive Road Design		X					X		D	D&C
SWP3 Tunnel Waste Water		X	X	X				X	PC	D&C
SWP4 Water Quality Monitoring	X		X	X					PC	D&C
SWP5 Spill Containment Design		X					X		D	D&C
SWP6 Management of Chemicals, Fuels, and Hazardous Materials			X	X			X		C	D&C
SWP7 Surface Water Management During Construction	X		X	X	X				C	D&C
SWP8 Use of non-potable water		X	X	X				X	C	D&C
SWP9 Bank Stability		X	X	X	X				C	D&C
SWP10 Waterway Modifications		X			X				D, C	D&C
SWP11 Flood Levels, Flows and Velocities		X	X	X		X			D, PC, C	D&C
SWP12 Floodplain Storage Capacity		X	X	X		X			D	D&C
SWP13 Tunnel Portal Flood Risk		X					X		D, O	D&C / OpCo
SWP14 Maintenance of Melbourne water and Other Drainage Assets		X	X	X			X		D	D&C
SWP15 North Yarra Main Sewer		X							D	D&C
TP1 Optimise Design Performance		X					X		D	D&C
TP2 Traffic Monitoring			X	X				X	PC, C, O	D&C / OpCo
TP3 Traffic Management Plan	X		X	X			X		PC, C	D&C
TP4 Public Transport		X	X	X				X	PC, C	D&C
TP5 Rail operations		X						X	D, C	D&C
TP6 Design Standards		X						X	D, C	D&C
TP7 Traffic Management Liaison Group			X	X				X	PC, C	D&C
TP8 River Navigation		X	X	X			X		C	D&C
TP9 Melbourne Metro Rail Authority Interface								X	C	D&C
WMP1 Waste Management	X	X	X	X				X	D, C, O	D&C / OpCo

APPENDIX C – IREA SPECIALIST TEAM

The formal audits described in this Minister's Report have been undertaken by the lead IREA Environment Auditor, Elizabeth Hurst and Assistant Environment Auditors, Camilla Freestone and Sam Withers. The Lead Auditor was supported by a team of specialists, including (but not limited to):

- IREA Construction Lead, Mike Cragg
- IREA Design Lead, Damien Kennedy
- IREA Technical Lead for Stakeholder and Community Engagement, Esther Diffey
- IREA Technical Leads for Groundwater, Gary Hirst and Sarah Sawyer
- IREA Technical Lead for Soil and Spoil, Dr Dave Adams
- IREA Technical Lead for Noise and Vibration, Mike Dowsett
- IREA Technical Lead for Ground Movement, Stuart Oakey
- IREA Stormwater and Hydrology Lead Design Reviewer, Paul Atkinson
- IREA Technical Lead for Sustainability, Bernadette Fitzgerald
- IREA Urban Design Reviewer, Tanja Redl.

This report has been reviewed by the IREA Representative, Simon O'Hana.

APPENDIX D – AUDIT LIMITATIONS

This report was prepared in accordance with generally accepted consulting practice for audit services. The environmental audit requires the IREA to apply a process of “general overview and reasonable checking” of the Project documentation and Design and Construction activities (as required under the contract between the IREA and Project Co / WGTA). The audit program is risk-based, targeting those Design and Construction activities with a potential for risk to the environment or to environmental management arrangements. Accordingly, it is possible that not all environmental issues will be examined during each audit. However, the IREA maintains a structured program of audits designed to cover all aspects of the Project and to enable the formation of an opinion on whether there is conformance with the requirements of the Strategy, CEMP (and subordinate documentation), WEMPs, and the EPRs (as applicable).