



EPA submission on the West Gate Tunnel Project
environment effects statement
(under the *Environment Effects Act 1978*)

10 July 2017

Executive Summary

Introduction

This submission is made on behalf of the Environment Protection Authority Victoria (**EPA**) to the joint Inquiry and Advisory Committee (**IAC**) under Section 9 (1) of the *Environment Effects Act 1978* (**EE Act**). This submission relates to the Environment Effects Statement (**EES**) for the West Gate Tunnel Project (**WGTP**) ('the **Project**').

This submission is made to assist the IAC in understanding the EPA's:

- role and future state following the Independent Inquiry into EPA;
- involvement with the Project;
- key recommendations to reduce the Project's impacts on the environment and public health;
- approach to the Works Approval application (**WAA**); and
- information on existing road tunnels in Victoria.

The role of EPA

EPA is Victoria's environmental regulator. It exists to protect the environment and people by preventing, and reducing harm from, pollution and waste. EPA does this in a number of ways, including by holding polluters to account; by helping people and businesses to understand, own and address their harmful impacts on the environment; and through working with others.

The *Environment Protection Act 1970* (**EP Act**) establishes the EPA, mandates and sets down guiding principles for the EPA's powers, duties and functions, and provides several instruments which are used to regulate wastes, pollution, and environmental risks.

EPA is currently undergoing significant change following the [Independent Inquiry into EPA](#). The report that resulted from this inquiry contained 48 recommendations for a strong environmental regulator underpinned by a philosophy of prevention and continual improvement.

Three early commitments made by the Government have already been implemented at EPA:

1. The establishment of an interim board to guide EPA's delivery of the Government's vision for EPA
2. The appointment of Victoria's first Chief Environmental Scientist to strengthen EPA's focus on science and protecting environmental and human health, and
3. Improving and enhancing Victoria's environmental public health capability.

These three key changes to EPA influence this submission through applying a preventative approach to minimising harm to the environment and health.

EPA's role in the West Gate Tunnel Project

EPA provided early technical and regulatory advice while the Project was in its initial design phase, and has continued to do so throughout the EES process, mainly in its capacity as a Technical Reference Group member. EPA notes the opportunity to add value to the Project through being involved early in the planning process.

EPA's review of the West Gate Tunnel Project

EPA has reviewed the EES reports that are relevant to EPA's legislative framework and its expanded capacity in environmental public health. EPA has identified areas for consideration by the IAC where

there is a need for the Project to achieve compliance with environmental legislation, minimise potential impacts on the environment and/or health, or respond to the changing expectations of the Victorian community.

These key recommendations stem from matters considered to be outstanding by EPA either because WDA has only partly incorporated EPA's advice or because the detail available in the current phase of the Project development is insufficient to enable a proper assessment.

EPA makes recommendations to minimise harm to the environment and health due to impacts from air quality, noise, surface water, ecology, contaminated land and groundwater.

EPA assessment of the Works Approval application

EPA is undertaking an assessment of a WAA for the road tunnel ventilation system for the Project which, *inter alia*, specifically considers:

- air emissions;
- greenhouse gas emissions, and
- noise emissions;

from the ventilation systems.

EPA will have regard to all relevant public submissions made to the IAC under Section 9 (1) of the EE Act, will attend the public hearings, and will have regard for the Minister for Planning's assessment of the EES before finalising its assessment decision of the Works Approval under the EP Act.

Contents

EXECUTIVE SUMMARY	2
ABBREVIATIONS	5
1. INTRODUCTION	6
2. THE ROLE OF EPA	6
3. EPA’S ROLE IN THE WEST GATE TUNNEL PROJECT.....	7
A. EPA’S APPROACH TO THE EES	8
B. EPA WORKS APPROVAL APPLICATION FOR THE VENTILATION SYSTEMS	9
4. EPA’S REVIEW OF THE WEST GATE TUNNEL PROJECT EES	10
A. AIR QUALITY	10
B. NOISE AND VIBRATION	13
C. SURFACE WATER	14
D. ECOLOGY	16
E. CONTAMINATED LAND AND SOILS (INCLUDING SOLID WASTE)	16
F. GROUNDWATER	17
5. EPA ASSESSMENT OF THE WORKS APPROVAL APPLICATION	20
A. AIR EMISSIONS	20
B. ENERGY AND GREENHOUSE GAS EMISSIONS	21
C. NOISE EMISSIONS.....	21
D. ENVIRONMENTAL PUBLIC HEALTH RISK ASSESSMENT	22
6. EXISTING ROAD TUNNELS IN VICTORIA.....	22
A. WORKS APPROVALS	22
B. OPERATIONAL LICENCES.....	22
C. MONITORING RESULTS	23
7. ENVIRONMENTAL MANAGEMENT FRAMEWORK	23
8. NEXT STEPS	24
REFERENCES	25

Abbreviations

AAQMP	Additional Air Quality Monitoring Program
AAQMS	Additional Air Quality Monitoring Stations
AQM	Air Quality Management
CEMP	Construction and Environment Management Plan
CNVMP	Construction Noise and Vibration Plan
DHHS	Department of Health and Human Services
EES	Environment Effects Statement
EE Act	<i>Environment Effects Act 1978</i>
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EMS	Environmental Management System
EP Act	<i>Environment Protection Act 1970</i>
EPA	Environment Protection Authority
EPR	Environmental Performance Requirement
Greenhouse PEM	<i>Protocol for Environmental Management (Greenhouse Gas Emissions and Energy Efficiency in Industry)</i>
IAC	Inquiry and Advisory Committee
MTPF Act	<i>Major Transport Projects Facilitation Act 2009</i>
NEPM	National Environment Protection Measure
NO ₂	Nitrogen Dioxide
NSW	New South Wales
OEMP	Operations Environmental Management Plan
PEM	Protocol for Environmental Management
PFAS	polyfluoroalkyl substances
ppm	parts per million
PM ¹	particulate matter
PPP	Public Private Partnership
SEPP	State Environment Protection Policy
SEPP AAQ	State Environment Protection Policy (Ambient Air Quality)
SEPP AQM	State Environment Protection Policy (Air Quality Management)
SEPP GoV	State Environment Protection Policy (Groundwaters of Victoria)
SEPP N1	State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1
SEPP WoV	State Environment Protection Policy (Waters of Victoria)
TRG	Technical Reference Group
UFP ²	Ultrafine Particles
VCAT	Victorian Civil and Administration Tribunal
WAA	Works Approval Application
WDA	Western Distributor Authority
WEMP	Worksite Environmental Management
WHO	The World Health Organization
WGTP	West Gate Tunnel Project

¹ Particulate Matter (also particles) - Generally refers to all airborne pollutants, which are not gases. Particulate matter can include droplets of liquids or solid matter.

² Ultrafine Particles - particles with diameters smaller than 0.1 µm.

1. Introduction

This submission is made on behalf of the Environment Protection Authority Victoria (**EPA**) to the joint Inquiry and Advisory Committee (**IAC**) under Section 9 (1) of the *Environment Effects Act 1978* (**EE Act**). This submission relates to the Environment Effects Statement (**EES**) for the West Gate Tunnel Project (**WGTP**) ('the **Project**').

This submission is made to assist the IAC in understanding the EPA's:

- role and future state following the Independent Inquiry into EPA;
- involvement with the Project;
- key recommendations to reduce the Project's impacts on the environment and public health;
- approach to the Works Approval application (**WAA**); and
- information on existing road tunnels in Victoria.

The content of this submission is based upon the above key factors and focuses on matters that EPA has identified as required, recommended or supported to manage and mitigate risks that are not fully addressed. The matters considered by EPA to be outstanding exist either because WDA has only partly incorporated EPA's advice or because the detail available in the current phase of the Project development is insufficient to enable a complete assessment.

In this submission, EPA has identified ways the Project can achieve compliance, minimise potential impacts on the environment and health, and/or respond to the changing expectations of the Victorian community. These points are highlighted in ***bold italics***. The following terms are used across this submission and are defined below with specific meaning and intention:

- '***EPA requires***' is used to highlight where Victorian policy and regulation apply to the Project and where the Project will be required to demonstrate compliance at a future point in time.
- '***EPA recommends***' is used to identify actions to ensure that potential impacts on the environment and/or health are minimised, and/or reflect emerging policy considerations and/or the changing expectations of the Victorian community.
- '***EPA supports***' is used to highlight commitments made in the EES that EPA considers necessary to achieve compliance and/or demonstrate best practice.

2. The role of EPA

EPA is Victoria's environmental regulator. It exists to protect the environment and people by preventing, and reducing harm from, pollution and waste. EPA does this in a number of ways, including by holding polluters to account; by helping people and businesses to understand, own and address their harmful impacts on the environment; and through working with others.

The *Environment Protection Act 1970* (**EP Act**) establishes the EPA, mandates and sets down guiding principles for the EPA's powers, duties and functions, and provides several instruments which are used to regulate wastes, pollution, and environmental risks.

EPA is currently undergoing significant change following the [Independent Inquiry into EPA](#). The report that resulted from this inquiry contained 48 recommendations for a strong environmental regulator underpinned by a philosophy of prevention and continual improvement.

In early 2017, the Government confirmed its support for all 48 recommendations and provided \$162.5m funding for a five-year implementation program. Three early commitments made by the Government have already been implemented at EPA:

1. The establishment of an interim board to guide EPA's delivery of the Government's vision for EPA
2. The appointment of Victoria's first Chief Environmental Scientist to strengthen EPA's focus on science and protecting environmental and human health, and
3. Improving and enhancing Victoria's environmental public health capability.

These three changes to EPA influence this submission in the following ways:

- 1) The interim board recently approved EPA's Organisational Strategy. This strategy describes EPA's vision, purpose and role and sets the scene for a prevention-based environmental and health regulator. The points highlighted in this submission for recommendation are in line with this prevention-based philosophy.

Vision:

A healthy environment that supports a liveable and prosperous Victoria, now and always.

Purpose:

We protect the environment and people by preventing and reducing harm from pollution and waste.

Role:

We are a world-class regulator of pollution and waste.

- 2) EPA's appointment of Dr Andrea Hinwood as Victoria's first Chief Environmental Scientist will ensure that Victorians are provided with robust, science-based advice and information about their environment. This appointment reflects EPA's commitment to being a science-based regulator focused on protecting environmental and human health.

Dr Hinwood is an accomplished environmental scientist with specialist expertise in environmental exposures and human health. As Victoria's inaugural Chief Environmental Scientist, she is well-positioned to play a key role in responding to emerging and critical issues.

There are some emerging issues, such as evolving science for some contaminants and air quality impacts, that are relevant to the Project, which Dr Hinwood has applied her expertise to and informed recommendations made in this submission.

- 3) Protecting public health has been a critical aspect of EPA's role since it was established in 1971. As of 14 December 2016, EPA is responsible for delivering environmental public health functions as they relate to human health impacts from past, present and potential future waste and pollution. To enable this delivery, some environmental health functions associated with the assessment of public health risks for pollution and waste were transferred from the Department of Human Health Services (DHHS) to EPA. In addition, EPA is expanding its capacity (in numbers and expertise).

In relation to the West Gate Tunnel Project, EPA's human health risk advisors reviewed and provided feedback on the Project's draft Human Health Impact Assessment. Consistent with the changes above, EPA's environmental public health function has informed recommendations made in this submission.

3. EPA's role in the West Gate Tunnel Project

EPA has had early involvement with the Project. Starting in mid-2015, EPA participated in Transurban's working group while the Project was in its initial design. EPA provided technical advice directly to Transurban and its consultants. This advice included recommendations to establish an Additional Air Quality Monitoring Program (**AAQMP**) as soon as possible, to augment the EPA Footscray monitoring data, and to make the monitoring results publicly available.

Upon the Project requiring an EES, EPA became a member of the Technical Reference Group (**TRG**) for the WGTP EES. In this capacity, EPA has had the opportunity to review the EES studies in their draft form and make recommendations to Western Distributor Authority (**WDA**). This participation has enabled EPA to review the Project (initially as a Reference Design and then again as the Tender Design) and the risks and impacts identified in the EES. EPA has, during this review process, provided advice as it relates to EP Act, relevant subordinate legislation, policies and guidance.

EPA has also provided ongoing advice to the WGTP project team throughout the development of project phases from initial design, concept design, reference design, and tender design – which is the current design reflected in the EES. This involvement with the WGTP project team has enabled EPA to identify and advise on key technical and regulatory matters.

EPA understands that this early technical and regulatory advice has helped inform considerations during the development of the Project design. Specifically, EPA understands that its involvement has contributed to improving the methodology, data inputs, risk assessment approach, and mitigation and management requirements expressed in the current version of the EES. Further, EPA's ongoing advice to augment the available air quality data sets led to WDA's Additional Air Quality Monitoring Stations being established in late 2016.

EPA notes the opportunity to add value to the Project through being involved early in the planning process. Notwithstanding this opportunity, there are instances where the WDA has only partly incorporated EPA's advice. The matters that EPA considers to be outstanding are identified in Section 4 of this submission.

Where EPA makes recommendations in Section 4 regarding monitoring, reporting and mitigating impacts, EPA can offer advice on mitigation measures. EPA will continue to work with WDA in EPA's capacity as an influential authority and science based regulator.

a. EPA's approach to the EES

The EES presents a tender design proposal for a road tunnel project in the inner-west of Melbourne. While the arrangement of a Public Private Partnership (PPP) delivery model is common for large infrastructure projects, it is new to introduce the preferred tender design into the EES. The Project proposal presented in the EES comprises:

- a road tunnel project tender design, presented as three project components (West Gate Freeway widening; the Tunnel; and Port, City Link and city connections)
- an environmental management framework, including environmental performance requirements

The tender design Project, and performance requirements, provides a refined basis for characterising risks and assessing impacts on the environment. In accordance with its legislative framework and new health function, EPA reviewed the following sections of the EES:

- *Technical report B: Contaminated soil and spoil management*
- *Technical report C: Groundwater*
- *Technical report E: Surface water*
- *Technical report F: Ecology*
- *Technical report G: Air quality*
- *Technical report H: Noise and vibration*
- *Technical report I: Vibration and regenerated noise (tunnel)*
- *Technical report J: Human health*
- *Technical report Q: Greenhouse gas*
- Relevant sections in the EES main report

The assessment of impacts, in many instances, reflects the Project's phase of design. Key aspects of the Project, including construction methodology, are still being developed. In this context, EPA's comments on the WGTP are directed at supporting the IAC in two key ways:

1. indicating the critical areas where EPA believes that further information or clarification is needed to inform the development of the IAC Report; and
2. identifying where verification and demonstration of optimal environmental performance will be required once a detailed design, construction methodology and an environmental management framework are determined.

b. EPA Works Approval application for the ventilation systems

Under the *Environment Protection (Scheduled Premises and Exemptions) Regulations 2007*, the proposed 'road tunnel ventilation systems' are scheduled premises (L03). Accordingly, a Works Approval under section 19B of the EP Act is required for its installation as a component of the Project.

EPA is undertaking an assessment of a Works Approval application (WAA) for the road tunnel ventilation system, which specifically considers:

- air emissions,
- greenhouse gas emissions, and
- noise emissions

from the ventilation systems.

EPA will require the WAA complies with relevant Victorian State Environment Protection Policies (**SEPPs**), regulations and guidelines.

For the benefit of the IAC, this submission includes detail regarding EPA's assessment of the WAA in Section 5.

EPA will have regard to all relevant public submissions made to the IAC under Section 9 (1) of the EE Act, will attend the public hearings, and will have regard for the Minister for Planning's Assessment of the EES before finalising its assessment decision of the Works Approval under the EP Act.

4. EPA's review of the West Gate Tunnel Project EES

This section provides advice on compliance with the EP Act, relevant subordinate legislation and EPA guidance for various aspects of the Project that are outside of the scope of the WAA.

Where possible at this stage, EPA has identified ways the Project can achieve compliance, minimise potential impacts on the environment and health, and/or respond to the changing expectations of the Victorian community. These points are highlighted in ***bold italics***. The following terms are used across this submission and are defined below with specific meaning and intention:

- ***'EPA requires'*** is used to highlight where Victorian policy and regulation apply to the Project and where the Project will be required to demonstrate compliance at a future point in time.
- ***'EPA recommends'*** is used to identify actions to ensure that potential impacts on the environment and/or health are minimised, and/or reflect emerging policy considerations and/or the changing expectations of the Victorian community.
- ***'EPA supports'*** is used to highlight commitments made in the EES that EPA considers necessary to achieve compliance and/or demonstrate best practice.

a. Air quality

i. Operation - Near road air quality

EPA has reviewed the background monitoring and modelling predictions of near-road air quality along the Project alignment as part of the overall assessment. Near-road emissions are restricted to a narrow corridor around the road, as demonstrated by the results of roadside monitoring set out in EPA Publication 1025: *Review of Air Quality near Major Roads*.

Technical report G: Air Quality identifies 12 roads that were selected to model PM_{2.5} and PM₁₀ road concentrations for no-project and project scenarios in 2022 and 2031. The selected roads were:

- West Gate Freeway
- Francis Street, Yarraville
- Williamstown Road, Yarraville
- Hyde Street, Yarraville
- Whitehall Street, Yarraville
- Footscray Road, West Melbourne
- Dynon Road, West Melbourne
- Blackshaws Road, Altona North
- Buckley Street, Footscray
- Geelong Road, Kingsville
- Millers Road, Altona North and Brooklyn
- Moore Street, Footscray.

Technical report G states that “Overall for the twelve roads evaluated in 2022, nine show a decrease or no change in the maximum 24 hour average PM₁₀ concentration for the project scenario, while three (West Gate Freeway, Millers Road and Geelong Road) show an increase. For PM_{2.5}, nine roads show a decrease or no change with the project, while three (Blackshaws Road, Millers Road and Geelong Road) show an increase.”

EPA supports a design that seeks to minimise impacts and results in reducing impacts from exposure to particulate matter. However, the current design (along with the proposed truck bans) results in a redistribution of traffic and hence predicted increased air pollutant concentrations and potential impacts along West Gate Freeway, Blackshaws Road, Millers Road and Geelong Road.

EPA can offer advice on the management and mitigation of impacts as a result of these increases.

EPA recommends monitoring, reporting and management to mitigate the potential impacts of predicted PM_{2.5} and PM₁₀ along the affected roads of West Gate Freeway, Blackshaws Road, Millers Road and Geelong Road.

As outlined in Section 3, the AAQMP implemented by WDA includes five additional air monitoring stations located around and along the Project alignment.

EPA supports the Additional Air Quality Monitoring Program (which includes roadside and ambient air quality monitoring at the five locations) currently being conducted.

EPA recommends that the Additional Air Quality Monitoring Program continue to operate throughout planning, construction and five years after commencement of Project operation.

EPA notes that, to date, the WDA has not accepted EPA's advice to make the Additional Air Monitoring Station data publicly available. To respond to the expectation of communities' for publicly available monitoring data of their local environment, EPA recommends any air quality monitoring data to be made available in real time to increase the confidence of the community in the Project area and also as a way of reviewing the success of implementation of management approaches. EPA understands the AAQMP data will be made available to the IAC.

EPA recommends any air quality monitoring data to be made available in a timely manner on an accessible website to increase the confidence of the community in the Project.

ii. Operation – In-tunnel air quality

The NSW Government Advisory Committee on Tunnel Air Quality is comprised of scientific experts, health experts and representatives with road engineering expertise. It recommended an in-tunnel air quality (nitrogen dioxide – NO₂) policy in February 2016 (see Appendix A). This recommendation was based on a thorough review that factored in international guidelines and reflects best-practice requirements for in-tunnel nitrogen dioxide levels in Australian conditions.

EPA considers it appropriate to apply best practice International and NSW in-tunnel air quality NO₂ guidelines for new road tunnels over one kilometre in length. This would require an NO₂ in-tunnel air quality standard of 0.5 ppm as a rolling 15-minute for monitoring and management.

The IAC should note there are no-applicable PM_{2.5} or PM₁₀ in-tunnel air quality standard. NSW road tunnels like Sydney's M5 East Tunnel use signs to warn drivers to 'close windows and use reverse cycle air conditioning' as a management technique to minimise the impact on health from exposure to PM_{2.5}, PM₁₀, and other in-tunnel pollutants. EES *Technical Report J: Human health* identified the need to minimise exposure to PM_{2.5} and PM₁₀ in-tunnel. However, the recommendation made in *Technical Report J* has not translated into the Environmental Performance Requirements.

EPA recommends best practice Australian management techniques, such as warning signs, are used to minimise impact on health from in-tunnel exposure to PM_{2.5} and PM₁₀. EPA recommends updating 'AQP3 – In tunnel air quality' to include a requirement to minimise any health impacts from in-tunnel air exposure.

'AQP3 – In tunnel air quality' identifies provision for retrofitting pollution control equipment in relation to CO in-tunnel standards. However, as stated above there is no-applicable PM_{2.5} or PM₁₀ in-tunnel air quality standard which means AQP3 requirement for retrofitting only applies for CO in-tunnel standards. The air quality environmental performance requirements need to be meaningfully addressed for pollutants PM_{2.5}, PM₁₀, CO, NO₂ regarding pollution control equipment.

EPA recommends that 'AQP1 – Tunnel ventilation system design' include design factors for retrofitting emission control equipment, for PM_{2.5}, PM₁₀, CO, and NO₂.

EPA recommends that 'AQP5 – In-tunnel air quality and ventilation structure emissions compliance' includes remedial action to retrofit emission control equipment if Environmental Requirements are not met.

iii. Operation – Emerging science, ultra-fine particles

EPA is aware of the emerging science and emerging concerns around ultrafine particles. There is clear evidence of health impacts from exposure to elevated concentrations of PM₁₀ and PM_{2.5}. The science on the health impacts and interactions in air of ultrafine particles continues to evolve. Given the limitation of the science at present, there is no air quality standard for ultrafine particles and no regulatory air monitoring of ultrafine particles in Australia. Any air monitoring undertaken is for research purposes.

EPA Victoria's position on the matter of ultrafine particles aligns with the advice and conclusions provided in the review undertaken by the Expert Advisory committee on Tunnel Air Quality in NSW (Appendix B):

"Motor vehicle exhaust is an important source of UFPs in urban settings (HEI, 2013). Ultrafine particles are thought to play a role in the adverse health impacts seen in association with exposure to PM pollution, although the epidemiological evidence of their effects is limited (HEI, 2013; WHO Regional Office for Europe, 2013). The World Health Organization (WHO Regional Office for Europe, 2013) recommends that current efforts to reduce the numbers of UFPs in vehicle emissions should continue and, until there is clearer evidence of the concentration-effect relationship for UFPs, management of PM should continue to focus on PM₁₀ and PM_{2.5}.

A key feature of PM is that no threshold has been identified below which exposure is not associated with adverse health effects; therefore, reductions in ambient concentrations of PM would provide public health benefits."

- Appendix B, p20.

EPA recommends activities to monitor, report, and mitigate impacts from PM_{2.5}, as ultrafine particles form part of the PM_{2.5} fraction. EPA recommends implementing a roadside monitoring program for PM_{2.5} that is designed in consultation with community (also known as community co-design).

iv. Construction - Dust generation

The construction of the WGTP is likely to temporarily give rise to dust and other air emissions. If managed appropriately, the impact can be reduced.

EPA Publication 480: *Environmental Guidelines for Major Construction Sites* (1996) provides guidance to the management of dust generation during construction activities.

Given the construction works involve significant excavation and stockpiling activities, it is important that there are good controls in place to manage dust generation. As per Performance Requirement AQP6, an air quality management and monitoring plan is proposed to manage the potential air quality impacts arising from these works.

EPA supports the stated Environmental Performance requirement 'AQP6 – Air quality during construction'.

b. Noise and vibration

i. Operation

EPA's statutory jurisdiction does not cover vibration or road traffic noise management.

EPA recognises noise impacts from roadside noise as a significant issue. *Technical Report H: Noise and vibration* summary states:

“Predicted noise levels at a small number of buildings facing the West Gate Freeway are predicted to exceed the project noise objective (EPR NVP1 Part (a)) by up to 3 dB(A). These buildings are located in the following areas:

- . Altona North Chapel*
- . Residential buildings located east of Millers Road on Beevers Street*
- . Residential buildings located between Lynch Road and Richards Court*
- . Residential buildings located adjacent to Millers Road on Primula Avenue*
- . Residential buildings located at the northern extent of Derham Street in Spotswood.*

Increasing the dimensions of the noise barriers proposed for these locations has not been considered as a practical option”

And

“Residences between Rosslyn Street and Abbotsford Street, particularly those on Railway Place, are the most exposed to potential traffic noise impacts due to the Wurundjeri Way Extension.”

The current design (along with the proposed truck bans) results in a redistribution of traffic and hence predicted increased roadside noise impacts for residents along Millers Road, Lynch Road, Derham Street, and Railway Place.

EPA can offer advice on the management and mitigation of impacts as a result of these increases.

EPA recommends implementing an operational noise management plan for monitoring, (public) reporting and management to mitigate the potential impacts of predicted roadside noise along the identified affected roads.

Section 5 below discusses noise from the road tunnel ventilation systems.

ii. Construction

EPA provides legislation and guidelines to manage construction noise to protect human health and amenity. Of particular relevance are two EPA Publications – 480: *Environmental Guidelines for Major Construction Sites*, and 1254: *Noise Control Guidelines* – which define the controls required to manage noise impacts from construction activities. The Australian Standard AS 2436:2010 ‘Guide to Noise Control on Construction, Maintenance and Demolition Sites’ also addresses the noise impacts of these activities. Trigger values developed under *State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N1)* may also apply during construction.

EPA notes that some works may be deemed to be ‘*unavoidable works*’, as per EPA Publication 1254. This guideline details the expectations for community consultation regarding noise emissions and impacts from construction activities.

As per Performance Requirement ‘NVP3 – Construction noise, vibration, and monitoring’, a Construction Noise and Vibration Plan (**CNVMP**) is proposed to manage the potential noise impacts arising from these works. Mitigation measures identified to address noise impacts in the CNVMP are to be consistent with those listed in *Technical Report H*.

EPA supports the development and implementation of a Construction Noise and Vibration Management Plan (CNVMP) to manage potential noise impacts associated with construction prior to commencement of project works.

EPA recommends that the CNVMP be developed in consultation with EPA Victoria.

EPA requires a rationale to be developed to ensure all activity considered to be ‘unavoidable works’ meet the definition outlined in EPA Publication 1254. EPA recommends that this rationale be included in ‘NVP3 – Construction noise, vibration, and monitoring’.

EPA recommends that any information associated with the determination of ‘unavoidable works’ is subject to community consultation and made publicly available.

c. Surface water

i. Design and operation

Kororoit Creek, Stony Creek, Maribyrnong River, Moonee Ponds Creek and the lower Yarra River all have the potential to be affected by surface and stormwater run-off from the roads constructed or affected by the Project. The proposed surface roads will be in areas where significant urban development is already contributing to stormwater run-off.

The *State Environment Protection Policy (Waters of Victoria)* (**SEPP (WoV)**) provides a framework and attainment program for the protection and improvement of Victoria’s surface water environments, defining environmental quality indicators and objectives that must be met to protect beneficial uses of the environment. Given the relatively poor quality of surface waters in the area, (relative to the SEPP (WoV) objectives) of each of the above-mentioned waterways, background conditions become default environmental quality objectives under SEPP (WoV). EPA notes that the EES studies to characterise background conditions should be considered preliminary: a comprehensive baseline surface water monitoring program will need to be established to accurately characterise background conditions and thus identify background SEPP (WoV) objectives. Within this context, EPA requires the Project to prioritise actions that will maintain environmental quality and enhance beneficial uses of the affected waterways.

EPA requires the development and implementation of a baseline surface water monitoring program which covers water and sediment characterisation at upstream, local and downstream areas to the Project area to accurately assess existing conditions, risks and potential impacts.

EPA recommends that the baseline surface water monitoring program be used to develop realistic and effective management plans prior to commencement of construction.

It should be noted that storm water objectives in the BPEM are being reviewed, as are the SEPP (WoV) and ANZECC objectives.

The SEPP (WoV) also outlines measures to manage activities that impact on water environments. Clause 57 requires that “*Road managers ... need to maintain and, where relevant, manage roads and infrastructure to minimise erosion and sediment and pollutant transport ... A priority of managers of sealed roads should be to manage contaminated stormwater runoff from roads.*”

Clause 12 of SEPP (WoV) requires that best practice is implemented to ensure effective environmental management. EPA supports the application of the Best Practice Environmental Management Guidelines for Urban Stormwater (1999) to be incorporated into the detailed design of the stormwater drainage and treatment systems.

EPA requires demonstration of compliance with SEPP (WoV) and relevant guidance best practice requirements. The design criteria for stormwater drainage and treatment systems should reflect policy and best practice.

EPA requires 'SW1 – Design of discharges and runoff' include characterisation, treatment and discharge to the satisfaction of the EPA, and prioritising actions designed to maintain environmental quality (i.e. background conditions) and enhance beneficial uses.

ii. Construction

Works within Stony Creek may not only alter the landform or geomorphology but also result in the release of toxicants that are present in the sediments, such as heavy metals and hydrocarbons. Moonee Ponds Creek should be investigated for PFAS in sediment, and consideration should be given to the release of potential PFAS contaminated sediments. EPA requires the Project to address how the disturbance of contaminated bed soil will be managed.

Moonee Ponds Creek has the potential to be affected by surface water run-off during the temporary construction works. EPA Publication 480: *Environmental Guidelines for Major Construction Sites* (1996) provides guidance on the management of surface water during construction activities. SEPP (WoV) Clause 56 requires the implementation of '*effective management practices that are consistent with guidance from the Environment Protection Authority*'. This includes EPA Publication 480.

EPA requires that, as part of the Construction Environmental Management Plan, a surface water management plan be prepared and implemented to manage potential surface water run-off impacts and any disturbance of contaminated bed soil associated with construction.

During construction and the dewatering of surface structures, sediment/chemical-laden water from cofferdams or other similar structures could pose a risk to water quality in immediate and downstream waterways. Performance Requirement 'SWP3 -Tunnel waste water' requires that '*Any proposed discharge of tunnel waste water from the site must be approved by the relevant authority prior to discharges occurring.*'

Any discharge to a sewer would require approval from the relevant water authority. If this 'waste' water is saline (e.g. from dewatering), it may not be acceptable for discharge to sewer.

Clause 36 of SEPP (WoV) requires that '*discharge of saline wastewater, including discharge from groundwater pumping ... should not pose an environmental risk to beneficial uses*'. It also states that, '*(w)here saline wastewater cannot be practicably avoided, re-used and recycled, its impact on surface waters needs to be minimised by discharging saline wastewater to artificial drains or evaporation basins or through treatment, including dilution, to minimise environmental risks posed to beneficial uses.*'

If 'waste' water is to be discharged to surface water, then this must be in accordance with SEPP (WoV). Clauses 27 and 28 specify the requirements for managing discharges to surface waters, including new wastewater discharges. The discharges of waste and wastewater '*must be managed in accordance with the waste hierarchy, with the priority given to avoiding the generation of wastewater*'. EPA approval will be required for wastewater discharge to surface waters.

If there is to be a reinjection of extracted groundwater, this should be undertaken in accordance with Clause 20 of *State Environment Protection Policy (Groundwaters of Victoria)* (**SEPP (GoV)**). EPA and Southern Rural Water approval may be required.

d. Ecology

i. *Design and operation*

EPA has a role in protecting ecosystems in order to maintain their functions and biodiversity. While ecosystem protection in Victoria is regulated across a number of SEPPs, issues raised in this submission predominantly relate to the SEPP (WoV).

The main potential risks to ecological assets, values and uses posed by the Project are loss or degradation of indigenous vegetation patches; loss or degradation of planted trees; sedimentation of waterways; potential changes in hydrology that may impact aquatic biota; and impacts to terrestrial and arboreal fauna.

EPA recommends expanding the temporal and spatial scales for 'EP5 – Works on waterways' to ensure that localised and downstream impacts on waterways are minimised in both the short and long term.

ii. *Construction*

To support new road structures, piers are to be installed within the waterway of the Maribyrnong River, Moonee Ponds Creek and on the banks of Stony Creek. The EES states that the installation of these structures during construction and subsequent operation may alter flows and hydrology. EPA suggests that disturbance to riverbed sediments (including PFAS) during construction can also cause the release of sediment and toxicants and therefore affect the condition of the waterways and habitats. Furthermore, pier-piling and construction methods also have the potential to impact waterway geomorphology and water quality.

EPA recommends consideration of potential disturbance to riverbed sediments and changes in waterway geomorphology and water quality in 'EP5 – Works on waterways' and implementation of control measures into the Project.

e. Contaminated land and soils (including solid waste)

The regulatory requirements for managing contaminated soil are complex, and are found across the EP Act, regulations, SEPPs and other materials (such as the ASC NEPM) which are incorporated into those legislative instruments.

Parts of the EES documentation (including *Technical Report B: Contaminated soil and spoil management*) discuss options for the reuse and/or treatment of contaminated soil generated as part of the WGTP. EPA notes some of the legal and environmental assumptions underpinning these proposed options and intends to examine these further with WDA.

EPA will require more information than what is currently available in the EES documentation to consider the applicability of any regulatory requirements administered by EPA; and to consider whether options for reuse and/or treatment of contaminated soil will achieve acceptable environmental outcomes. A detailed description of the information required by EPA is included in Appendix C.

Considering the need for further information about contaminated soil and spoil management across the WGTP, and the need to ensure relevant regulatory requirements will be met, EPA recommends that 'CSP2 – Contaminated soil and spoil management' be amended so that any Construction

Environment Management Plan must include requirements and methods for contaminated soil and spoil management developed 'to the satisfaction of EPA Victoria'.

EPA recommends 'CSP2 – Contaminated soil and spoil management' change to 'The CEMP must include requirements and methods for contaminated soil and spoil management developed to the satisfaction of EPA Victoria.'

f. Groundwater

The EES has identified and assessed a number of potential risks to the groundwater environment. Risks associated with the construction and operation of the tunnel that are of primary interest to EPA include:

- interception or mobilisation of existing contaminated groundwater from construction works and dewatering; and
- altering the beneficial uses of groundwater through the introduction of contamination from construction activities, such as spills, hazardous materials, chemical grouts, etc.

EPA has a role in protecting and improving groundwater quality, in line with SEPP (GoV). While groundwater is not generally used as a drinking supply in the Melbourne metropolitan area, it may be used for other purposes such as irrigation and needs to be protected for its role in the ecosystem – that is, where it discharges to surface waters and other groundwater-dependent ecosystems.

EPA details and makes recommendations relating to existing contaminated groundwater below.

i. Interception or mobilisation of existing contamination during construction

The main risks to the environment posed by the Project associated with groundwater as described in the EES include the mobilisation of existing contaminated groundwater plumes during construction, and the migration of contaminated groundwater during construction and once operational along the permanent tunnel structures. If migration of contaminated groundwater were to occur, this would affect the quality and availability of groundwater to support beneficial uses such as ecosystems. In addition to this, the tunnel activities can also result in drawdown, which may result in the acidification of soils where oxidation of the soils/sediments occurs as well as alterations to long-term groundwater flow direction. This can alter the quality of land and groundwater, and so affect their use. These risks are relevant where the proposed Project would intersect with groundwater or interfere with groundwater flow.

EPA has a role in regulating the management of contaminated land and groundwater. The EES identified areas of known and potentially contaminated groundwater that exists within close proximity to the proposed Project works including (but not limited to); former gas works, former petroleum terminal, infilled quarry, landfills and a number of factories within the vicinity of the tunnel alignment and portals, as well as gas works, railway sidings and reclaimed land composed of night soil, abattoir waste and industrial waste within the vicinity of the Port, CityLink and city connections.

There have been a number of groundwater extraction bores identified within the Project area and, although the use of some of these bores is unknown, they need to be considered with regards to migration of contaminated groundwater during construction and operation.

EPA notes that groundwater users, via extraction bores, are one example of beneficial uses of groundwater. Therefore, EPA requires that 'GWP7 – Impacts on groundwater users' be amended to include 'Impacts on beneficial uses'.

EPA recommends that 'GWP7 – Impacts on groundwater users' include assessment to ensure that contaminated groundwater is not mobilised and does not impact on sensitive receptors and beneficial uses of groundwater.

ii. Monitoring

EPA supports 'GWP5 – Groundwater monitoring'.

EPA requires that the monitoring program include:

- ***monitoring (consistent with EPA Victoria Publication 669 (2000): Groundwater Sampling Guidelines) prior to construction to include data from winter and summer seasons;***
- ***the installation of groundwater wells;***
- ***sampling and/or measurements to be undertaken in accordance with the relevant guidelines including, EPA Publication 669 Groundwater Sampling Guidelines, EPA Publication 668 Hydrogeological Assessment (Groundwater Quality) Guidelines, and where relevant the National Environment Protection (Assessment of Site Contamination) Measure (NEPM);***
- ***data on transmissivity/ hydraulic conductivity to be obtained from groundwater wells both within, up gradient and downgradient of the construction area;***
- ***groundwater flow directions;***
- ***groundwater level data;***
- ***groundwater quality data and consideration of SEPP (GoV) indicators and objectives; and***
- ***surface elevations to be surveyed.***

EPA notes that the tender design tunnel length has been extended outside the reference design, and that there is less data available for this new section compared to the rest of the tunnel alignment.

If contaminated groundwater is encountered during the monitoring or construction works, EPA must be notified and contingency measures to manage any potential risks must be implemented.

iii. Risk assessment and modelling

EPA supports 'GWP4 – Predictive groundwater model'.

To inform the predictive groundwater modelling, a conceptual site model should be developed informed by the baseline groundwater conditions and a risk assessment undertaken to identify and quantify the potential risks. The assessment of risk should be verified by actual site data obtained through the construction phase monitoring and trigger levels for intervention and details contingency actions should be established to the satisfaction of EPA.

EPA recommends that further site-specific data be collected on groundwater quality, levels, and flow to better inform the risk assessment and development of mitigation measures.

iv. Mitigation and management

EPA recommends a rigorous establishment of baseline conditions through monitoring as a critical stage in developing the mitigation measures and detailed design of the Project. Actual site data should verify the assessment of risk.

There will also be a need to characterise the groundwater and decide on the appropriate treatment options before reuse, disposal or discharge. EPA understands that decisions on the approach for managing waste groundwater will be made during the detailed design period. EPA has provided information to WDA during the EES draft review period as part of our involvement in the TRG on how to best approach the assessment, treatment and management of waste groundwater.

Some of the mitigation and management measures of the groundwater and surface water proposed by WDA may require further EPA advice or approval, (for example, if WDA decide to undertake in-situ

treatment of groundwater, or its treatment in an on-site waste water treatment plant). It is expected that suitable technology and construction techniques would be adopted to manage contamination.

EPA recommends that it be consulted during the development of the Construction Environmental Management Plan (CEMP) regarding groundwater management.

EPA requires notification of the identification of contamination, Project compliance, and effectiveness regarding groundwater management and contingency measures.

The groundwater management aspects of the CEMP must be developed and implemented to the satisfaction of EPA and include:

- a program to complete the baseline monitoring and assessment of groundwater conditions (including a summer and winter season) prior to construction commencing;
- a preliminary risk assessment and conceptual site model based on the data obtained in GWP5 using EPA guidance, which can be developed with the assistance of the NEPM;
- details of measures to be implemented to manage potential impacts during construction;
- details of monitoring to be undertaken during the construction works to track and respond to any changes in conditions;
- details of contingency measures to be undertaken; and
- reporting procedures to demonstrate compliance with the plan.

v. Emerging science - Consideration of PFAS

Polyfluoroalkyl substances (**PFAS**) have recently been the focus of health and environmental investigations and consequently there are emerging concerns about PFAS and the chemical characteristics of PFAS. There is now an increased environmental regulatory focus; EPA applies the precautionary approach to the management and disposal of PFAS.

Technical Report C: Groundwater notes numerous groundwater locations within the project area that have been affected by contamination of petroleum hydrocarbons (including aromatic hydrocarbons) and by polyfluoroalkyl substances (PFAS). The report also states that:

“Disposal criteria for PFAS to sewer are not known at this time and there is the potential that the PFAS in the groundwater would need to be treated prior to disposal.” – Technical Report C: Groundwater, p. 68.

There are currently limited options available in Victoria for managing or disposing of PFAS-impacted waste. The information available on the EPA website, which WDA has been directed to, aims to provide guidance to duty holders who have current requirements to manage PFAS-impacted wastes. <http://www.epa.vic.gov.au/your-environment/land-and-groundwater/pfas-in-victoria/managing-pfas-impacted-wastes-in-victoria>

EPA recommends that a new EPR be developed to address the management, treatment and disposal of PFAS-contaminated groundwater and land, in consultation with EPA.

5. EPA assessment of the Works Approval application

This section outlines the key issues that are currently under consideration in EPA's assessment of the WAA. EPA reserves itself from statements of support, recommendation or requirement in relation to the Works Approval application. EPA will have regard to all relevant public submissions made to the IAC under Section 9 (1) of the EE Act, attend the public hearings, and will have regard for the Minister for Planning's assessment of the EES before finalising its assessment decision of the Works Approval under the EP Act.

a. Air emissions

The *State Environment Protection Policy (Air Quality Management) (SEPP (AQM))* sets aims and objectives for the protection and improvement of air quality in Victoria, including "(a) ensure that the environmental quality objectives of the State environmental protection policy (Ambient Air Quality) are met" and (b) "drive the improvement of and achieve the cleanest air possible having regard to the social and economic development of Victoria". The policy requires that the generators of all air emissions "apply best practice to the management of their emissions..." (Clause 18(3)) and assess the impact of development on local air quality having regard to "...the use of design criteria and dispersion modelling for assessing emissions" (Clause 27(1)(a)).

i. Control of emissions at source

As a result of implementing standards for new vehicles and fuels to improve exhaust emissions, air quality in Melbourne is generally improving. This is despite an increasing number of vehicles on Melbourne's roads (EPA Publication 1535: *Future air quality in Victoria – Final report*).

Relevant Victorian motor vehicle regulations are the *Environment Protection (Vehicle Emissions) Regulations 2013*. These are modelled on national rules and specify standards and test methods for air and noise emissions from in-service light motor vehicles (heavy vehicles are covered in Heavy Vehicle National Law). The regulations also define emission standards from spark ignition passenger vehicles (carbon monoxide and volatile organic compounds), fuel quality parameters (vapour pressure of petrol in summer) and noise-labelling requirements.

Emissions from new vehicles are controlled nationally through the Australian Design Rules and most of the fuel standards are controlled nationally through the *Fuel Quality Standards Act 2000*, except for vapour pressure.

EPA also oversees a program to reduce emissions from smoky vehicles on the roads and implements initiatives based on the National Environment Protection (Diesel Vehicle Emissions) Measure.

ii. Treatment of emissions

As part of its assessment, EPA will review whether there is a need to filter emissions before leaving the vent stack. In previous tunnel ventilation system approvals (CityLink and EastLink), filters were not required as the fans directed air flow through the tunnels to provide a safe in-tunnel air quality and diluted the emissions to a point where filters would not provide a significant benefit to external air quality.

iii. Dispersion of emissions

To prevent impacts on local air quality, the dispersion of air quality emissions is affected by two key design features. These are the height of the vent structures and the operation of the fans. The stack height and fan extraction speeds of the ventilation system are the main design parameters used in minimising the local impact on air quality. In operation, the ventilation of emissions can be controlled through adjusting the speed of the fans and airflow through the tunnel. To optimise the tunnel

operations, the operating regimes must also integrate best-practice energy usage for the systems to minimise the greenhouse gas emissions.

iv. Emerging science and new considerations

The NSW Government Advisory Committee on Tunnel Air Quality is comprised of scientific experts, health experts and representatives with road engineering expertise. It recommended an in-tunnel air quality (nitrogen dioxide – NO₂) policy in February 2016 (see Appendix A). This recommendation was based on a thorough review that factored in international guidelines and reflects best-practice requirements for in-tunnel nitrogen dioxide levels in Australian conditions.

In the case of in-tunnel carbon monoxide, while there is no SEPP (AQM) requirement, both CityLink and EastLink tunnel EPA licence conditions include CO requirements.

“The concentration of carbon monoxide in the tunnel must not exceed (a) a maximum of 150 ppm, (b) a 15 minute average of 50 ppm, and (c) a two hour average of 25 ppm.”

–EastLink and CityLink Licences, Section Air Conditions, Requirement LI_DA1.6 (Appendix D and E)

v. EPA assessment

EPA is currently undertaking its review of the WAA and assessing potential impacts on air quality. This includes:

- the applied background concentrations of ambient air quality and prevailing meteorology (allowing for other sources);
- modelled scenarios and modelling inputs (such as the suitability of the applied vehicle emission factors);
- in tunnel design criteria for the ventilation system (including the application of best practice);
- the near road emissions modelling, as part of the overall assessment; and
- the contribution of ventilation emissions relative to the background conditions.

b. Energy and greenhouse gas emissions

A key policy aim of the SEPP (AQM) is to *“support Victorian measures to address the enhanced greenhouse effect”*. The SEPP (AQM), together with the *Protocol for Environmental Management “Greenhouse Gas Emissions and Energy Efficiency in Industry”* (Greenhouse PEM) (EPA Publication 824) require that best-practice, energy-efficient plant and equipment is installed. For this Project, the main features are the fans to be installed in each tunnel to manage in-tunnel air flow and the lighting systems.

To achieve best-practice energy usage and minimise greenhouse gas emissions, the level of dispersion gained by increased fan use must be balanced so as not to compromise the air quality objectives.

c. Noise emissions

The relevant policy requirements for noise within the Melbourne metropolitan area are set out in the *State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N1)*. This policy applies to the plant and equipment within the control of the Project operator, including the tunnel ventilation system. Clause 19 advises that *“where equipment is to be replaced or new equipment installed, the quietest equipment available should be used where a significant reduction in noise in noise-sensitive areas can be expected to occur”*.

Experience from existing tunnels (CityLink and EastLink) demonstrates that the noise emissions can be managed through design.

d. Environmental public health risk assessment

EPA is required to refer Works Approval applications to the Department of Health and Human Services (**DHHS**), the responsible authority under the Planning and Environment Act 1987, along with any protection agency that EPA considers may be directly affected by the application. EPA is required to take into account any comments received from referral authorities such as DHHS.

The WAA for the WGTP has been referred to DHHS.

In December 2016, in response to the Independent Inquiry into the EPA (as discussed in Section 2 above), some environmental health functions associated with the assessment of public health risks for pollution and waste were transferred from DHHS to EPA. In line with this change, EPA provided the Department with the EPA Environmental Public Health Risk Assessment of 27 June for its consideration.

A copy of DHHS's received response to the referral is attached in Appendix F.

6. Existing Road Tunnels in Victoria

a. Works approvals

There are two existing Victorian road tunnel projects that have been the subject to Works Approvals issued by EPA (under section 19B of the EP Act) - the CityLink and EastLink Tunnels. A third planned road tunnel project, East West Link (Eastern Section), was also subject to a Works Approval.

EPA assessed the application for the CityLink tunnels in 1997, and a Works Approval was issued after a review by the Victorian Civil and Administration Tribunal (VCAT) (Works Approval Number WA30665). EPA assessed the application for the EastLink tunnels, and a Works Approval was issued in September 2006 (Works Approval Number WA59307). EPA assessed the application for the East West Link (Eastern Section) in 2014, which was granted by the Planning Minister under section 77 of the *Major Transport Projects Facilitation Act 2009 (MTPF Act)* (Works Approval Number 1001390).

Copies of these Works Approvals are provided in Appendix G, Appendix H, and Appendix I.

In support of the applications, predictive air quality modelling was undertaken, including modelling of the relative contribution of the stack emissions to the overall ambient air quality. As illustrated in Figures 1 and 2 in Appendix J for particulate matter (PM_{2.5}), the contribution of the vent emissions to the overall air quality effect was relatively low, as confirmed by the monitoring described below.

b. Operational licences

After the completion of the works, a commissioning approval under S30A (1A) was issued for EastLink. After demonstration of the ventilation system for the associated EastLink and CityLink tunnels, operational licences were issued by EPA (under section 20 of the EP Act). The current licences are provided in Appendix D and Appendix E. These licences permit emissions to air from the tunnel ventilation systems, and include a number of general, amenity and air quality conditions. To ensure that operations are conducted within licence conditions, EPA requires that a monitoring program be developed, together with ongoing reporting on compliance breaches.

c. Monitoring results

Upon commencement of operation of the tunnels ambient air quality monitoring programs were implemented by the operators of CityLink and EastLink. EPA has reviewed these programs. The EPA assessment of the impact of the CityLink tunnel on air quality concluded that:

“To date no impact associated with CityLink on local air quality in the vicinity of the project has been detected. Whilst EPA will continue to review the data from CityLink, the analysis to date justifies less frequent formal reviews. EPA has an on-going role ensuring that CityLink is operated within its licence conditions controlling ventilation stack discharges and portal emissions.”

- EPA Publication 958: *CityLink review of air quality monitoring* – Sept 2004.

In an unpublished review of the ambient monitoring for EastLink, EPA similarly concluded that:

“A detailed review of ambient monitoring results at sites near the EastLink ventilation stacks did not find any evidence of significant impacts from the stacks on local air quality. This result confirms that air pollutants from the two tunnels are being effectively dispersed... that the EastLink stacks are operating effectively to disperse air pollutants, and therefore ambient monitoring may cease. In-stack monitoring must remain as a means of long-term surveillance of total emissions”

- Review of EastLink Air Monitoring Requirement – June 2011 (Unpublished).

7. Environmental Management Framework

EPA supports the implementation of an Environmental Management Framework (**EMF**) that outlines governance arrangements for implementing and ensuring compliance with the environmental performance requirements throughout the delivery of the Project, as well as requirements for an Environmental Management System (**EMS**) and Environmental Management Plans (**EMPs**) to be adopted. An EMF consistent with AS/NZS ISO 14001 provides an appropriate standard.

The EMPs and procedures include a Construction Environmental Management Plan (**CEMP**); separate Worksite Environmental Management Plans (**WEMPs**) for the management of discrete issues, components or stages of works; and an Operations Environmental Management Plan (**OEMP**) to govern the operational phase of the Project. The EMF outlines the approval process of the EMPs, which is required prior to the commencement of activities relevant to those plans.

A key element of the EMF is the environmental performance requirements established for the Project. Together with any other requirements arising from the approvals process, the performance requirements establish the key requirements for the Project.

EPA has made some recommendations regarding the Environmental Performance Requirements within this submission.

EPA is aware of other projects where a similar governance model has been implemented. The Victorian Desalination Project (**VDP**) model, for example, included Independent Reviewer and Independent Auditor roles, which assisted the EPA in ensuring that environmental performance and monitoring and reporting of EMPs compliance was met for the Project. Throughout the detailed design phase of the VDP, the Independent Reviewer provided the verification to the EPA that the predicted environmental performance could be achieved.

EPA supports the engagement of an Independent Reviewer and Environmental Auditor (IREA).

EPA is seeking further detail of proposed governance arrangements and the management of environmental risks, including:

- the appointment, role and expertise of the Independent Reviewer (IR) (including the available team of technical specialists available to support the IR);
- the appointment, role and expertise of the Independent Auditor;
- the role of the Independent Reviewer and Independent Auditor in the context of EPA's regulatory role;
- the audit method and the process for monitoring and reporting of compliance; and
- incident reporting to the EPA regarding non-compliance of legislative requirements enforceable by EPA.

8. Next steps

EPA's comments are provided to the IAC to inform its assessment of the EES, and to advise on issues currently being considered by EPA as part of its assessment of the WAA. The next steps in EPA's process will be to:

- attend the public hearings;
- provide advice to the Committee, as requested;
- continue discussions with the WDA; and
- finalise the assessment of the Works Approval application.

References

A full list of references including hyperlinks are provided below. All referenced EPA documents are available on the EPA website <http://www.epa.vic.gov.au/>

Advisory Committee on Tunnel Air Quality NSW 2016, *In-Tunnel Air Quality (Nitrogen Dioxide) Policy February 2016*, viewed 2 June 2017, http://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0004/81778/In-Tunnel-Air-Quality-Policy-FINAL.pdf

CSIRO 1999, *Urban Stormwater: Best Practice Environmental Management Guidelines for Urban Stormwater*, viewed 2 June 2017, <http://www.publish.csiro.au/nid/220/issue/3822.htm>

EPA Victoria 1996, *Environmental Guidelines for Major Construction Sites (EPA Publications 480)*, viewed 2 June 2017, <http://www.epa.vic.gov.au/~media/Publications/480.pdf>

EPA Victoria 2000, *Environmental Guidelines for Groundwater Sampling (EPA Publications 669)*, viewed 2 June 2017, <http://www.epa.vic.gov.au/~media/Publications/669.pdf>

EPA Victoria 2002, *Greenhouse Gas Emissions and Energy Efficiency in Industry (Greenhouse PEM) (EPA Publication 824)*, viewed 2 June 2017, <http://www.epa.vic.gov.au/~media/Publications/824.pdf>

EPA Victoria 2004, *CityLink review of air quality monitoring (EPA Publication 958)*, viewed 2 June 2017, <http://www.epa.vic.gov.au/~media/Publications/958.pdf>

EPA Victoria 2006, *Hydrogeological Assessment (Groundwater Quality) Guidelines (EPA Publications 668)*, viewed 2 June 2017, <http://www.epa.vic.gov.au/~media/Publications/668.pdf>

EPA Victoria 2006, *Review of Air Quality near Major Roads (EPA Publications 1025)*, viewed 2 June 2017, <http://www.epa.vic.gov.au/~media/Publications/1025.pdf>

EPA Victoria 2008, *Noise Control Guidelines (EPA Publications 1254)*, viewed 2 June 2017, <http://www.epa.vic.gov.au/~media/Publications/1254.pdf>

EPA Victoria 2011, *Review of EastLink Air Monitoring Requirement – June 2011*, viewed 2 June 2017, Unpublished.

EPA Victoria 2013, *Future air quality in Victoria – Final report (EPA Publication 1535)*, viewed 2 June 2017, <http://www.epa.vic.gov.au/~media/Publications/1535.pdf>

NEPC 2001, *National Environment Protection (Diesel Vehicle Emissions) Measure*, viewed 2 June 2017, <http://www.ephc.gov.au/nepms>

NEPC 2013, *National Environment Protection (Assessment of Site Contamination) Measure*, viewed 2 June 2017, <http://www.ephc.gov.au/nepms>

Parliament of Victoria, *State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) Victorian Government Gazette No S31 June 1989*, Government Printer, Melbourne

Parliament of Victoria, *State Environment Protection Policy (Air Quality Management), Victorian Government Gazette No. S240, December 2001*, Government Printer, Melbourne

Parliament of Victoria, *State Environment Protection Policy (Waters of Victoria), Victorian Government Gazette, No.S107, June 2003*, Government Printer, Melbourne

Legislation

Environment Effects Act 1978 (VIC)

Environment Protection Act 1970 (VIC)

Major Transport Projects Facilitation Act 2009 (VIC)

Licences

EastLink Licence, November 2011, *EP Act 1970 Section 20 Licence 2043*, viewed 2 June 2017, www.epa.vic.gov.au

CityLink Licence, April 2000, *EP Act 1970 Section 20 Licence 1278*, viewed 2 June 2017, www.epa.vic.gov.au