

**PLANNING AND ENVIRONMENT ACT**  
 BRIMBANK, HOBSONS BAY, MARIBYRNONG, MELBOURNE,  
 PORT OF MELBOURNE AND WYNDHAM **PLANNING SCHEME**  
 WEST GATE TUNNEL PROJECT  
**PERMIT No.** INCORPORATED DOCUMENT, DECEMBER 2017

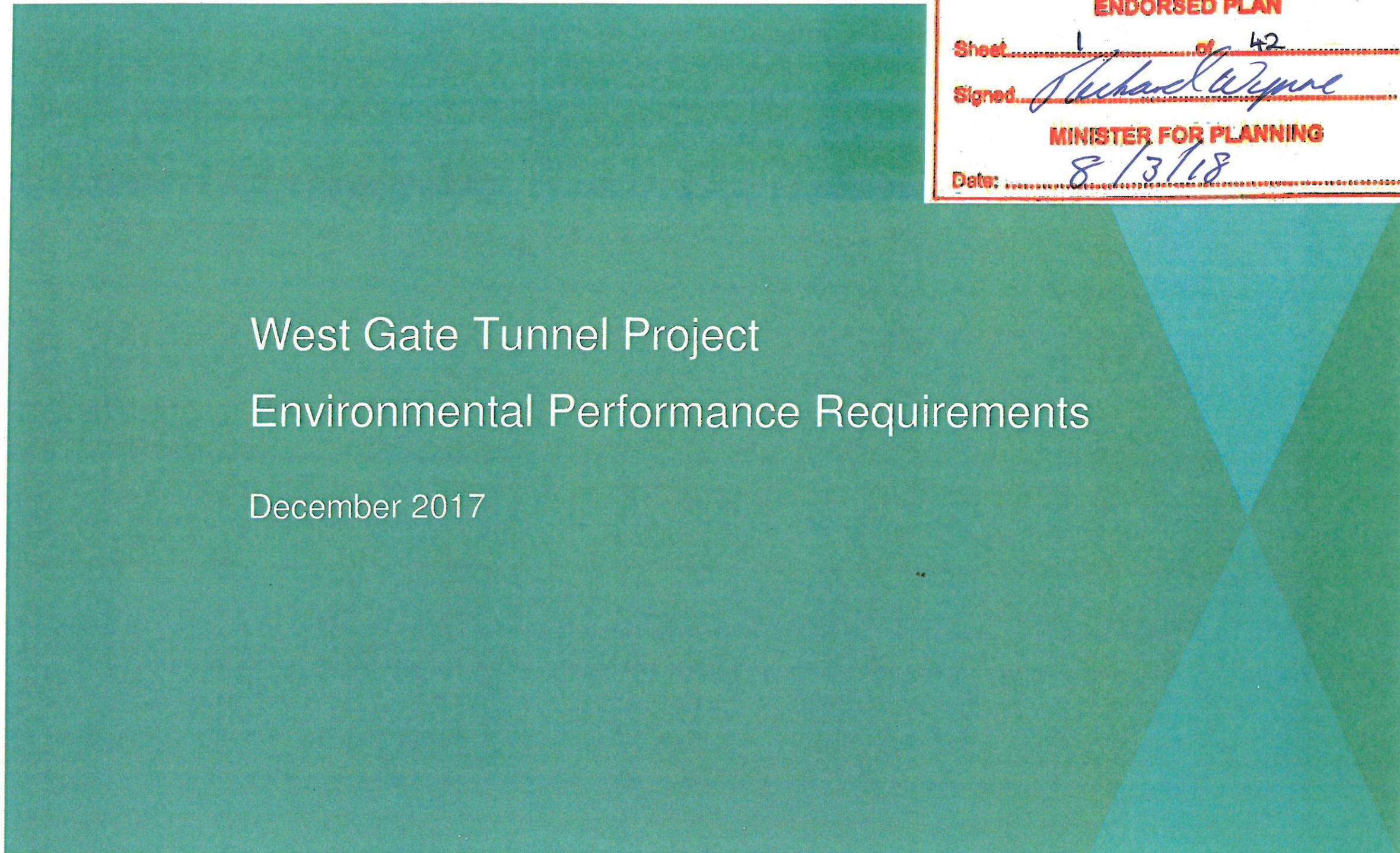
**ENDORSED PLAN**

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Signed Richard Weyne

**MINISTER FOR PLANNING**

Date: 8/3/18



West Gate Tunnel Project  
 Environmental Performance Requirements

December 2017

# Environmental Performance Requirements

The Environmental Performance Requirements (EPRs) for the West Gate Tunnel Project, as approved in December 2017, are set out in Table 2.

The EPR identifiers used in Table 2 are set out in Table 1.

A glossary of abbreviations used in the EPRs is set out in Table 3.

**Table 1. Environmental Performance Requirement identifiers**

ID	EPR
EMP	Environmental management
AQP	Air quality
BP	Business
CHP	Cultural heritage
CSP	Contaminated soil and spoil management
EP	Ecology
GGP	Greenhouse gas emissions
GMP	Ground movement
GWP	Groundwater
LPP	Land use planning
LVP	Landscape and visual
NVP	Noise and vibration
SP	Social and community
SW	Surface water
TP	Transport
WMP	Waste management

Table 2 West Gate Tunnel Project – Environmental Performance Requirements

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
<b>Environmental Management</b>					
<p><b>Environmental Management Framework</b> - to provide a transparent framework with clear accountabilities for managing environmental effects and hazards associated with construction and operation phases of the Project, in order to achieve acceptable environmental outcomes</p>	<p>AS/NZS ISO 14001: Environmental management systems – requirements with guidance for use for construction and operation Legislation and policy as identified in all EPRs</p>	<p>To control adverse effects and support beneficial environmental outcomes in the delivery of the project.</p>	EMP1	<p><b>Environmental Management Strategy</b></p> <p>Prepare an Environmental Management Strategy to provide an overarching framework to address environmental requirements including relevant environmental laws, key approvals, approval conditions, the environmental performance requirements (EPRs). The Environmental Management Strategy covers the construction and operations phases of the project and is to be prepared to the satisfaction of the Minister for Planning under the Incorporated Document applicable to the project.</p> <p>The Environmental Management Strategy must incorporate an Environmental Management System that complies with AS/NZS ISO 14001: Environmental management systems – requirements with guidance for use for construction and operation.</p> <p>The approved Environmental Management Strategy must be made publicly available on a clearly identifiable website for at least five years after the commencement of operation of the project.</p>	All
			EMP2	<p><b>Environmental Management Plans</b></p> <p>Prepare and implement a Construction Environmental Management Plan (CEMP), Worksite Environmental Management Plans (WEMPs), Operations Environmental Management Plan (OEMP) and other plans as required by the Environmental Performance Requirements (EPRs) in accordance with the Environmental Management Strategy.</p> <p>The development of the Environmental Management Strategy, the CEMP, the WEMPs and OEMP must include consultation with relevant councils, VicRoads, Melbourne Water, EPA Victoria and other authorities as relevant. These consultation processes must be described in the Environmental Management Strategy.</p> <p>The CEMP must be prepared in accordance with EPA Victoria Publication 480, Environmental Guidelines for Major Construction Sites (EPA 1996). The CEMP and OEMP must be prepared to the satisfaction of the IREA.</p>	All
			EMP3	<p><b>Environmental compliance</b></p> <p>Appoint an Independent Reviewer and Environmental Auditor to review and approve the CEMP and OEMP to ensure compliance with the Environmental Management Strategy and EPRs and to undertake environmental audits of compliance with the approved Environmental Management Strategy, CEMP, WEMPs and OEMP. The IREA must produce six monthly audit reports which Western Distributor Authority must forward to the Minister for Planning during construction and other approval authorities as appropriate. Audit reports must be made publicly available.</p>	Pre-construction, construction, operation
			EMP4	<p><b>Complaints management system</b></p> <p>Prior to the commencement of works, other than preparatory works as referred to in the Incorporated Document), develop and implement a process for the recording, management, and resolution of complaints from affected stakeholders consistent with Australian Standard AS/NZS 100002:2014 Guidelines for Complaint Management in Organisations.</p> <p>The complaints management system must be consistent with the Communications and Community Engagement Plan required under EPR SP2.</p>	Pre-construction, construction

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<b>Air Quality</b>					
<b>Health, amenity and environmental quality</b> – to minimise adverse air quality, noise and vibration effects on the health and amenity of nearby residents, local communities and road users during both construction and operation of the Project.	<i>Environment Protection Act 1970</i> State Environment Protection Policy (SEPP) – Ambient Air Quality SEPP – Air Quality Management (AQM)	To manage Tunnel emissions to protect the beneficial uses of the air environment	AQP1	<b>Tunnel ventilation system design</b> Design and construct a tunnel ventilation system to meet the requirements of the SEPP (AQM) and in accordance with the requirements of the EPA Victoria Works Approval, including provision for retrofitting of tunnel ventilation pollution control equipment if subsequently required.	Detailed design, construction
			AQP2	<b>Zero portal emissions</b> Design and implement a tunnel ventilation system to achieve zero portal emissions.	Detailed design, operation
		To ensure in-tunnel air quality is safe for motorists and others using the Tunnel	AQP3	<b>In tunnel air quality</b> Design and implement a tunnel ventilation system to introduce and remove air from the tunnels to meet in tunnel air quality requirements for carbon monoxide (CO) and best practice standards for NO <sub>2</sub> listed below. Achieve a longitudinal air velocity in the Tunnels not exceeding 10 metres/second. In tunnel air quality must meet the following standards: <ul style="list-style-type: none"> <li>Maximum peak CO value of 150ppm</li> <li>15-min. average CO value of 50ppm</li> <li>2-hour average CO value of 25ppm</li> <li>15-minute average NO<sub>2</sub> value of 0.5 ppm.</li> </ul> Apply best practice Australian management techniques to minimise impact on health from in tunnel exposure to PM <sub>2.5</sub> and PM <sub>10</sub> .	Detailed design, operation
		To protect beneficial uses of the air environment for the surface sections of West Gate Tunnel Project	AQP4	<b>Ambient air quality monitoring</b> Develop and undertake an ambient air quality monitoring program in consultation with EPA to measure the air quality impacts of West Gate Tunnel Project, including monitoring during construction, and five years post opening of the Project, or such lesser period as agreed with EPA Victoria at the following air quality monitoring station locations: <ul style="list-style-type: none"> <li>Millers Road (north of the West Gate Freeway), Brooklyn</li> <li>Primula Avenue, Brooklyn</li> <li>Donald McLean Reserve, Spotswood</li> <li>Francis Street, Yarraville</li> <li>Woods Street, Yarraville</li> <li>Yarraville Gardens, Yarraville.</li> </ul> Results of the monitoring are to be made publicly available on a website related to the project, or through EPA Victoria's Air Watch website on a monthly basis.	Construction, operation
			AQP5	<b>In-tunnel air quality and ventilation structure emissions compliance</b> Monitor the in-tunnel air quality and ventilation structure emissions during operation of the ventilation system to demonstrate compliance with EPR AQP3, SEPP (Air Quality Management) and the EPA Victoria licence to the satisfaction of EPA Victoria. Report the monitoring results	Operation

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				publicly on a quarterly basis for five years post opening of the Project or such lesser period as agreed with EPA Victoria. Take remedial action, to the satisfaction of EPA Victoria, if standards outlined in EPR AQP3 are not met.	
			AQP6	<b>Air quality during construction</b> Manage construction activities in accordance with EPA Victoria Publication 480 Guidelines for Major Construction Sites, to maintain air quality to a standard which does not prejudice the health and amenity of nearby residents, open spaces and community facilities. Develop and implement an Air Quality Management and Monitoring Plan (AQMMP) as part of the CEMP including in respect of dust, odour, and construction vehicle emissions to minimise impacts during construction, including setting out requirements and methods for: <ul style="list-style-type: none"> <li>Identifying sources and nature of airborne pollutants</li> <li>Identifying the location of sensitive receptors</li> <li>Monitoring</li> <li>Mitigation options to minimise impacts on local air quality</li> <li>Procedures for record keeping and reporting.</li> </ul>	Construction
			AQP7	<b>Roadside air quality mitigation strategy</b> Develop and implement a roadside air quality mitigation strategy, to the satisfaction of the EPA, for specific locations where post-construction monitoring shows a significant deterioration of air quality as a result of the Project.	Operation
<b>Business</b>					
<b>Social, business, land use, public safety and infrastructure</b> – to minimise adverse effects on the social fabric of the community, including with regard to community cohesion, access to community services and facilities, business		To minimise impacts on business and commercial facilities	BP1	<b>Damage or impacts on third party property and infrastructure</b> Through detailed design and construction, and in consultation with relevant land owners and parties as necessary, design and construct the works to minimise, to the extent practicable, impacts to, and interference with, third party property and infrastructure and to ensure that infrastructure and property is protected during construction and operation. Any damage caused to property or infrastructure as a result of the Project must be appropriately remedied in consultation with the property or asset owner.	Detailed design, construction
			BP2	<b>Access and amenity for business and commercial facilities</b> Access to, and amenity of, potentially affected business and commercial facilities must be protected, where practicable, by responding to the Project urban design principles and vision and implementing the principles of Crime Prevention Through Environmental Design. Any reduction in the level of access, amenity or function of any business or commercial facility must be minimised to the extent and duration necessary to carry out the relevant construction related works. Potentially affected business and commercial facilities must be provided with adequate notification of potential impacts and temporary access arrangements. Emergency access must be maintained at all times. All permanent access to business and commercial facilities affected by the works is to be restored, or relocated as agreed with the relevant property owner, including associated	Detailed design, construction

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functionality, changes to land use, public safety and access to infrastructure.				landscaping and restoration works, and temporary access arrangements put in place for the duration of construction must be removed when construction has ceased.	
			BP3	<b>Screening</b> Screening must be erected at the boundary of construction sites that adjoin residential or commercial properties, consistent with the surrounding context, in consultation with the relevant local councils, affected property owners and occupiers.	Construction
			BP4	<b>Impacts on operation of community, private recreation and council facilities and services</b> Where the operation of community, private recreation and council facilities and services are directly impacted by the Project, mitigation and management measures must be implemented in consultation with the appropriate stakeholders including the relevant local council to minimise these impacts to the extent practicable.	All
		To minimise impacts on business through engagement during construction	BP5	<b>Business Involvement Plan</b> As part of the Communications and Community Engagement Plan (see EPR SP2), develop and implement a Business Involvement Plan, in consultation with affected local Councils, affected businesses, relevant local trader association, and other affected stakeholders, in advance of works commencing (other than preparatory works as referred to in the Incorporated Document). Councils and affected stakeholders (including affected businesses and relevant local trader association) are to be consulted on progress of construction activities, including significant milestones, potential impacts, mitigation measures, changed traffic and parking conditions, and other matters which are of interest or concern to them. The plan must be published on the project website for the duration of construction and include but not be limited to: <ul style="list-style-type: none"> <li>• Identification of relevant stakeholders</li> <li>• Procedures to disseminate information regarding the construction schedule, construction progress, key milestones, changes in traffic and parking conditions and environmental management measures</li> <li>• Procedures to engage with stakeholders including affected businesses and relevant local trader associations, and through which affected businesses and relevant local trader associations can provide comment or feedback in relation to environmental management or delivery of the Project</li> <li>• Procedures that would be implemented to resolve any issues or disputes that may arise between parties relating to the environmental management or delivery of the Project</li> <li>• Procedures to minimise impact on access to business and commercial premises during construction and to restore permanent access (refer EPR BP2).</li> </ul>	Pre-construction, construction
		To minimise impacts on utility assets	BP6	<b>Utility assets</b> Through detailed design and construction, minimise impacts on utility assets, to the extent practicable, including but not limited to: <ul style="list-style-type: none"> <li>• Stormwater and sewer assets</li> <li>• Electricity transmissions assets (overhead and underground lines)</li> <li>• Gas and fuel pipelines</li> </ul>	Detailed design, construction

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				<ul style="list-style-type: none"> <li>Communications lines (e.g. fibre optic cables and VicRoads trunk fibre).</li> </ul> To the extent relocations are required to facilitate the Project, protect and where required, modify utility assets to the satisfaction of asset owners.	
			BP7	<b>Gas utilities</b> Unless agreed otherwise with the asset owner, ensure that: <ul style="list-style-type: none"> <li>No works are undertaken within 3.0 metres of any licensed transmission gas pipeline or underground regulating station</li> <li>Subject to the requirement below, clearances to all gas assets are as per the Conditions of Works as detailed in SP AusNet Technical Standards TS2607.1, TS2607.2 and TS2607.3, as amended or replaced from time to time</li> </ul> Risk assessments and safety studies detailing the impact on gas network infrastructure are completed in accordance with AS2885, which is the Standards Australia standard for the design, construction, testing, operations and maintenance of gas and petroleum pipelines that operate at pressure in excess of 1050 kPa, as amended or replaced from time to time.	Detailed design, construction
			BP8	<b>Business disruption</b> Minimise disruption to businesses to the extent practicable from temporary occupation of land.	Detailed design, construction
			BP9	<b>Business acquisition process</b> Minimise disruption to businesses to the extent practicable from the acquisition of interests in land, and work with business and land owners to endeavour to reach agreement on the terms for possession of the land.	Design, construction
<b>Cultural Heritage</b>					
<b>Cultural heritage</b> – to avoid or minimise adverse effects on Aboriginal and historical cultural heritage values	<i>Aboriginal Heritage Act 2006</i>	To minimise impacts on sites of Aboriginal cultural significance	CHP1	<b>Cultural Heritage Management Plan</b> Comply with and implement the Cultural Heritage Management Plan (CHMP) approved under the <i>Aboriginal Heritage Act 2006</i> .	Detailed design, construction
	<i>Heritage Act 1995</i>	To minimise impacts on both known (identified) and unidentified archaeological historic sites and values and To protect structural	CHP2	<b>Design and construction to minimise impacts on heritage</b> Undertake detailed design of the permanent and temporary works to minimise impacts where practicable, on the cultural heritage values of heritage places in consultation with Heritage Victoria and/or local councils (as applicable). Prior to commencement of works that affect heritage structures, features or places, develop and implement in consultation with the relevant heritage authority: <ul style="list-style-type: none"> <li>Physical protection measures for heritage structures, features and places as appropriate</li> <li>A methodology for any required dismantling, storage or reinstatement of heritage fabric (with reference to the ICOMOS Burra Charter 2013).</li> </ul> <i>Note: The project must meet the requirements of the Heritage Act 2017 (formerly Heritage Act 1995)</i>	Detailed design, pre-construction, construction

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		integrity of known historic sites and values and To record historical values of buildings, streetscapes or relocate/reuse small structures if feasible that are disturbed by the Works	CHP3	<p><b>Archaeological Management Plan</b></p> <p>Develop an Archaeological Management Plan detailing measures to avoid, minimise, mitigate or manage disturbance of archaeological sites and values affected by the works. Undertake investigations in accordance with the Guidelines for Investigating Historical Archaeological Artefacts and Sites, Heritage Victoria 2014 and to the satisfaction of the Executive Director, Heritage Victoria.</p> <p>The Management Plan must include:</p> <ul style="list-style-type: none"> <li>• Requirements for background historical research, excavation methodology, research design, reporting and artefact management and analysis</li> <li>• The incorporation of strategies relating to the protection of sites of archaeological interest in relevant master plans</li> <li>• Protocols for managing previously unidentified historical archaeological sites discovered during the works.</li> </ul>	Pre-construction, construction
			CHP4	<p><b>Monitoring of heritage sites and places</b></p> <p>Undertake vibration monitoring during demolition, excavation and construction within an appropriate distance (as determined by a technical assessment) of heritage sites and places in the Victorian Heritage Register (VHR) at risk of impact and monitor their condition during and post construction for settlement and structural integrity disturbance as a result of the proposed works. Report the results to the Executive Director, Heritage Victoria and take remedial action, if required, to the satisfaction of the Executive Director, Heritage Victoria.</p> <p>(Also refer to EPR GMP3 and NVP11)</p>	Construction
			CHP5	<p><b>Archival photographic records</b></p> <p>Prior to construction, undertake archival photographic recording (interior and exterior) of all heritage buildings, streetscapes or places disturbed by the works in accordance with Heritage Victoria's specification for the archival photographic recording of heritage places.</p>	Pre-construction
			CHP6	<p><b>Port Phillip Monument</b></p> <p>Develop and implement an approach to maintain a link between the Port Phillip Monument and the Maribyrnong River, including establishing an appropriate setting in consultation with the City of Melbourne which allows for interpretation, either on the existing or an alternative site.</p>	Detailed design, construction
			CHP7	<p><b>Heritage interpretation strategy</b></p> <p>In consultation with the relevant local councils and Aboriginal community develop and implement a heritage interpretation strategy for the Project which seeks to explore historical and Aboriginal cultural heritage themes. The strategy must include an audit of existing heritage interpretation. The strategy may include installation of signage regarding local heritage places and is to have a particular focus on the Kororoit Creek area, Footscray/Maribyrnong River area, and the Moonee Ponds Creek area.</p>	Pre-construction, construction
			CHP8	<p><b>Shipwrecks</b></p> <p>To confirm the presence of shipwrecks at the Maribyrnong River crossing, including the <i>Hilaria</i></p>	Pre-construction,

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				<p>(S331) which is thought to be located on the west bank of the river, undertake preliminary high-resolution sonar scan of river environs within the area to be affected by the works and targeted diving for sub-surface anomalies within the area affected by the works. Based on the results of investigations, as appropriate develop management measures in consultation with Heritage Victoria; these could include consideration in the detailed design and a detailed program of archaeological investigation.</p> <p>If the <i>Edina</i> (S199) is affected by works, record appropriately and relocate, if practicable, to a more secure location within the Maribyrnong riverine landscape or include as part of an interpretation strategy for display in the local area, to the satisfaction of Heritage Victoria.</p> <p>Engage a suitably qualified and experienced maritime archaeologist to undertake these tasks.</p>	construction
			CHP9	<p><b>Maribyrnong River front (Footscray)</b></p> <p>Where practicable in detailed design retain evidence of historical infrastructure and services in the vicinity of the Maribyrnong River front (Footscray), including rail tracks and the bluestone drain (Billy Button Creek). If removal is required, record in accordance with EPR CHP5. Apply the heritage interpretation strategy (EPR CHP7) as appropriate.</p>	Detailed design
			CHP10	<p><b>Bluestone bridge</b></p> <p>Undertake any works at and/or in the immediate vicinity of the bluestone bridge over Kororoit Creek (HO259) in a manner which avoids to the extent practicable disturbing surviving evidence of early road surfacing, including to the approaches to the bridge.</p>	Construction
			CHP11	<p><b>Rail turntables</b></p> <p>Through detailed design, avoid impacts to rail turntables to the extent practicable. Make every effort to maintain rail turntables in situ. If it is necessary to remove one of the rail turntables, develop and implement a methodology for the salvage and storage of one of the turntables to provide the opportunity for future reinstatement at an alternative site.</p>	Detailed design
			CHP12	<p><b>Flinders Street</b></p> <p>Undertake any works in the vicinity of the two VHR heritage places (No. 2 Goods Shed and the Flinders Street Retaining Wall) in a manner which avoids disturbance to the extent practicable.</p>	Construction
<b>Contaminated Soil &amp; Spoil Management</b>					
<p><b>Waste Management</b> – to manage excavated spoil generated by the project in accordance with the waste hierarchy and relevant best practice principles</p>	<p>The Environment Protection Act 1970 Environment Protection (Industrial Waste Resources) Regulations 2009 SEPP – Prevention and Management of Contamination of Land</p>	<p>To protect the beneficial uses of land and minimise risk to human health and ecosystems from exposure to contaminated soils</p>	CSP1	<p><b>Contaminated soil requirements</b></p> <p>The CEMP must include processes and measures to manage contaminated soil (including paste) that comply with relevant standards, guidelines, statutory requirements and best practice including but not limited to:</p> <ul style="list-style-type: none"> <li>SEPP – Prevention and Management of Contaminated Land, 2002</li> <li>SEPP – Air Quality Management, 2001 (in respect of odour)</li> <li>Environment Protection (Industrial Waste Resource) Regulations 2009</li> <li>Industrial Waste Management Policy (Waste Acid Sulphate Soils) 1999</li> <li>National Environment Protection (Assessment of Site Contamination) Measures 2013</li> <li>Environment Protection (Scheduled Premises) Regulations 2017</li> </ul>	Construction

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				<ul style="list-style-type: none"> <li>• WorkSafe Occupational Health and Safety Regulations 2007 (Asbestos)</li> <li>• Relevant Industrial Waste Resource Guidelines.</li> </ul>	
			CSP2	<p><b>Contaminated soil and spoil management</b></p> <p>The CEMP must include a sub-management plan that sets out the requirements and methods for contaminated soil and spoil management developed to the satisfaction of EPA Victoria.</p> <p>The contaminated soil and spoil management plan must include undertaking a detailed assessment prior to any excavation of potentially contaminated areas to identify location, types and extent of any contaminated land and properties within or adjacent to the Project boundary, and sensitive land uses affected by construction activity outside the Project boundary, and assessing the potential impact for human health, environmental risk and odour.</p> <p>This assessment must include but not be limited to consideration of the following:</p> <ul style="list-style-type: none"> <li>• Potential contamination risks, including landfill gas migration at the former quarry locations and landfills in accordance with Landfill BEPM publication 788</li> <li>• Potential contamination risks associated with any alteration of the 220kV power lines and any other utilities</li> <li>• Potential contamination risks associated with any works to the North Yarra Main Sewer</li> <li>• Potential contamination risks and waste classification of the sediments in the Maribyrnong River and Moonee Ponds Creek</li> <li>• Potential impacts posed by contamination sources adjacent to the northern portal area</li> <li>• Presence of soil contamination where excavations are proposed in the South Dynon rail yards</li> <li>• Potential contamination risks in locations where public open spaces are proposed.</li> </ul> <p>The CEMP via the contaminated soil and spoil management plan must also include requirements and methods for:</p> <ul style="list-style-type: none"> <li>• Characterising soil prior to disposal or reuse including PFAS chemicals</li> <li>• EPA waste classification to enable reuse, transport and temporary storage</li> <li>• Identifying, and where practicable adopting, options for the reuse of spoil in accordance with the Environment Protection Act 1970 waste management hierarchy</li> <li>• Identifying soil containing asbestos and if present, developing management strategies in accordance with the WorkSafe Regulations</li> <li>• Assessing geological formations with naturally enriched metals and applicable spoil management options and/or off-site disposal to the satisfaction of EPA Victoria, in particular, tunnel spoil and the West Gate Freeway embankment material</li> <li>• Identifying suitably licensed facilities for the disposal or treatment of contaminated soil</li> <li>• Management of wastewater</li> <li>• Management of dust, potential stormwater run-off and seepage from stockpiled materials, including the enclosure of the spoil handling facility at the former pivot site near the northern portal</li> <li>• Assessing potential for accumulation of potentially harmful gases and vapours during</li> </ul>	Pre-construction, construction

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				<p>tunnelling from soil and groundwater contamination zones</p> <ul style="list-style-type: none"> <li>Undertaking a baseline site assessment of areas proposed for construction laydown prior to use</li> <li>Management of any air pollutants released as a result of disturbance of contaminated land, in accordance with requirements of SEPP (AQM)</li> <li>Minimising cut and cover construction techniques in areas containing asbestos contamination</li> <li>Protection of the beneficial uses of land associated with current and planned future use.</li> </ul>	
			CSP3	<p><b>Acid sulphate soil</b></p> <p>The CEMP must include requirements and methods for the management of waste acid sulphate soil material in accordance with EPA Victoria publication IWRG 2009, EPA Victoria Publication 655.1 Acid Sulfate Soil and Rock 2009, Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil.</p> <p>This will include undertaking an acid sulphate soils risk identification process in accordance with the Victorian Coastal Acid Sulphate Soil Strategy, if soil and rock within the Project boundary are suspected to be acid sulphate soil and rock.</p>	Pre-construction, construction
		To minimise odour from the excavation and transportation of contaminated material to protect local amenity	CSP4	<p><b>Odour management</b></p> <p>The CEMP must include requirements and methods for odour management during the excavation, stockpiling and transportation of contaminated material including:</p> <ul style="list-style-type: none"> <li>Identifying the areas of contamination that may pose an odour risk;</li> <li>Monitoring of the excavated material for possible odour risk</li> <li>Management measures to minimise odour.</li> </ul>	Construction
<b>Ecology</b>					
<b>Biodiversity</b> – to avoid or minimise adverse effects on native terrestrial, aquatic and inter-tidal flora and fauna, and address opportunities for offsetting potential losses consistent with the relevant	<i>Planning and Environment Act 1987</i> <i>Flora and Fauna Guarantee Act 1988</i> <i>Wildlife Act 1975</i>	To avoid where possible, and otherwise minimise adverse impacts on native vegetation and listed species and ecological communities	EP1	<p><b>Minimise vegetation removal and disturbance</b></p> <p>Develop and implement measures to avoid, where practicable, and otherwise minimise to the extent practicable impacts on native vegetation and fauna habitat through detailed design and construction, including:</p> <ul style="list-style-type: none"> <li>Minimising footprint and surface disturbance of temporary and permanent works and constrain works on or near the north and south side of the West Gate Freeway and Kororoit Creek intersection, Hyde Street Reserve, Yarraville Gardens, Stony Creek and Stony Creek Reserve, Maribyrnong River, Moonee Ponds Creek, Kororoit Creek, Dynon Road and areas of amenity planting including Footscray Road</li> <li>Minimising works in or near wetlands and EVC habitats (such as the Kororoit Creek Riparian Woodland, Stony Creek Coastal Saltmarsh, Moonee Ponds Creek Brackish Wetlands and Plains Grassy Woodland and Swamp Scrub patches along Dynon Road)</li> <li>Minimising footprint and disturbance of potential foraging habitat for Swift Parrot, Powerful</li> </ul>	Detailed design, pre-construction, construction

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policy				<p>Owl and Grey-headed Flying Fox</p> <ul style="list-style-type: none"> <li>Minimising the removal of mature trees, planted and remnant native trees and remnant vegetation, particularly large amenity trees (&gt;30 cm DBH) and those within or connected to public reserves and parks</li> <li>Arboricultural assessments to inform detailed design and maximise tree retention and long-term viability of amenity plantings in accordance with Australian Standard 4970-2009 Protection of Trees on Development Sites</li> <li>Explore potential relocation of palm trees removed from Yarraville Gardens.</li> </ul> <p>A pre-construction site assessment must be carried out to confirm the area and number of trees and other vegetation proposed to be impacted. Area and number of trees and other vegetation actually removed is to be confirmed through a post-construction assessment.</p>	
			EP2	<p><b>Vegetation protection measures</b></p> <p>The CEMP must include a sub-management plan that sets out the requirements and methods for:</p> <ul style="list-style-type: none"> <li>Identification of areas of important flora and fauna habitat to be protected during construction</li> <li>Fencing protected areas and no go zones to prevent access during construction. Fencing should be to a standard agreed with the relevant land manager</li> <li>Pre-construction site assessment to confirm that vegetation and trees to be retained have been adequately protected from impact</li> <li>Vegetation clearing controls and protection measures</li> <li>Development and implementation of a Tree Protection Plan for protection of retained trees based on the recommendations of Australian Standard 4970-2009 Protection of Trees on Development Sites. The Tree Protection Plan must respond to the detailed design and construction methodology and identify all trees to be retained, their condition, significance, and measures to protect them from the impact of construction activities including identification of the tree protection zone</li> <li>Implementation of appropriate measures to manage the risk of the spread and introduction of weeds and pathogens during construction</li> <li>Procedures if unexpected endangered ecological communities or threatened species are identified.</li> </ul>	Pre-construction, construction
			EP3	<p><b>Reinstatement</b></p> <p>Areas affected by temporary works must be reinstated and appropriate vegetation selected for planting to tolerate the microclimate conditions including under new road structures, such as the elevated structure over Footscray Road, in consultation with the relevant council and the land manager.</p>	Construction
			EP4	<p><b>Fauna management measures</b></p> <p>The CEMP must include requirements and methods for:</p> <ul style="list-style-type: none"> <li>Managing native fauna that may be displaced due to tree removal, in compliance with the Wildlife Act 1975 and in consultation with public land managers where relevant. The strategy should be prepared by a qualified wildlife ecologist prior to vegetation clearance.</li> </ul>	Pre-construction, construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<ul style="list-style-type: none"> <li>Undertaking pre-clearing surveys and inspections to confirm the on-site location of native fauna immediately prior to tree removal</li> <li>Minimising lighting impacts in known fauna habitats</li> <li>Immediate reporting of incidental or unanticipated threatened flora and fauna finds with any clearing works in the vicinity stopped until an evaluation and appropriate response can be established.</li> </ul> <p>The surveys, inspections and management actions must be undertaken by a qualified wildlife ecologist with all necessary authorisations obtained prior to removal of relevant habitat. All management actions and any accidental fauna injuries or deaths must be reported to the IREA.</p>	
		To manage interactions with aquatic fauna habitat in Kororoit Creek, Stony Creek Maribyrnong River and Moonee Ponds Creek	EP5	<p><b>Works on waterways</b></p> <p>Through detailed design and construction, design, locate and construct structures to minimise, to the extent practicable, short and long-term impacts on riparian, riverbed and aquatic habitat in Kororoit Creek, Stony Creek, Maribyrnong River and Moonee Ponds Creek, in consultation with Melbourne Water and relevant authorities.</p>	Detailed design, construction
		To replace affected planted vegetation and where practicable improve ecological outcomes	EP6	<p><b>Landscaping Plan</b></p> <p>Prepare and implement the Landscaping Plan that includes replacement of affected planted vegetation to achieve a canopy of equal (or greater) size of healthy, mature examples of the species.</p> <p>The plan must ensure the reinstatement of soils is of sufficient quality and volumes to support the long-term viability of replacement plantings. Ensure ongoing supply of water to tree root zones, especially during their establishment stage. Employ water sensitive urban design principles (WSUD) where possible.</p> <p>The plan must achieve a minimum tree replacement ratio of 5:1 and replacement trees should be planted in areas determined in consultation with the relevant Councils and authorities. Tree reinstatement and offset planting should take into account the amenity, shade and heritage value of the canopy trees to be removed for local residents. Tree replacement to be undertaken to benefit such residents, rather than offset elsewhere in the Project.</p> <p>The plan must specify the locations where installations of advanced trees are indicated to minimise impact of tree removal, in consultation with relevant local council.</p> <p>The plan must identify locations for planting prior to construction works where feasible to do so.</p> <p>The plan must consider the contribution that vegetation and the planted replacement trees can make to the creation of habitat corridors and linkages.</p> <p>The plan must be reviewed by the IREA and developed in consultation with the relevant council, City West Water and Melbourne Water (where appropriate) with regard to local policies, strategies and relevant existing vegetation enhancement initiatives including, as applicable:</p>	Detailed design, pre-construction, construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<ul style="list-style-type: none"> <li>Greening the West Strategic Plan</li> <li>City of Maribyrnong Street Planting Strategy</li> <li>City of Maribyrnong Stony Creek Directions Plan</li> <li>City of Maribyrnong Footscray River Edge Master Plan</li> <li>City of Hobsons Bay Donald McLean Reserve Master Plan</li> <li>City of Maribyrnong Yarraville Gardens Conservation Plan</li> <li>City of Melbourne Draft Urban Ecology and Biodiversity Strategy</li> <li>City of Melbourne's Tree Retention and Removal policy, Urban Forest Strategy, and Nature in the City Strategy</li> <li>The relevant City of Melbourne Urban Forest Precinct Plan.</li> </ul>	
			EP7	<p><b>Vegetation Offsets</b></p> <p>Native vegetation offsets must be provided in accordance with the Permitted Clearing of Native Vegetation – Biodiversity Assessment Guidelines (Department of Environment and Primary Industries, September 2013), except as otherwise agreed by the Secretary to the Department of Environment, Land, Water and Planning.</p>	Construction
<b>Greenhouse gas emissions</b>					
<p><b>Health, amenity and environmental quality</b> – to minimise adverse air quality, noise and vibration effects on the health and amenity of nearby residents, local communities and road users during both construction and operation of the Project.</p>	<p><i>Environment Protection Act 1970</i></p>	<p>To manage greenhouse gas emissions by targeting an 'Excellent' rating on the ISCA rating framework for Design and As Built</p>	GGP1	<p><b>Greenhouse gas emissions</b></p> <p>Integrate sustainable design practices into the design process to minimise, to the extent practicable, greenhouse gas emissions arising from construction, operations and maintenance of the West Gate Tunnel Project. Include mandatory actions under the Protocol for Environmental Management (Greenhouse Gas Emissions and Energy Efficiency in Industry) for selection of best practice energy usage for the tunnel ventilation and lighting systems.</p>	Detailed design
			GGP2	<p><b>Emissions reduction</b></p> <p>In detailed design, consider the selection of materials and monitor energy and carbon during construction, to target reductions for GHG emission impacts of materials and energy consumption in accordance with Mat-1 (Level 2) and Ene-1 (Level 2) credits of the Infrastructure Sustainability (IS) rating tool (v1.2). Investigate opportunities to use green power sourced from renewable energy and bio diesel where practicable.</p> <p>Target Ene-1 (Level 2.7) credits of the Infrastructure Sustainability (IS) rating tool (v1.2), above the minimum Project requirement of Level 2.</p>	Detailed design, construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
<b>Ground Movement</b>					
<p><b>Land stability</b> – to avoid or minimise adverse effects on land and river bed or bank geomorphic stability from Project Activities, including Tunnel construction and crossings of the Maribyrnong River, Kororoit Creek, Stony Creek and Moonee Ponds Creek.</p>		<p>To minimise the likelihood of subsidence and lateral ground movement</p>	GMP1	<p><b>Geotechnical model and assessment</b></p> <p>Prepare a geotechnical model of representative geological and groundwater conditions prior to excavation and tunnelling in subject area(s) to identify geological structures and groundwater features. This model must include details of proposed excavations and tunnels, construction staging, and identify surface (including road and rail infrastructure) and sub-surface structures and infrastructure (including utilities) which could be impacted by the Project, including the specific attributes of those structures. This model must be used to assess the predicted settlement, ground movement, stress redistribution and horizontal strain profiles caused by excavation and tunnelling on adjacent property and infrastructure.</p> <p>Maintain the predictive model throughout the construction period and review against monitoring data (EPR GMP5), to regularly assess potential ground movement impacts.</p>	Pre-construction, construction
			GMP2	<p><b>Tunnel and portal drainage</b></p> <p>Through detailed design and construction, design tunnel and portal drainage and adopt construction methods which minimise adverse changes to groundwater levels during construction and operation to prevent or manage the effects of ground subsidence.</p> <p>In addition to the above, for the northern and southern portal areas design and implement engineering control measures to ensure dewatering does not result in adverse ground movement impact on property or infrastructure.</p>	Detailed design, construction
			GMP3	<p><b>Condition surveys and determination of settlement criteria for property and infrastructure</b></p> <p>Before works commence, and subject to receiving landowner consent on suitable terms, undertake condition surveys of property and infrastructure identified in the geotechnical model and assessment (EPR GMP1) as being at risk of damage by an independent qualified professional. Condition surveys are to include property, land, ground or infrastructure reasonably accessible and within 50 metres of project activities or other property, land, ground or infrastructure that may be affected by project activities. Post-construction condition surveys of those properties and infrastructure must be undertaken after construction of the Project is completed.</p> <p>The results of the condition surveys and the modelling undertaken under GMP1 must be used to determine appropriate settlement criteria for the relevant property and infrastructure. Condition surveys must be forwarded to the property owner within four weeks of the survey being undertaken.</p> <p>Where potential for ground movement impacts could occur, consult with affected stakeholders. Any damage caused to property or infrastructure as a result of the Project must be rectified or the landowner or asset owner compensated.</p> <p>Establish an independent mediation process for the assessment of claims for property and infrastructure damage to operate up to three years post opening of the Project.</p> <p>Ensure all stakeholder engagement activities are undertaken in accordance with the project's Communications and Community Engagement Plan (EPR SP2).</p>	Pre-construction, construction, operation
			GMP4	<p><b>Settlement criteria for utilities</b></p> <p>Settlement criteria for individual utility structures and infrastructure must be determined in consultation with the relevant authorities prior to commencement of any construction potentially</p>	Pre-construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				affecting the individual utility or infrastructure.	
			GMP5	<p><b>Ground movement monitoring</b></p> <p>Develop and implement a pre-construction, construction and post-construction program to monitor subsidence and lateral movement during construction activities and during operation.</p> <p>Implement a baseline ground movement monitoring plan, including provision for monitoring of water table and soil moisture interactions, prior to commencement of construction, in locations where construction activities with the potential to cause ground movement will occur, to assess background fluctuations.</p>	Pre-construction, construction, operation
			GMP6	<p><b>Mitigation of ground movement impact</b></p> <p>Implement appropriate mitigation measures should the geotechnical model (EPR GMP1), predictive groundwater model (EPR GWP4), or subsequent monitoring program identify exceedances of criteria identified in EPR GMP3 and EPR GMP4.</p>	Construction, operation
<b>Groundwater</b>					
<p><b>Hydrology and water quality</b> – to avoid or minimise adverse effects on surface water and groundwater quality and hydrology in particular resulting from the disturbance of contaminated or acid-forming materials, and to maintain functions and values of floodplain environments.</p>	SEPP – Groundwaters of Victoria	To protect beneficial uses of groundwater	GWP1	<p><b>Groundwater management measures</b></p> <p>Prepare and implement a CEMP and an OEMP including a sub-management plan which sets out the measures for management, monitoring, reuse and disposal of groundwater inflows during construction and operation that comply with relevant legislation and guidelines, including but not limited to:</p> <ul style="list-style-type: none"> <li>• State Environment Protection Policy Groundwaters of Victoria 1997 (Vic)</li> <li>• State Environment Protection Policy Waters of Victoria 2003 (Vic)</li> <li>• State Environment Protection Policy Prevention and Management of Contaminated Land 2002 (Vic)</li> <li>• Water Industry Regulations 2006 (Vic).</li> </ul> <p>The groundwater sub-management plan, developed in consultation with EPA Victoria, must include details of:</p> <ul style="list-style-type: none"> <li>• Hydrogeological conceptual model</li> <li>• Baseline conditions</li> <li>• Beneficial uses</li> <li>• Monitoring plan</li> <li>• Management, mitigation and performance measures</li> <li>• Disposal of groundwater</li> <li>• Triggers for action</li> <li>• Reporting.</li> </ul>	Pre-construction, construction, operation
			GWP2	<p><b>Protection of groundwater quality</b></p> <p>The CEMP must include requirements and construction methods that maintain groundwater quality, for example:</p> <ul style="list-style-type: none"> <li>• Use sealing products, caulking products, lubricating products and chemical grouts applied</li> </ul>	Construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<p>during tunnelling construction that do not diminish the groundwater quality</p> <ul style="list-style-type: none"> <li>• Use fluids for artificial recharge activities that do not diminish the groundwater quality</li> <li>• Ensure compatibility of construction material with groundwater quality to provide long term durability for infrastructure design life</li> <li>• Develop drainage infrastructure that provides for the propensity of dissolved constituents in groundwater to precipitate out of solution and create clogging and maintenance risks</li> <li>• Develop a plan to assess, remove and dispose of contaminated groundwater and impacted soils associated with pile and pile cap excavation and construction.</li> </ul>	
		<p>To minimise changes to groundwater movements during construction and operation to manage potential impacts</p>	<p>GWP3</p>	<p><b>Tunnel drainage design and construction methods</b></p> <p>Design long term tunnel drainage and adopt construction methods which minimise changes to groundwater levels during construction and operation to manage, mitigate and minimise:</p> <ul style="list-style-type: none"> <li>• Mobilisation of contaminated groundwater</li> <li>• Dewatering and potential impacts of acid sulphate soils, including both unconsolidated sediments and lithified sedimentary rock</li> <li>• Protection of waterways and potential groundwater dependent ecosystems (GDE), including terrestrial ecosystems</li> <li>• Avoid any other adverse impacts of groundwater level changes such as subsidence.</li> </ul> <p>Design contingency measures and/or controls as required to:</p> <ul style="list-style-type: none"> <li>• Ensure maintenance of the base flow associated with a reduction or loss of groundwater discharge to Stony Creek or loss of water availability for terrestrial ecosystems.</li> <li>• Limit acidification should monitoring indicate a potential adverse impact to water levels or quality.</li> </ul> <p>Design contingency measures and/or controls as required should movement of contamination be identified. Contingency measures to include consideration of:</p> <ul style="list-style-type: none"> <li>• Improvements to barrier system and ground treatments at the portal to reduce inflows and drawdowns</li> <li>• Hydraulic control of the movement of the contaminated groundwater.</li> </ul> <p>Implement engineering control measures and/or ground treatment to minimise to the extent practicable groundwater inflow during excavation, construction and operation of tunnels, cross passages and subsurface excavations.</p> <p>Implement measures to limit groundwater inflow during construction to excavations and drawdown should monitoring indicate acidification is occurring.</p> <p>Develop and implement a plan to mitigate and manage potential future displacement of contaminated groundwater in the vicinity of the NYM sewer, in accordance with State Environment Protection Policy Groundwaters of Victoria 1997 (Vic) and State Environment Protection Policy Prevention and Management of Contaminated Land 2002 (Vic), including:</p> <ul style="list-style-type: none"> <li>• Investigate the properties identified as potentially contaminated and likely to be influenced by the changed groundwater conditions</li> <li>• Assess the influence of changed conditions on potentially contaminated groundwater at these</li> </ul>	<p>Detailed design, pre-construction, construction</p>

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<ul style="list-style-type: none"> <li>properties</li> <li>Assess the risk posed to human health and the environment, including the potential for vapour intrusion to indoor air of buildings</li> <li>Develop contingency measures to control any adverse risks.</li> </ul>	
			GWP4	<p><b>Predictive groundwater model</b></p> <p>Develop and maintain a predictive groundwater model throughout the construction period to assess the potential impacts of dewatering during construction and develop potential contingency measures.</p>	Pre-construction, construction
			GWP5	<p><b>Groundwater monitoring</b></p> <p>Develop and implement a pre-construction, construction and post-construction groundwater monitoring program to calibrate the predictive model prior to commencement of construction and verify the model predictions post-construction, manage construction activities and monitor during operation that as a minimum:</p> <ul style="list-style-type: none"> <li>Establishes a baseline condition for groundwater (quality, level, flow and GDE health) prior to the commencement of construction</li> <li>Can be used to identify (and manage) changes to groundwater (quality, level, flow and GDE health) during construction and operation activities.</li> <li>Can be used to assess (and manage) the impact of construction on: <ul style="list-style-type: none"> <li>Groundwater beneficial uses (or users of surface water, groundwater and land)</li> <li>Areas considered a high contamination risk</li> <li>Groundwater Dependant Ecosystems (e.g. Stony Creek, Yarraville Gardens)</li> <li>North Yarra Main Sewer</li> <li>Acid Sulphate Soils</li> <li>Compressible materials</li> <li>Portal, tunnel, and cross passage construction</li> </ul> </li> <li>Can be used to determine the requirement for intervention, and assess the effectiveness of mitigation measures proposed or implemented to protect groundwater</li> <li>Can be used to calibrate and verify a predictive numerical model developed as part of the Project</li> <li>Groundwater sampling undertaken consistent with EPA Victoria Publications 668 (2006) Hydrogeological Assessment (Groundwater Quality) Guidelines and 669 (2000) Groundwater Sampling Guidelines.</li> </ul>	Pre-construction, construction, operation
			GWP6	<p><b>Interception of groundwater</b></p> <p>The CEMP must include requirements and methods for management of groundwater interception during construction, including:</p> <ul style="list-style-type: none"> <li>Identification, treatment, disposal and handling of contaminated seepage water and/or slurries including vapours in accordance with relevant legislation and guidelines</li> </ul>	Construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<ul style="list-style-type: none"> <li>Assessment of barrier/damming effects</li> <li>Subsidence management</li> <li>Dewatering and potential impacts on acid sulphate soils, including both unconsolidated sediments and lithified sedimentary rock</li> <li>Protection of waterways and potential groundwater dependent ecosystems including Yarraville Gardens</li> <li>Contingency actions when interventions are required.</li> </ul>	
		To minimise impact on existing groundwater users	GWP7	<b>Impacts on groundwater users</b> Conduct a review and confirm the status of potential use of extraction bores within the estimated construction drawdown area. Develop and implement if required a plan to maintain water supply to identified groundwater users.	Pre-construction, construction
<b>Land Use</b>					
<b>Built environment</b> – to protect and enhance the function and character of the evolving urban environment including built form and public realm within the immediate and broader context of the Works.	Planning and Environment Act 1987	To minimise impacts on existing and proposed future land use	LPP1	<b>Minimise design footprint</b> Through detailed design, minimise the permanent footprint of the Project to the extent practicable to reduce adverse impacts on potentially affected land uses in consultation with the relevant local Council, particularly: <ul style="list-style-type: none"> <li>Parks</li> <li>Reserves/ gardens</li> <li>Waterways</li> <li>Recreational and community facilities</li> <li>Residential properties in proximity to the construction area</li> <li>Commercial and industrial sites.</li> </ul>	Detailed design
			LPP2	<b>Recreation facilities</b> Through detailed design and construction, minimise to the extent practicable any impacts on users of recreational facilities including Westgate Public Golf Course, Crofts Reserve, Hyde Street Reserve, Donald McLean Reserve, Moonee Ponds Creek (Capital City Trail), Railway Place and Miller Street Reserve, Yarraville Gardens, and McIvor Reserve. Access to, and amenity and function of recreation facilities is to be maintained to the extent practicable in consultation with the land manager.	Detailed design, construction
			LPP3	<b>Future development opportunities</b> Do not preclude the possibility of a future road connection between Precinct 15 (Hobsons Bay City Council) and Bradmill Precinct (Maribyrnong City Council). Manage, to the extent practicable, the impacts on Railway Place and Miller Street Reserve Concept Plan in consultation with City of Melbourne. In consultation with the relevant Council and authorities, minimise to the extent practicable, the impacts on urban renewal areas, identified in relevant planning schemes, and proposed open	Detailed design

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				space areas. Manage, to the extent practicable, the impacts on future built form of 48–54 Digital Drive, Digital Harbour in consultation with the landowner/developer.	
			LPP4	<b>Pedestrian and bicycle connections</b> Do not preclude the possibility of high amenity, accessible and convenient future pedestrian and bicycle connections between: <ul style="list-style-type: none"> <li>• North and West Melbourne, E-Gate and Docklands to Moonee Ponds Creek (the Moonee Ponds Creek Trail/Capital City Trail)</li> <li>• Digital Harbour and West Melbourne by upgrading pedestrian crossings at the intersection of Wurundjeri Way and Dudley Street.</li> </ul>	Detailed design
			LPP5	<b>Public Land</b> Through detailed design and construction reduce the disruption to the extent practicable, to current uses of public and council land resulting from temporary occupation. Reinstate public land upon completion of temporary occupation as per LVP2.	Detailed design, construction
<b>Landscape and Visual</b>					
<b>Landscape, visual and recreational values</b> – to minimise adverse effects on landscape and visual amenity values and to maximise the enhancement of these values where opportunities exist	<i>Planning and Environment Act 1987</i>	To minimise impacts on the built environment and landscape, including public open space, and to maximise opportunities for enhancement for public amenity and safety	LVP1	<b>Urban design approach</b> Detailed design development must respond to the West Gate Tunnel Project urban design principles and vision. The design response must minimise, to the extent practicable, landscape and visual impacts, and maximise opportunities for enhancement of public amenity, open space and facilities, resulting from the Project, in consultation with relevant stakeholders, particularly in relation to: <ul style="list-style-type: none"> <li>• Landmark elements</li> <li>• Heritage values and assets</li> <li>• Bridges and structures</li> <li>• Existing and proposed roads, streets, cycle paths, trails and footpaths</li> <li>• Existing and proposed landmark natural and urban elements across the Project, including CityLink</li> <li>• Significant views from the public domain</li> <li>• Existing and proposed vegetation including street trees and vegetation along waterways</li> <li>• Open space including, Yarraville Gardens, Hyde Street Reserve, Donald McLean Reserve, Railway Place and Millers Street Reserve, and along Maribyrnong River and Moonee Ponds Creek and proponent-proposed new open spaces</li> <li>• Community and recreational assets including the Yarraville Community Centre, Yarraville Gardens, Westgate Golf Club, Spotswood Cricket/Football Oval, W.L.J. Crofts Reserve, shared paths along Kororoit Creek, Maribyrnong River, Stony Creek, and Moonee Ponds Creek, various bowls and tennis clubs in the vicinity of the Project</li> <li>• Residential interfaces</li> </ul>	Detailed design, construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<ul style="list-style-type: none"> <li>Business interfaces</li> <li>Crime Prevention Through Environmental Design, including effects on safe movements of pedestrians and cyclists; including within undercroft and open spaces areas</li> <li>Detailed design to minimise overshadowing by noise walls of residential properties, community facilities, open spaces, waterways and valuable natural habitats</li> <li>Design of acoustic sheds, used during construction, to have regard to the character of the area.</li> </ul>	
			LVP2	<p><b>Reinstatement following temporary works</b></p> <p>Avoid direct impacts on the Yarraville Gardens unless agreed by the City of Maribyrnong. Reinstatement of public open spaces, vegetation cover and facilities disturbed by temporary works to the reasonable satisfaction of the land manager.</p>	Detailed design, construction
		To minimise the impact of light emissions	LVP3	<p><b>Light spillage</b></p> <p>Detailed design of the works must minimise light spillage to protect the amenity of adjacent land uses and any known significant native fauna habitat to the extent practicable.</p> <p>The CEMP must include requirements and methods to minimise light spillage, to the extent practicable, during construction to protect the amenity of adjacent surrounding neighbourhoods, parks and community facilities including urban environments, in consultation with relevant stakeholders.</p>	Detailed design, construction
			LVP4	<p><b>Vegetation screening</b></p> <p>As part of the Landscaping Plan (refer EPR EP6), implement vegetation screening for visually impacted residential areas, public realm areas, public open spaces and the Altona Memorial Park. The plan must be prepared in consultation with the relevant Councils and include measures to ensure vegetation screening is used where practicable if Project infrastructure would be visible from residential areas and public open spaces.</p>	Construction
			LVP5	<p><b>Design review</b></p> <p>WDA must refer urban design plans to the OVGA for review against the relevant EPRs and the Project's urban design principles and vision.</p>	Detailed design

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase						
Noise and Vibration											
<p><b>Health, amenity and environmental quality</b> – to minimise adverse air quality, noise and vibration effects on the health and amenity of nearby residents, local communities and road users during both construction of the works and operation of the West Gate Tunnel Project</p>		<p>To minimise traffic noise impacts of West Gate Tunnel Project and local roads</p>	<p>NVP1</p>	<p><b>Traffic noise limits</b> Design and construct the works to meet the following limits on traffic noise levels.</p> <table border="1" data-bbox="846 337 1822 1174"> <thead> <tr> <th data-bbox="846 337 1031 375">Aspect</th> <th data-bbox="1031 337 1822 375">External Traffic Noise Levels</th> </tr> </thead> <tbody> <tr> <td data-bbox="846 375 1031 922"> <p>External traffic noise levels</p> </td> <td data-bbox="1031 375 1822 922"> <p>a External traffic noise levels from the freeway* and Local Roads<sup>+</sup> at Category A Buildings and Category B Buildings<sup>^</sup> facing the traffic noise, being those adjacent to or with a direct line of sight to the freeway*, must be no greater than:</p> <ul style="list-style-type: none"> <li>i 63dB(A) L<sub>10(18h)</sub> measured between 6am and midnight for Category A Buildings; and</li> <li>ii 63dB(A) L<sub>10(12h)</sub> measured between 6am and 6pm for Category B Buildings.</li> </ul> <p>b External traffic noise levels from the freeway* and Local Roads<sup>+</sup> at Category A Buildings and Category B Buildings<sup>^</sup> which do not fall within paragraph (a) above and which are adjacent to an identified section of Local Road<sup>+</sup>, must be no greater than the predicted traffic noise level under a 'no project' scenario. The 'no project' scenario must also assume that the road traffic noise attributable to the West Gate Freeway (without the project) is:</p> <ul style="list-style-type: none"> <li>• 63dB(A) L<sub>10(18h)</sub> measured between 6am and-midnight for the relevant Category A Buildings; and</li> <li>• 63dB(A) L<sub>10(12h)</sub> measured between 6am and 6pm for the relevant Category B Buildings.</li> </ul> </td> </tr> <tr> <td data-bbox="846 922 1031 1174"> <p>Applies at</p> </td> <td data-bbox="1031 922 1822 1174"> <p>The noise criteria in paragraphs (a) and (b) above are to apply to the lowest habitable level of Category A Buildings and Category B Buildings existing and occupied or capable of being occupied at the time of announcing the design on 29 May 2017.</p> <p>In some cases off-site noise attenuation may be required to meet the noise criteria at any Category A or Category B Building. This may include implementation of noise attenuation measures in consultation with the owner of the relevant building to ensure that an equivalent internal level of attenuation is provided to the building.</p> </td> </tr> </tbody> </table>	Aspect	External Traffic Noise Levels	<p>External traffic noise levels</p>	<p>a External traffic noise levels from the freeway* and Local Roads<sup>+</sup> at Category A Buildings and Category B Buildings<sup>^</sup> facing the traffic noise, being those adjacent to or with a direct line of sight to the freeway*, must be no greater than:</p> <ul style="list-style-type: none"> <li>i 63dB(A) L<sub>10(18h)</sub> measured between 6am and midnight for Category A Buildings; and</li> <li>ii 63dB(A) L<sub>10(12h)</sub> measured between 6am and 6pm for Category B Buildings.</li> </ul> <p>b External traffic noise levels from the freeway* and Local Roads<sup>+</sup> at Category A Buildings and Category B Buildings<sup>^</sup> which do not fall within paragraph (a) above and which are adjacent to an identified section of Local Road<sup>+</sup>, must be no greater than the predicted traffic noise level under a 'no project' scenario. The 'no project' scenario must also assume that the road traffic noise attributable to the West Gate Freeway (without the project) is:</p> <ul style="list-style-type: none"> <li>• 63dB(A) L<sub>10(18h)</sub> measured between 6am and-midnight for the relevant Category A Buildings; and</li> <li>• 63dB(A) L<sub>10(12h)</sub> measured between 6am and 6pm for the relevant Category B Buildings.</li> </ul>	<p>Applies at</p>	<p>The noise criteria in paragraphs (a) and (b) above are to apply to the lowest habitable level of Category A Buildings and Category B Buildings existing and occupied or capable of being occupied at the time of announcing the design on 29 May 2017.</p> <p>In some cases off-site noise attenuation may be required to meet the noise criteria at any Category A or Category B Building. This may include implementation of noise attenuation measures in consultation with the owner of the relevant building to ensure that an equivalent internal level of attenuation is provided to the building.</p>	<p>Detailed design, construction</p>
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<p>External traffic noise levels</p>	<p>a External traffic noise levels from the freeway* and Local Roads<sup>+</sup> at Category A Buildings and Category B Buildings<sup>^</sup> facing the traffic noise, being those adjacent to or with a direct line of sight to the freeway*, must be no greater than:</p> <ul style="list-style-type: none"> <li>i 63dB(A) L<sub>10(18h)</sub> measured between 6am and midnight for Category A Buildings; and</li> <li>ii 63dB(A) L<sub>10(12h)</sub> measured between 6am and 6pm for Category B Buildings.</li> </ul> <p>b External traffic noise levels from the freeway* and Local Roads<sup>+</sup> at Category A Buildings and Category B Buildings<sup>^</sup> which do not fall within paragraph (a) above and which are adjacent to an identified section of Local Road<sup>+</sup>, must be no greater than the predicted traffic noise level under a 'no project' scenario. The 'no project' scenario must also assume that the road traffic noise attributable to the West Gate Freeway (without the project) is:</p> <ul style="list-style-type: none"> <li>• 63dB(A) L<sub>10(18h)</sub> measured between 6am and-midnight for the relevant Category A Buildings; and</li> <li>• 63dB(A) L<sub>10(12h)</sub> measured between 6am and 6pm for the relevant Category B Buildings.</li> </ul>										
<p>Applies at</p>	<p>The noise criteria in paragraphs (a) and (b) above are to apply to the lowest habitable level of Category A Buildings and Category B Buildings existing and occupied or capable of being occupied at the time of announcing the design on 29 May 2017.</p> <p>In some cases off-site noise attenuation may be required to meet the noise criteria at any Category A or Category B Building. This may include implementation of noise attenuation measures in consultation with the owner of the relevant building to ensure that an equivalent internal level of attenuation is provided to the building.</p>										
<p>* Freeway means the primary road connecting the West Gate Freeway (from the M80 interchange) with the Port of Melbourne, CityLink and the city to be constructed as a result of the Project and excludes:</p> <ul style="list-style-type: none"> <li>• The sections of the West Gate Freeway east of the Williamstown rail line, but includes the Hyde Street ramps; and</li> <li>• The sections of the Project which comprise widening of arterial roads, but includes:</li> <li>• The Dynon Road eastbound exit ramp and Dynon Road westbound entry ramp to the western</li> </ul>											

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<p>abutment of the existing Dynon Road bridge over the railway lines; and</p> <ul style="list-style-type: none"> <li>The Wurundjeri Way Extension from Dynon Road to the point at which the elevated section of the road ties into Wurundjeri Way south of Dudley Street.</li> </ul> <p>+ Local Road means</p> <ul style="list-style-type: none"> <li>The sections of Grieve Parade, Millers Road, Williamstown Road/Melbourne Road, Hyde Street, MacKenzie Road, Simcock Avenue and Dynon Road which extend 100 metres from the interchange of the relevant road with the freeway; and</li> <li>The sections of Footscray Road between the intersection of Footscray Road with the Footscray Road ramps and the Sims Street loop intersection with Footscray Road.</li> </ul> <p>^ Category A Buildings and Category B Buildings means</p> <ul style="list-style-type: none"> <li>Category A Buildings - Residential dwellings, aged persons homes, hospitals, motels, caravan parks and other buildings of a residential nature</li> <li>Category B Buildings - Schools, kindergartens, libraries and other noise-sensitive community buildings.</li> </ul>	
			NVP2	<p><b>Traffic noise reduction at open space</b></p> <p>Construct noise barriers to reduce noise levels at the following open space areas:</p> <ul style="list-style-type: none"> <li>Crofts Reserve: extend the 8.25 metre high barrier on the south of the freeway, to the west for approximately 85 metres</li> <li>Precinct 15 (frontage): provision of an additional 3 metre high barrier on the south of the freeway, approximately 210 metres extending to the west</li> <li>Mclvor Reserve: extend the 8.75 metre high barrier opposite Mclvor Reserve, on the north side of the freeway, to the west for approximately 150 metres</li> <li>Hyde Street Reserve: a 4.5 metre high noise barrier along the Hyde Street off ramp and shared use path adjacent to the Hyde Street Reserve for approximately 440 metres.</li> </ul>	Detailed design, construction
			NVP3	<p><b>Maintenance of noise mitigation measures</b></p> <p>Traffic noise mitigation measures must be maintained to ensure that the traffic noise levels in EPR NVP1 are not exceeded for 20 years after opening of the Project for the same sensitive receptors used at the time of the design.</p>	Operation
			NVP4	<p><b>Traffic noise reduction at Millers Road north of West Gate Freeway</b></p> <p>Subject to the timely agreement of the relevant property owners prior to opening of the Project, agreed noise mitigation measures must be implemented, during construction, at the residential properties that front Millers Road between the West Gate Freeway and Geelong Road (to the extent EPR NVP1 is not otherwise applicable to such properties). Relevant property owners are to be consulted and provided with:</p> <ul style="list-style-type: none"> <li>An acoustic report predicting traffic noise levels from Millers Road in 2031 both with the project and without the project (with the difference in these being 'the predicted traffic noise increases')</li> <li>Details of practicable on-property noise reduction options such as fencing, double glazing and mechanical ventilation (or a combination of these) to achieve to the extent practicable an</li> </ul>	Pre-operation

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<p>equivalent reduction to the predicted traffic noise increase for the relevant property</p> <ul style="list-style-type: none"> <li>The process for documenting and implementing agreed noise mitigation measures.</li> </ul>	
			NVP5	<p><b>Construction of noise barriers</b></p> <p>Permanent noise attenuation must, where feasible, be installed in advance of adjacent works.</p>	Construction
			NVP6	<p><b>Traffic noise monitoring</b></p> <p>Traffic noise must be measured prior to and upon opening of the Project and during operation of the freeway, in accordance with the VicRoads Traffic Noise Measurement Requirements for Acoustic Consultants – September 2011, to verify conformance with the external traffic noise performance requirements set out in EPR NVP1 above.</p> <p>Remedial action must be taken as soon as practicable in the event that the measured traffic noise levels demonstrate that the external traffic noise performance requirements set out in EPR NVP1 are not met.</p> <p>Monitoring results must be made publicly available.</p>	Pre-operation, operation
		Manage surface construction noise and vibration to protect amenity	NVP7	<p><b>Construction noise, vibration management, and monitoring</b></p> <p>Prepare and implement a Construction Noise and Vibration Management Plan (CNVMP) in accordance with the limits and methodologies outlined in the Noise and Vibration EPRs.</p> <p>The CNVMP must be informed by monitoring and modelling undertaken by a suitably qualified acoustic and vibration consultant prior to the construction works and include (but not be limited to) the following:</p> <p><b>A. Noise and vibration management levels</b></p> <ul style="list-style-type: none"> <li>The construction noise, vibration and regenerated noise targets as defined in EPRs NVP8, 9, 10, 11 and 12</li> <li>Updated noise and vibration modelling of the noise and vibration impacts</li> </ul> <p><b>B. Noise and vibration mitigation measures</b></p> <ul style="list-style-type: none"> <li>Identification of sensitive receptors potentially impacted by the construction stage of the Project</li> <li>Identification of the scheduling, duration, activities and equipment with the potential to generate airborne noise or surface vibration impacts at the identified sensitive receptors</li> <li>Implementation of construction noise and vibration targets including management measures, where practicable to achieve these targets such as: <ul style="list-style-type: none"> <li>Scheduling</li> <li>Measures to manage night works</li> <li>Vehicle and traffic management related to any relevant traffic management plan prepared under EPR TP3</li> <li>Temporary structures to attenuate noise impacts at the tunnel portals if required to achieve Noise and Vibration EPRs.</li> </ul> </li> <li>Detail of practicable measures that will be adopted to manage noise and vibration impacts that exceed the targets or values set out in the EPRs and CNVMP including:</li> </ul>	Pre-construction, construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<ul style="list-style-type: none"> <li>• Engagement and notification measures</li> <li>• Off-site measures (eg temporary relocation or respite offers)</li> </ul> <p>C. <u>Vibration</u></p> <ul style="list-style-type: none"> <li>• Procedures for condition surveys to be undertaken, with the prior approval of the relevant property owner and/or occupier, for property, land, ground and infrastructure that is reasonably accessible and that may be affected by the project activities</li> <li>• Any alternative vibration guideline values identified under EPR NVP11 (refer Note 2 of NVP11).</li> </ul> <p>D. <u>Blasting</u></p> <ul style="list-style-type: none"> <li>• If blasting is proposed, the values and management measures as defined in EPRs NVP9, 16 and 17.</li> </ul> <p>E. <u>Monitoring</u></p> <ul style="list-style-type: none"> <li>• Noise and vibration monitoring commitments (including real time monitoring in high risk areas) and response protocols for managing noise complaints and remedial action (with reference to procedures required by EPR EMP4)</li> </ul> <p>F. <u>Community consultation</u></p> <ul style="list-style-type: none"> <li>• Details of the communication plan to be adopted throughout construction as part of EPR SP2 including any specific measures related to particular locations or activities</li> <li>• Detail of the complaints management system for noise complaints, consistent with the requirements under EPR EMP4.</li> </ul> <p>G. <u>Unavoidable works</u></p> <ul style="list-style-type: none"> <li>• A qualification rationale or list of planned works that constitute 'unavoidable works'; and response strategies best suited to mitigation of the impacts of those unavoidable works, consistent with EPA Publication 1254 – Noise Control Guidelines.</li> <li>• Prior approval must be obtained from the IREA for planned unavoidable work to be undertaken (except for emergency works to avoid the loss of life or damage to property, or to prevent environmental harm).</li> </ul>	
			NVP8	<p><b>Construction noise targets</b></p> <p><b>1. Sensitive areas (non-residential)</b></p> <p>For sensitive land uses (based on AS/NZS 2107:2016) implement management actions if construction noise is predicted to or does exceed the internal and external noise levels below, and a noise sensitive receptor is adversely impacted.</p> <p>If construction exceeds the noise levels below:</p> <ul style="list-style-type: none"> <li>• Consider the duration of construction noise</li> <li>• Consider the existing ambient noise levels</li> <li>• Consult with the owner or operator of the noise sensitive receptor</li> <li>• Consider any specific acoustic requirements of land uses listed below to determine whether a noise sensitive receptor is adversely impacted.</li> </ul>	Construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase																														
				<p><b>Land use</b></p> <table border="1"> <thead> <tr> <th colspan="2" data-bbox="1312 232 1822 289"><b>Construction noise management level, LAeq (15 min) (applies when properties are in use)</b></th> </tr> </thead> <tbody> <tr> <td data-bbox="846 297 1304 386">Classrooms in schools and other educational institutions including kindergartens</td> <td data-bbox="1312 297 1822 386">Internal noise level 45 dB(A)</td> </tr> <tr> <td data-bbox="846 394 1304 427">Places of worship</td> <td data-bbox="1312 394 1822 427">Internal noise level 45 dB(A)</td> </tr> <tr> <td data-bbox="846 435 1304 548">Active recreation areas characterised by sporting activities and activities which generate their own noise, making them less sensitive to external noise intrusion</td> <td data-bbox="1312 435 1822 548">External noise level 65 dB(A)</td> </tr> <tr> <td data-bbox="846 557 1304 695">Passive recreation areas characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example reading, meditation</td> <td data-bbox="1312 557 1822 695">External noise level 60 dB(A)</td> </tr> <tr> <td data-bbox="846 703 1304 784">Community centres</td> <td data-bbox="1312 703 1822 784">Depends on the intended use of the centre. Refer to the recommended maximum internal levels in AS/NZS 2107:2016 for specific uses.</td> </tr> <tr> <td data-bbox="846 792 1304 824">Industrial premises</td> <td data-bbox="1312 792 1822 824">External noise level 75 dB(A)</td> </tr> <tr> <td data-bbox="846 833 1304 865">Offices, retail outlets</td> <td data-bbox="1312 833 1822 865">External noise level 70 dB(A)</td> </tr> <tr> <td data-bbox="846 873 1304 930">Other noise sensitive land uses as identified in AS/NZS 2107:2016</td> <td data-bbox="1312 873 1822 930">Refer to the noise levels in AS/NZS 2107:2016 for specific uses.</td> </tr> </tbody> </table> <p><b>2 Residential dwellings</b></p> <p>For residential dwellings, implement management actions if construction noise is predicted to or does exceed the noise targets in EPA Victoria Publication 1254 or the daytime management levels specified for noise at residences during recommended standard hours in Part 4.1.1 of the NSW Interim Construction Noise Guidelines (ICNG) with the hours amended to correspond to the EPA Victoria Publication 1254 hours as shown in the table below.</p> <table border="1"> <thead> <tr> <th colspan="2" data-bbox="1312 1157 1822 1214"><b>Construction noise management level, LAeq (15 min) (applies when properties are in use)</b></th> </tr> </thead> <tbody> <tr> <td data-bbox="846 1222 1213 1255">7am–6pm Monday to Friday</td> <td data-bbox="1224 1222 1822 1255">Noise affected</td> </tr> <tr> <td data-bbox="846 1263 1213 1295">7am–1pm Saturday</td> <td data-bbox="1224 1263 1822 1295">Background LA90+10dB</td> </tr> <tr> <td data-bbox="846 1304 1213 1336"></td> <td data-bbox="1224 1304 1822 1336">Source: NSW ICNG Chapter 4.1.1 Table 2, page 12</td> </tr> <tr> <td data-bbox="846 1344 1213 1377">7am–6pm Monday to Friday</td> <td data-bbox="1224 1344 1822 1377">Highly noise affected</td> </tr> <tr> <td data-bbox="846 1385 1213 1417">7am–1pm Saturday</td> <td data-bbox="1224 1385 1822 1417">75 dB(A)</td> </tr> </tbody> </table>	<b>Construction noise management level, LAeq (15 min) (applies when properties are in use)</b>		Classrooms in schools and other educational institutions including kindergartens	Internal noise level 45 dB(A)	Places of worship	Internal noise level 45 dB(A)	Active recreation areas characterised by sporting activities and activities which generate their own noise, making them less sensitive to external noise intrusion	External noise level 65 dB(A)	Passive recreation areas characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example reading, meditation	External noise level 60 dB(A)	Community centres	Depends on the intended use of the centre. Refer to the recommended maximum internal levels in AS/NZS 2107:2016 for specific uses.	Industrial premises	External noise level 75 dB(A)	Offices, retail outlets	External noise level 70 dB(A)	Other noise sensitive land uses as identified in AS/NZS 2107:2016	Refer to the noise levels in AS/NZS 2107:2016 for specific uses.	<b>Construction noise management level, LAeq (15 min) (applies when properties are in use)</b>		7am–6pm Monday to Friday	Noise affected	7am–1pm Saturday	Background LA90+10dB		Source: NSW ICNG Chapter 4.1.1 Table 2, page 12	7am–6pm Monday to Friday	Highly noise affected	7am–1pm Saturday	75 dB(A)	
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			NVP9	<p><b>Blasting trials and assessment</b></p> <p>Where blasting is proposed, a series of initial trials at reduced scale must be conducted prior to production blasting to determine site-specific blast response characteristics and to define allowable blast sizes to meet air blast overpressure and ground vibration limits. If blasting is required, an assessment of the potential noise and vibration impacts, and a strategy to minimise and manage those impacts, to the targets set out in EPRs NVP10-13 and NVP16-17, must be prepared, including preparation of an appropriate community information program.</p>	Construction																												
		Manage construction vibration and regenerated noise impacts to protect amenity	NVP10	<p><b>Construction vibration targets (amenity)</b></p> <p>Implement management actions if the following guideline target levels for continuous vibration from construction activity to protect human comfort of occupied buildings (including heritage buildings) are not achieved (levels are calculated from the British Standard BS6472-1:2008).</p> <table border="1"> <thead> <tr> <th rowspan="3">Type of space occupancy</th> <th colspan="4">Vibration Dose Values (<math>m/s^{1.75}</math>)</th> </tr> <tr> <th colspan="2">Day (7am to 10pm)</th> <th colspan="2">Night (10pm to 7am)</th> </tr> <tr> <th>Preferred Value</th> <th>Maximum Value</th> <th>Preferred Value</th> <th>Maximum Value</th> </tr> </thead> <tbody> <tr> <td>Residential</td> <td>0.2</td> <td>0.4</td> <td>0.1</td> <td>0.2</td> </tr> <tr> <td>Offices, schools, educational institutions, places of worship</td> <td>0.4</td> <td>0.8</td> <td>0.4</td> <td>0.8</td> </tr> <tr> <td>Workshops</td> <td>0.8</td> <td>1.6</td> <td>0.8</td> <td>1.6</td> </tr> </tbody> </table>	Type of space occupancy	Vibration Dose Values ( $m/s^{1.75}$ )				Day (7am to 10pm)		Night (10pm to 7am)		Preferred Value	Maximum Value	Preferred Value	Maximum Value	Residential	0.2	0.4	0.1	0.2	Offices, schools, educational institutions, places of worship	0.4	0.8	0.4	0.8	Workshops	0.8	1.6	0.8	1.6	Construction
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				<p><i>Notes</i></p> <p>1 The Guideline Targets are non-mandatory; they are goals that should be sought to be achieved through the application of practicable mitigation measures. If exceeded then management actions would be required</p> <p>2 The VDV's may be converted to PPVs within a noise and vibration construction management plan.</p>																												
			NVP11	<p><b>Construction vibration targets (structures)</b></p> <p>Construction vibration targets for structures are summarised in the tables below.</p> <p>Guideline values for the vibration velocity to be used when evaluating the effects of short term vibration on structures.</p> <table border="1" data-bbox="846 548 1711 1250"> <thead> <tr> <th rowspan="3">Type of structure</th> <th colspan="4">Guideline values for velocity (mm/s)</th> </tr> <tr> <th colspan="3">Vibration at the foundation at a frequency of</th> <th rowspan="2">Vibration at horizontal plane of highest floor (Hz)</th> </tr> <tr> <th>1 to 10 Hz</th> <th>10 to 50 Hz</th> <th>50 to 100 Hz*</th> </tr> </thead> <tbody> <tr> <td>1. Buildings used for commercial purposes, industrial buildings, and buildings of similar design</td> <td>20</td> <td>20 to 40</td> <td>40 to 50</td> <td>40</td> </tr> <tr> <td>2. Dwellings and buildings of similar design and/or occupancy</td> <td>5</td> <td>5 to 15</td> <td>15 to 20</td> <td>15</td> </tr> <tr> <td>3. Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of intrinsic value (eg. Heritage buildings)</td> <td>3</td> <td>3 to 8</td> <td>8 to 10</td> <td>8</td> </tr> </tbody> </table> <p>*At frequencies &gt; 100 Hz, the values given in this column may be used as a minimum</p> <p><i>Notes</i></p> <p>1 Vibration levels marginally exceeding those vibration levels in the table would not necessarily mean that damage would occur and further investigation would be required to determine if higher vibration levels can be accommodated without risk of damage.</p>	Type of structure	Guideline values for velocity (mm/s)				Vibration at the foundation at a frequency of			Vibration at horizontal plane of highest floor (Hz)	1 to 10 Hz	10 to 50 Hz	50 to 100 Hz*	1. Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40	2. Dwellings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	3. Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of intrinsic value (eg. Heritage buildings)	3	3 to 8	8 to 10	8	Construction
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				<p>2 For civil engineering structures (e.g. with reinforced concrete constructions used as abutments or foundation pads) the values for Type 1 buildings may be increased by a factor of 2</p> <p>3 Short-term vibration is defined as vibration which does not occur often enough to cause structural fatigue and which does not produce resonance in the structure being evaluated.</p> <p>Guideline values for the vibration velocity to be used when evaluating the effects of long term vibration on structures.</p> <table border="1"> <thead> <tr> <th>Type of structure</th> <th>Guideline values for velocity (mm/s) Vibration at horizontal plane of highest floor All frequencies</th> </tr> </thead> <tbody> <tr> <td>Buildings used for commercial purposes, industrial buildings, and buildings of similar design</td> <td>10</td> </tr> <tr> <td>Dwellings and buildings of similar design and/or occupancy</td> <td>5</td> </tr> <tr> <td>Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of intrinsic value (eg. Heritage buildings)</td> <td>2.5</td> </tr> </tbody> </table> <p>Notes:</p> <p>1 Vibration levels marginally exceeding those in the table would not necessarily mean that damage would occur and further investigation would be required to determine if higher vibration levels can be accommodated without risk of damage</p> <p>2 Targets in the above table may need to be adjusted where deemed necessary and/or appropriate to protect the structural integrity of structures based on a pre-construction condition survey and/or modelling</p> <p>3 Long-term vibration relates to events that may result in a resonant structural response.</p> <p>Implement management actions if, due to construction activity, the DIN 4150.3 Guideline Targets for structural damage to buildings (for short-term vibration or long-term vibration) are not achieved.</p>	Type of structure	Guideline values for velocity (mm/s) Vibration at horizontal plane of highest floor All frequencies	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	10	Dwellings and buildings of similar design and/or occupancy	5	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of intrinsic value (eg. Heritage buildings)	2.5	
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			NVP12	<p><b>Ground-borne (internal) noise targets</b></p> <p>Implement management actions as determined in consultation with potentially affected land owners to protect amenity at residences where the following ground borne noise guideline targets are exceeded during construction.</p> <table border="1"> <thead> <tr> <th>Time of Day</th> <th>Internal noise level measured at the centre of the most affected habitable room</th> </tr> </thead> <tbody> <tr> <td>Evening (6pm - 10pm)</td> <td>L<sub>Aeq</sub> (15 minute) = 40dBA</td> </tr> <tr> <td>Night (10pm - 6am)</td> <td>L<sub>Aeq</sub> (15 minute) = 35dBA</td> </tr> </tbody> </table>	Time of Day	Internal noise level measured at the centre of the most affected habitable room	Evening (6pm - 10pm)	L <sub>Aeq</sub> (15 minute) = 40dBA	Night (10pm - 6am)	L <sub>Aeq</sub> (15 minute) = 35dBA	Construction		
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				<p><i>Notes</i></p> <p>1 Levels are only applicable when ground borne noise levels are higher than airborne noise levels.</p> <p>2 Management actions include community consultation to determine acceptable level of disruption and provision of respite accommodation in some circumstances.</p>									
		To manage construction vibration to protect utility assets	NVP13	<p><b>Utility asset protection</b></p> <p>Prior to construction undertake condition assessments of above and below ground utility assets and establish construction vibration limits in consultation with asset owners to maintain asset integrity. Where construction vibration limits are not agreed with the asset owner, the guideline values in the table below apply.</p> <table border="1"> <thead> <tr> <th>Pipe Material</th> <th>Guideline values for velocity measured on the pipe</th> </tr> </thead> <tbody> <tr> <td>Steel (including welded pipes)</td> <td>100mm/s</td> </tr> <tr> <td>Clay, concrete, reinforced concrete, pre-stressed concrete, metal (with or without flange)</td> <td>80 mm/s</td> </tr> <tr> <td>Masonry, plastic</td> <td>50 mm/s</td> </tr> </tbody> </table> <p><i>Notes</i></p> <p>1 These values may be reduced by 50% when evaluating the effects of long-term vibration on buried pipework</p> <p>2 It is assumed pipes have been manufactured and laid using current technology.</p> <p>Monitor vibration limits during construction to demonstrate compliance with agreed vibration limits. Identify contingency measures to be implemented if limits are not met. Where necessary rectify any defects that are attributable to the Project.</p>	Pipe Material	Guideline values for velocity measured on the pipe	Steel (including welded pipes)	100mm/s	Clay, concrete, reinforced concrete, pre-stressed concrete, metal (with or without flange)	80 mm/s	Masonry, plastic	50 mm/s	Pre-construction, construction
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	SEPP N-1 – Control of Noise from Commerce, Industry and Trade	To minimise noise impacts of the tunnel ventilation system	NVP14	<p><b>Tunnel ventilation system noise design</b></p> <p>Design and implement the tunnel ventilation system in accordance with the Works Approval and to achieve compliance with State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1). Provide detailed design to the satisfaction of EPA Victoria prior to commencement of the works permitted by the Works Approval.</p>	Detailed design, operation								
NVP15			<p><b>Tunnel ventilation system noise monitoring</b></p> <p>Measure noise from the tunnel ventilation system on commencing road operation and monitor noise from the tunnel ventilation system and report annually for up to five years post opening of the freeway, or as agreed with EPA Victoria, to verify compliance with State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1). Identify and implement contingency measures if noise level targets are not met.</p>	Operation									
		Manage construction blasting impacts to	NVP16	<p><b>Amenity – Blast Vibration</b></p> <p>Implement management actions if the following vibration values are not achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.</p>	Construction								

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			NVP17	<p><b>Amenity – Blast Overpressure</b></p> <p>Implement management actions if the following overpressure values are not achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Type of blasting operations</th> <th>Peak Overpressure Value (dBL)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Sensitive Site</td> <td>Operations lasting longer than 12 months or more than 20 blasts</td> <td>115 dBL for 95% blasts per year. 120dBL maximum unless agreement with occupier that a higher limit may apply</td> </tr> <tr> <td>Operations lasting less than 12 months or less than 20 blasts</td> <td>120dBL for 95% blasts per year. 125 dBL maximum unless agreement with occupier that a higher limit may apply</td> </tr> <tr> <td>Occupied non-sensitive sites such as factories and commercial premises</td> <td>All blasting</td> <td>125 dBL maximum value unless agreement is reached with occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturers specification or levels that can be shown to adversely</td> </tr> </tbody> </table>	Category	Type of blasting operations	Peak Overpressure Value (dBL)	Sensitive Site	Operations lasting longer than 12 months or more than 20 blasts	115 dBL for 95% blasts per year. 120dBL maximum unless agreement with occupier that a higher limit may apply	Operations lasting less than 12 months or less than 20 blasts	120dBL for 95% blasts per year. 125 dBL maximum unless agreement with occupier that a higher limit may apply	Occupied non-sensitive sites such as factories and commercial premises	All blasting	125 dBL maximum value unless agreement is reached with occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturers specification or levels that can be shown to adversely	Construction	
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				<p>affect the equipment operation</p> <p><i>Note</i></p> <p>1 Sensitive site includes houses and low rise residential buildings, theatres, schools and other similar buildings occupied by people.</p>	
			NVP18	<p><b>Construction noise management</b></p> <p>Manage construction noise in accordance with EPA Publication 1254 Noise Control Guidelines and as specified in the Construction Noise and Vibration Management Plan prepared under NVP7.</p>	Construction
			NVP19	<p><b>Traffic noise at Hyde Street, south of Francis Street</b></p> <p>In the event that voluntary acquisition is not offered for residences on the west side of Hyde Street south of Francis Street in connection with the Project, and subject to the timely agreement of the relevant property owners prior to opening of the Project, agreed noise mitigation measures must be implemented, during construction, at the residential properties on Hyde Street where acoustic modelling predicts a difference between noise levels from Hyde Street in 2031 with and without the project (with the difference in these being 'the predicted traffic noise increase'). Relevant property owners are to be consulted and provided with:</p> <p>An acoustic report predicting traffic noise levels from Hyde Street in 2031 both with the project and without the project</p> <p>Details of practicable on-property noise reduction options such as fencing, double glazing and mechanical ventilation (or a combination of these) to achieve to the extent practicable an equivalent reduction to the predicted traffic noise increase for the relevant property</p> <p>The process for documenting and implementing agreed noise mitigation measures.</p>	Construction
<b>Social</b>					
<p><b>Social, business, land use, public safety and infrastructure</b> – to minimise adverse effects on the social fabric of the community in the project area, including with regard to community cohesion and access to community services and</p>	<p><i>Planning and Environment Act 1987</i></p>	To minimise impacts on social and community infrastructure	SP1	<p><b>Urban design principles and vision</b></p> <p>Detailed design to protect and, where practicable, improve access to and amenity and safety for potentially affected residents, open space, social and community infrastructure and commercial facilities by responding to the urban design principles and vision and implementing the principles of Crime Prevention Through Environmental Design.</p>	Detailed design
		To minimise impacts on the community through engagement during construction and operation	SP2	<p><b>Communications and Community Engagement Plan (CCEP)</b></p> <p>Develop and implement a Communications and Community Engagement Plan in consultation with affected local councils to engage and consult the community and potentially affected stakeholders and discuss progress of construction activities and operation. The plan must be published on the project website prior to and for the duration of construction and include:</p> <ul style="list-style-type: none"> <li>Community issues identification, complaints management and resolution approach and procedures in accordance with EPR EMP4</li> <li>The BIP in accordance with EPR BP5</li> <li>Approach to stakeholder identification</li> <li>Enquiry management and record keeping approach and procedures including making available a 24 hour telephone number, postal address, and an email address and publishing</li> </ul>	Pre-construction, construction, operation

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
facilities, business functionality, changes to land use, public safety and access to infrastructure.				<p>these on the project website</p> <ul style="list-style-type: none"> <li>• Approach to mitigating community impacts including dust, noise and light and any relevant policies (e.g. relocations policy)</li> <li>• Approach to changes to transport conditions for affected and potentially affected users, relevant stakeholders and relevant road authorities</li> <li>• How it will evaluate the effectiveness of community impact mitigation measures, including through noise and vibration monitoring</li> <li>• Identification of how stakeholders can access environmental monitoring data that is to be made publicly available</li> <li>• Incident and emergency communications, including notification methods and timeframes in the event of a major incident or overrun</li> <li>• Approach and processes to ensure that the workforce has appropriate community awareness and sensitivity</li> <li>• Any innovative communications tools and methods in the CCEP which would enhance the Project's ability to effectively communicate with the community and stakeholders</li> <li>• Approach to notifying community, business, road user and other stakeholders affected by construction activities about impacts</li> <li>• Approach to making relevant project information available to the community</li> <li>• The role and function of the Community Liaison Group (CLG) as developed by the State.</li> </ul> <p>The CCEP must address matters of interest or concern to the following stakeholders:</p> <ul style="list-style-type: none"> <li>• Municipalities</li> <li>• Recreation, sporting and community groups</li> <li>• Potentially affected residents and property owners</li> <li>• Potentially affected business</li> <li>• Other public facilities in proximity</li> <li>• Religious and worship groups.</li> </ul>	
			SP3	<p><b>Community Liaison Group participation</b></p> <p>Participate in the Community Liaison Group (CLG) that has been established by the State to facilitate community and stakeholder involvement for the construction phase of the Project. Participation must include:</p> <ul style="list-style-type: none"> <li>• Attendance at meetings</li> <li>• Regular reporting of design and construction activities</li> <li>• Timely provision of relevant information, including response to issues raised by the group</li> <li>• Regular reporting and monitoring of community feedback, impacts and discussion of mitigation measures and their effectiveness.</li> </ul>	Construction
			SP4	<p><b>Social and local procurement</b></p> <p>Develop and implement a Workforce Development Plan and a Local Industry Development Plan</p>	Pre-construction,

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				to provide: <ul style="list-style-type: none"> <li>• Opportunities for graduates, non-engineering cadets and upskilling short courses for the project workforce</li> <li>• Opportunities for young people such as scholarships, and structured workplace learning placements</li> <li>• Opportunities for local businesses such as forums to inform local businesses about potential procurement opportunities.</li> </ul>	construction
			SP5	<b>Community Involvement and Participation Plan (CIPP)</b> Develop and implement a CIPP in consultation with Hobsons Bay City Council and Maribyrnong City Council and representatives of communities affected negatively by the impacts of the Project, including Altona North, Brooklyn, South Kingsville, Spotswood and Yarraville, in order to improve community connectedness and cohesiveness. The plan should apply for the period of project construction. Social legacy outcomes and tasks that could be considered for funding under the CIPP include: community partnership programs; community support grants; running of community events and festivals; sponsorships of local sporting clubs; small capital works targeting community, sporting and recreation facilities; a wide range of other 'community led' initiatives.	Pre-construction, construction
<b>Surface Water</b>					
<b>Hydrology and water quality</b> – to avoid or minimise adverse effects on surface water and groundwater quality and hydrology in particular resulting from the disturbance of contaminated or acid-forming materials, and to maintain functions and values of floodplain environments.	<i>Water Act 1989</i> SEPP – Waters of Victoria	To maintain or improve existing surface water quality during operation and construction	SWP1	<b>Design of discharges and runoff</b> Meet State Environment Protection Policy (Waters of Victoria) for discharge and run-off from the Project to Kororoit Creek, Stony Creek, Maribyrnong River, Moonee Ponds Creek.	Detailed design
			SWP2	<b>Water sensitive road design</b> Integrate the stormwater treatment system into the design of the works in accordance with VicRoads Integrated Water Management Guidelines (June 2013) and the EPA Victoria Best Practice Environmental Management Guidelines for Urban Stormwater (2006).	Detailed design
			SWP3	<b>Tunnel waste water</b> Any proposed discharge of tunnel waste water from the site must be approved by the relevant authority prior to discharges occurring.	Pre-construction
			SWP4	<b>Water quality monitoring</b> Develop and implement a baseline surface water monitoring program prior to commencement of construction to assess background water quality in all receiving waters. This should be developed in consultation with the EPA Victoria and Melbourne Water. The baseline surface water monitoring program is to be used to inform the surface water sub-management plan (EPR SWP7)	Pre-construction
			SWP5	<b>Spill containment design</b> Design the capacity of the stormwater drainage system for all new roads and ramps to contain hazardous spills at or prior to every stormwater outlet, to the satisfaction of EPA Victoria, and develop procedures to be implemented in response to a hazardous spill.	Detailed design
			SWP6	<b>Management of chemicals, fuels, and hazardous materials</b> Minimise chemical and fuel storage on site and store hazardous materials and dangerous goods	Construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<p>in accordance with the relevant guidelines and requirements. Comply with the Victorian WorkCover Authority and Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids and EPA Victoria publications 480 Environmental Guidelines for Major Construction Sites and 347 Bunding Guidelines</p> <p>Develop and implement management measures for dangerous substances, including:</p> <ul style="list-style-type: none"> <li>• Creating and maintaining a dangerous goods register</li> <li>• Disposing of any hazardous materials, including asbestos, in accordance with Industrial Waste Management Policies, regulation and relevant guidelines</li> <li>• Implementing requirements for the installation of bunds and precautions to reduce the risk of spills</li> <li>• Developing contingency and emergency response plans to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits.</li> </ul>	
			SWP7	<p><b>Surface Water Management during construction</b></p> <p>The CEMP must include a sub-management plan that sets out the Surface Water Management requirements and methods for:</p> <ul style="list-style-type: none"> <li>• Best practice sediment and erosion control and monitoring, in accordance with EPA Victoria publications 275 (1991), 480 (1996), and 960 (2004)</li> <li>• Maintenance of existing flow paths, drainage lines and floodplain storage</li> <li>• Location and bunding of any contaminated material (including tunnel spoil and stockpiled soil) to the 1% AEP flood level and to the satisfaction of EPA Victoria and the relevant drainage authority</li> <li>• A flood emergency management plan including consideration of scheduling works</li> <li>• Bunding of the tunnel portals to an appropriate level during the construction phase.</li> </ul> <p>The sub-management plan is to be informed by EPR SWP4.</p>	Construction
		To limit the use of potable water during construction and preserve natural reserves	SWP8	<p><b>Use of non-potable water</b></p> <p>Where available and practicable, of suitable quality, and meets health and safety requirements, stormwater, recycled water, groundwater inflow to tunnels or other water sources must be used in preference to potable water for construction activities, including concrete mixing and dust control.</p>	Construction
		To protect the bank stability of potentially impacted waterways	SWP9	<p><b>Bank stability</b></p> <p>Develop and implement appropriate measures to maintain bank stability of Kororoit Creek, Stony Creek, Maribyrnong River, Moonee Ponds Creek during construction to the satisfaction of Melbourne Water and in consultation with relevant local councils.</p>	Construction
			SWP10	<p><b>Waterway modifications</b></p> <p>Design and undertake modifications to all waterways in a way to mitigate the effects of changes to flow and minimise, to the extent practicable, the potential for erosion, sediment plumes and</p>	Detailed design, construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<p>exposure of contaminated material during construction to the satisfaction of Melbourne Water and in consultation with relevant local councils.</p> <p>Maximise the visual and aesthetic amenity of the waterways having regard to relevant strategies, policies and plans for that waterway and in consultation with Melbourne Water and relevant Councils.</p>	
		To maintain existing levels of flood protection	SWP11	<p><b>Flood levels, flows and velocities</b></p> <p>Permanent works and associated temporary construction works must not increase flood risk (considering flood levels, flows and velocities) associated with overland flow paths to the requirements and satisfaction of Melbourne Water and in consultation with any other relevant drainage authority.</p> <p>Undertake modelling of the design of permanent and temporary works to demonstrate the resultant flood levels and risk profile to the requirements and satisfaction of Melbourne Water and in consultation with any other relevant drainage authority.</p> <p>Consider potential effects of climate change and sea level rise of 0.8m by 2100, with and without the works for both existing and proposed scenarios (for example future redevelopment in relation to Moonee Ponds Creek within the Arden – Macaulay Structure Plan area) in consultation with local councils</p> <p>Ensure that surface water from West Gate Tunnel Project does not encroach into underground SP AusNet electricity or gas assets.</p>	Detailed design, pre-construction, construction
		To maintain flood plain storage	SWP12	<p><b>Floodplain storage capacity</b></p> <p>Maintain existing floodplain storage capacity for overland flow paths potentially impacted by the Project in consultation with Melbourne Water and any other relevant drainage authority.</p>	Detailed design
		To protect people and assets from flood waters in the Tunnel	SWP13	<p><b>Tunnel portal flood risk</b></p> <p>Design tunnel portals to exclude surface flows from external catchments during the probable maximum flood.</p> <p>Develop and implement measures and plans to manage flood risk to the tunnel portals. Develop operation and maintenance plans for flood protection works.</p>	Detailed design, operation
		To maintain access to stormwater and other assets	SWP14	<p><b>Maintenance of Melbourne Water and other drainage assets</b></p> <p>Provide adequate clearances and access for ongoing maintenance of Melbourne Water and other drainage authority assets to the satisfaction of the relevant drainage authority.</p>	Detailed design
			SWP15	<p><b>North Yarra Main Sewer</b></p> <p>Design any proposed realignment to the North Yarra Main Sewer to the satisfaction of Melbourne Water.</p>	Detailed design

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<b>Transport</b>					
<b>Transport capacity and connectivity</b> – to increase transport capacity and improve connectivity to and from the west of Melbourne and, in particular, to increase freight movement via the freeway network instead of local and arterial roads, while adequately managing effects of the works on the existing broader and local transport networks, including road, public transport, cycling and pedestrian transport networks	<i>Road Management Act 2004</i> <i>Planning and Environment Act 1987</i>	To improve road-based transport connectivity between the west of Melbourne, the Port of Melbourne and the CBD and the wider metropolitan region and the State, while maintaining the connectivity of the existing local transport routes	TP1	<b>Optimise design performance</b> Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, Melbourne Water and local councils as part of the detailed design process to: <ul style="list-style-type: none"> <li>Maintain and where practicable reduce travel times for all transport modes, including walking, cycling and public transport</li> <li>Maintain, and where practicable, enhance the existing traffic movements at interchanges</li> <li>Design interchanges and intersections to achieve a level of service of D or degree of saturation of 0.9, where practicable within the available land, or as otherwise approved by the relevant road and transport authority</li> <li>Maintain, and where practicable, enhance pedestrian movements, bicycle connectivity, and shared use paths</li> <li>Provide evidence that functional and generous pedestrian linkages between North Melbourne Station, West Melbourne and the E-gate urban renewal site will be facilitated, to support pedestrian flows to/from North Melbourne, E-gate and Docklands</li> <li>Develop a strategy with Public Transport Victoria to minimise impacts on buses, trams and rail and, where practicable, enhance public transport facilities and services that cross or run parallel to the alignment of the-Project or are in any way affected by traffic using the Project</li> <li>Minimise loss of car parking in consultation with relevant local councils.</li> </ul>	Detailed design
			TP2	<b>Traffic monitoring</b> Undertake traffic monitoring in selected streets identified in consultation with the relevant Road Authority and local council pre-construction, at six monthly intervals during construction, and up to two years after construction is complete. Implement local area traffic management works in consultation with the local relevant councils.  Develop and implement traffic performance management to monitor conditions along the West Gate Freeway during construction. Real time traffic information must be provided to drivers on the approach to the West Gate Freeway.	Pre-construction, construction, operation
		To minimise disruption to motor vehicle traffic, parking, bicycle and pedestrian movements during construction and	TP3	<b>Traffic Management Plans</b> Develop and implement Traffic Management Plans with measures to minimise disruption, to the extent practicable, to motor vehicle traffic including on road public transport, parking, bicycle and pedestrian movements during construction in consultation with relevant road management authorities on all roads affected by the Project, including: <ul style="list-style-type: none"> <li>Management of any temporary or partial closure of traffic and cycle lanes, including but not limited to, along:             <ul style="list-style-type: none"> <li>Local and arterial roads, including provision for suitable routes for vehicles, cyclist and pedestrians to maintain connectivity for road and shared path users</li> <li>CityLink traffic lanes and ramps</li> </ul> </li> </ul>	Pre-construction, construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
		To minimise disruption to public and commercial transport during construction		<ul style="list-style-type: none"> <li>• M1, M80 and Footscray Road</li> <li>• Hyde Street, Francis Street, Whitehall Street</li> <li>• Management of any temporary diversion of pedestrian or cycle paths to provide a safe, well-sign-posted alternative route and minimise impact on commuter travel times for cyclists as far as practicable</li> <li>• A strategy for maintaining the current capacity (number of lanes) during peak periods for works on the following key State roads – West Gate Freeway, Princes Freeway, M80, Footscray Road, Wurundjeri Way, Dudley Street, Williamstown Road, Millers Road, Grieve Parade, Melbourne Road, Douglas Parade and Hyde Street</li> <li>• Restrict the number of local roads to be used for construction-related transportation to minimise impacts on amenity, in consultation with the relevant road authorities</li> <li>• Measures to minimise construction traffic on New Street, including the provision of access to the Southern Portal Compound from the freeway or alternative routes approved by the road authority</li> <li>• Reinstate access to open space, community facilities, commercial premises and dwellings if disrupted, as soon as practicable</li> <li>• Provide suitable parking arrangements to accommodate the construction workforce while minimising traffic impacts on local and arterial roads, preventing construction-related parking on local and arterial roads or use of public car parks</li> <li>• Provide safe access points to laydown areas and site compounds</li> <li>• Implement a communications strategy (as set out in the CCEP) to advise affected users, potentially affected users, relevant stakeholders and the relevant road authorities of any changes to transport conditions</li> <li>• Maintain, where practicable, current local area traffic management measures during construction or reinstate upon completion in consultation with the relevant local councils</li> <li>• Haulage of bulk material to and from the construction areas to within a two km range of the works must be via roads operated by VicRoads, CityLink or the Port Manager or, subject to obtaining prior agreement by the relevant road authority, other parts of the road network.</li> </ul> <p>The Traffic Management Plan may include Worksite Traffic Management Plans (WTMP) for discrete components or stages of the works having the potential to impact on roads, shared used paths, pedestrian paths or public transport infrastructure.</p> <p>WTMP must address, as applicable:</p> <ul style="list-style-type: none"> <li>• Vehicle, bicycle and pedestrian movements</li> <li>• Public transport movements</li> <li>• Lane, road and public transport route closures</li> <li>• Major traffic control devices</li> <li>• Traffic signal operation</li> <li>• Vertical and horizontal alignment</li> <li>• Drainage</li> </ul>	

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
				<ul style="list-style-type: none"> <li>Barrier placement</li> <li>Operating conditions including speed limits</li> <li>Safety of the public and workers</li> <li>Peak flows and road traffic capacity, including catering for special events</li> <li>Signing and line marking</li> <li>Lighting</li> <li>Property access</li> <li>Stakeholder communication and media advertising</li> <li>Timing</li> <li>Replacement public transport services</li> <li>Utility Infrastructure access</li> <li>Any interface between the responsibilities and requirements of Project Co, its Subcontractors and any other Authority</li> <li>Incident management.</li> </ul> <p>Draft WTMPs must be distributed to the State, VicRoads, the road safety auditor, any other relevant road authority for any affected Roads and, where the works affect public transport infrastructure, Public Transport interface parties for their comment.</p>	
			TP4	<p><b>Public transport</b></p> <p>Develop and implement measures to minimise to the extent practicable disruption during construction to all impacted railway lines, tram and bus routes in consultation with VicTrack, Yarra Trams and Metro Trains Melbourne and to the satisfaction of Public Transport Victoria.</p>	Pre-construction, construction
			TP5	<p><b>Rail operations</b></p> <p>Minimise disruption to the rail infrastructure and operations in consultation with the relevant rail infrastructure stakeholders.</p>	Detailed design, construction
		To minimise potential for accidents by managing road safety for all new road linkages	TP6	<p><b>Design standards</b></p> <p>Design new works (including shared use facilities) in accordance with applicable design standards and undertake independent road safety audits after each stage of detailed design and pre-opening and immediately following the opening of the works.</p> <p>The Veloway design must be prepared in consultation with VicRoads, the City of Melbourne, Maribyrnong City Council and Bicycle Network and include an operating path width (between hand rails) of 4.0 metres.</p>	Detailed design, construction

EES Evaluation Objective	Applicable Legislation and Policy	Performance Objective	EPR Code	Environmental Performance Requirement	Project Phase
			TP7	<p><b>Traffic Management Liaison Group</b></p> <p>A Traffic Management Liaison Group (TMLG) must be established and convene prior to the commencement of any works that may impact on existing roads, paths or public transport infrastructure. The TMLG must include representatives from the State, VicRoads and Project Co. Other relevant agencies as nominated by the State may be included as required including relevant local councils.</p> <p>The TMLG will be a forum for exchange of information and discussion of issues associated with Traffic Management Plans.</p> <p>The TMLG must be provided with the Traffic Management Plans, details as to timing of implementation, information about construction traffic monitoring conducted by Project Co, and other reports as relevant.</p> <p>The TMLG must meet at least monthly until the completion of construction.</p>	Pre-construction, construction
			TP8	<p><b>River navigation</b></p> <p>Navigational channel of Maribyrnong River must not be impeded without approval of the relevant authority.</p>	Construction
			TP9	<p><b>Melbourne Metro Rail Authority interface</b></p> <p>Consult and coordinate with Melbourne Metro Rail Authority to manage and where possible minimise, cumulative impacts of construction vehicles.</p>	Construction
<b>Waste Management</b>					
<p><b>Waste management</b> – to manage excavated spoil and other waste streams generated by the Project in accordance with the waste hierarchy and relevant best practice principles.</p>	<p><i>Environment Protection Act 1970</i></p>	<p>To manage all wastes from the construction and operation of the Project</p>	<p>WMP1</p>	<p><b>Waste management</b></p> <p>Develop and implement management measures for waste (excluding soils) minimisation during construction and operation in accordance with the <i>Environment Protection Act 1970</i> waste management hierarchy and management options, to address:</p> <ul style="list-style-type: none"> <li>Litter management</li> <li>Construction and demolition wastes including, but not limited to, washing residues, slurries and contaminated water</li> <li>Organic wastes</li> <li>Inert solid wastes.</li> </ul>	<p>Detailed design, construction, operation</p>

# Glossary of abbreviations

Table 3. Glossary

Term	Definition
AQMP	Air Quality Management Plan
CCEP	Communications and Community Engagement Plan
CEMP	Construction Environment Management Plan
CIPP	Community Involvement and Participation Plan
CLG	Community Liaison Group
CNVMP	Construction Noise and Vibration Management Plan
CHMP	Cultural Heritage Management Plan under the <i>Aboriginal Heritage Act 2006</i>
EPR	Environmental Performance Requirement
EPA	Environment Protection Authority (Victoria)
GDE	Groundwater Dependent Ecosystem
GHG	greenhouse gas
HO	Heritage Overlays
ICNG	NSW Interim Construction Noise Guidelines
Incorporated Document	The West Gate Tunnel Incorporated Document that is included in the Melbourne, Port of Melbourne, Hobsons Bay, Maribyrnong, Brimbank and Wyndham Planning Schemes.
IREA	The Independent Reviewer and Environmental Auditor for the project
ISCA	Infrastructure Sustainability Council of Australia
NYM Sewer	North Yarra Main Sewer
OEMP	Operations Environmental Management Plan
OVGA	Office of the Victorian Government Architect
PPV	Peak particle velocity
SEPP	State Environment Protection Policy (Victoria)
TMLG	Traffic Management Liaison Group

Term	Definition
VHR	Victorian Heritage Register
WDA	Western Distributor Authority
WEMP	Worksite Environmental Management Plan