



ENVIRONMENT PROTECTION ACT 1970
SECTION 19B

WORKS APPROVAL

The Secretary to the Department of Transport

Holder of

Works Approval: 219663

Issued: 28/02/2020

ACN: 69 981 208 782

Registered Address: Level 14, 121 Exhibition Street,
Melbourne, VIC 3000

Premises Address: North East Link Tunnel
VIC

Scheduled Categories: L03 Tunnel Ventilation Systems

Description: This approval grants consent to construct a road tunnel ventilation system for the North East Link.

TIM EATON
Executive Director

Delegate of the Environment Protection Authority

Issued under the *Environment Protection Act 1970*, Section 19B

PREAMBLE

Works Approvals

Who we are: The Environment Protection Authority (“EPA”) is an independent statutory authority established under the *Environment Protection Act 1970* (“the Act”). Our purpose is to protect and improve our environment by preventing harm to the environment and human health.

Why we issue works approvals: EPA is responsible for preventing or controlling pollution (including noise) and improving the quality of the environment. This responsibility includes regulating activities that may present a danger to the environment. One of the tools available to EPA is issuing works approvals for scheduled premises to prevent or minimise risk to the environment.

Section 19A of the Act requires the occupier of a “scheduled premises” to obtain works approval to construct or install plant and equipment in order to discharge, handle, treat or dispose of waste to the environment. These types of premises are defined in the *Environment Protection (Scheduled Premises and Exemptions) Regulations 2017* (“the Regulations”).

When we issue works approvals: EPA will issue a works approval when satisfied that an applicant has put in place measures to protect the environment. Works approvals allow construction of works to occur and set control measures to minimise a site’s environmental risk. EPA can amend a works approval in response to changes in standards and site activities. Works approval holders must submit reports if required by a condition of the approval.

Works Approval information and obligations

For the purposes of this works approval “You” means the works approval holder identified on the first page of this works approval at the “premises” identified on the first page and represented in Schedule 1.

Compliance: You must comply at all times with the Act and all policies and regulations administered by EPA. Strict penalties apply for non-compliance with any part of your works approval.

Works Approval structure

Structure: Your works approval has:

- Works conditions - setting out requirements for construction or installation;
- Schedule 1A - locality plan of your premises;
- Schedule 1B - plan of premises (provided by you).

Note

Where this document refers to Environmental Performance Requirements (EPRs) they refer to the EPRs for the North East Link as approved by the Minister for Planning on the 9th of February 2020 (Document No: NEL-GE01-NEL-ZW1-SZ00-GEN-PRO-00001_A). The application of the EPRs in this document is limited to the construction and operation of the tunnel ventilation system and does not extend to the broader North East Link Project.

CONDITIONS

General Conditions

- WA_G1 Subject to the following conditions, this approval allows the construction of the following works and associated equipment - Tunnel ventilation systems associated with the construction and operation of twin tunnels of approximately six kilometre in length supporting the North East Link.
- WA_G2 The works must be constructed in accordance with the application accepted on 8 March 2019 as augmented or amended by additional information dated 5 and 20 September, 1, 7, 14, 21 and 24 October, 15 and 18 November and 5 December 2019 ('the application'), except that, in the event of any inconsistency arising between the application and the conditions of this approval, the conditions of this approval shall apply.
- WA_G4 This approval expires:
- 1) on the issue or amendment of a licence relating to all works covered by this approval
 - 2) when EPA advises in writing that all works covered by this approval have been satisfactorily completed and no licence is required, or
 - 3) five years from the date of issue of this approval, unless the works have been commenced by this date to the satisfaction of EPA.

Works Conditions

- WA_W1 Before commencing construction of the following components of the works, you must provide to EPA a report or reports outlining the plans and specifications of those components, including details of:
- 1) Final design of tunnel ventilation system with the engineering approach based on 'typical' parameters and assumptions to demonstrate that the system can meet the required EPRs for air quality (AQ2 and AQ3) and GHG emissions (SCC2 and SCC3). The design must be reviewed by a consultant or engineer who has demonstrated qualification and experience in road tunnel ventilation design suitable for the project. This entity can be the appointed independent environmental auditor for the North East Link Project (IEA), if suitable, or another suitable entity, independent from the project, subcontracted by the IEA. It must include:
 - A. Final design of the smoke extraction system. This should consider the alternative engineering solutions below to provide an equivalent safety standard for tunnel users:
 - a) eliminating the smoke duct in the whole tunnel;
 - b) eliminating the smoke duct in the cut and cover sections (at least south of Manningham Interchange); or

- c) a different engineering design of the smoke duct allowing for more efficient usage of the jet fans in the cut and cover section.
 - B. Report of final design of ventilation, consisting of:
 - a) detailed ventilation design, including all relevant parameters for the design of the ventilation system (jet fans and axial fans), ventilation stations, as well as for the smoke duct which covers leakage rates from closed smoke dampers, casting joints, connections to other structures, etc), if semi-transverse ventilation is required;
 - b) description of the final design of the ventilation control system for normal and incident operation, including its physical space requirements with consideration of the effect on positioning and number of jet fans;
 - c) proposed leakage rates from closed smoke dampers, casting joints, connections to other structures, etc. in the smoke extraction system design, if semi-transverse ventilation is required.
 - C. Conceptual provision for retrofitting of future particulates pollution control equipment to be installed at the tunnel ventilation structures.
 - D. The content of the Fire Engineering Brief and Fire Engineering Report must be reviewed and agreed by the Emergency Services in accordance with the process outlined in AS4825. Fire and life safety systems and facilities must be designed and constructed in consultation with the Emergency Services.
- 2) An updated air quality assessment to demonstrate compliance with the State Environment Protection Policy (Air Quality Management) and EPR AQ2. The report must include:
- A. Assessment of all emission points, including underdeck space (if provided) and on/off ramps.
 - B. Updated emission factors using PIARC 2019 data.
 - C. Modelling of the proposed air emission licence limits (in g/s) for all ventilation stacks.
- 3) Monitoring programs to demonstrate compliance of in-tunnel air quality and ventilation structure emissions with EPR AQ5 and ambient air quality with EPR AQ4, including:
- A. In-tunnel air quality monitoring:
 - a) detailed in-tunnel air monitoring program, including parameters, instruments, location of instrument installations.
 - b) tunnel ventilation control system linked to in-tunnel air monitoring, including related performance parameters and indicative alarm set points.
 - c) contingency measures to manage in-tunnel air quality in the event of incidents or emergencies.
 - B. Continuous monitoring program for the ventilation stack emissions, including parameters, assessment methodology and criteria which are linked to ambient monitoring data, as well as daily public reporting system.
 - C. Ambient air quality monitoring program:
 - a) including periods before and after the commencement of tunnel operation using the existing five monitoring sites relied upon within the application, or sites as

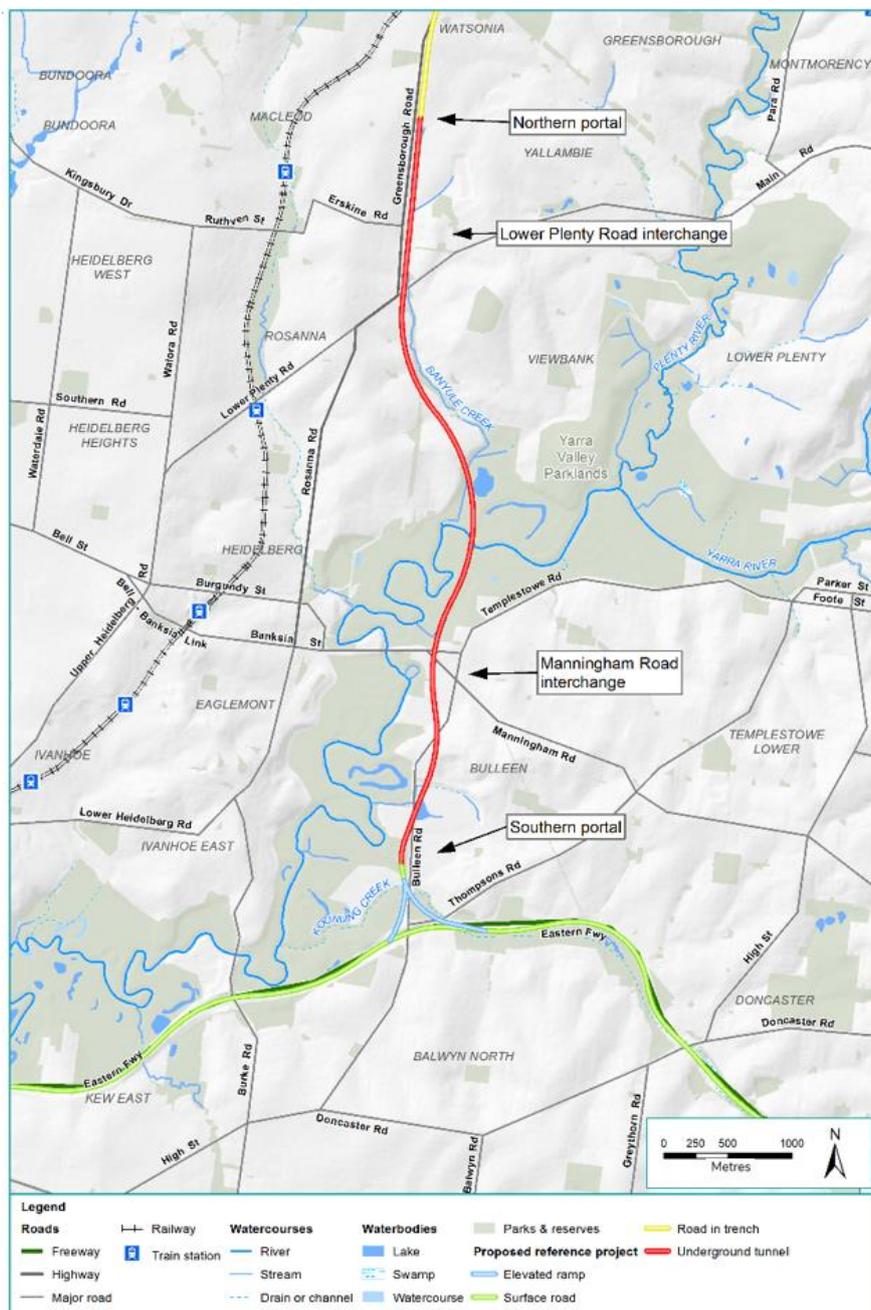
- otherwise agreed with EPA Victoria, inclusive of the specification and location of instruments.
- b) provision for daily reporting of ambient air quality monitoring program results, on a publicly available website related to the project, or through EPA Victoria's Air Watch website. The reporting shall be undertaken for at least five years post commissioning of the project, or such lesser period, as agreed with the EPA.
- 4) A detailed noise assessment must be reviewed by an acoustic consultant or engineer who has demonstrated qualifications and experience in acoustic design and noise management suitable for the project. This entity can be the IEA, if suitable, or another suitable entity, independent from the project, subcontracted by the IEA). The assessment must demonstrate that the requirements set out in EPR NV6 will be met, including, but not be limited to:
- A. Re-assessment of the background levels that may have varied due to different assessment locations, or due to potential change in background conditions.
- B. Noise impact assessment on non-residential sensitive uses (i.e. classrooms in schools, libraries) using the lower value of the design sound level range of AS/NZS 2107 standards of those receptors.
- C. The necessary refinements to the noise assessment, including:
- a) the fans and silencers ultimately selected for installation and consideration of the layout of the facility (including the noise path between the fan and the point of discharge). The assessment must consider:
- i. silencer insertion-loss data based on dynamic testing of the product under similar operational conditions.
- ii. the risk of flow-generated noise across the face of silencers.
- iii. the acoustic performance throughout the life of silencers with explanation of how the potential for acoustic degradation in the performance equipment (such as silencers) through wear and dust build-up will be addressed.
- b) design of ventilation buildings and stack(s) and of substation buildings to prevent or otherwise minimise break-out noise.
- c) the need for adjustments to the predicted levels, having consideration of the character of the noise (tonal, impulsive or low frequency).
- D. Implementation of best practice noise control in accordance with clause 19 of SEPP N-1.
- 5) Prior to commencing construction of the works, provide a Construction Environmental Management Plan for the tunnel ventilation system detailing the proposed:
- A. Noise management plan to demonstrate compliance with the EPRs NV3 and 4.
- B. Dust management plan, including a real-time monitoring program to comply with the EPR AQ1.
- C. Actions to minimise GHG emissions to comply with EPR SCC2.
- D. Waste management plan to comply with EPR SCC4.

- WA_W2 You must not commence construction of the works for which reports are required by condition WA_W1 until written EPA approval of those reports has been received.
- WA_W3 Where any reports specified in condition WA_W1 and approved by EPA differ from the application, the works must be constructed in accordance with those approved reports.
- WA_W4 You must notify EPA when the construction of the works covered by this approval has been commenced.
- WA_W5 You must notify EPA when the construction of the works covered by this approval has been completed.
- WA_W7 You must not commission or operate the works without the written approval of EPA.
- WA_12.1 You must install all exhaust stacks so that provisions for sampling are included in accordance with EPA Publication 440.1 "A guide to the Sampling and Analysis of Air Emissions and Air Quality", or as approved by EPA.

Reporting Conditions

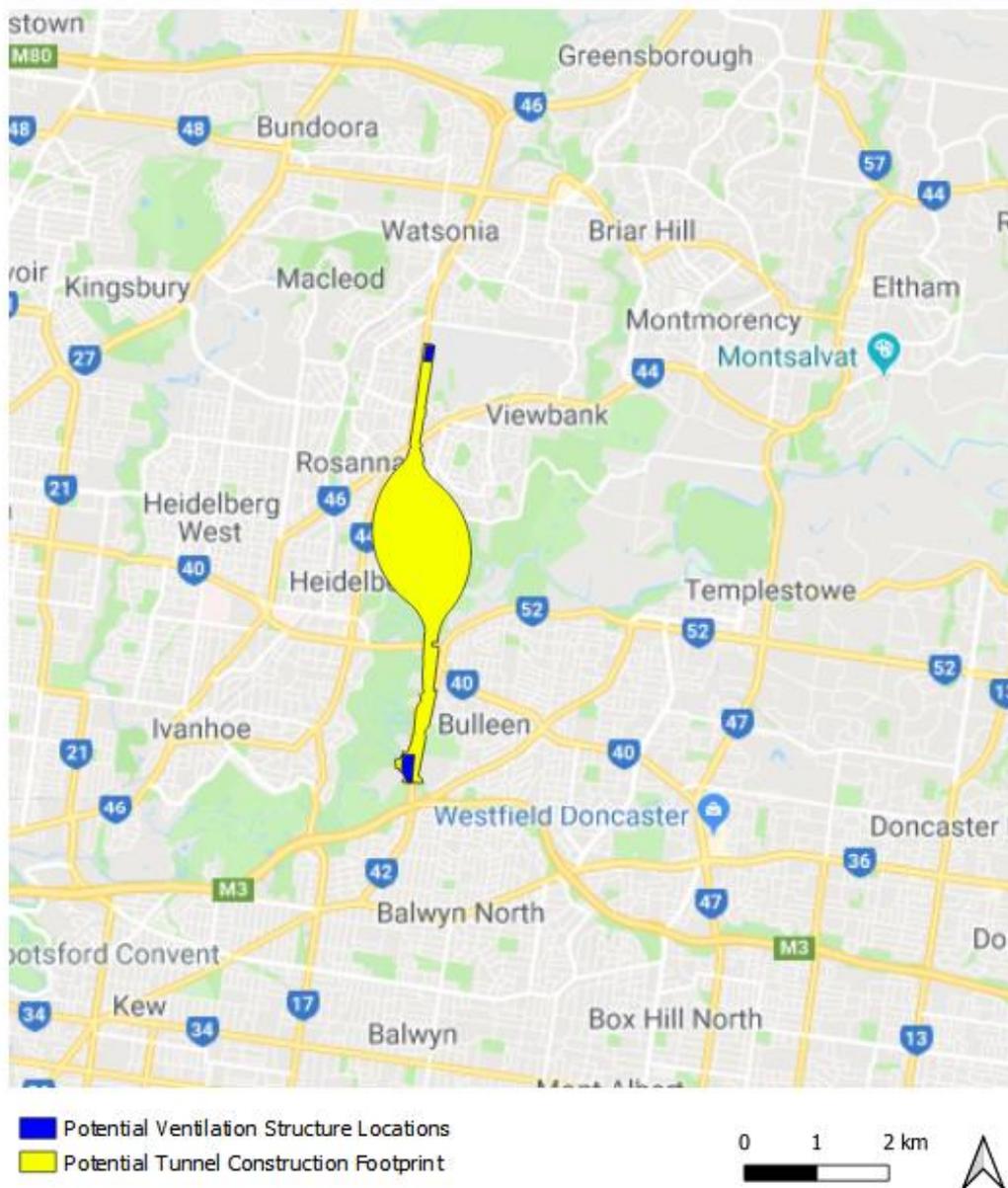
- WA_R1 At least three months before commencement of any commissioning, you must provide to EPA reports that include:
- 1) Operation environmental management plan (OEMP) for the tunnel ventilation system, which must include:
 - A. confirmed monitoring program for in-tunnel air quality and ventilation stack emissions to meet EPR AQ5, as approved under WA_W1 3) A and B.
 - B. a noise monitoring program for the tunnel ventilation system and relevant fixed infrastructure to comply with EPR NV7. It should include contingency measures in the event of exceedances of noise limits.
 - 2) A Sustainability Management Plan to comply with EPR SCC1 which must include targets and measures for the operation of the tunnel ventilation system.
- WA_R5 You must not commence operation of the works until written EPA approval of the plans and reports required by condition(s) WA_R1 has been received.

SCHEDULE 1A – LOCALITY PLAN



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SCHEDULE 1B – PREMISES PLAN



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