

Technical Paper

TP08: Role of NSW Agencies for Tunnel Projects

Advisory Committee on Tunnel Air Quality

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Key Points

The NSW Government manages the assessment, determination, and compliance of significant road tunnels (and associated ventilation systems) as follows:

- The Department of Planning and Environment assesses proposals under the *Environmental Planning and Assessment Act 1979* (EP&A Act) in consultation with relevant State government agencies. The assessment process is public and transparent, with formal opportunities for agencies, local government and the public to provide comment.
- Prior to public exhibition of the Environmental Impact Statement (EIS) (for all tunnel projects after WestConnex):
 - The Office of the Chief Scientist and Engineer (OCSE), on behalf of the non Roads and Maritime Services members of the Advisory Committee on Tunnel Air Quality (ACTAQ), provides a scientific review of a project's air emissions from ventilation outlets for the Minister of Planning's consideration.
 - The NSW Chief Health Officer releases a statement on the potential health impacts of emissions from tunnel ventilation outlets informed by the review by the OCSE.
- The NSW Environmental Protection Authority (EPA) provides technical advice to the Department of Planning and Environment on operational air quality impacts during the assessment of the EIS.
- NSW Health advises the Department of Planning and Environment on air quality health impacts, including appropriate health assessment methodologies for in-tunnel and ambient air quality during the assessment of the EIS.
- The OCSE, on behalf of the non-conflicted members of the ACTAQ, provides advice on the technical adequacy and appropriateness of the air quality modelling and impacts during the public exhibition of the EIS.
- The Department of Planning and Environment may also seek advice from an independent air quality expert during the assessment of the EIS.
- The Minister for Planning is the approval authority for complex infrastructure proposals, including road tunnels. If approved by the Minister, a significant road tunnel will be regulated by a project approval.
- The Department of Planning and Environment regulates the construction and operation of the project in accordance with the project approval. These functions are generally delegated to the Secretary of the Department of Planning and Environment (or their nominee) under the project approval.
- The EPA currently licences tunnel construction activities under the *Protection of the Environment Operations Act 1997* (POEO Act). The EPA will licence emissions from tunnel ventilation facilities once the NSW Government initiative, announced in February 2018, to strengthen the approach of addressing air quality issues associated with road tunnels is fully implemented.



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1. Department of Planning and Environment

The NSW Department of Planning and Environment has multiple roles in the development and operation of road tunnels. These roles include independently assessing a new road tunnel proposal, coordinating input about a project with other relevant government agencies, setting out approval conditions for projects, and monitoring specific conditions under which road tunnels operate.

1.1 State significant assessment systems

The NSW planning approval process includes a State significant assessment system comprising two separate assessment pathways known as State significant infrastructure (SSI) and State significant development (SSD). Projects that fall into these categories are assessed by the Department of Planning and Environment, and the Minister for Planning (the Minister) is the approval authority for SSI. For less complex SSI proposals, the Minister delegates authority to senior officers of the Department of Planning and Environment. Fact sheets and planning circulars describing the State significant assessment system are available on the Department's website (www.planning.nsw.gov.au).

Infrastructure projects are generally delivered by, or on the behalf of, a public authority, and do not normally require the Minister for Planning's approval. Major infrastructure projects, however, may have the potential for significant environmental impact, and therefore require assessment and approval from the Minister for Planning. In particular, linear infrastructure – such as roads, railway lines or pipelines – which often cross a number of council boundaries will generally be considered as SSI. A full list of SSI development types can be found in Schedule 3 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP).

1.2 Assessment of new tunnel projects

Major infrastructure projects, such as large road tunnel projects may have the potential for significant environmental impact, and therefore require assessment and approval from the Minister for Planning as SSI projects.

From time to time, an SSI project may be considered to be essential to the State for economic, social or environmental reasons. These projects can be declared to be 'critical State significant infrastructure' (CSSI). The CSSI provisions:

- ensure the timely and efficient delivery of essential infrastructure projects
- allow the government and the planning system to rapidly and readily respond to the changing needs of the State
- provide certainty in the delivery of these projects
- provide for rigorous scrutiny to ensure environmental outcomes are appropriate
- focus on delivering outcomes that are essential to the NSW community.

The Minister may declare a project to be CSSI by amending the SRD SEPP. The NorthConnex and WestConnex road tunnel projects are considered as CSSI projects.

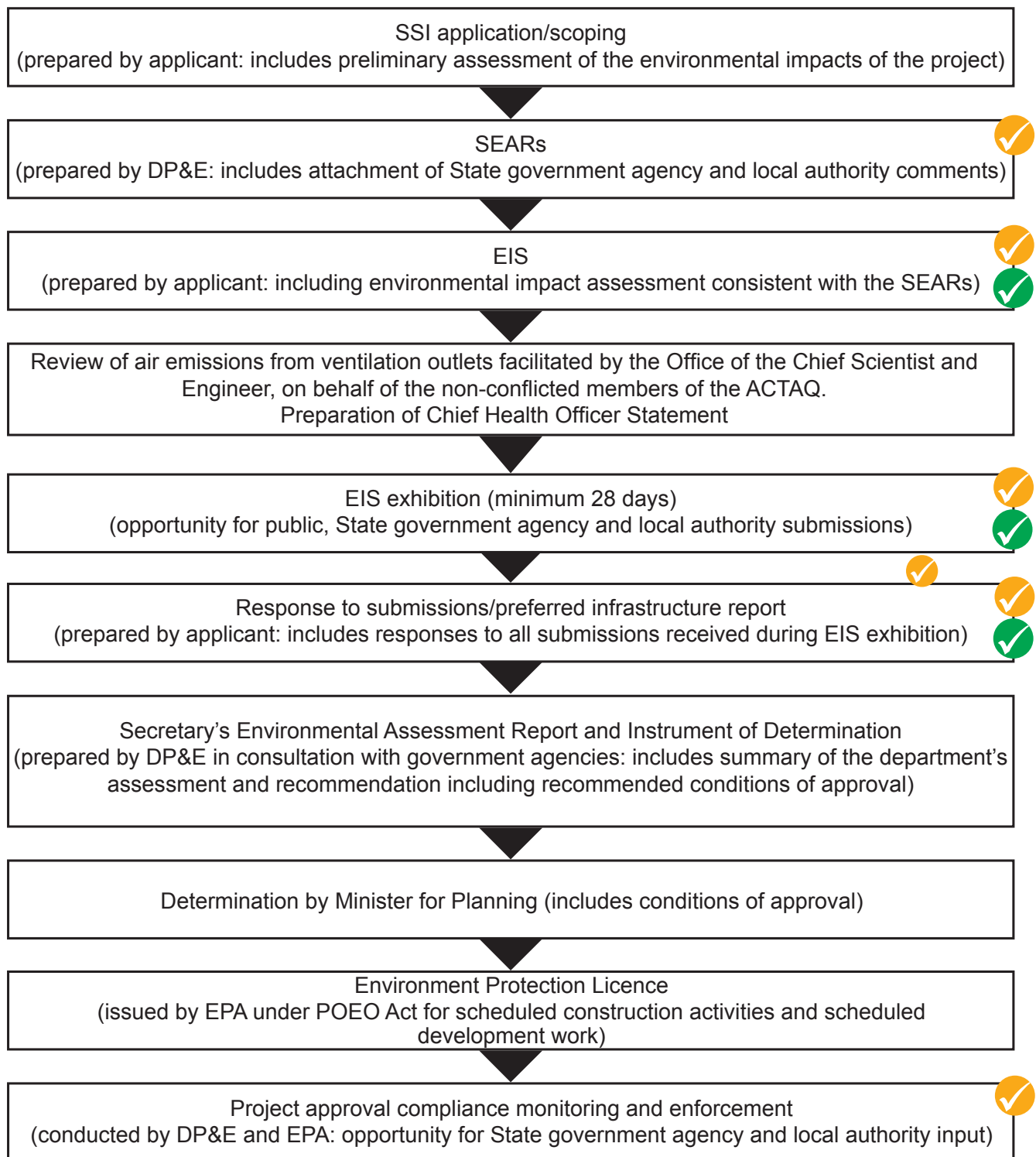
The assessment, determination and compliance process for SSI projects is shown in Figure 1. The process does not change once an SSI project has been declared CSSI.

1.3 State significant infrastructure application

For new tunnel projects, Roads and Maritime Services lodges an SSI application with supporting documents, which includes a preliminary assessment of the environmental impacts of the project. The request is then placed on the Department of Planning and Environment's major projects website (www.majorprojects.planning.nsw.gov.au/).

1.4 Secretary's environmental assessment requirements

The Department of Planning and Environment issues the Planning Secretary's environmental assessment requirements (SEARs) – formerly known as Director-General's requirements (DGRs). In preparing the SEARs, state government agencies and local authorities are consulted to identify key issues and environmental assessment requirements. This consultation is conducted through written correspondence and inter-agency meetings, and may include a planning focus meeting. The SEARs, as issued, are placed on the Department of Planning and Environment's website.



Opportunity for State government agency and local authority input



Opportunity for community input

Figure 1: Indicative assessment process for SSI projects (including opportunities for government authority and community input)

1.5 Environmental Impact Statement

Roads and Maritime Services prepares and submits the EIS. The EIS must include an assessment of the potential air quality and human health impacts consistent with the SEARs. The SEARs require Roads and Maritime Services to consult with relevant government agencies and members of the community during preparation of the EIS, and document the process in the EIS. This requirement may be satisfied through written correspondence or inter-agency meetings.

1.6 Environmental Impact Statement exhibition

Following receipt and acceptance of the EIS, the Department of Planning and Environment exhibits it for a minimum of 28 days, which provides government authorities and members of the community an opportunity to make submissions on the project. Project documentation is made available on the Department of Planning and Environment's website.

Submissions received during the exhibition period are provided to Roads and Maritime Services for a response and uploaded onto the Department of Planning and Environment's website.

1.7 Response to submissions/preferred infrastructure report

Roads and Maritime Services prepares a detailed response to all submissions received during the exhibition, and details of any changes to the project in a preferred infrastructure report (where applicable). The response to submissions and preferred infrastructure report is placed on the Department of Planning and Environment's website and, depending on any significant changes, the preferred infrastructure report may be publicly exhibited.

1.8 Secretary's environmental assessment report

The Department of Planning and Environment prepares the Planning Secretary's environmental assessment report, which details its assessment of the environmental impacts of the project and makes a recommendation for determination.

The Department of Planning and Environment considers the review by the ACTAQ and may also seek expert advice from air quality specialists on the models and assessments of the predicted emissions.

If the Department of Planning and Environment recommends the project be approved, it will consult with relevant government authorities when preparing recommended conditions of approval.



1.9 Determination

The Minister for Planning approves (with or without conditions) or refuses the project.

1.10 Approval conditions

The Department of Planning and Environment sets conditions under which approval is granted for each project. Traditionally, the Department of Planning and Environment has specified standards for in-tunnel air quality and goals for external (ambient) air quality as part of a project's approval conditions.

Air quality standards are set out in the conditions of approval for new motorway tunnel projects, which are developed in consultation with the EPA, NSW Health and the Office of the Chief Scientist and Engineer on behalf of non-conflicted members of ACTAQ.

These standards are informed by the national air quality goals set by the Commonwealth Government, which are based on international guidelines and health studies.

1.11 Infrastructure approval compliance monitoring and enforcement

The performance of the tunnel ventilation system is closely monitored by the Department of Planning and Environment's Compliance Branch.

The Department of Planning and Environment reviews the air quality monitoring results for these projects and the reports produced about the performance of the ventilation system.

If there is a reading above the air quality standard then the Department of Planning and Environment, EPA and NSW Health are notified, and the causes are investigated. If operation of the tunnel causes the exceedance then the tunnel operator will need to look at the ways to improve the system to ensure compliance.

The tunnel operator also must comply with any order by the Department of Planning and Environment to make the necessary improvements.

The tunnels' air quality management system is also audited on a regular basis to check the system is operating properly.



2. NSW Environment Protection Authority

The NSW EPA provides advice to the Department of Planning and Environment and the Minister regarding SSI projects. For significant road tunnel proposals, this includes during the assessment and determination process, and regulating construction activities in accordance with the POEO Act. An overview of the EPA's input to the assessment and determination process and its regulatory responsibilities is provided below.

2.1 Input to the planning assessment process

The EPA's primary role in the management of tunnel air quality is to provide advice during the assessment and determination process. The EPA is often involved in the early stages of the planning approval process for road tunnel projects through active participation in planning focus meetings and strategic joint agency groups.

2.2 Environment Protection Licences under the Protection of the Environment Operations Act 1997

The EPA requires tunnel construction to obtain an environment protection licence (EPL) prior to commencement of construction if it meets the licensing triggers in Schedule 1 of the POEO Act, or if it constitutes scheduled development work under section 47(3) of the POEO Act. The EPA will usually issue an EPL for tunnel construction to the project's primary construction contractor. EPLs issued for tunnel construction primarily focus on noise and dust mitigation, stormwater and groundwater management, and community engagement.

The EPA will also regulate the operational air emissions from tunnel ventilation facilities (the vertical discharge of air emissions from the tunnel) once the NSW Government initiative to strengthen the approach of addressing air quality issues associated with road tunnels is fully implemented.

3. Office of the NSW Chief Scientist and Engineer

The Office of the Chief Scientist and Engineer is involved in scientific research and development activities, promoting science and technology, and facilitating independent reviews into complex environmental issues.

The ACTAQ is chaired by NSW Chief Scientist and Engineer. This committee comprises a range of experts and officers in fields related to road tunnels, air quality and human health. The ACTAQ undertakes work to better understand air quality in association with road tunnels in Sydney, including within cabins, within tunnels, and external to tunnels in the local surrounds.

The OCSE has two main roles in relation to the ACTAQ. The ACTAQ is chaired by the NSW Chief Scientist and Engineer. In addition, the OCSE operationalises the work of the ACTAQ when any of the members have a conflict of interest in the project or process, as occurs in the case of assessment of new tunnel projects. The OCSE coordinates the assessment work, provides it to the non-conflicted members for review and comment and the OCSE then submits it on behalf of the ACTAQ non-conflicted members.

From 2018, the Office of the Chief Scientist and Engineer will complete a scientific review of the air quality and ventilation components of all new road tunnel projects prior to the public exhibition of an EIS.

A full review of the technical adequacy and appropriateness of the air quality modelling and impacts was undertaken prior to the approval of NorthConnex and all three stages of WestConnex.



4. NSW Health

NSW Health advises the Department of Planning and Environment on air quality health impacts, including appropriate health assessment methodologies for in-tunnel and ambient air quality.

During the EIS process, the NSW Chief Health Officer assesses and releases a statement on the potential health impacts of emissions from road tunnel ventilation systems. This assessment is informed by the Chief Scientist and Engineer's review of the proposed facility.

5. NSW Roads and Maritime Services

The NSW Roads and Maritime Services operates and manages the main and arterial road system in Sydney. As part of catering for existing and future traffic needs, the Roads and Maritime Services initiates new and expanded road projects. Road tunnels are considered to be an effective transport solution that enable traffic to bypass congested areas by moving traffic underground.

The Greater Sydney Services and Infrastructure Plan (2018) sets a 40 year vision for transport in the Greater Sydney Region. The Plan includes investment in motorways and tunnels as part of the vision for the road network. Upcoming funded tunnel projects include The Western Harbour Tunnel and Beaches Link, and a proposed extension to the F6 Motorway.



