Secretary's Environmental Assessment Requirements

Section 115Y of the *Environmental Planning and Assessment Act 1979*

Application Number	SSI 6788
Proposal	Multi-lane road link, including twin motorway tunnels, between the M5 East Motorway east of King Georges Road, Beverly Hills and St Peters.
Location	Land generally located between the M5 East Motorway east of King Georges Road, Beverly Hills and St Peters in the Canterbury, Hurstville, Rockdale, Marrickville, Botany Bay and City of Sydney local government areas.
Proponent	Roads and Maritime Services
Date of Issue	26 August 2015
General Requirements	The Environmental Impact Statement (EIS) must be prepared in accordance with, and meet the minimum requirements of Part 3 of Schedule 2 of the *Environmental Planning and Assessment Regulation* 2000 (the Regulation), including: 1. the information required under clause 6 of Schedule 2 of the Regulation. 2. the content listed in clause 7 of Schedule 2 of the Regulation, including but not limited to: • a statement of the objectives of the proposal, including a description of the strategic need, justification, objectives and outcomes for the proposal, taking into account existing and proposed transport infrastructure and services within the adjoining subregions, and as relevant, the outcomes and objectives of relevant strategic planning and transport policies, including, but not limited to: *NSW 2021; NSW State Infrastructure Strategy 2012* (and update)*; NSW Long Term Transport Master Plan* (December 2012); *A Plan for Growing Sydney* (December 2014); *NSW Freight and Ports Strategy 2013;* and any other relevant plans or draft plans published after the date of these requirements; • an analysis of feasible alternatives to the carrying out of the proposal and proposal justification, including: o an analysis of alternatives/options considered, having regard to the proposal objectives (including an assessment of the environmental costs and benefits of the proposal relative to alternatives and the consequences of not carrying out the proposal), and whether or not the proposal is in the public interest, o justification for the preferred proposal taking into consideration the objects of the *Environmental Planning and Assessment Act 1979*, o details of the alternative ventilation options considered during the tunnel design to meet the air quality criteria for the proposal, o details of the short-listed route and tunnel options from the tender process and the criteria that was considered in the selection of the preferred route and tunnel design, and o staging of the proposal and the broader WestConnex scheme, and in particular access to Sydney Airport and Port Botany and improved freight efficiencies; • a detailed description of the proposal, including: o proposed route, o design of the tunnels, interchanges (including tunnel portals and entry and exit ramps), and potential future connections to Stage 3 of WestConnex and other proposals such as southern Sydney

	connection, and road user, pedestrian and cyclist facilities, and lighting, o surface road upgrade works, including road widening, intersection treatment and grade separation works, property access, parking, pedestrian and cyclist facilities (including appropriate locations for overbridges) and public transport facilities, and integration with the M5 East Motorway, o ancillary infrastructure and operational facilities, such as operational and maintenance facilities, ventilation structures and systems, and fire and emergency services and infrastructure for the proposal, including (if required) additional infrastructure (such as tolling infrastructure) for the M5 East Motorway, o location and operational requirements of construction ancillary facilities and access, o land use changes as a result of the proposal and the acquisition of privately owned, Council and Crown lands, and impacts to Council and Crown lands, and o relationship and/or integration with existing public and freight transport services; • an analysis of the proposal including an assessment, with a particular focus on the requirements of the listed key issues, in accordance with clause 7(1)(d) of Schedule 2 of the Regulation (where relevant), including an identification of how relevant planning, land use and development matters (including relevant strategic and statutory matters) have been considered in the impact assessment (direct, indirect and cumulative impacts) and/or in developing mitigation measures (to avoid, manage, offset and monitor impacts and where relevant, improve the existing environment); • detail how the principles of ecologically sustainable development will be incorporated in the design, construction and ongoing operation phases of the proposal; and • details of the proposal's relationship to and consistency with the broader WestConnex, and an assessment of the cumulative impacts taking into consideration the WestConnex program of works. Where relevant, the assessment of key issues below, and any other significant issues identified in the risk assessment, must include: • adequate baseline data, in terms of temporal, spatial and parameters monitored; • consideration of the potential cumulative impacts due to other development in the vicinity (completed, underway or proposed); and • measures to avoid, minimise and if necessary offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment.
Key issues	The EIS must also address the following specific matters: **Traffic and Transport** — including but not limited to: • details of how the proposal meets the objectives of the overall WestConnex program; • details of how the traffic and transport objectives of the proposal, and service and infrastructure responses, take into account: adjacent sensitive land uses; future housing and employment growth areas; existing town, employment and industrial centres; approved and proposed infrastructure proposals; and broader transport needs (including public transport, cyclist and pedestrian requirements and facilities); including with specific reference to: • the preferred alignment and design, • the proposed interchanges and connections to the surrounding road network, and • associated road and related transport infrastructure facilities;

- an assessment and modelling of operational traffic and transport impacts on the local and regional road network (in consultation with affected councils), and the Sydney motorway network, including the consideration of planning proposals, major urban renewal and development, the potential cumulative impacts of Stage 3 – M4 South (Haberfield to St Peters), and the impacts of potential shifts of traffic movements to alternative routes outside the proposal area (including as a result of tolls);
- induced traffic and operational implications for public transport (particularly with respect to strategic bus corridors and bus routes) and future public transport opportunities;
- impacts on property and business access and on street parking provision, including permanent and temporary (construction) changes to access and parking, and traffic management measures such as clearways;
- impacts on cyclists and pedestrian access and safety and consideration of opportunities to integrate cycleway and pedestrian elements with surrounding networks;
- construction traffic and transport impacts of the proposal (including ancillary facilities) and associated management measures, in particular:
    - impacts on the road network (including safety and level of service, parking, pedestrian and cyclist access, and disruption to public transport services and access to properties),
    - route identification and suitability for heavy vehicles, and scheduling of transport movements, particularly movements outside standard construction hours,
    - the number, frequency and size of construction related vehicles (both light and heavy vehicles),
    - the nature of existing traffic on construction access routes (including consideration of peak traffic times), and
    - the need to close, divert or otherwise reconfigure elements of the road network associated with construction of the proposal, and
    - having reference to the cumulative construction impacts of other infrastructure preparing for or commencing construction.

Air Quality – including but not limited to:

- an assessment of construction and operational activities that have the potential to impact on in-tunnel, local and regional air quality. The air quality impact assessment must provide an assessment of the risk associated with potential discharges of fugitive and point source emissions on sensitive receivers, and include:
    - the identification of all sources of air pollution and assess potential emissions of PM_{10}, $PM_{2.5}$, CO, NO_2 and other nitrogen oxides and volatile organic compounds (eg BTEX) and consider the impacts from the dispersal of these air pollutants on the ambient air quality along the proposal route, proposed ventilation outlets and portals, surface roads in the vicinity of the St Peters interchange, the alternative surface road network, and in-tunnel air quality,
    - assessment of worst case scenarios for in-tunnel and ambient air quality, including assessment of a range of traffic scenarios, including worst case design maximum traffic flow scenario (variable speed) and worst case breakdown scenario, and discussion of the likely occurrence of each,
    - details of the proposed tunnel design and mitigation measures to address in-tunnel air quality and the air quality in the vicinity of portals and any mechanical ventilation systems (ie ventilation stacks and air inlets) including details of proposed air quality monitoring (including criteria),
    - demonstrate how the project and ventilation design ensures that concentrations of air emissions meet NSW, national and international best practice for in-tunnel and ambient air quality,

	and taking into consideration the approved criteria for the NorthConnex project, • consideration of any advice from the Advisory Committee on Tunnel Air Quality on the project particularly in relation to assessment methodology, • details of any emergency ventilation systems, such as air intake/exhaust stacks, including protocols for the operation of these systems in emergency situations, potential emission of air pollutants and their dispersal, and safety procedures, and • details of in-tunnel air quality control measures considered, including air filtration. Justification must be provided to support the proposed measures; • details of the proposed mitigation measures to prevent the generation and emission of dust (particulate matter and TSP) and air pollutants (including odours) during the construction of the proposal, particularly in relation to ancillary facilities (such as concrete batching plants), the use of mobile plant, stockpiles and the processing and movement of spoil; • cumulative assessment of the local and regional air quality due to the operation of the M5 East Motorway ventilation stack, operation of Stage 3 – M4 South (Haberfield to St Peters), and surface road operations; • The air quality assessment including the setting of air quality criteria must be done in consultation with NSW Health, and the Environment Protection Authority and the consideration of any applicable advice provided by the Advisory Committee on Tunnel Air Quality; and • modelling (including dispersion modelling) must be conducted in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA, 2005) or a suitably justified and verified alternative method based on current scientific understanding of atmospheric dispersion. Particular attention must be given to the verification of the method of predicting local air quality or meteorological conditions based on non-local or modelled data. **Human Health** – including but not limited to: • an assessment of human health impacts with particular consideration of: • how the design of the proposal minimises adverse health impacts, • human health impacts from the operation of the tunnel under a range of conditions, including worst case operating condition, • human health risks and costs associated with the proposal, including those associated with air quality, noise and vibration, and social impacts, during the construction and operation of the proposal, and • the Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards (enHealth, 2012) and Air Quality in and Around Traffic Tunnels (NHMRC, 2008). **Noise and Vibration** — including but not limited to: • an assessment of the noise impacts of the proposal during operation, consistent with the *Road Noise Policy* (EPA, 2011) and *NSW Industrial Noise Policy* (EPA, 2000). The assessment must address: • the redistribution of traffic, • impacts to receivers (dwellings, child care centres, educational establishments, hospitals, motels, nursing homes, or places of worship), • sleep disturbance, and • the characteristics of noise (eg. low frequency noise); • an assessment of construction noise and vibration impacts, consistent with the *Interim Construction Noise Guideline* (ICNG) (DECCW, 2009) and *Assessing Vibration: a technical guideline* (DEC, 2006). The assessment must address:

- the nature of construction activities (including transport, tonal or impulsive noise-generating works and the removal of operational noise barriers, as relevant),
- the intensity and duration of noise and vibration impacts (both air and ground borne),
- the nature, sensitivity and impact to receivers,
- the need to balance timely conclusion of noise and vibration-generating works with periods of receiver respite, and other factors that may influence the timing and duration of construction activities (such as traffic management),
- an indication of potential for works outside standard construction hours, including predicted levels, exceedances and number of potentially affected receivers, justification for the activity in terms of the ICNG; and

- cumulative assessment of potential construction noise and vibration impacts due to other developments in the vicinity, including future stages of WestConnex.

Biodiversity — including but not limited to:

- an assessment of the potential ecological impacts of the proposal, with specific reference to vegetation and habitat clearing, connectivity, edge effects, weed dispersal, riparian and aquatic habitat impacts, soil and water quality impacts and operational impacts. The assessment must:
  - make specific reference to impacts on landscape values, biodiversity values of native vegetation and threatened species or populations, including worst case estimates of vegetation clearing and operational impacts;
  - demonstrate a design philosophy of impact avoidance on ecological values, and in particular, ecological values of high significance, and be consistent with the 'avoid, minimise or offset' principle;
  - be undertaken in accordance with the *Framework for Biodiversity Assessment* (OEH, 2014) and the *NSW Biodiversity Offsets Policy for Major Projects* (OEH, 2014), and by a person accredited in accordance with section 142B(1)(c) of the *Threatened Species Conservation Act, 1995.* Impacts on species, populations and ecological communities that will require further consideration and provision of information specified in section 9.2 of the *Framework for Biodiversity Assessment* include those identified by the OEH. Species specific surveys shall be undertaken for those species and in accordance with the survey requirements specified by the OEH; and
  - in relation to aquatic biodiversity be consistent with the draft *Policy and Guidelines for Fish Habitat Conservation and Management – Update* 2013 (DPI, 2013).
- The assessment of potential ecological impacts is to comply with the requirements of the *Guidelines for preparing Assessment Documentation relevant to the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) — WestConnex New M5 Project (EPBC 2015/7520)*. The assessment is to contain detailed identification and assessment of direct and indirect impacts on threatened species and ecological communities that will, are likely to, or may be significantly impacted by the proposal, including but not limited to:
  - Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion,
  - Green and Golden Bell Frog (*Littoria aurea*),
  - Turpentine-Ironbark Forest in the Sydney Basin Bioregion,
  - Bynoe's Wattle (*Acacia bynoeana*),
  - Downy Wattle (*Acacia pubescens*),
  - Deane's Paperbark (*Melaleuca deanei*),

- Hairy Geebung (*Persoonia hirsuta*),
- Spiked Rice-flower (*Pimelea spicata*),
- Magenta Lilly Pilly (*Syzygium paniculatum*), and
- Black-eyed Susan (*Tetratheca juncea*).

Urban Design and Visual Amenity – including, but not limited to:

- a consideration of the urban design and visual amenity implications of the proposal, including supporting infrastructure, during construction and operation. The assessment must identify urban design and landscaping objectives to enhance the ventilation stacks, interchanges, tunnels, 'cut and cover' arrangements, consider resulting residual land and treatments, and demonstrate how the proposed hard and soft urban design elements of the proposal would be consistent with the existing and desired future character of the area traversed affected by the proposal;
- identification of opportunities to utilise surplus or residual land, and utilise key structures (such as stacks) for multiple uses ie integration with other structures;
- evaluation of the visual impacts and urban design aspects of the proposal (and its components) on surrounding areas, and consistency with the urban and landscape design of the M5 East Motorway and WestConnex Urban Design Corridor Framework;
- a consideration of impacts on views and vistas, streetscapes, key sites and buildings, and direct amenity impacts (such as proximity and overshadowing);
- details of urban design and landscape mitigation measures, having regard to the urban design and landscape objectives for the proposal;
- measures to manage lighting impacts both during construction and operation, in particular lighting of the St Peters interchange and impacts on the operation of Sydney Airport; and
- artists' impressions and perspective visualisations of the proposal from a variety of locations along and adjacent to the route.

Land Use, Social and Economic — including, but not limited to:

- a description of the existing socio-economic environment;
- impacts on directly affected properties and land uses, including impacts related to access, land use, settlement and subsidence associated with tunnel excavation, property acquisition (including relocations and expenses for those properties acquired) and amenity related changes;
- social and economic impacts to businesses and the community within the vicinity of the proposal, with associated property acquisition, traffic, access, property, public domain and open space, and amenity and health related changes (including the broader regional impacts associated with the closure of the Alexandria landfill site should this be part of the proposal);
- opportunities for local centre and street revitalisation near the St Peters interchange;
- an assessment of the impact of the proposal on community facilities, including open space and recreational facilities. The assessment must include the use of existing facilities impacted by the proposal, and options and opportunities for the relocation and/or reconfiguration of the community facilities, both temporary and permanent;
- where there are potential impacts to the OEH estate reserved under the *National Parks and Wildlife Act 1974* or where the proposal is located upstream of OEH estate, an assessment of the matters to be considered outlined in the *Guidelines for developments adjoining land and water managed by DECCW* (DECCW 2010);
- potential impacts on utilities (including communications, electricity, gas, and water and sewerage) and the relocation of these utilities; and
- a draft Community Consultation Framework identifying relevant stakeholders, procedures for distributing information and

	receiving/responding to feedback and procedures for resolving stakeholder and community complaints during construction and operation. Key issues that must be addressed in the draft Strategy include: • traffic management (including property access, pedestrian access), • landscaping/urban design matters, • construction activities including out of hours work, and • noise and vibration mitigation and management. **Soil, Water and Hydrology**— including but not limited to: • an assessment of construction and operational erosion and sediment and water quality discharge impacts, taking into account impacts from treated discharge, accidents and runoff (i.e. acute and chronic impacts), having consideration to impacts to surface water runoff, soil erosion and sediment transport, mass movement, salinity and iron levels. The assessment must include identification and estimation of the quality and quantity of pollutants that may be introduced into any waterways by source and discharge point; • an assessment of water quality impacts on receiving waterways likely to be affected by the proposal (including Wolli, Cup and Saucer Creeks, Cooks River and Alexandria Canal). The assessment must include existing water quality, geomorphology, riparian vegetation and rehabilitation of riparian land, and have reference to the *NSW Water Quality Objectives and* relevant public health and environmental water quality trigger values and criteria, including those specified in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC/ARMCANZ 2000), any applicable regional, local or site-specific guidelines and any licensing requirements; • an assessment of groundwater impacts (including ancillary facilities such as the tunnel control centre and any deluge systems), considering local impacts along the length of the tunnels and impacts on local and regional hydrology including consideration of any Water Sharing Plan and impacts on groundwater flow. The assessment must consider: extent of drawdown; impacts to groundwater quality; volume of groundwater that will be taken (including inflows); discharge requirements; location and details of groundwater management and implications for groundwater-dependent surface flows, groundwater-dependent ecological communities, and groundwater users. The assessment must include details of proposed surface and groundwater monitoring and be prepared having consideration to the requirements of the *NSW Aquifer Interference Policy*; • identification of potential impacts of the proposal on existing flood regimes, consistent with the *Floodplain Development Manual* (Department of Natural Resources, 2005), including impacts to existing receivers and infrastructure and the future flood mitigation options for and development potential of affected land, demonstrating consideration of the changes to rainfall frequency and/or intensity as a result of climate change on the proposal. The assessment must demonstrate due consideration of flood risks during construction and in the proposal design; • identifying potential impacts of the development on acid sulphate soils in accordance with the relevant guidelines and a description of the mitigation measures proposed to minimise potential impacts; and • a Spoil Management Strategy detailing how spoil will be managed during construction, including likely volumes, likely nature and classification of excavated material, opportunities for recycling, potential disposal sites (including description of sites), stockpile management, and method(s) and route of transportation. **Contaminated Sites –** including but not limited to: • an assessment of contaminated sites in accordance with the guidelines

made or approved under section 105 of the *Contaminated Land Management Act 1997.* The assessment must include details of proposed remediation measures and justification for the proposed measures in terms of the proposed final use of that land;

- status of site contamination and suitability of the site for the proposal, including the suitability of the Alexandria landfill site for the St Peters interchange;
- an assessment of the potential disturbance of contaminated bed sediments in the Alexandra Canal, and interception of contaminated water from the Botany Sand Beds aquifer; and
- having reference to the assessments conducted in satisfaction of the above, consideration of whether or not a site auditor, accredited under the *Contaminated Land Management Act 1997,* has or will be engaged to issue a site audit statement to certify on the suitability of the current or proposed uses.

Heritage — including but not limited to:

- impacts to State and local non-Aboriginal heritage (including conservation areas, built heritage landscapes and archaeology) must be assessed. Where impacts to State or locally significant historic heritage are identified, the assessment must:
    - outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the guidelines in the *NSW Heritage Manual* (Heritage Office and Department of Urban Affairs and Planning 1996),
    - be undertaken by a suitably qualified heritage consultant(s) with relevant heritage expertise (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria),
    - include a statement of heritage impact for all heritage items/conservation areas to be impacted (including significance assessment), This must include detailed mapping of all heritage items and how they are affected by the proposal,
    - include details of any proposed mitigation measures (architectural and landscape),
    - consider the impacts from vibration, demolition, archaeological disturbance, altered historical arrangements and access, increased traffic, landscape and vistas, and architectural noise treatment, and
    - develop an appropriate archaeological assessment methodology, including research design, in consultation with the Department and the Heritage Council of New South Wales, to guide physical archaeological test excavations and include the results of these excavations; and
- impacts to Aboriginal heritage (including cultural and archaeological significance), in particular impacts to Aboriginal objects and potential archaeological deposits (PAD), should be assessed. Where impacts are identified, the assessment shall:
    - outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the measures) generally consistent with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation 2005) and other relevant guidelines and requirements,
    - be undertaken by a suitably qualified heritage consultant(s),
    - demonstrate effective consultation with Aboriginal stakeholders in determining and assessing impacts and developing and selecting

	options and mitigation measures (including the final proposed measures), • assess and document the archaeological and cultural heritage significance of affected sites, and • undertake appropriate archaeological investigations generally in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010), to establish the full spatial extent and significance of any archaeological evidence across each site/area of PAD, and include the results of these excavations. If an alternative excavation method is proposed, it shall be developed in consultation with OEH. **Environmental Risk Analysis** — notwithstanding the above assessment requirements, the EIS must include an environmental risk analysis to identify potential environmental impacts associated with the proposal (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of this additional key environmental impact must be included in the EIS.
Consultation	During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. • local, State and Commonwealth government authorities, including the: o Environment Protection Authority, o Office of Environment and Heritage (including Heritage Division), o The Heritage Council of NSW, o Department of Primary Industries, o NSW Office of Water, o NSW Health (including Local Health Districts), o Roads and Maritime Services, o Transport for NSW, o UrbanGrowth NSW; o Sydney Water, o Canterbury City Council, o Hurstville City Council, o Rockdale City Council, o Marrickville Council, o City of Botany Bay Council, o City of Sydney, o Civil Aviation Safety Authority, and o Air Services Australia; • specialist interest groups, including Local Aboriginal Land Councils, Aboriginal stakeholders, and pedestrian and bicycle user groups; • utilities and service providers; and • the public, including community groups and adjoining and affected landowners. The EIS must describe the consultation process and the issues raised, and identify where the design of the proposal has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation must be provided.
Further consultation after 2 years	If you do not lodge an EIS for the proposal within 2 years of the issue date of these SEARs, you must consult further with the Secretary in relation to the preparation of the EIS.