



Sydney Gateway Road Project

State Significant Infrastructure Assessment SSI 9737

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Glossary

Abbreviation	Definition
AEP	Annual Exceedance Probability
ARTC	Australian Rail Track Corporation
BC Act	<i>Biodiversity Conservation Act 2016</i>
CASA	Civil Aviation Safety Authority
Crown Lands	Crown Lands, DPIE
CSSI	Critical State Significant Infrastructure
DITRDC	Commonwealth Department of Infrastructure, Transport, Regional Development and Communications
Department	Department of Planning, Industry and Environment
DPI	Department of Primary Industries, DPIE
DPIE	Department of Planning, Industry and Environment
EESG	Environment, Energy and Science Group, DPIE
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
ESD	Ecologically Sustainable Development
Heritage	Heritage NSW, Department of Premier and Cabinet
Minister	Minister for Planning and Public Spaces
NASF Guidelines	National Airports Safeguarding Framework Guidelines
NCA	Noise Catchment Area
OLS	Obstacle limitation surface
pdMDP	Preliminary Draft Major Development Plan
RMS	Roads and Maritime Services, TfNSW
Planning Secretary	Secretary of the Department of Planning, Industry and Environment

Relevant councils	Inner West Council, City of Sydney Council, Bayside Council
SEPP	State Environmental Planning Policy
SSI	State Significant Infrastructure
TfNSW	Transport for NSW (the Proponent)

Executive Summary

Sydney Airport and Port Botany are important infrastructure assets essential for domestic and international connectivity for people and goods and critical to the NSW and Australian economies. The area is the second largest employment area in Sydney with high concentrations of airport and port related businesses that serve the Greater Sydney Area, NSW and Australia. High volumes of traffic access Sydney Airport and Port Botany with many of the surrounding roads at or near capacity during peak periods with the forecasts for increases in air travel, air freight, container freight and other traffic over the next 20 years likely to increase. The Sydney Gateway Project would alleviate traffic congestion by providing a high capacity road linking the Sydney motorway network at St Peters with Sydney Airport and road links to Port Botany.

The project is an important component of the Government's transport infrastructure strategy, which aims to improve efficient road and rail access between Sydney Airport and Port Botany to key strategic centres via the Sydney motorway and freight rail network.

The potential environmental impacts of construction and operation are, overall, considered acceptable subject to implementation of appropriate mitigation and management measures, with the majority of the work being undertaken in an industrial, commercial or airport environment.

The Department has found that the benefits outweigh the localised negative impacts by:

- improving connectivity to Sydney Airport terminals that cater for forecast growth in passenger and air freight volumes;
- supporting efficient distribution of freight to and from Sydney Airport and Port Botany through a more efficient connection to the Sydney motorway network; and
- reducing congestion and heavy vehicle movements on the local road network in St Peters, Tempe and Mascot.

It is in the public interest that the project is approved.

The project complies with the objects of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is consistent with the Government's key priorities and transport planning framework including *NSW Freight and Ports Plan 2018-2038* and *2020 Infrastructure Priority List*. The project is State significant infrastructure (SSI) and was declared critical State significant infrastructure (CSSI) on 15 May 2020. The Minister for Planning and Public Spaces is the approval authority.

Engagement with the Community

The Environmental Impact Statement (EIS) was publicly exhibited from Wednesday 20 November 2019 until Thursday 19 December 2019 (30 days). Submissions were received from nine government agencies, four councils, 77 community submissions including seven special interest groups/non-residential submissions. City of Sydney, Inner West Council and 42 community submissions objected to the project. Key issues raised in the submissions included increased traffic, impacts of active transport connections and operational noise, and construction noise and vibration.

Key assessment issues

Traffic and transport

The Department considered traffic and transport impacts during the construction and operational stages of the project, including advice and recommendations from an independent traffic and transport consultant. The project will result in improvements in network reliability, remove existing traffic from neighbouring local roads, and improve travel times to and from the airport from south-western and western Sydney. However, there is the potential for local traffic impacts to occur with increased volumes forecast as the demand for travel and air freight increases. The Department has recommended an Operational Road Network Performance Review be undertaken within 12 months and again at five years to address potential impacts on the road network and implement management measures where impacts are identified.

Local traffic impacts are predicted to occur during construction when work is undertaken at intersections and on key thoroughfares such as Qantas Drive. The introduction of heavy and light construction vehicles has the potential to increase congestion on the surrounding local road network. Construction worker vehicles could also impact on on-street parking due to a shortfall in parking spaces at construction ancillary facilities. To manage these impacts, the Department has recommended limits on the use of local roads by construction heavy vehicles and the implementation of a Construction Traffic and Transport Management Sub-Plan, Site Establishment Plan and Construction Parking and Access Strategy. Implementation of these plans and the strategy would ensure that traffic and access impacts are minimised, vehicular access to and parking in the vicinity of affected businesses and properties is maintained, and spoil haulage occurs along approved routes.

Noise and vibration

Noise and vibration impacts to residents and other sensitive land uses are expected throughout construction, particularly in Tempe, Mascot and St Peters. Out-of-hour works are required due to safety reasons and constraints posed by the surrounding transport networks and Sydney Airport.

The Department has recommended conditions to manage the impact of construction noise and vibration including the provision of respite periods, additional mitigation for consecutive nights of noisy work and implementation of management strategies including scheduling of work and coordination with other State significant projects such as the WestConnex M4-M5 Link and Botany Rail Duplication.

The Proponent proposes to construct a noise wall near Tempe and install at-property noise treatment for residents where operational traffic noise exceeds the operational noise criteria. The Department supports these measures and has recommended an Operational Noise Review to confirm the noise levels and suitability of the mitigation measures installed before they are installed. Further, an Operational Noise Compliance Report must be prepared within 14 months of commencing operation to assess compliance with operational noise levels and the effectiveness of operational noise mitigation.

Place and design

The Project will impact active transport routes, open space, landscape character and amenity in Tempe Lands and sections of Alexandra Canal.

Temporary active transport routes will be provided during construction and permanent routes constructed along the western side of Alexandra Canal and linking Sydney Airport terminals T1 and T2/T3. The Department has recommended conditions to ensure the existing Coward Street cycleway is refurbished.

Landscape and amenity impacts would be managed through a Place, Design and Landscape Plan to ensure the form and finishes of structures are sympathetic to the character of the local area. The Department has recommended conditions for independent and qualified practitioners in the fields of public art, heritage, open space design, landscaping and active transport be involved in the detailed design of the project.

Land use and social and economic considerations

The project will require the relocation or closure of a number of businesses, the majority of which are on airport land. The overall impact to businesses is considered acceptable as some businesses are already in the process of being relocated and / or similar facilities and services are available in the Sydney region.

The project will result in a net increase in publicly accessible open space. The final landform / design of this space will form part of the Tempe Lands Master Plan process which is being undertaken by Inner West Council. Through this master planning process, Council will determine the final land uses as owner of this land, including the establishment of a permanent dog park to offset the loss an existing dog park at Tempe which will be demolished during construction of the project.

Construction of the project has the potential to impact airport operations through impacts to the prescribed airspace including intrusions to the Obstacle Limitation Surface and potential impacts to lighting, navigational aids, and turbulence. These impacts are considered manageable and will be subject to approval under the *Airports Act 1996* or managed in accordance with the National Airports Safeguarding Framework (NASF) Guidelines.

Non-Aboriginal heritage

Heritage impacts to Alexandra Canal and potential State significant archaeology would result from four new bridges over the canal and nine drainage outlets through canal walls, some containing original sandstone fabric.

The Department has recommended conditions to manage the impacts of construction including minimising the physical and visual impacts to the Canal. Archival recording is also required for those parts of the Alexandra Canal that will be physically impacted during construction.

Contamination

Construction on contaminated lands, including the former Tempe landfill and Alexandra Canal, has the potential to result in migration of leachate and contaminated groundwater, generation of offensive odours and resuspension of contaminated bed sediments in Alexandra Canal. An emplacement mound containing contaminated material will be established on the Tempe Lands and would be capped and managed to minimise impacts on the integrity and stability of the underlying landfill.

The Department has recommended conditions to adequately reduce the risk of adverse environmental and human health impacts from exposure to contaminated sediments, groundwater and odour through appropriate management, monitoring and independent auditing by an EPA accredited site auditor.

Surface and ground water

Construction of the project will require excavation works to depths which will encounter groundwater. Dewatering of excavations will bring groundwater to the surface and may cause temporary drawdown of the groundwater table altering sub-surface flows and causing migration of contaminated groundwater plumes which exist throughout the area. The Proponent has committed to preparing a dewatering management strategy which would identify any groundwater treatment requirements. To protect ecosystem health and the quality of receiving water environments, recommended conditions prohibit the direct discharge of groundwater to waterways. Further, the Department has recommended stringent discharge criteria for all construction water treatment plants. Requirements for groundwater monitoring have also been recommended.

The Department is satisfied that the implementation of stormwater runoff and erosion controls would effectively manage overland flows during construction, and that the incorporation of water sensitive urban design features and stormwater drainage into the final design would minimise adverse impacts on receiving waters.

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1 Introduction

Transport for NSW (TfNSW) (former Roads and Maritime Services) is seeking approval for the Sydney Gateway Road project, a new road connection from the St Peters Interchange to Sydney Airport, Terminals 1 and 2/3 (**Figure 1**). The project includes new and upgraded sections of road:

- between the Sydney motorway network at St Peters and Terminal 1;
- between the Sydney motorway network at St Peters and Terminals 2/3, and towards General Holmes Drive, Port Botany and Southern Cross Drive;
- between Terminal 1 and Terminals 2/3 at Sydney Airport; and
- that provide improved access to Sydney Airport land located on both sides of Alexandra Canal and across the Botany Rail Line.

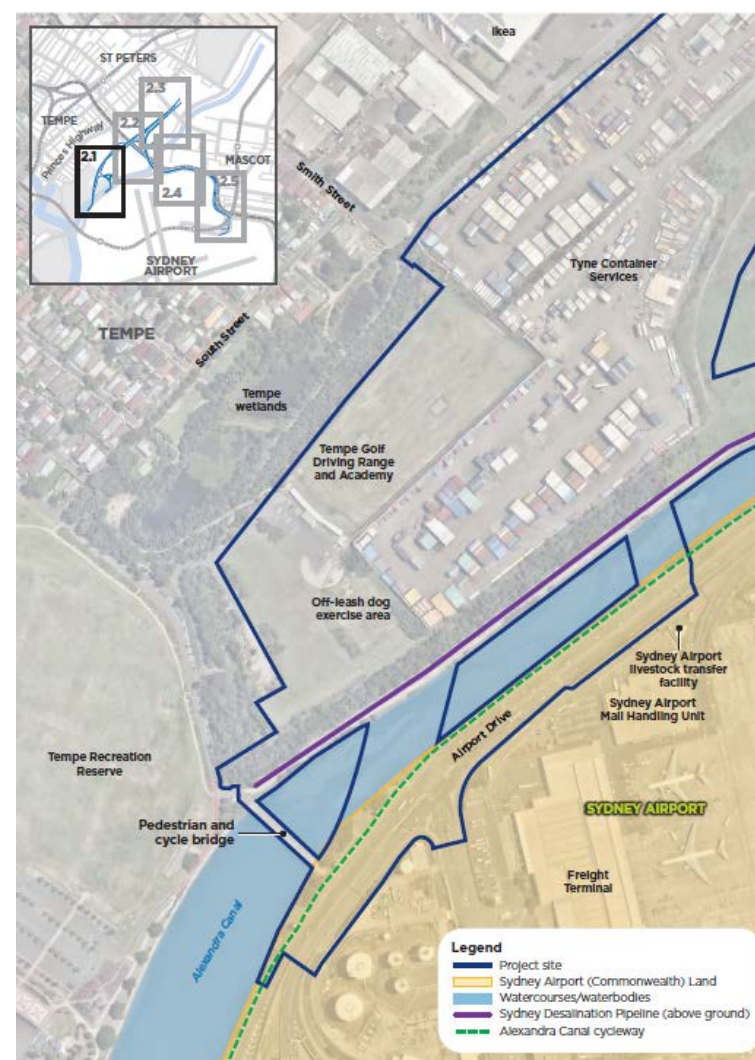
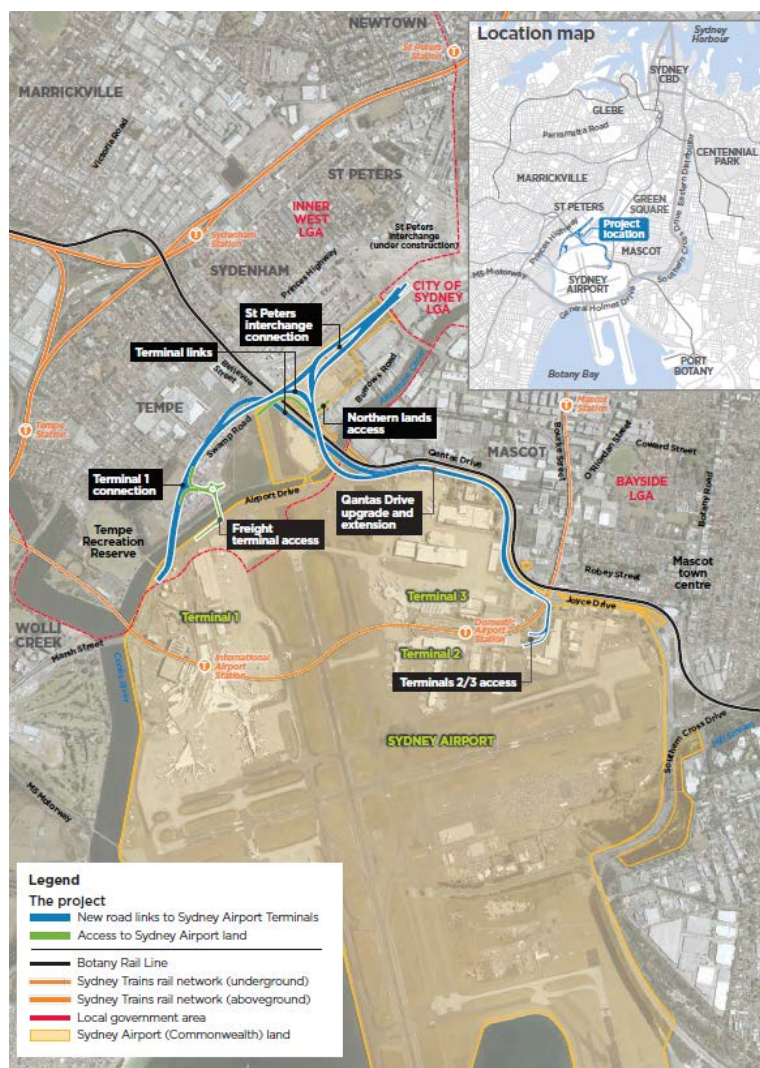
The project is located mostly on Commonwealth owned land leased to Sydney Airport Corporation (Sydney Airport land) and is located within the suburbs of Tempe, St Peters and Mascot in the Inner West, Bayside and City of Sydney local government areas.

The project requires approval under the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Airports Act 1996* (Cth). This Report addresses the requirements of the EP&A Act.

Sydney Airport and Port Botany are important infrastructure assets essential for domestic and international connectivity for people and goods. The locality is the second largest employment area in Sydney with high concentrations of airport and port related businesses.

Many of the roads surrounding Sydney Airport and Port Botany are at or near capacity during peak periods and the forecast for air travel, air freight, container freight and other traffic are all expected to increase over the next 20 years. The project aims to ease congestion by providing a direct connection to the Sydney motorway network and improve access for passengers and freight and remove heavy vehicle traffic from local streets in Mascot.

The dominant land use in the study area is Sydney Airport. The study area also includes land uses related to transport (road and rail), commercial and industrial (including airline and freight related businesses), residential (west and east of the site at Tempe, Mascot and Wolli Creek), hotels, open space and recreational facilities (Tempe Recreation Reserve and Tempe Lands). **Figure 2a** to **Figure 2e** show the project area and context.



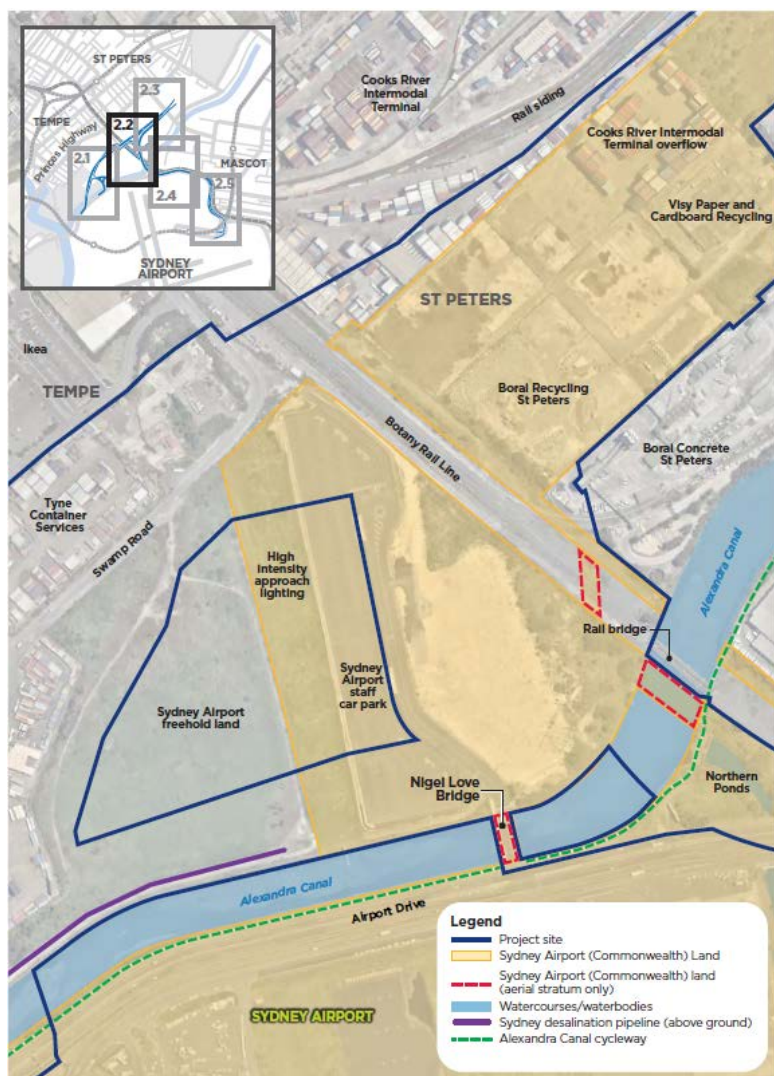


Figure 2b | Project area
(Source: Sydney Gateway Road Project EIS/pdMDP)

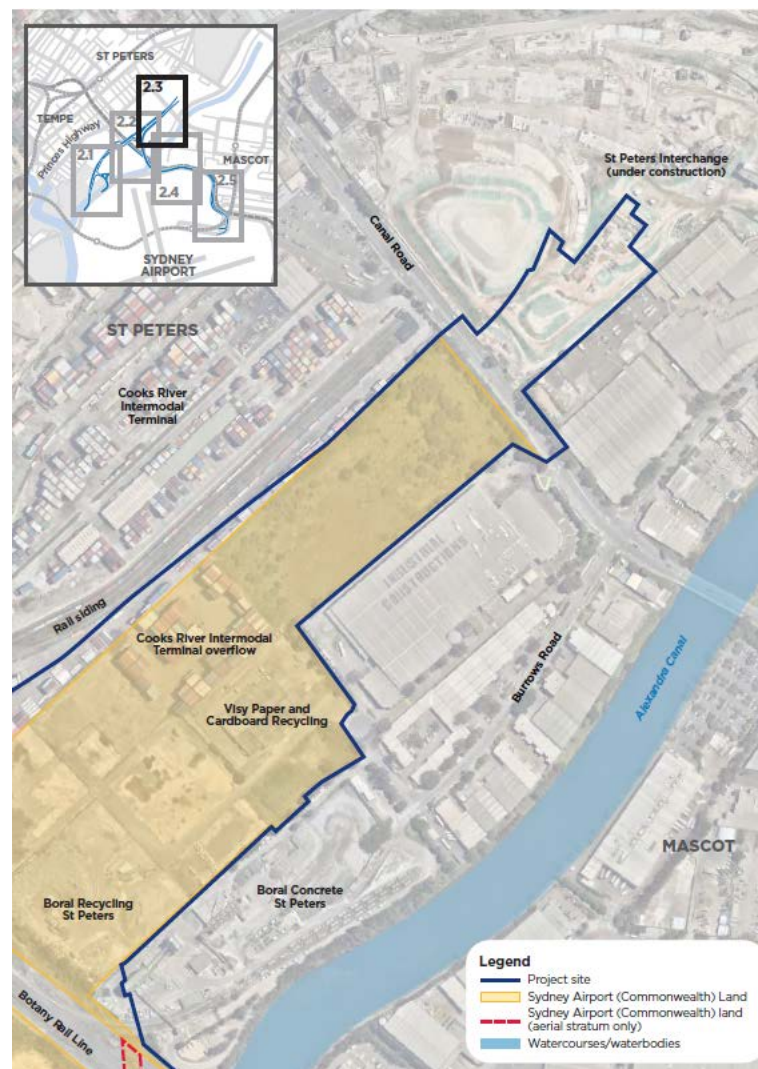


Figure 2c | Project area
(Source: Sydney Gateway Road Project EIS/pdMDP)

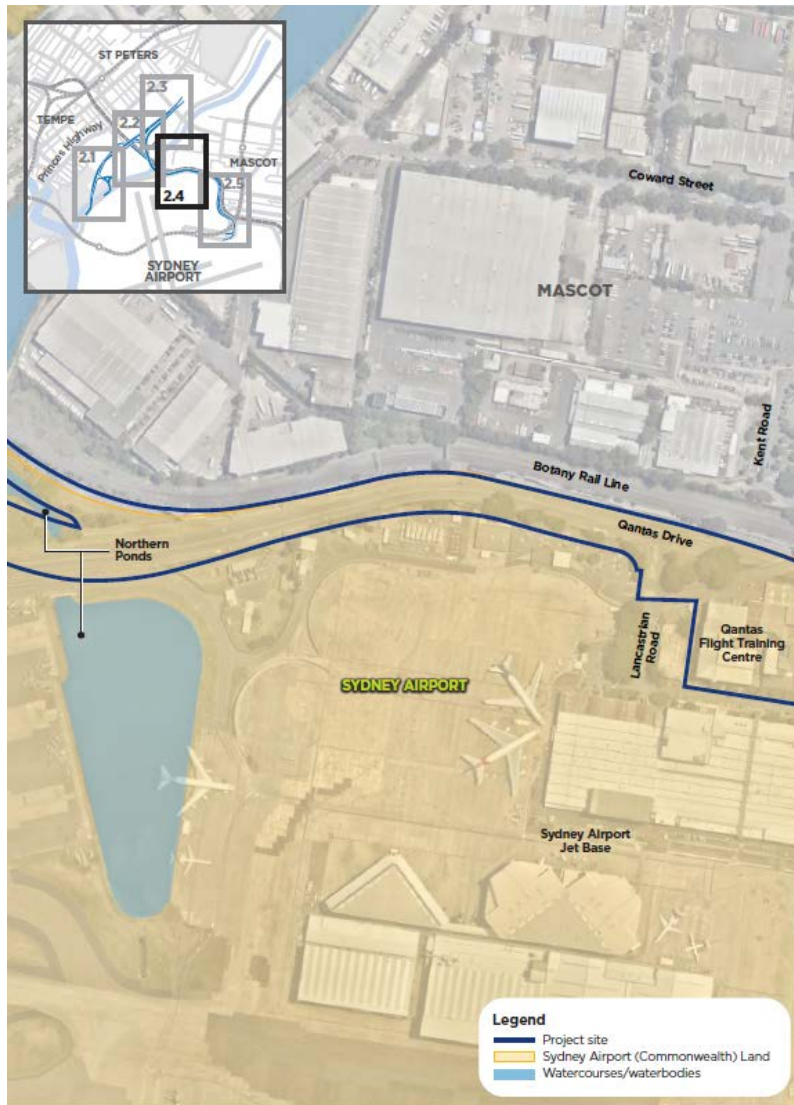


Figure 2d | Project area
(Source: Sydney Gateway Road Project EIS/pdMDP)

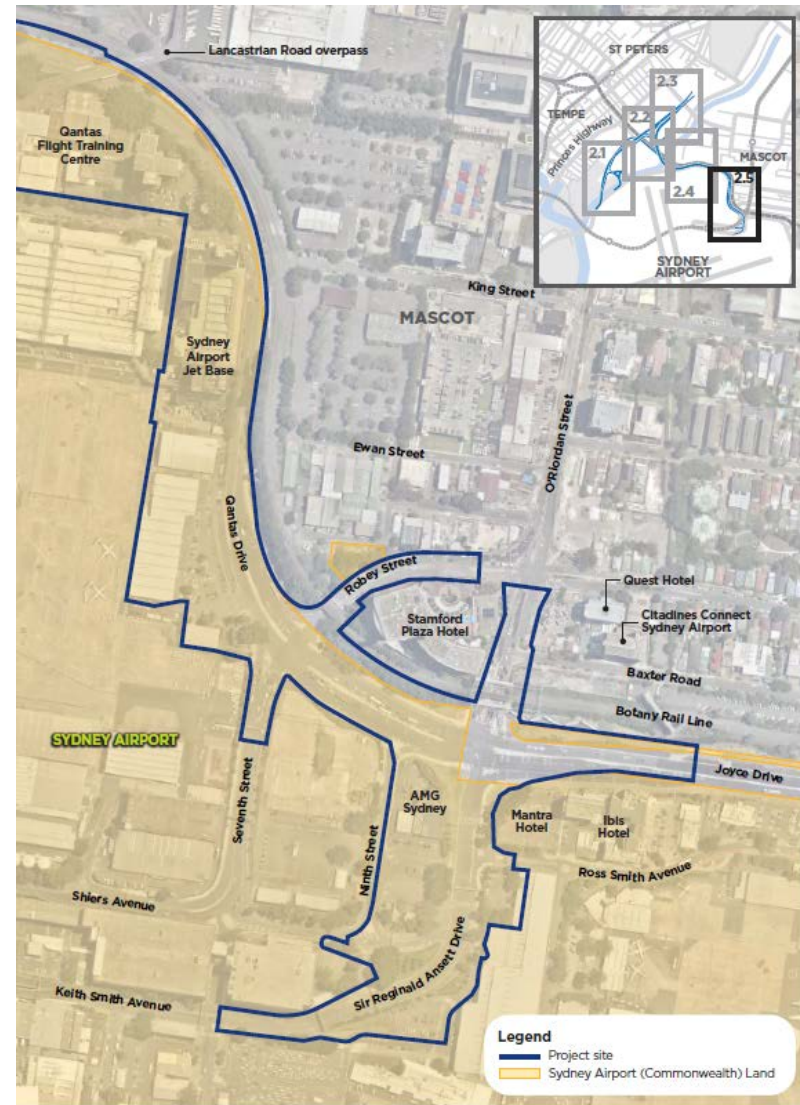


Figure 2e | Project area
(Source: Sydney Gateway Road Project EIS/pdMDP)

2 Project

2.1 Physical layout and design

The project would include the construction of road links between the Sydney motorway network at St Peters, Sydney Airport's Terminals 1 and 2/3 and to Sydney Airport land. Key components and features of the project are described in **Table 1** and shown in **Figure 3**.

Table 1 | Main project components

Aspect	Description
St Peters Interchange connection	A new elevated section of road extending from the St Peters Interchange to the Botany Rail Line, including an overpass over Canal Road
Terminal 1 connection	A new section of road connecting Terminal 1 with the St Peters Interchange connection, including a bridge over Alexandra Canal and an overpass over the Botany Rail Line
Qantas Drive upgrade and extension	Widening and extension of Qantas Drive to connect Terminals 2/3 with the St Peters Interchange connection, including a high-level bridge over Alexandra Canal
Terminal links	Two new sections of road connecting Terminal 1 and Terminals 2/3, including a bridge over Alexandra Canal
Terminals 2/3 access	A new elevated viaduct and overpass connecting Terminals 2/3 with the upgraded Qantas Drive
Road links to Sydney Airport Land	<p>A new section of road and an overpass connecting Sydney Airport's northern lands on either side of the Botany Rail line</p> <p>A new section of road, including a signalised intersection with the Terminal 1 connection and a bridge connecting Sydney Airport's existing and proposed freight facilities on either side of Alexandra Canal</p>
Active transport	An active transport link about 1.3 kilometres long, located along the western side of Alexandra Canal to maintain connections between Sydney Airport and Mascot
Intersection upgrades/ Modifications	Link Road/Airport Drive Lancastrian Road/Qantas Drive Robey Street/Seventh Street/Qantas Drive Qantas Drive/O'Riordan Street/Joyce Drive/Sir Reginald Ansett Drive Ross Smith Avenue/Sir Reginald Ansett Drive Shiers Avenue/Sir Reginald Ansett Drive
Ancillary infrastructure	<p>One emplacement mound to retain some of the material excavated from the former Tempe landfill site</p> <p>Maintenance bays, new and upgraded drainage infrastructure, signage and lighting, retaining walls, noise barriers, flood mitigation basin, utility works and landscaping</p>

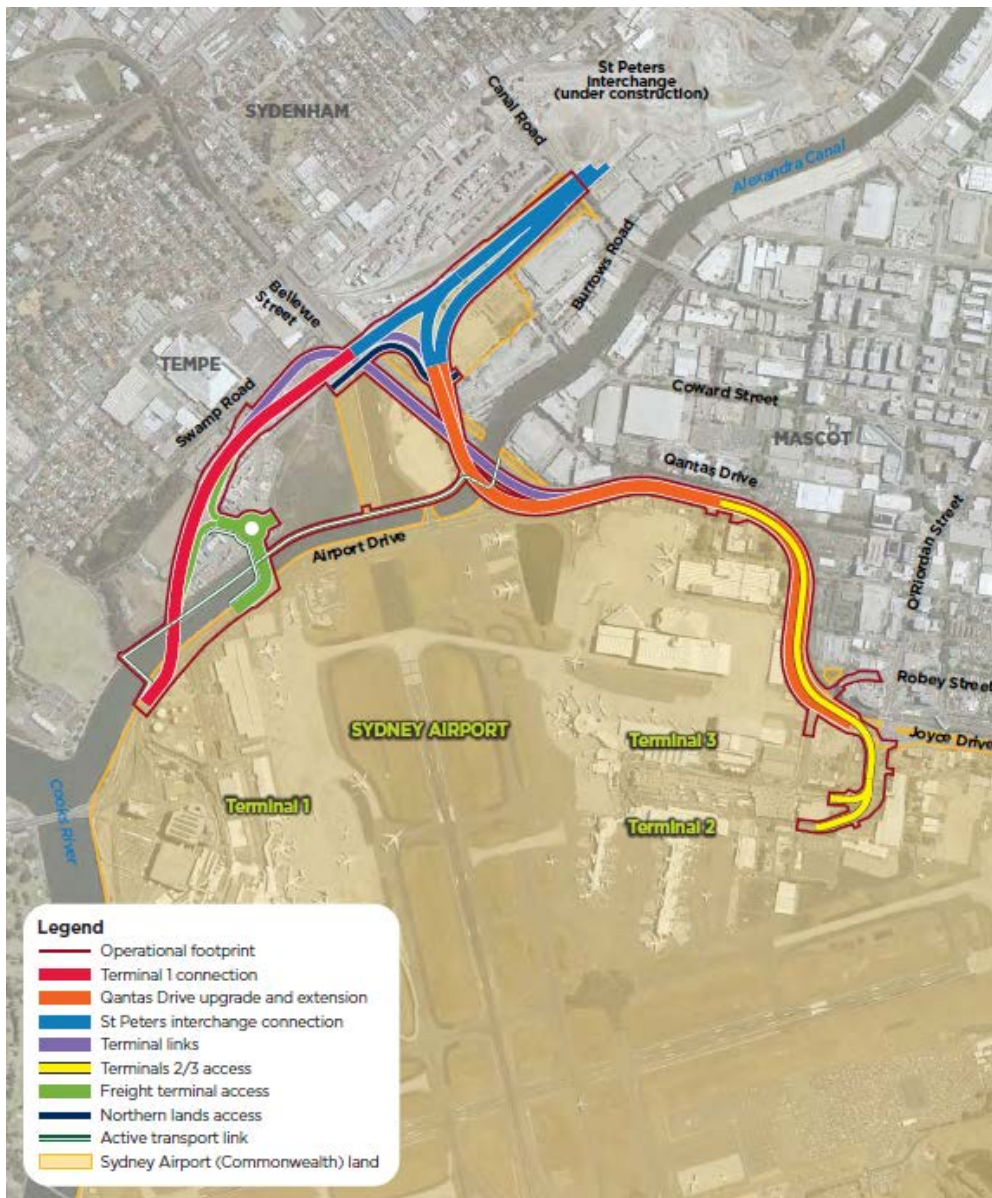


Figure 3 | Project overview
(Source: Sydney Gateway Road Project EIS/pdMDP)

The design and future use of residual land at Tempe Lands and the former landfill would be co-ordinated with Inner West Council and other relevant stakeholders.

Retaining walls would be required at the southern end of the Terminal 1 connection and the freight terminal access at Airport Drive, the St Peters Interchange connection and the terminal links. A noise attenuation barrier is proposed adjacent to the Terminal 1 connection near South Street and would be approximately five metres high and 400 metres long.

2.2 Construction works

The key construction works are summarised in **Table 2**.

Table 2 | Key construction works

Aspect	Description
Site establishment and enabling works	<ul style="list-style-type: none"> • Utility works including protection, adjustment and augmentation • Adjustments to existing transport networks including active transport links and intersections • Site establishment including fencing and hoarding, site compounds and clearing/trimming of vegetation
Removal of buildings and structures	<ul style="list-style-type: none"> • Northern Lands – removal of Visy recycling facility structures and Boral concrete recycling structures • Jet base – removal of ten structures including the Qantas Flight Training Centre building and flammable liquids and fuel stores. • Qantas Drive, Airport Drive and Sir Reginal Ansett Drive – removal of advertising and wayfinding structures • Boral Concrete St Peters – removal of sheds and vehicle wash facilities • Tyne Container Services – removal of all structures and containers • Tempe Lands – removal of office, driving range and lighting structures at the Tempe Golf Driving Range and Academy • Inner West Council depot – removal of all material and any structures
Earthworks	<ul style="list-style-type: none"> • Piling for bridge and overpass abutments • Roadways and active transport link • Drainage infrastructure • Retaining walls • Utility works • Removal of approximately 218,000 cubic metres of spoil • Import of around 706,000 cubic metres of clean fill
Road construction and widening	<ul style="list-style-type: none"> • Preparatory works • Construction of retaining walls • New and adjustments to drainage and other utilities • New pavement, kerbs and gutters
Bridge and overpasses	<ul style="list-style-type: none"> • Lifting of pre-cast segments into place • Launching of steel arch and casting of beams and deck slabs
Additional support facilities	<ul style="list-style-type: none"> • Laydown areas, worker parking, mobile site sheds/offices, toilets and storage facilities
Finishing works	<ul style="list-style-type: none"> • Line marking, safety barriers • Landscaping and rehabilitation works • Erection of directional signage and lighting

The construction of the project would use five construction ancillary facilities:

- St Peters Interchange construction ancillary facility (C1);
- Eastern Bridges construction ancillary facility (C2);
- Western Bridges construction ancillary facility (C3);
- Qantas Drive construction ancillary facility (C4); and
- Ninth Street construction ancillary facility (C5).

The location of the construction ancillary facilities is shown in **Figure 4**. **Table 3** sets out the proposed activities to be carried out at each facility.

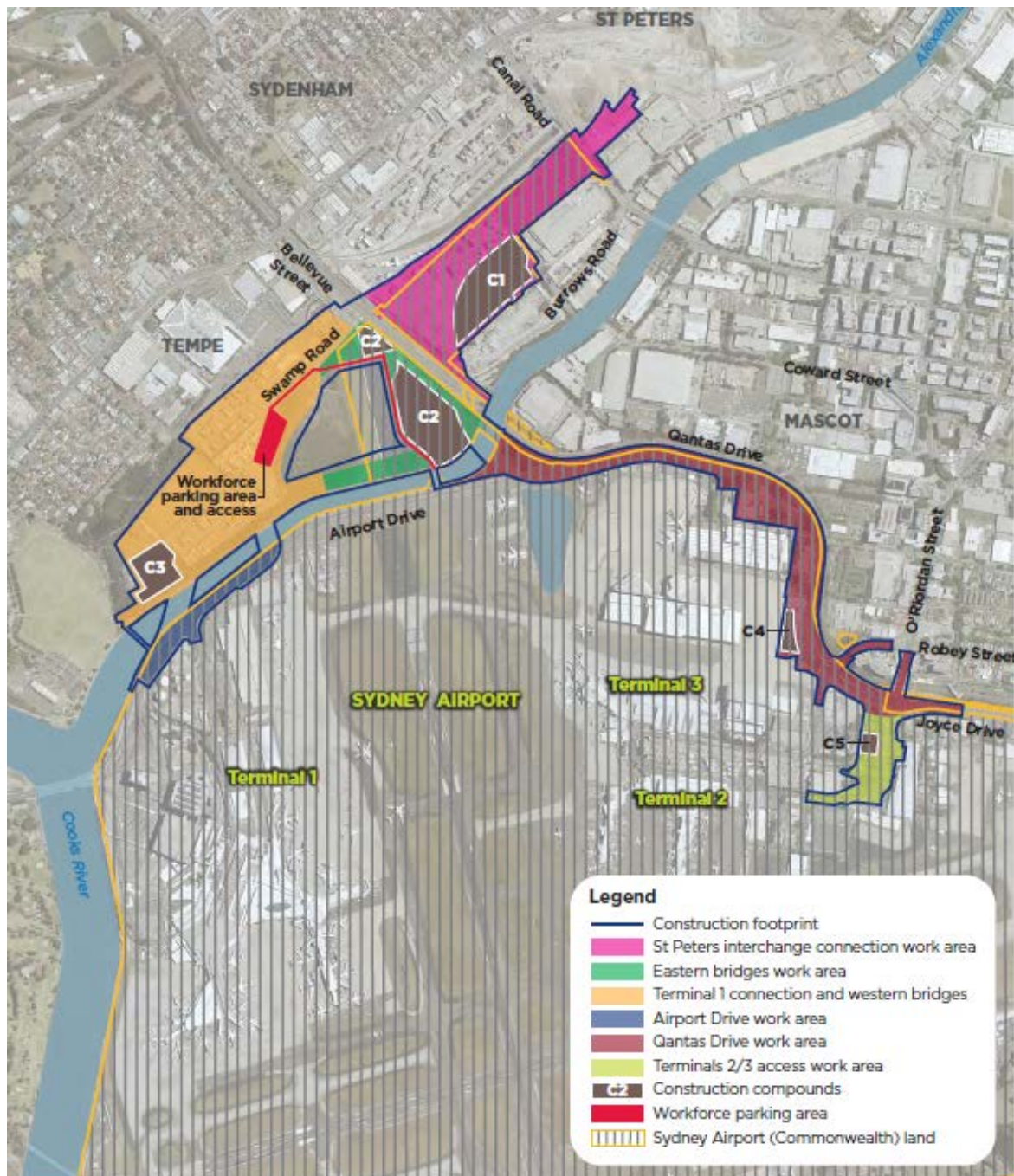


Figure 4 | Construction ancillary facilities and construction footprint
(Source: Sydney Gateway Road Project EIS/pdMDP)

Table 3 | Proposed construction ancillary facilities and activities

Activity	C1	C2	C3	C4	C5
Site offices workplace amenities					
Laydown area & material storage					
Plant storage					
Parking					
Sheds					
Stores					
Workshop					
Crushing and grinding facility					

Most of the construction is proposed to be undertaken between 7:00 am and 6:00 pm weekdays and 8:00 am to 1:00 pm on Saturdays. However, some works would need to be undertaken outside of these hours for safety and operational reasons and to minimise access disruptions to Sydney Airport. Further details on indicative out-of-hours works are provided in **Section 6**.

Works with the potential to intrude into prescribed airspace (e.g. the use of cranes or piling rigs) would need to be undertaken during the Airport's curfew hours of 11:00 pm to 6:00 am when aircraft are not operating. Approval under the *Airports Act 1996* from Sydney Airport Corporation is required for works that may affect the prescribed airspace.

Any works which encroach onto the Botany Rail Line rail corridor would be restricted to rail maintenance possession periods or between train movements under worksite protection as agreed by Australian Rail Track Corporation (ARTC). Rail maintenance possession periods are scheduled on four weekends each year from around 2:00 am on a Saturday until 2:00 am on a Monday.

2.3 Timing

Early works and site establishment are anticipated to commence in 2020 with main construction commencing in 2021. The indicative timing of the main work phases as set out in the EIS is shown in **Table 4**. It is acknowledged that the construction program will be updated and confirmed by the successful contractor once the tender for construction is awarded and land access dates are provided by Sydney Airport Corporation.

Table 4 | Indicative construction program

Construction activity	2020				2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enabling works																
Site establishment																
Main construction works																
Finishing and post-construction rehabilitation																

2.4 Related development

The NSW and Australian Governments are making major investments in the transport network to support future growth and reliable access to the airport and Port Botany. Part of this solution includes duplication of the Botany Rail Line. The Botany Rail Duplication involves duplication of the railway line for around three kilometres between Mascot and Botany, including construction of new bridge structures at Mill Stream, Southern Cross Drive, O’Riordan Street and Robey Street (adjacent to the existing bridges at these locations), and re-construction of the existing bridge structures at Robey Street and O’Riordan Street (**Figure 5**). The project is critical State significant infrastructure and was approved on 28 July 2020. It is anticipated that construction will commence in late 2020 and be completed in 2023.

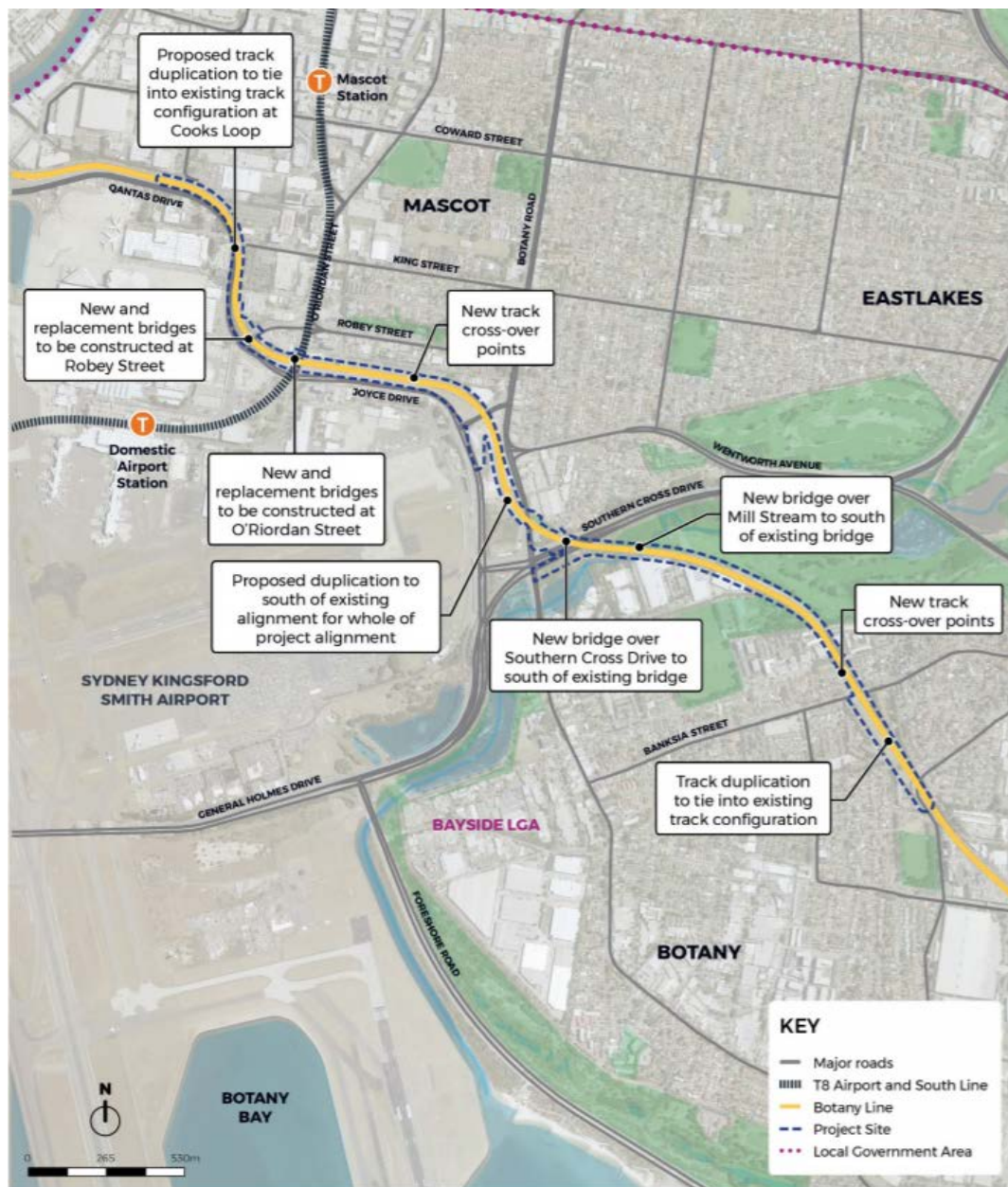


Figure 5 | Proposed Botany Rail Duplication Project
(Source: Botany Rail Duplication EIS)

3 Strategic context

3.1 Project justification

Sydney Airport and Port Botany are important infrastructure assets essential for domestic and international connectivity for people and goods. Sydney Airport caters for approximately 40 per cent of Australia's international passenger movements, 46 per cent of domestic/regional passenger movements and 50 per cent of air freight (SACL, 2019, DIRDC, 2018). Port Botany handles 99 per cent of NSW's container demand, 98 per cent of NSW's consumption of liquid petroleum gas, 90 per cent of bulk chemical products, 30 per cent of refined petroleum fuels and 100 per cent of bitumen products (NSW Ports, 2015).

The locality is the second largest employment area in Sydney with high concentrations of airport and port-related businesses that directly serve the Greater Sydney Area, wider NSW and Australia. Access to from Sydney Airport and Port Botany is critical to the NSW and Australian economies (Ernst and Young, 2011).

High volumes of traffic access Sydney Airport and Port Botany and many of the roads surrounding Sydney Airport and Port Botany are at or near capacity during peak periods and the forecast for air travel, air freight, container freight and other traffic are all expected to increase significantly over the next 20 years. Sydney Gateway project aims to ease congestion by providing a direct connection to the Sydney motorway network which would meet the forecasted growth in passenger and air freight volumes.

The Project is consistent with Commonwealth and NSW strategic planning policies and framework, including:

- *Australian Infrastructure Plan* (Infrastructure Australia, 2016) and the *Infrastructure Priority List* (Infrastructure Australia, 2019)
- *Future Transport Strategy 2056* (Transport for NSW, 2018)
- *State Infrastructure Strategy 2018-2038* (NSW Government, 2018)
- *NSW Freight and Ports Plan 2018-2023* (NSW Government, 2018)
- *A Metropolis of Three Cities – the Greater Sydney Region Plan* (Greater Sydney Commission, 2018)
- *Eastern City District Plan* (Greater Sydney Commission, 2018)
- *Greater Sydney Services and Infrastructure Plan* (Transport for NSW, 2018)
- *Sydney Airport Master Plan 2039* (SACL, 2019)
- *NSW Ports 30 year Master Plan* (NSW Ports, 2015).

The key project benefits include:

- improving connectivity to Sydney Airport terminals that cater for forecast growth in passenger and air freight volumes;
- supporting the efficient distribution of freight to and from Sydney Airport and Port Botany through a more efficient connection to the Sydney Motorway network; and
- reducing congestion and heavy vehicle movements on the local road network including through St Peters, Tempe and Mascot.

The project is in the public interest as it would relieve capacity constraints on local roads, improve accessibility, and respond to future growth and regional accessibility. The project is expected to create around 1,000 full time construction jobs during peak construction, 3,000 indirect jobs during construction and has a capital investment value of approximately \$2.45 billion.

3.2 Project alternatives

The Environmental Impact Statement (EIS) considered the merits of the project in the context of a number of alternative project options including:

- improvements to public transport;
- improvements to the road network;
- improvements to rail freight;
- demand management; and
- do nothing / do minimum.

The assessment also addressed six surface corridor options and alternative designs within the project including alternative connections to the existing road network, use or bypass of Airport Drive and bridges over Alexandra Canal. These options considered impacts and constraints to Sydney Airport facilities, businesses, open space and the former Tempe Landfill.

Alternative 1 – public transport improvements

The Proponent considered options for improvements to the bus network and increasing rail services and notes that travel needs are highly variable and dispersed and include long-distance passenger movements, air and container freight, commercial and business services.

The Department is satisfied that this is not a feasible alternative as public transport improvements would not meet all of the predicted growth or address the project's objectives to improve connectivity to Sydney Airport terminals, support the efficient distribution of freight and reduce congestion and heavy vehicle movements on the local road network in St Peters, Tempe and Mascot.

Alternative 2 – improvements to rail freight

Projects to increase rail freight capacity are being undertaken in parallel to Sydney Gateway including the Botany Rail Duplication, a new intermodal terminal at Moorebank and the Cabramatta Rail Loop. These projects are consistent with the Australian and NSW Governments objectives to increase the share of freight moved by rail from 17.5 per cent to 28 per cent in 2021 and NSW Ports' target of achieving 40 per cent of total freight volume movements to be transported by rail by 2036.

The Department notes that improvements to the freight rail network would support a reduction in truck movements and associated traffic congestion around Sydney Airport and Port Botany, and would not support the needs of air freight, which are currently transported by road. Improvements to freight rail networks will not be enough to support the diverse freight transport requirements, as noted above.

Alternative 3 – improvements to the existing road network

The Department notes that a program of road upgrades has been recently undertaken, including the Airport East and Airport North precinct upgrades. These and other future potential projects would assist in improving some congestion issues in the area and improve the amenity of the Mascot town centre but would not alone be able to address future demand or improve access to and from Sydney Airport and Port Botany to Sydney's Motorway Network.

Alternative 4 – demand management

The Department recognises that demand management would help with congestion at peak periods but considers there are many journeys that would not be influenced by demand management initiatives including trips dictated by flight or work schedules. This alternative would not improve connectivity to Sydney Airport terminals and Sydney's motorway network or support the efficient distribution of freight. It is also likely to have a limited ability to reduce congestion and heavy vehicle movements on the local road network in St Peters, Tempe and Mascot.

Alternative 5 – do nothing/do minimum

This approach would involve carrying out only currently planned and funded transport infrastructure improvements on the existing road network, such as the M4 East, M4-M5 link, the M8 and other routine road and intersection upgrades. These works would be undertaken over time to incrementally improve capacity where there are specific congestion issues. However, they would not solve traffic congestion in and around Mascot nor remove heavy vehicles from the local road network in this suburb.

The Department is satisfied that this is not a feasible alternative as the current road network would not meet forecast traffic needs. It would also impact on the NSW economy through longer delivery and transport times, particularly for freight and airport traffic.

4 Statutory Context

4.1 State significance

The Sydney Gateway Road project has been declared Critical State Significant Infrastructure (CSSI) pursuant to section 5.13 of the EP&A Act. The Minister for Planning and Public Spaces is the approval authority.

4.2 Permissibility

The project is for the purpose of a road or road infrastructure facilities and is characterised as development permitted without consent, in accordance with clause 94 of *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP).

4.3 Other approvals

4.3.1 State approvals and legislation

In accordance with section 5.22(2) of the EP&A Act, the only NSW environmental planning instruments that apply to the project are the Infrastructure SEPP, insofar as it relates to the declaration of development that does not require consent, and *State Environmental Planning Policy (State and Regional Development) 2011* as it pertains to the declaration of infrastructure as State significant infrastructure.

The construction of the project will likely be subject to an environment protection licence issued under the *Protection of the Environment Operations Act 1997*.

Other legislation that applies to the project includes *Land Acquisition (Just Terms Compensation) Act 1991* and the *Contaminated Land Management Act 1997*.

4.3.2 Commonwealth approvals and legislation

The project also requires approval under the *Airports Act 1996* (Cth). Parts of the project on Sydney Airport land (shown in **Figures 2a to 2e**) are considered to be major development in accordance with the *Airports Act 1996*. A major development plan, approved by the Australian Minister for Infrastructure, Transport and Regional Development, is required before major airport development can be undertaken at a leased airport. As the airport-lessee company under the *Airports Act 1996*, Sydney Airport Corporation is seeking approval for the parts of the project on Commonwealth leased land.

Pursuant to the *Airports Act 1996* and *Airports (Protection of Airspace) Regulations 1996*, any activity that intrudes into prescribed airspace is a “controlled activity” and needs to be approved under the *Airports Act 1996*. Controlled activities that require approval include the use of tall equipment such as piling rigs and cranes.

Those parts of the project that are on Sydney Airport land require building activity approvals under the *Airports (Building Control) Regulations 1996*.

Section 160(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Cth) requires that before a Commonwealth agency or employee of the Commonwealth gives an authorisation of an action (including major airport development), they must obtain and consider advice from the Australian Minister for the Environment. The Commonwealth Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) will seek advice from the Australian Minister for the Environment on behalf of the Minister for Infrastructure, Transport and Regional Development.

4.4 Mandatory matters for consideration

4.4.1 Objects of the *Environmental Planning and Assessment Act 1979*

The determination must have regard to the objects of the EP&A Act. The Department has considered the objects of the EP&A Act including:

- ecologically sustainable development (ESD) (see **Sections 4.4.2** and **6**);
- social and economic welfare (see **Section 6**);
- protection of the environment, including in relation to biodiversity, traffic, noise and vibration, air quality, surface and groundwater hydrology, urban design, amenity and socioeconomic issues (see **Section 6**);
- sustainable management of built and cultural heritage, including Aboriginal cultural heritage (see **Section 6**);
- good design and amenity of the built environment (see **Section 6**);
- promote the sharing of the responsibility for environmental planning and assessment between the different levels of government (see **Section 5**); and
- community participation in the assessment of the project (see **Section 5**).

4.4.2 Ecologically Sustainable Development

The EP&A Act adopts the definition of ESD found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental consideration in decision-making process and that ESD be achieved through the implementation of:

- a) the precautionary principle;
- b) inter-generational equity;
- c) conservation of biological diversity and ecological integrity; and
- d) improved valuation, pricing and incentive mechanisms.

Project objectives which guide the delivery and operation of the project contribute to the sustainability of the project and meeting ESD principles. In addition to the objectives, the Proponent addressed the above principles directly in the EIS/pdMDP and has identified a broad range of mitigation measures to manage impacts associated with these issues.

The Department has also recommended conditions of approval requiring the:

- preparation of a Sustainability Strategy that will be implemented throughout construction and operation of the project; and
- project to achieve a minimum “Excellent” ‘Design’ and ‘As built’ rating under the Infrastructure Sustainability Council of Australia infrastructure rating tool.

The precautionary principle is applied throughout the EIS and the Department considers the assessment and the range of mitigation measures adequately adopt the principle. The Department is also satisfied that the valuation and pricing of the environmental resources associated with the project have been adequately undertaken and internalised through the project design and mitigation measures.

4.5 Biodiversity development assessment report

A Biodiversity Development Assessment Report (BDAR) was prepared in accordance with the biodiversity assessment method and the requirements of the *Biodiversity Conservation Act 2016*. The assessment considered construction and operational impacts on native vegetation, including terrestrial and aquatic threatened species and communities, and Matters of National Environmental Significance (under the *Environmental Protection and Biodiversity Conservation Act 1999*). The majority of the site is located on land that has been significantly modified by clearing and development. About 24 hectares of vegetation would be removed, consisting mainly of exotic vegetation, of which 0.9 hectares is native. Only 0.2 hectares of the native vegetation is on State land. No biodiversity offsets are required as the impacts on vegetation are under thresholds and no credit species were recorded.

The Proponent has committed to implementing management measures during construction and operation to minimise impacts to vegetation and fauna. These are complemented by a condition of approval requiring the preparation of a Construction Flora and Fauna Management Sub-plan, including measures to minimise impacts to microbats following concerns raised by the Environment, Energy and Science Group (EESG) on microbats potentially roosting in buildings.

5 Engagement

5.1 Department's engagement

Under section 5.28(1)(c) of the EP&A Act, the Planning Secretary is required to make the EIS publicly available. The EIS (**Appendix B**) was made publicly available from Wednesday 20 November 2019 until Thursday 19 December 2019 (30 days) on the Department's website and electronically at NSW Service Centres. The EIS was also made publicly available at the following locations:

- Transport for NSW (RMS Head Office), Ennis Road, Milsons Point;
- Sydney Airport, Ground Floor, Nigel Love Building, International Terminal;
- City of Sydney, Council Town Hall Customer Service Centre;
- Bayside Council, Rockdale Customer Service Centre;
- Inner West Council, Petersham Customer Service Centre; and
- Libraries at Green Square, Eastgardens, Mascot, Arncliffe and Marrickville.

The Department advertised the exhibition in the Sydney Morning Herald, The Daily Telegraph, Inner West Times and Southern Courier. The Department notified State and relevant local government authorities of the exhibition.

The Department undertook site inspections in November 2018, September 2019 and June 2020 to obtain an understanding of the surrounding environment, its sensitivities and issues raised in submissions. Representatives from the Department attended community information sessions held by the Proponent before (June 2019) and during the exhibition period (November and December 2019), and attended the Proponent's briefings to agencies.

The Department met with impacted businesses including:

- Qantas on 29 October 2019, 24 April 2020 and 26 June 2020 – the company raised concerns in relation to noise and vibration impacts, including on existing and future facilities (such as its flight training centre), and soil and groundwater contamination. In June, Qantas acknowledged that many of their issues were addressed in the Response to Submissions report.
- Boral on 20 January 2020 – the company reiterated its concerns raised in its submission about impacts to its business operations and traffic.

The Department met with Inner West Council on 14 July 2020 to discuss impacts to the Tempe dog park and the provision of a temporary dog park during construction of the project.

5.2 Summary of submissions

The exhibition of the EIS resulted in the receipt of submissions from nine government agencies, four local government councils (**Table 5**) and 78 submissions from the community (**Appendix C**). The community submissions comprise submissions from individuals, community special interest groups (seven submissions – ARTcycle Inc, Bicycle NSW, Bike Leichhardt, Bike Marrickville, BIKEast, Cooks River Alliance, Walk Sydney and WestCONnex), the Member for Heffron and private organisations and corporations (**Table 6**). Forty-two public submissions and the City of Sydney and Inner West Council objected to the project.

Table 5 | Summary of State and local government submissions

Submitter	Number	Position
Government Agencies		
Environment Protection Authority	1	Advice
NSW Health	1	Advice
Heritage Council	1	Advice
Office of Environment and Heritage	1	Advice
Water Group	1	Advice
Department of Primary Industries	1	Supports, no comments
Crown Lands	1	No comments
ARTC	1	Supports, comments
Sydney Water Corporation	1	Supports, comments
Inner West Council		Objects
Bayside Council	1	Comments
City of Sydney	1	Objects
Sutherland Shire Council	1	Comments

Table 6 | Corporations and private organisations that made submissions

Company / Organisation	Company / Organisation
Australian Logistics Council	Qantas Group Flight Training
Boral Resources (NSW) Pty Ltd	Qube Logistics
Container Transport Alliance	Shipping Australia Limited
Kentucky Fried Chicken Pty Ltd	Sydney Airport Corporation
McDonald's Australia Ltd	Tyne Container Services
NSW Ports	Viva Energy Australia Pty Ltd
Qantas Airways Ltd	

5.3 Key issues raised – government agencies

Environment Protection Authority (EPA) commented on noise and vibration, water quality, contaminated land and air quality impacts. Issues raised included noise mitigation, construction wastewater and leachate management, construction on contaminated land and odour impacts from construction on the former Tempe landfill site.

Environment, Energy and Science Group (EESG, former OEH) provided comments on flooding, biodiversity (including impacts to native vegetation and microbats) and made recommendations regarding management and rehabilitation of riparian areas, and tree replacement including the use of trees to mitigate the urban heat island effect.

Water Group recommended a groundwater management plan be developed and that groundwater monitoring be undertaken during and post construction to determine the actual volumes of groundwater extracted and any impacts on groundwater flows and levels.

NSW Health commented on the potential for health impacts from operational and construction noise impacts, dust impacting air quality, odour from construction activities on the former Tempe landfill site, and socio-economic impacts. NSW Health noted that the Mascot and Tempe areas have a higher level of socio-economic disadvantage than considered in the assessment. It recommended that appropriate mitigation and communication strategies be implemented to minimise short and long-term social impacts.

Heritage Council of NSW commented on the works affecting Alexandra Canal including the design of the drainage outlets along Alexandra Canal and unexpected finds and recommended the preparation of specific plans and methodologies for heritage management including archival recordings, archaeological excavations and reporting, and unexpected finds procedures.

Sydney Water Corporation noted that endorsement and/or approval will be required from Sydney Water for any discharges to its assets to ensure the project does not adversely impact its water, wastewater and stormwater infrastructure. Sydney Water also commented on the Alexandra Canal, cycling/shared path, biodiversity and water quality.

Australian Rail Track Corporation (ARTC) noted the proximity of the project to the Botany Rail Duplication project and the likelihood of construction of both projects overlapping. ARTC raised concern about impacts to ARTC's operations, noise attenuation structures and light spill impacting train driver visibility. It supports the proposal for works to be coordinated in consultation with ARTC.

Department of Primary Industries and **Crown Lands** had no comments.

5.4 Key issues raised – local government councils

Inner West Council objected to the proposal, indicating that it is opposed to the principle of urban motorways and that the Inner West is an inappropriate location for any motorway project. However, it recognises that the project will benefit the local area by encouraging WestConnex traffic to remain on the motorway rather than filter through adjacent streets. Council raised concern over both the scope of the traffic assessment, indicating that a much wider area should be modelled, and the potential impacts of construction traffic on access and the local road network. It also raised concern over construction workers parking on local roads, particularly around Tempe Reserve.

Inner West Council indicated concern about the potential construction and operational noise impacts of the project and recommended that the Proponent should develop a detailed construction program including one for the night-time period which details periods of respite, notification to residents, and limits on out-of-hours works and undertake noise monitoring. Other issues raised included access to residual lands and impacts on existing public and active transport connectivity, industrial lands, biodiversity, air quality, water quality and the management of contaminated materials, leachate and landfill gas at the former Tempe landfill site.

Bayside Council indicated that there is a need to expand the geographic region for traffic modelling and recommended a number of roads and intersections to be investigated. Council stated there is a need for greater exploration and provision of public and active transport options as well as green grid opportunities and made recommendations on enhancing these. Council noted that access fees for travel to the airport by train are a significant barrier to people using public transport and called for the fees to be overhauled. Council also requested that the project be amended to include access ramps to the Cooks River Intermodal terminal.

Council also highlighted the potential for construction fatigue to arise and recommended actions for managing the issue. Other issues of concern raised by Council included flooding around Qantas Drive and Robey Street at Mascot, land acquisitions, impacts on biodiversity and decreasing levels of tree canopy, heritage impacts, air quality impacts (including odour), water quality impacts and the need to ensure that the final design is of architectural excellence.

City of Sydney objected to the project and noted that it will make driving to the airport more attractive and therefore deter people from using public transport or riding and walking to the airport. It requested that further active transport options are provided to ensure connectivity with the airport and consistency with the NSW Government's policy frameworks for active transport. Council raised concern that direct regional cycleway access along Alexandra Canal would be severed for three years and is of the opinion that alternative options have not been exhaustively explored. Similar to Bayside Council, City of Sydney raised the issue of train access fees and called for them to be removed.

Sutherland Shire Council supports the project. It indicated that the EIS could have been improved by mapping out future road, active transport and public transport links with the existing local and regional network so as to better understand the project's connectivity and broader impact with these as well as infrastructure requirements and priorities. Council also sought further information on the potential impact of the project on the current rail mode share whereby 15 per cent of trips to the airport are by train.

5.5 Key issues raised – community, special interest groups and organisations

The following key issues were raised by the community, community special interest groups and private organisations and corporations. The key environmental issues raised in submissions include:

- ***Project need and context***
 - Lack of demonstrated project need and justification
 - The project is an extension of a private motorway and should be paid for by toll users and not public money
 - Need for enhancement of public and active transport modes and station access fees should be reduced

- The project should be underground (tunnel)
- Concern the project won't alleviate congestion
- **Traffic and access**
 - Freight facilities should be relocated closer to Port Botany to avoid heavy vehicles accessing local roads
 - Impacts to pedestrian and cyclist access during construction
 - Impacts to access to the airport and recreational areas
 - Use of local roads for construction traffic and construction worker parking
 - Incentives/disincentives for heavy vehicles to use the new road
 - Inability to use Airport Drive in the future and changes to Link Road access
 - Lack of a direct connection to and from the Cooks River Intermodal Terminal
 - Uncertainties regarding traffic modelling methodology
- **Noise and vibration**
 - Construction noise impacts including noise from heavy vehicle traffic, removal of shipping containers, out-of-hours construction works and sleep disturbance
 - Operational traffic noise
 - Adequacy of noise mitigation measures during construction and operation
 - Cumulative noise impacts
 - Pre-inspection and damage claims processes arising from impacts to buildings
 - Noise and vibration impacts to sensitive equipment and infrastructure
- **Land use and place making**
 - Future use of residual land, increase green space including vertical gardens
 - Concern about a decrease in tree canopy
 - Shared pedestrian and cycle paths - extent and location along Alexandra Canal and the need to retain access for bicycle users between Tempe and Alexandra
 - Loss of public open spaces during construction and operation including impacts to Tempe dog park/off-leash area during construction and its potential future location
- **Landfill/contamination/hazards**
 - Excavation and management of contaminated soil and groundwater, especially at the former Tempe landfill site
 - Location of emplacement mounds
 - Transfer of spoil from State to Commonwealth land
- **Business impacts**
 - Acquisition of land
 - Construction and operational road and access changes and delays to traffic
 - Operational impacts to container/freight businesses and efficiency of the freight network including a reduction in storage capacity for empty shipping containers
 - Construction and operational impacts to airport related operations
 - Freight rail access constraints and impacts and potential for delays to the construction of a direct port-rail turn out during construction of the project
 - Impacts on sensitive equipment

- **Air quality**
 - Increased volume of vehicular emissions during operation
 - Odours from the former Tempe landfill during construction
 - Generation and management of nuisance dust during construction
 - Air quality assessment has not included all relevant sensitive receivers
- **Biodiversity**
 - Clearing of native vegetation
 - Concern about impacts to Tempe Wetlands
- **Sustainability**
 - Project will result in an increase in greenhouse gas emissions during construction and operation
 - Increases in the urban heat island effect
 - The project encourages people to drive more
- **Water Quality**
 - Discharges to Alexandra Canal and impacts on water quality
 - Adequacy of the mitigation measures for the Mill Stream and Alexandra Canal
- **Health**
 - Three years of construction impacts to communities already affected by construction
 - Need for ongoing consultation with communities
 - Health impacts from excavating the Tempe landfill on vulnerable communities
 - Cumulative construction impacts including noise, traffic and air quality

A breakdown of the issues raised in community submissions is illustrated in **Figure 6**. The Department notes that matters relating to train access fees and project funding are outside the scope of this assessment.

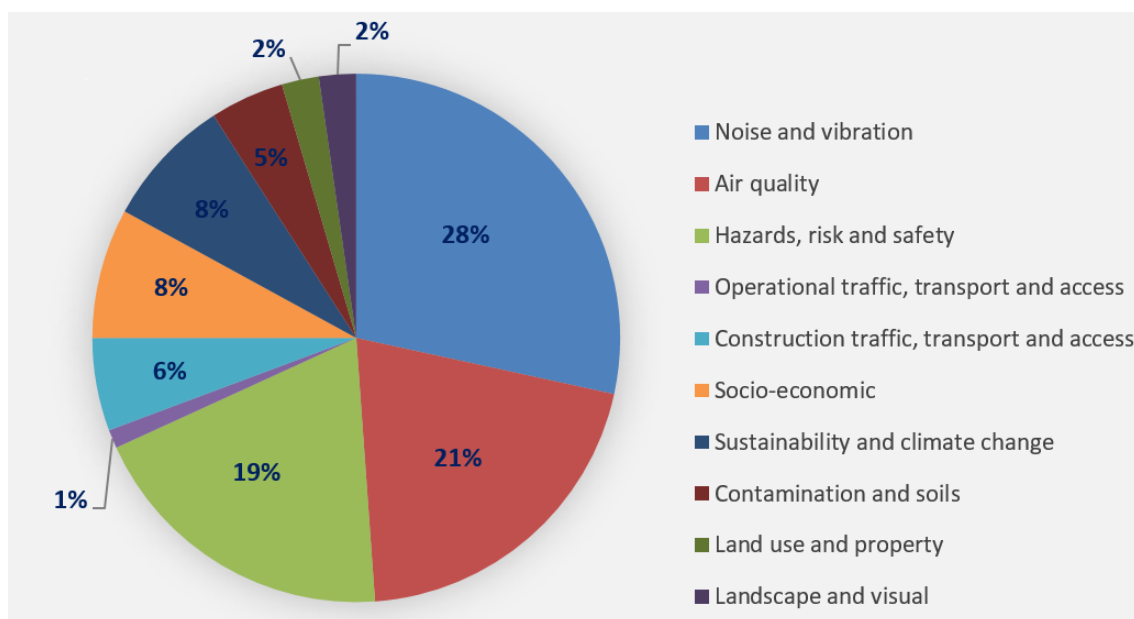


Figure 6 | Types of environmental issues raised in community submissions
(Source: Sydney Gateway Road Project RtS)

5.6 Response to submissions

Following completion of the public exhibition period, the Department directed the Proponent to prepare a response to the submissions received. The Proponent's Response to Submissions report (Appendix D) was made publicly available on the Department's major projects website on 15 May 2020. The Response to Submissions report was forwarded to the relevant agencies for comment.

During the exhibition of the EIS, the Proponent made two design refinements to the project:

- realignment of the St Peters Interchange connection to avoid impacts to the Cooks River Intermodal terminal; and
- reduction in the number of waste emplacement mounds within the Tempe Lands area from two to one, following consultation with Inner West Council and Sydney Airport Corporation.

Both of these refinements are addressed in the Response to Submissions report. Technical assessments including noise and vibration, windshear and turbulence, odour and historical archaeology were updated. Neither of the design refinements will result in additional environmental impacts.

6 Assessment

The Department has considered the Proponent's EIS/pdMDP, Response to Submissions report and submissions received on the project as part of its assessment. Based on this consideration, the Department has identified the key issues for assessment are:

- traffic and transport (**Section 6.1**);
- noise and vibration (**Section 6.2**);
- design and public space (active transport, urban design and visual amenity) (**Section 6.3**);
- land use and socio-economic impacts (**Section 6.4**);
- contamination (**Section 6.6**);
- surface water and groundwater (**Section 6.7**); and
- non-Aboriginal heritage (**Sections 6.5**).

Other issues are discussed in **Section 6.8**.

6.1 Traffic and transport

Sydney Gateway will provide a link from Sydney's new motorway network at St Peters to Sydney Airport, removing existing traffic and heavy vehicles from local roads and neighbourhoods in and around the Mascot and St Peters. The project will connect with other motorways such as the WestConnex M8 and M4-M5 Link resulting in improved travel times to and from the airport from south-western and western Sydney.

Although the project will provide a regional benefit to traffic mobility once operational, local traffic impacts are predicted to occur during construction when work is undertaken at intersections and on key thoroughfares such as Qantas Drive. In addition, the introduction of heavy and light construction vehicles has the potential to increase congestion on the surrounding local road network. Construction worker vehicles could also impact on on-street parking due to a shortfall in parking spaces at construction ancillary facilities.

To manage these impacts, the Department has recommended conditions to address potential impacts on the road network, limits on the use of local roads by construction heavy vehicles and the implementation of a Construction Parking and Access Strategy prior to impacting on on-street parking.

The Department's assessment was informed by the advice of an independent traffic specialist engaged by the Department to undertake a technical review of the Proponent's traffic and transport assessment. The review is provided at **Appendix E**.

6.1.1 Construction traffic

Issue

Five construction ancillary facilities will be established, all of which will have direct access to arterial roads. Total daily heavy vehicle numbers entering and leaving access points at each construction ancillary facility and the work areas along Qantas and Airport Drive are estimated to be between 10 and 20 vehicles during the morning and afternoon peak periods, with estimated total daily volumes

ranging from 60 vehicles along Airport Drive up to 220 vehicles at construction ancillary site C3 (**Table 7**). The largest increases in travel time during construction are predicted to occur during the afternoon peak on O’Riordan Street for southbound traffic, during all construction scenarios.

Table 7 | Peak construction vehicle estimates (Source: Sydney Gateway Road project EIS/pdMDP)

Construction Ancillary Facility	Access Points	Estimated daytime traffic volumes (7:00 am – 10:00 pm)		Estimated nighttime traffic volumes (7:00 am – 10:00 pm)		Estimated daily total traffic volumes	
		Light	Heavy	Light	Heavy	Light	Heavy
C1 – St Peters Interchange connection	A1, A2, A3	850	150	40	0	890	150
C2 – Eastern Bridge	A4, A5, A6, A7	810	100	50	10	860	110
C3 – Western bridges	A7, A8	650	200	30	20	680	220
C4 – Qantas Drive	A9	200	100	20	20	220	120
C5 – Ninth Street	A10	400	100	30	20	430	120
Airport Drive	A11, A12	80	80	20	40	100	120
Qantas Drive	A13	100	50	20	20	120	70

Haulage will primarily be undertaken on State roads

Proposed construction haulage routes and access points to work areas and construction ancillary facilities are shown in **Figure 7**. Secondary access haulage routes will be activated as access roads close and new access points are created. Access points for each work area and facility have been chosen to minimise the number of heavy vehicles travelling on local roads in the surrounding suburbs. The only local road that will be used is Bellevue Street, St Peters which is in an industrial area.

The largest increases in heavy vehicle volumes are expected along Canal Road, particularly at its western extent near the Princes Highway, with a 16 per cent increase in the morning peak, and 29 per cent in the afternoon peak. Traffic volumes on Qantas Drive and Airport Drive would increase by up to 20 per cent in the eastbound direction in the afternoon peak.

Access changes will result from temporary and permanent road closures

Work areas will be located within the road corridor on Airport Drive, Qantas Drive and Sir Reginald Ansett Drive, with nightly closures of single traffic lanes in each direction at these locations to facilitate roadworks and bridge construction. In addition, temporary closures of Canal Road would be required to construct compound access points and bridge structures. These closures would occur outside of peak periods, at night or on weekends when traffic volumes are lower. Access to Port Botany and Sydney Airport would be accommodated by detours. Airport Drive would be permanently closed between the terminal access points. Swamp Road, St Peters will be permanently closed with access provided at the southern end of Bellevue Street.

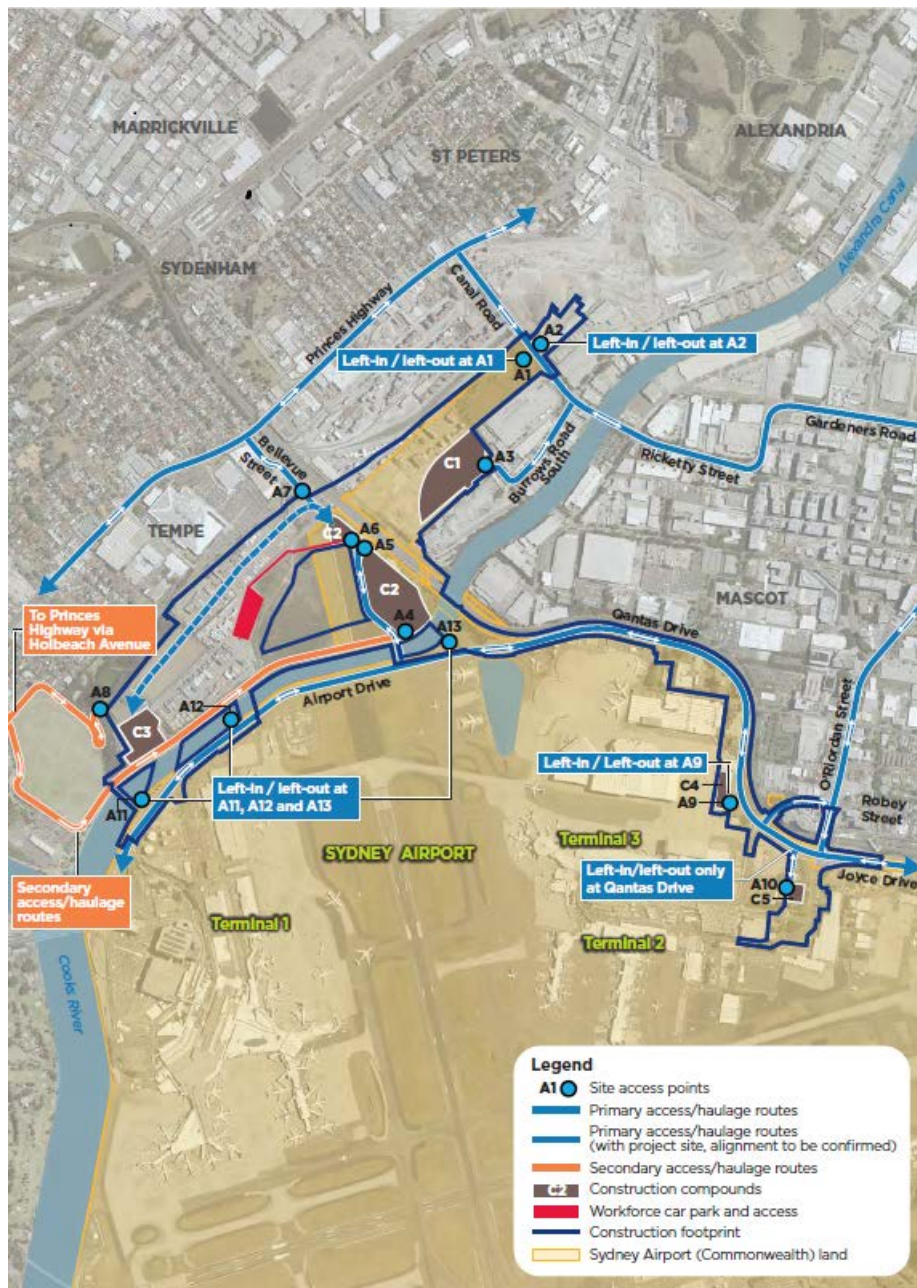


Figure 7 | Haulage routes and site access
(Source: Sydney Gateway Road Project EIS/pdMDP)

Parking impacts will result from worker demand and the loss of parking spaces

Parking for the construction workforce will be provided at the construction ancillary facilities in the construction footprint. However, there would be a shortfall in parking of approximately 110 spaces across all sites. On-street parking impacts are predicted to occur on streets within walking distance to construction ancillary facilities, generally in Mascot, due to uptake by construction workers. Shuttle buses could potentially be used to transfer workers between areas where required.

Several commercial and Sydney Airport employee car parks will have reduced capacity as a result of project construction. The car park near Terminals 2/3, with capacity for about 100 vehicles (accessed from Ninth Street) will be closed during construction and become part of the C5 construction ancillary facility. The Northern Lands carpark will be permanently reduced by 24 spaces, initially to accommodate part of the C2 construction ancillary facility and finally for the operational footprint.

Two other car parks leased to DHL (with a combined capacity of 81 spaces) would also be occupied during construction, although only one of these two car parks would be occupied at any one time. About 40 car parking spaces would be temporarily removed from within the Sydney Airport mail handling facility adjacent to Airport Drive.

There would be a temporary loss of about 500 square metres from the operational area of the livestock transfer facility, which is currently used to park and queue delivery trucks.

Travel times will vary during construction

Travel times in the surrounding road network are predicted to generally increase during construction as a result of the project and forecast vehicle demand. The most notable delays are travel routes approaching Terminal 2/3 via Gardeners Road and O'Riordan Street, and General Holmes Drive eastbound in the PM peak (up to 41 per cent and 47 per cent travel time increase, respectively). However, travel times are predicted to decrease following upgrades to roads and intersections around the airport as part of the Airport Precinct Road Upgrade program of works, which will introduce capacity to the surrounding network from the end of 2020.

Cumulative traffic impacts will occur with construction of the Botany Rail Duplication project, due to the proximity of the project and common work areas, specifically on Qantas Drive and Robey and O'Riordan Streets. Construction of the Botany Rail Duplication will impact access to Terminals 2/3 up to four times a year during weekend (48 hour) closures of Robey and O'Riordan Streets. An additional 10-20 minutes of travel time is predicted to negotiate planned diversions.

The project will use the M8 haulage route from the Kogarah Golf Course compound onto Marsh Street, then M5 East. The M4-M5 project haulage routes will overlap on Campbell Street southbound along Princes Highway. While volumes are considered minor in the local network, travel times and intersection performance will be impacted at several locations, as shown in **Table 8**.

Table 8 | Cumulative intersection impacts (Source: Sydney Gateway Road Project EIS/pdMDP)

Location	LoS impact	Travel Time Delay (seconds)
Qantas Drive/Robey Street	D to F	141
O'Riordan Street/Robey Street	C to F	52
General Holmes Drive/Wentworth Avenue	B to F	59
Botany Road/Wentworth Avenue	C to F	146

Submissions

Community submissions

Key issues raised in community and public interest group submissions regarding construction traffic and transport included:

- decreased intersection performance and access to airport precinct;
- need to maintain access to local businesses and the airport, including proactive management of delays;
- impact of increased heavy vehicles on local traffic volumes;
- proposed spoil haulage routes;
- cumulative construction traffic with Botany Rail duplication; and
- potential road safety issues arising from construction activities.

Council and Government agency submissions

Bayside Council raised concerns regarding potential detrimental impacts to traffic, on-street parking, the cumulative impacts from other projects in the area, and the need for project staging.

Inner West Council requested traffic modelling of additional areas in the assessment, including other local intersections and heavy rail grade separated crossings that will be impacted by the project, in order to capture the broader traffic implications within the Inner West local government area. Council also raised concern over the cumulative impacts from several concurrent local developments and requested measure be implemented to minimise impacts on local amenity, access and parking.

Consideration

Impacts from construction traffic can be reduced by scheduling work start and finish times to outside of peak traffic periods

Construction vehicle access to construction ancillary facilities will occur via arterial roads. Many of the surrounding roads are congested during peak periods, particularly the Princes Highway. To minimise traffic impacts at peak periods, the Proponent has committed to developing construction staging and temporary work plans to reduce conflict with the existing road network. A travel demand strategy will also be developed to coordinate workforce activities to start and finish shifts outside of peak periods, which will aim to lessen peak hour impacts.

The Department is satisfied that the Proponent's mitigation measures will reduce traffic impacts around construction sites and the broader network. Further measures will be identified on an ongoing basis by the Transport Management Centre, as real-time data and performance reports are made available from completed motorway projects in metropolitan Sydney.

Cumulative traffic impacts will be managed through coordination, including local traffic and transport groups

The EIS identifies the need to co-ordinate activities with adjacent projects to minimise traffic impacts in the vicinity, particularly during proposed weekend closures of Robey and O'Riordan streets.

Whilst the Department is concerned at the potential increased journey times to the airport, the project's Construction Traffic and Transport Management Plan will include appropriate measures to

manage activities and minimise overlapping road and lane closures with adjacent projects. The Department also notes that other road upgrades to Sydney Airport and Mascot Town Centre will increase network capacity of the locality which will reduce cumulative traffic impacts from this and other projects.

The potential for cumulative construction traffic impacts will be further reviewed and coordinated with other projects, in consultation with the Airport Precinct Infrastructure Coordination Operations Group and the Traffic and Transport Liaison Group. These groups have membership from local councils and government agencies and undertake a coordinating role with detailed reviews of traffic staging, work schedules and road closures, to ensure Airport access and travel times are not significantly impacted.

Construction workforce parking will be addressed through a Construction Parking and Access Strategy

To address the potential shortfall of worker parking and impacts on adjoining streets, the Department has recommended that the Proponent prepare a Construction Parking and Access Strategy, in consultation with councils, affected stakeholders and property occupants, which would include measures to encourage workers to use alternative transport arrangements, such as public transport, and promote the use of shuttle buses to move workers between compounds and work areas where there is limited parking capacity.

6.1.2 Operational traffic

Issue

Operational traffic modelling was undertaken to estimate the current and future levels of travel demand and the impact of the project on the transport network. Operational scenarios included impacts with and without the project for the years 2026 and 2036.

The project will deliver broad improvements to the local and regional road network

Operational modelling indicates that traffic volumes would decrease on local roads, travel times to the Airport would decrease and the average delay at key intersections would improve compared to current traffic conditions due to the increase in north-south capacity provided by the project. In particular, traffic congestion on the M5, General Holmes Drive and Southern Cross Drive would be reduced. In addition, heavy vehicles volumes would decrease through the Mascot town centre, Botany and Gardeners Roads, with improved access to Foreshore Road and Port Botany provided.

A comparison of traffic volume counts at three locations on the road network was undertaken for future scenarios, to determine the project performance and changes in traffic flows along key road corridors (screenline analysis). The locations of the screenlines is illustrated in **Figure 8**.

The screenline analysis predicts that around 30 per cent of two-way traffic will be diverted from parallel corridors such as O'Riordan Street and Botany Road to the project and that demand will be reduced on the Princes Highway by around 15 and eight per cent in both 2026 and 2036. Traffic demand would slightly increase along the Port Botany screenline given that improved access and travel times would be substantially improved with increased capacity. Traffic is predicted to increase along the F6 (M6) screenline due to predicted increases in traffic volumes along Marsh Street which would provide access to/from the project.

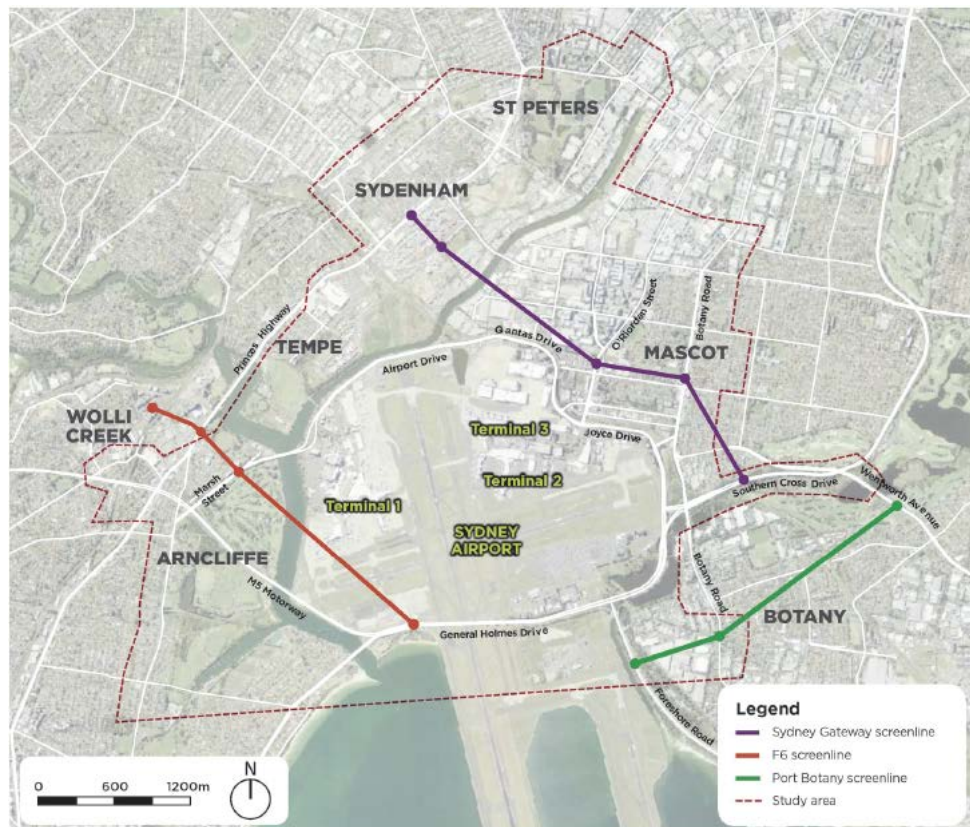


Figure 8 | Screenline Locations
(Source: Sydney Gateway Road Project EIS/pdMDP)

Most intersections would continue to operate at existing levels of service during the morning and afternoon peak periods. However, there would be a substantial reduction in intersection delays at most key intersections in the study area for the 2026 and 2036 scenarios as follows:

- Joyce Drive and O’Riordan Street – decreases of 129 seconds and 189 seconds in the morning and afternoon peaks, respectively;
- Qantas Drive, Robey Street and Seventh Street – decreases of 129 seconds and 81 seconds in the morning and afternoon peaks, respectively;
- O’Riordan Street and Gardeners Road – decreases of 86 seconds and 82 seconds in the morning and afternoon peaks, respectively;
- Botany Road and Gardeners Road – decreases of 145 seconds and 230 seconds in the morning and afternoon peaks, respectively; and
- Bourke Street and Coward Street – decreases of 152 seconds and 213 seconds in the morning and afternoon peaks, respectively.

The increased performance of key intersections accessing the airport, such as the Joyce Drive / O’Riordan Street and the Qantas Drive / Robey Street intersections would alleviate congestion and improve travel times for vehicles accessing Terminal 2/3.

Travel times between St Peters Interchange and the Sydney Airport terminals would substantially reduce, with travel time savings of up to 23 minutes in 2026, increasing to up to 30 minutes in 2036. Overall, the project would result in an increase in average vehicle speeds of between 26 and 47 per

cent, with average trip times to decrease by between 15 and 22 percent in 2026 and 2036 respectively.

Travel time improvements of up to 17 minutes will be experienced between St Peters interchange and Foreshore Road, Port Botany, at opening in 2026. Travel demand for Port Botany access via the M5 East and Foreshore Road will be reduced with the project.

The project would generally result in substantial improvements to bus travel times along most of the assessed corridors. In 2026, bus travel times would improve by a minimum of 30 per cent, with some routes experiencing improvements of up to 50 per cent. This would benefit public transport access to Sydney Airport.

Changes to vehicle access and parking are minor

Swamp Road will be closed south of Bellevue Street. Access would be via the proposed northern lands access and the freight terminal access. A cul-de-sac would be installed at the southern end of Bellevue Street to the north of the project site. Provision of access roads to Sydney Airport land west of Alexandra Canal would facilitate proposed future developments in accordance with the Sydney Airport Master Plan. The project will close current access to the Sydney Airports “Northern Lands” which will be accessed via Burrows Road and a new stub road from the freight terminal access.

While no on-street parking will be lost as a result of the project, 24 off-street car parking spaces in the northern lands car park will be permanently removed. This loss on Commonwealth land is a matter for Sydney Airport.

Cumulative traffic analysis demonstrates mainly ongoing benefits to the road network

The cumulative scenario for 2026 included operation with the F6 (M6) Extension. The 2036 scenario included Sydney Gateway, F6 (M6) Extension, and the Western Harbour Tunnel and Beaches Link projects. Generally, traffic volumes would decrease along local roads, overall travel times would decrease and the average delay at key intersections would improve.

Heavy vehicle volumes would decrease on Southern Cross Drive and General Holmes Drive, shifting to the new infrastructure. Traffic in general would decrease along the M1 and the Princes Highway as traffic would divert from these routes to the New M5 and F6 Extension. A marginal decrease in traffic volumes is predicted along O’Riordan Street and Botany Road. However, increases to intersection delay are expected at the O’Riordan Street / Gardeners Road and Gardeners Road / Bourke Street intersections.

Intersections in the vicinity of the Terminal 2/3 are predicted to experience deteriorating LoS as traffic volumes increase over time, and eight intersections would experience increased average delays by up to 45 seconds in the AM peak hour. In the PM peak hour, five intersections would experience increased average delays of up to 26 seconds.

Submissions

Community Submissions

Key issues raised in submissions from the community and special interest groups included:

- the project promotes cars over other modes of transport;
- access restricted to and from Port Botany and other intermodal facilities for heavy vehicles;
- capacity improvement programs throughout the airport precinct and local areas should be considered;
- local intersections record a decreased performance for future scenarios; and
- road access impacts for local businesses.

Council and Government agency submissions

City of Sydney raised concerns over the level of increased traffic on local roads in the City and induced traffic demand at the expense of public and active transport. It noted these outcomes contradict NSW Government Policy frameworks and recommended that the Sydney Airport Station Access Fee is removed to encourage the use of public transport to the airport.

Bayside Council recommended additional operational traffic modelling to understand the broader traffic interactions particularly traffic connectivity to southern Sydney. It further noted a lack of consistency with the Government's strategic planning framework. Council requested greater access for heavy vehicles accessing adjacent intermodals and Port Botany.

Inner West Council raised concern over the extent of the road network addressed in the operational traffic modelling, calling for a broader geographic study area to be assessed, as a minimum, Edgeware Road (Bedwin Bridge), Gleeson Avenue (Sydenham Station) and Richardson Crescent (Tempe Station).

Consideration

The project, together with other motorway projects, will improve access across Sydney and reduce travel times

Future modelled scenarios predict a decrease in average delay of up to 70 seconds across most intersections linking to the project. The Department notes that submissions received identify there are increased delays at other intersections in the local area, which require further investigation. The Department acknowledges the complexity of future planning for the network and notes that additional information will be made available as other motorway projects, such as the M8 and the M4 - M5, become operational.

The M8 Road Network Performance Review Plan (required under the New M5 Motorway approval) and the M4-M5 Link Road Network Performance Review (required under the M4-M5 Link approval) will provide the Proponent with updated operational traffic data on the surrounding road network. This data will ensure that measures to improve poorly performing intersections can be adopted in a timely manner. The Department is satisfied with this approach, given the overall benefits and improvements to most intersections that will interact with the project.

Public transport upgrades in and around the Airport precinct are being undertaken by Sydney Airport and Transport for NSW

The Department notes that with the improvements to road network there are corresponding benefits to road based public transport. Separate projects to be developed for the *Sydney Airport Master Plan* and the by the NSW Government will further improve bus access to and from the Airport. For example, *Sydney's Bus Future* program will provide improved commuter bus access with better network connectivity, new bus routes and extra bus services to improve accessibility. Sydney Airport has proposed a new ground transport interchange at Terminals 2/3 that will provide direct and efficient access for bus and taxi/ride share vehicles. These measures will increase the number of public transport services to and from Sydney Airport.

An Operational Road Network Performance Review will be required to assess and mitigate future impacts on the road network

The Department has considered submissions querying the scope of the traffic study area, which suggested additional investigations to both the east and the west of the project to capture impacts to the broader traffic network. The Department has also considered submissions concerned with how the project will interface with the airport and the Sydney Airport Master Plan, which proposes separate projects on Sydney Airport land to update access points to the terminals.

The Proponent has addressed the additional intersections and streets nominated in Bayside and Inner West Council's submissions in its Response to Submissions, and the Department considers that no further assessment is required. To confirm the operational traffic impacts of the project, the Department has recommended that the Proponent prepare and submit to the Department an **Operational Road Network Performance Review** within 12 months and again within five years after the commencement of operation. The Review will address road network performance and review the performance of the project on the adjoining road network. Further mitigation measures, if required, must be detailed in the Reviews along with the timeframes to be implemented. The Review will complement other reviews undertaken for the M8 and the M4-M5 Link motorway projects and will provide a holistic evaluation of network performance. The Department is satisfied the recommended condition would ensure the management and mitigation of any impacts on the local road network.

6.2 Noise and vibration

Construction of the project will have noise impacts at residences and other sensitive receivers. However, these impacts, particularly impacts at night, are unavoidable due to the constraints imposed by airport operations, the need to maintain road network operational performance during the day and peak traffic periods, and to ensure no conflicts with the operation of the Botany Rail Freight line.

The Department has recommended conditions that require the Proponent to improve its standard approach to mitigation and proactively manage works to address potential construction fatigue, amenity impacts and out-of-hours works. The Department is confident that, through the implementation of the Proponent's commitments, standard mitigation measures and the recommended conditions, noise and vibration impacts can be minimised throughout construction and operation of the project.

Issue

Construction noise impacts are expected outside of standard construction hours

Although construction will predominantly be undertaken during standard daytime construction hours, works will need to be completed overnight in some locations for safety reasons, to minimise disruption to freight movements on the Botany freight rail line and/or minimise disruptions to traffic on major arterial roads and ensure the safety of road workers. In addition, works in and around the airport which would intrude into the prescribed airspace may only be permitted by the airport operator during the curfew period (11:00 pm to 6:00 am).

Out-of-hours construction hours work would occur in locations shown in **Figure 9**. Most out-of-hours work would be bridge works, road works along Qantas Drive, Terminal 1 connections and the freight terminal access east of Alexandra Canal.

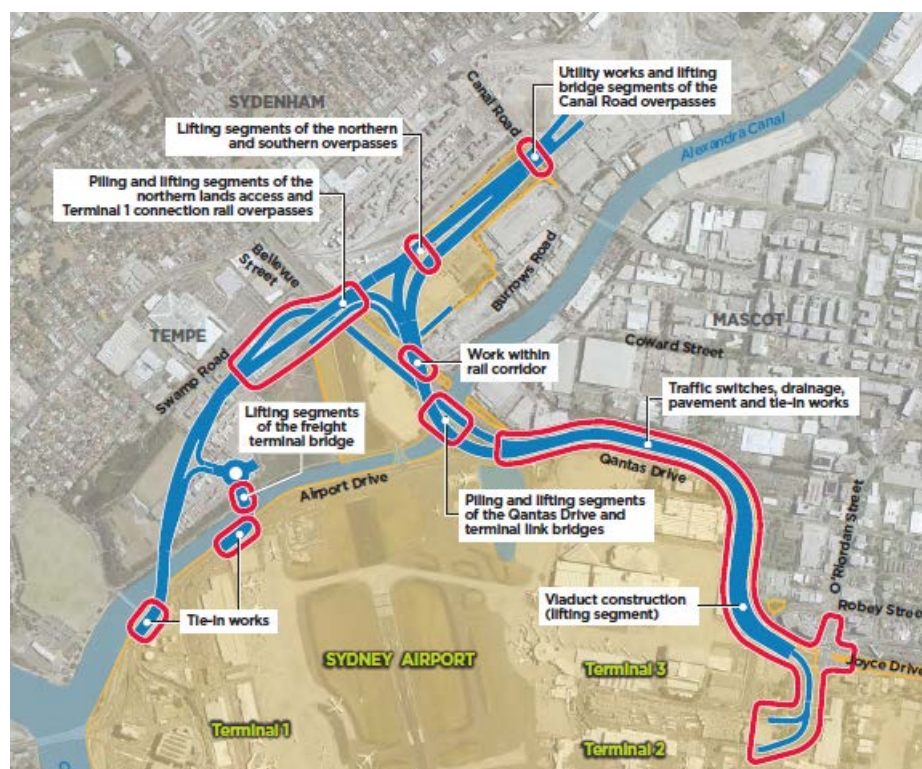


Figure 9 | Proposed locations of out-of-hours works

(Source: Sydney Gateway Road Project EIS pdMDP)

(The Project is shown as blue and the location of out-of-hours works are circled in red.)

While portions of the project pass through areas with no residences, residential areas in Tempe (NCA03 – see **Figure 10**), St Peters (NCA01 and NCA02) and Mascot (NCA06 and NCA08) would experience elevated construction noise levels up to and in excess of 20 dB above Noise Management Levels during both the day time and night time, including potential sleep disturbance during some enabling, site establishment, and bridge and road works. Residents in Tempe would experience elevated construction noise during most night-time construction scenarios with the potential for the sleep disturbance screening criterion to be exceeded at up to 420 residences during peak road and bridge works which would last for two to nine months depending on the location.

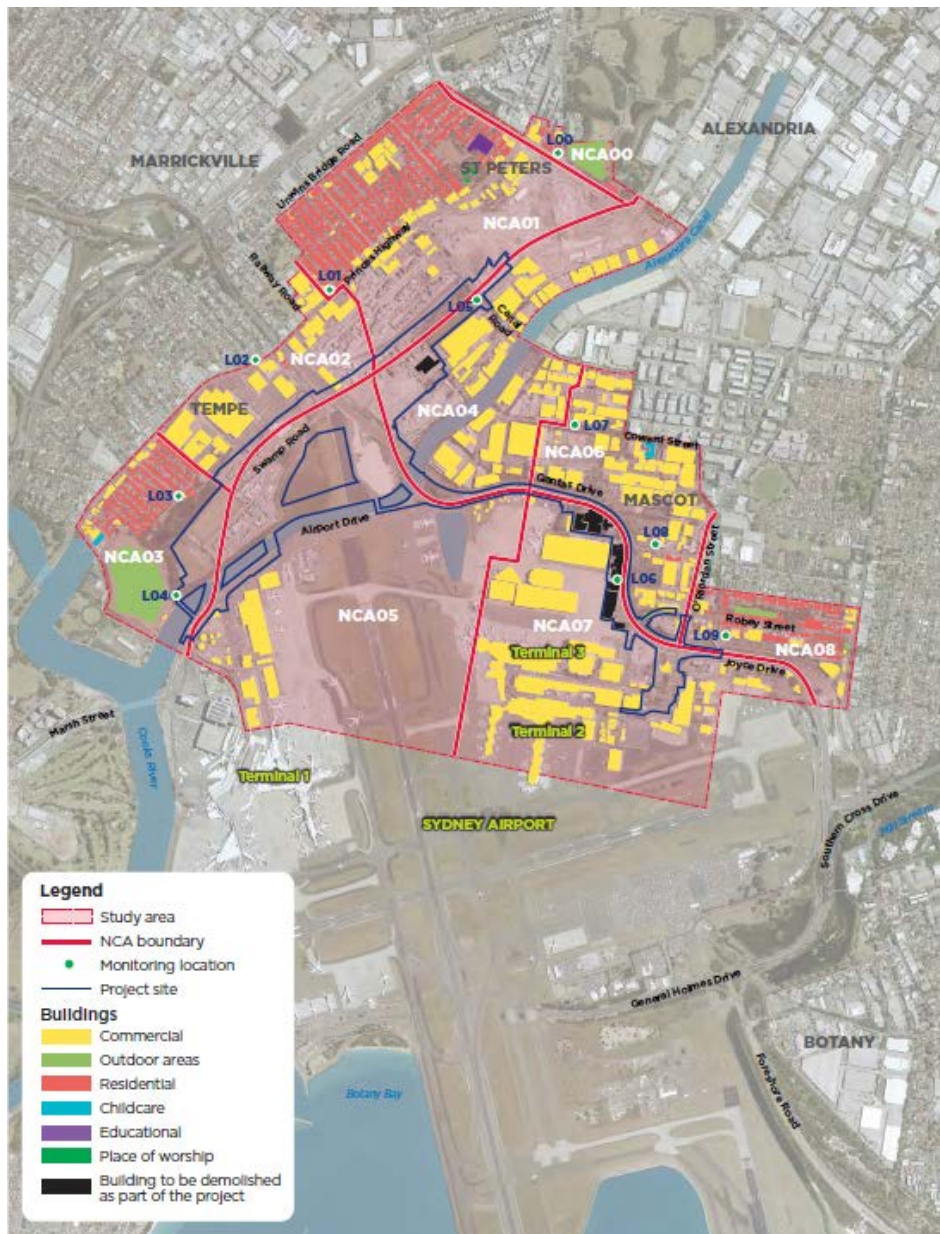


Figure 10 | Noise Catchment Area (NCAs)
(Source: Sydney Gateway Road Project EIS/pdMDP)

Elevated construction noise levels up to and in excess of 20 dB above the Noise Management Level are also predicted at churches, childcare centres, hotels and commercial premises located in St Peters, Mascot and Sydney Airport as well as Coleman Reserve at Mascot, and both the existing Qantas Flight Training Centre and the new Flight Training Centre, when operational.

Construction vibration has the potential to cause limited property damage

Vibration intensive equipment and activities such as dynamic compaction, piling, rock breaking and vibratory rolling have the potential to cause cosmetic damage and / or impact human comfort when undertaken close to residences, other sensitive land uses or structures. The Proponent's vibration assessment indicates that a number of residences, hotels, businesses, the Qantas Flight Training Centre and five heritage items in Tempe, St Peters and Mascot would be within the minimum working distances where vibration generating activities (**Figure 11**) have the potential to impact on human

comfort or cause cosmetic damage to structures depending on the construction method used. In particular, dynamic compaction has been identified as generating vibration levels exceeding the criteria for human comfort at residences in Tempe and cosmetic damage on structures (**Figure 12**).

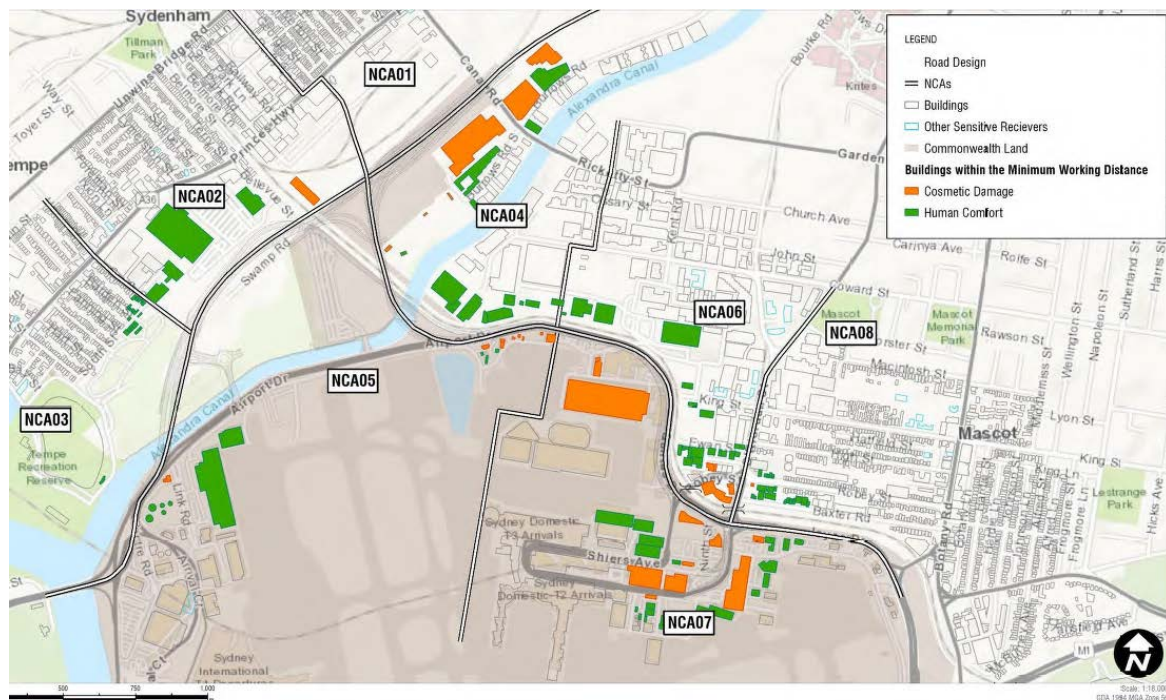


Figure 11 | Predicted vibration impacts for vibration intensive works (excluding dynamic compaction) (Source: Sydney Gateway Road Project RtS)

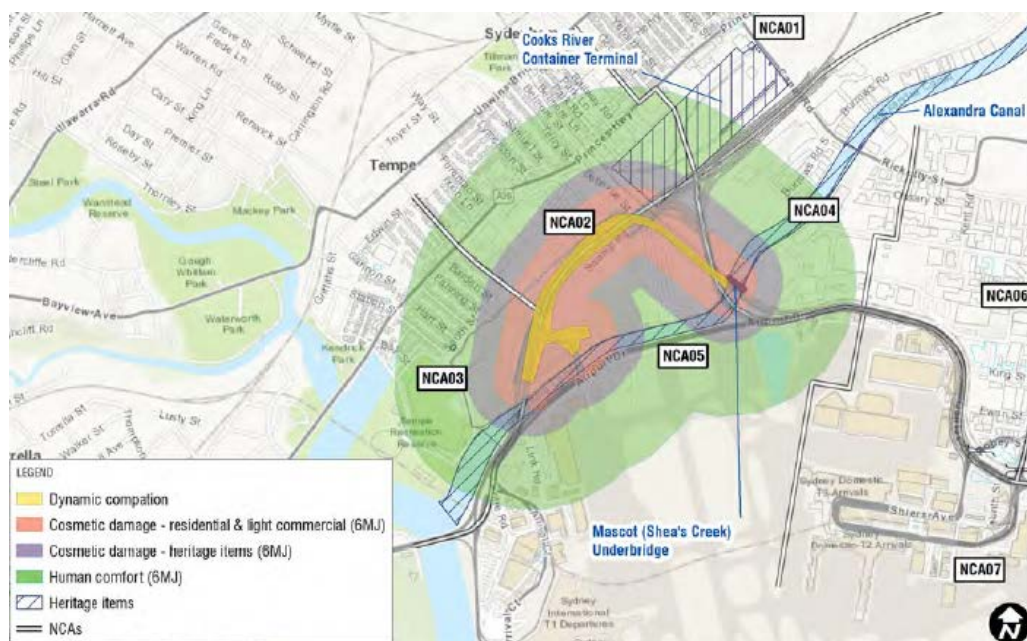


Figure 12 | Indicative minimum working distances for dynamic compaction (6 MJ) - worst case (Source: Sydney Gateway Road Project RtS)

Operational noise impacts are expected at residences in Tempe and Mascot

The project would introduce a new road traffic noise source in some locations in Tempe where road noise is not currently a dominant noise source. The project would also increase noise from ground-based aviation activities consequent to the removal of shipping containers in Tempe and where buildings on Sydney Airport near Mascot currently provide a barrier to noise.

Road traffic impacts are predicted to be the greatest in 2036 due to higher predicted traffic volumes. The impacts include an increase of:

- up to 13 dB at residents in Tempe, particularly South and Smith Streets (NCA03);
- up to 3 dB in areas west of O’Riordan Street (NCA06) due to increased traffic along Qantas Drive and the new viaduct to Sydney Airport Terminals 2/3; and

up to 3 dB at residential receivers on Baxter Road (NCA08), due to increases in traffic, particularly heavy vehicles on Joyce Drive (see **Figure 13**).

Increased ground-based aviation noise resulting from the removal of shielding structures is predicted to result in:

- up to 3 dB increase at residents in Tempe (NCA03); and
- up to 16 dB at a residential apartment block, hotels and commercial properties near O’Riordan Street in Mascot (NCA06 and NCA08).

The Proponent has committed to constructing a noise wall at Tempe and implementing at-property noise treatments at residences identified as eligible for receiving mitigation to reduce noise impacts.

Submissions

Community submissions

Community members raised concerns about construction noise and vibration impacts, including noise from heavy vehicle traffic, the removal of the shipping containers, out-of-hours construction works, sleep disturbance, cumulative construction and operational noise impacts, and concerns about property damage from vibration.

Organisation submissions

Qantas Airways Limited raised concerns about increased noise and vibration impacts during construction and operation including impacts to the operation of the current and new (under construction) Qantas Flight Training Centre, and concern for buildings that may be susceptible to cosmetic damage.

Viva Energy Australia advised of specific restrictions relating to construction activities on land adjacent to the Mascot Pipeline.

Sydney Airport Corporation Limited noted construction and operational noise management was a concern for Sydney Airport tenants and local residents including hotels.

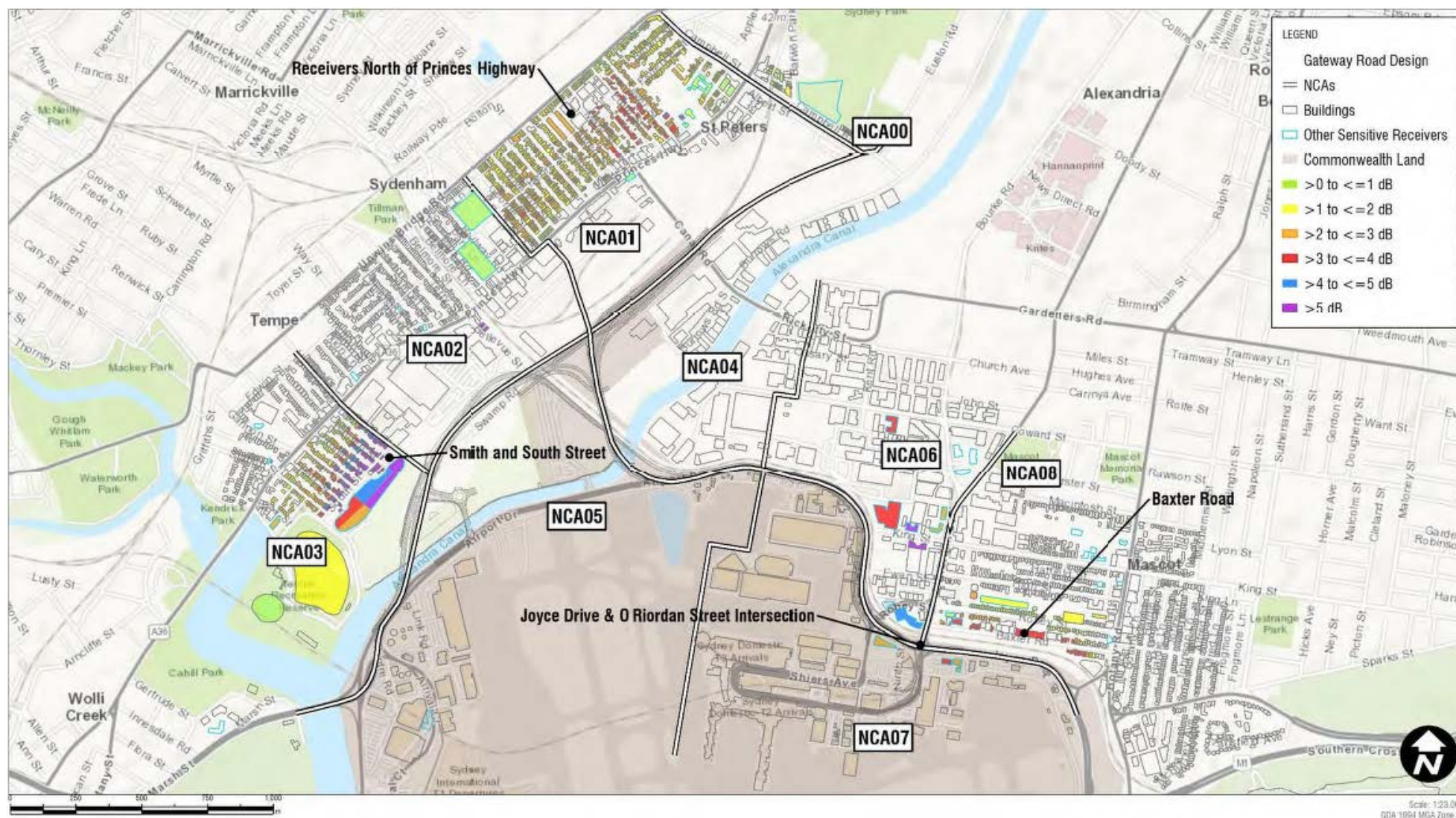


Figure 13 | Worst-case predicted change in operational night-time noise in 2036 future design scenario
(Source: Sydney Gateway Road Project RtS)

Council and Government agency submissions

Inner West Council commented on construction and operational noise impacts and requested a night works construction program which includes details on proposed periods of respite, notification of residents and limits on out-of-hours noisy works. Council also requested noise monitoring in Tempe.

EPA commented on the adequacy of the weather data used and sought clarification on the structures and roads included in the modelling. EPA also raised questions about the application of the *Noise Policy for Industry* (EPA, 2017) for aviation noise, justification for proposed noise mitigation measures and requested an assessment of vibration impacts from dynamic compaction.

NSW Health commented on the potential for health impacts from operation and construction noise.

Consideration

Construction is required to be undertaken out of hours and will require proactive community engagement and management

There is a need for flexibility in construction hours as some works need to be completed outside of standard hours due to operational and safety constraints associated with undertaking work near Sydney Airport, the Botany freight rail line and major roads. As the community is likely to be subject to regular out-of-hours works, which is exacerbated by the existing high noise environment, a proactive approach to the management and mitigation of noise (and vibration) impacts including consultation with affected community, businesses and key stakeholders and coordination and scheduling of works in consultation with other projects is necessary to minimise impacts. The Department supports the Proponent's commitments to manage noise impacts including:

- completing works during the daytime, where possible, or scheduling noisy works as early as possible during the evening and/or night-time periods;
- maximising the distance between noisy plant and equipment and residents;
- use of shielding structures, where possible, for noisy works adjacent to residents; and
- coordinating cumulative and consecutive construction noise impacts with other nearby projects, where possible.

Efforts to provide as much relief from construction as possible while still allowing the project to proceed in a timely manner is a high priority for the Department. To reduce construction noise impacts the Department has recommended conditions requiring:

- a proactive, community-focus to scheduling respite;
- additional mitigation for noisy works and dynamic compaction during extended construction hours (including during the airport curfew); and
- offers of alternative accommodation where noise levels are predicted to exceed noise management levels by over 25 dB(A) or are over 75 dB(A) over consecutive nights.

In addition, the Department has recommended extending the standard construction hours of 8:00 am to 1:00 pm on a Saturday up to 6:00 pm. The extension in hours allows for works which might have otherwise been undertaken of an evening or night time to be moved forward, reducing out-of-hours work requests.

Some residents will be exposed to large exceedances of the noise management level over a prolonged duration. Consequently, the Department has recommended that where residences have

also been identified as eligible for receiving at-property operational noise mitigation, this mitigation be installed within six months of the commencement of construction to reduce noise impacts.

The Qantas Flight Training Centre operates 24 hours a day, seven days a week. To address potential construction noise (and vibration) impacts on the operation of the Flight Training Centre, at both its current and future location, the Proponent has committed to preparing and implementing an acoustic management framework in consultation with Qantas once detailed construction planning information is available and again when the new Flight Training Centre is operational. The Department supports this approach and has recommended conditions to ensure consultation with all businesses that have noise and vibration sensitive critical working areas (such as Qantas). The recommended conditions also allow for the Proponent to implement agreed acoustic frameworks.

Construction vibration impacts can be minimised and appropriately managed

Five heritage items (Alexandra Canal, Cooks River Container Terminal and three rail bridges) are located within the minimum working distance for risk of cosmetic damage. The Department notes the Proponent's advice that the rail bridges are unlikely to be sensitive to vibration and that two rail bridges (Robey and O'Riordan Street rail bridges) are to be removed as part of the Botany Rail Duplication Project (SSI-9714).

The Proponent commits to managing vibration impacts to sensitive land uses and heritage items, including Alexandra Canal, by maximising the distance to heritage structures, using alternative methods that generate less vibration, and using real-time vibration monitoring. These measures would be detailed in a Construction Noise and Vibration Management Sub-Plan.

Vibration intensive works may also exceed the required criteria for pipelines in the project area and specialist vibration sensitive equipment in the Qantas Flight Training Centre. The Proponent commits to consulting with:

- the relevant pipeline asset owner to determine the sensitivity of pipelines to vibration and any management protocols required to protect the pipelines; and
- Qantas to determine site specific criteria and monitoring requirements for the existing and new Flight Training Centre to be documented in the acoustic framework.

The Department considers that these measures are appropriate.

Dynamic compaction has the potential to generate vibration at levels above the criteria for human comfort and cosmetic damage. The Department has recommended that the Proponent undertake trials of various dynamic compaction weights to determine minimum working distances from residences to avoid cosmetic damage and impacts on human comfort. Where compaction will be undertaken within minimum working distances and exceed the preferred values for human comfort, the Proponent must offer affected residents alternative accommodation for works occurring over consecutive nights.

Coordination with other major projects will be required to minimise cumulative construction impacts

Cumulative construction impacts associated with the concurrent construction of the Botany Rail Duplication Project could result in noise level increases of up to 3 dB. Hotels near Qantas Drive and O'Riordan Streets and residential receivers near Baxter Road, Mascot are most likely to be affected. Construction fatigue is also an issue for residents in these locations and at St Peters and Tempe

following construction of the M8, ongoing construction of the M4-M5 link, the recently completed Airport East and Airport North (currently under construction) road works, future construction of the Botany Rail Duplication project, Qantas Flight Training Centre and this project. A key contributor to fatigue is the need for night work and reduced periods of respite, particularly where work extends into current airport curfews.

The Proponent has committed to reviewing the potential for cumulative and consecutive noise impacts and coordinating works with nearby projects, where possible, so as to reduce the number of nights on which out-of-hours works occur. The Department supports this commitment and has recommended conditions requiring the Proponent consult with other State Significant projects within 200 metres of the Sydney Gateway Road project and to coordinate utility works undertaken by third parties for this project so as to maximise periods of respite.

Operational noise impacts will be mitigated with a combination of noise walls and at receiver treatments

Traffic noise increases are predicted in Tempe, Mascot and St Peters. To reduce these impacts, a five-metre high and 400-metre long noise barrier will be built along part of the roadway adjacent to the Terminal 1 connection (near South Street, Tempe) where the greatest noise impacts are expected. In addition, at-property acoustic treatment will be offered to residents and other sensitive land uses identified as experiencing noise levels above operational noise trigger values (see **Figure 14**). These measures are considered appropriate for the level of impact.

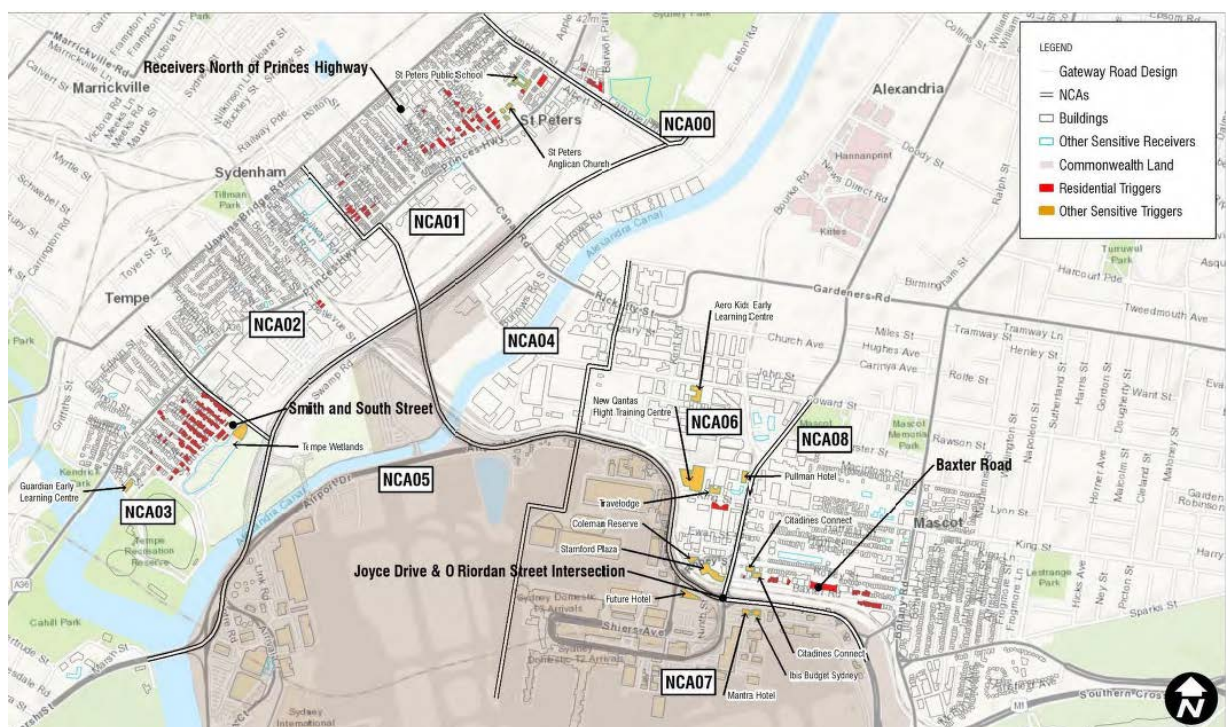


Figure 14 | Receivers identified for consideration of additional noise mitigation
(Source: Sydney Gateway Road Project RtS)

To ensure that mitigation measures are implemented, the Department has recommended that:

- the Proponent confirm operational noise impacts based on the detailed design, review the suitability of the noise mitigation measures identified in the EIS/pdMDP and, where necessary, identify any additional noise management measures required to achieve the noise criteria, as part of an Operational Noise and Vibration Review;
- eligible landowners be provided with the guidelines and procedures used to determine and implement such treatments so that they are aware of the range of options that are available; and
- the Proponent undertake a review of operational noise within 12 months of operations commencing to ensure that noise levels are consistent with predictions. Where expected noise levels are not achieved, investigation and installation of further mitigation measures is required.

To further ameliorate noise from operational traffic, the Proponent commits to:

- investigating options to reduce noise from ground-based aviation activities including retaining screening provided by existing buildings on Sydney Airport; and
- consulting with ARTC to determine reasonable and feasible noise mitigation where noise from both the Botany Rail Duplication and this project contribute to increased noise.

The Department supports these commitments as a means of reducing noise impacts on residents and other sensitive land uses.

6.3 Place and design

The project has the potential to improve place outcomes through enhanced active transport links, improvements to open space and good design. The project will have an impact on existing active transport links including along Alexandra Canal and Qantas Drive, through increasing distances, introducing steeper grades and removing a direct link. To address these impacts the Department has recommended the enhancement of connecting routes and the provision a missing link between the airport terminals. Whilst not all impacts can be mitigated, the Department considers the project, subject to recommended conditions and other active transport initiatives being undertaken by the Proponent (not part of the project, but within the area), will deliver overall improved links and greater connectivity in the area.

The Proponent presented a comprehensive urban design and landscape concept. This concept will be further developed during detailed design through independent design review and delivered through a Place Design and Landscape Plan. Open space and tree losses will be offset so that there is a net gain in the local area.

Issue

An Urban Design, Landscape Character and Visual Impact Assessment was prepared which presents the concept urban design and place making principles for the project. The assessment describes and illustrates the urban and landscape design for major built elements such as bridges and retaining walls and presents a range of measures such as active transport connections, place making opportunities (including public art and heritage interpretation, landscaping, and improvements to open space) to ensure a high-quality public domain as a key community benefit of the project. The

Proponent has committed to preparing a detailed urban design and landscape plan that will document the final visual characteristics of the project once the detailed design is completed.

Changes to land uses provide an opportunity to expand parklands

The project will introduce road infrastructure, including multiple carriageways, walls, ramps, and bridges into an area currently occupied by freight, airport and recreational uses. Key impacted areas include greenspaces around Tempe Lands and sections of Alexandra Canal.

The former Tempe landfill (now known as Tempe Lands) includes an open space area which caters to limited user types (golfers and dog owners). The Project would impact around 2.6 hectares of existing public open space, but once operational, up to around 4.3 hectares of residual land in this area would be provided to council as open space (refer **Section 6.4**). Council is currently preparing a master plan for this area. The final configuration of any residual land will be determined through this process.

The project will remove around 1,300 of trees across the entire alignment with limited scope for replacement due to space constraints. The Proponent intends to prepare and implement a tree replacement strategy to ensure a net increase in tree canopy is provided. Where trees cannot be replaced within the project footprint due to potential aviation hazards, planting locations will be determined in consultation with the relevant Council (for areas on State land) and Sydney Airport Corporation (for areas on airport land).

The proposal will result in reconfigured active transport facilities and the loss of some access

The Alexandra Canal Cycleway (shared pedestrian and cycle path between Link Road and the freight rail bridge) and the footpath along Qantas Drive (between Qantas Jet Base at Lancastrian Road and Robey Street) will be removed to facilitate the road upgrade works. As part of the final design, a new shared path will be provided along the western side of Alexandra Canal tying it into the existing active transport network as shown in **Figure 15**. The relocated cycle path will be 160 metres longer than existing. The current pedestrian crossing at Link Road would be removed, severing the direct a link from Tempe Recreation Reserve to Link Road and the Terminal 1 precinct. Pedestrian access to the Qantas Jet Base at Lancastrian Road will not be reinstated due to limited space within the upgraded Qantas Drive section.

Submissions

Community submissions

Key issues raised in submissions from the community and special interest groups included:

- request for additional / upgraded active transport links including:
 - link between T1 and T2/T3 terminals;
 - shared path from the New M5 St Peters Interchange to the existing Alexandra Canal cycleway;
 - an improved Cooks River crossing;
 - a connection between Coward Street at Mascot and Sydenham Station; and
 - improvements to the current active transport network;
- the need to maintain active transport networks during construction;
- request that pedestrian crossings are provided at all proposed signalised intersections; and
- loss of open space areas.



Figure 15 | Proposed active transport link and existing Coward Street cycleway
 (Source: Sydney Gateway Road Project EIS/pdMDP amended to highlight the existing Coward Street cycleway)

Council and Government agency submissions

City of Sydney recommended the following active transport connections be provided:

- a cycling connection between the St Peters interchange and the Alexandra Canal cycleway;
- an improved Cooks River crossing, via a new cycle bridge parallel to the Giovanni Brunetti Bridge;
- direct connections between the Alexandra Canal Cycleway and Terminals T2 and T3, and beyond the Bayside Council cycleway network;
- a direct cycleway connection between Coward Street at Mascot and Sydenham station;
- provision and maintenance of safe cycling and walking connections around works areas during the construction of the project; and
- enhanced connections into the existing active transport network;

Inner West Council also raised the above active transport issues. Other issues raised included:

- tree replacement to be undertaken at a ratio of 4 to 1;
- a request that no mounds be placed on land to be returned to Council as it will limit potential future uses;
- residual lands handed back to council must be remediated;
- the need for measures to be implemented to limit the urban heat island effect;
- the proposal should explore and implement potential improvements to and integration of active transport, the public domain, public art, and indigenous and contemporary heritage;
- residual land should be easy to access by the community, well integrated with the local road network and not be isolated.

Bayside Council requested similar active transport connections to those of City of Sydney and Inner West Council as well as the following connections:

- grade-separated pedestrian bridge over Qantas Drive from O'Riordan Street;
- shared path from Alexandra Canal to Mascot;
- a direct Wentworth Avenue to Domestic (T2) link;
- an improved Cooks River crossing (Cahill Park to Tempe Reserve); and
- an extended east-west (Mill Pond to Sydenham Metro Station) link.

Bayside Council was of the opinion that any trees removed for construction and operation should be replaced at a ratio of 5 to 1 and recommended that a detailed urban design and landscape plan be prepared which focuses on urban design and architectural excellence in the final project design.

Environment, Energy and Science Group (EESG) indicated that the final number of trees to be removed across the alignment is unclear and that any tree management / replacement strategy must be prepared to achieve a net increase in trees. EESG raised concerns about potential impacts to riparian vegetation along Alexandra Canal and the need to protect and restore the riparian zone. EESG requested for large tree trunks and root balls be salvaged for riparian restoration works and recommended that a landscape plan be prepared to detail the replanting of native local vegetation.

Sydney Water requested a minimum load limit of 35 tonnes on the proposed shared path along the western side of Alexandra Canal to allow for machinery during bank rehabilitation works.

Consideration

Pedestrian and cyclist access will be maintained around work zones during construction

The Alexandra Canal Cycleway along Airport Drive will be relocated westwards through Tempe Lands during construction. The Response to Submissions report provided two temporary indicative routes (**Figure 16**), however the Department acknowledges that the exact location of these may vary according to the stage of construction.

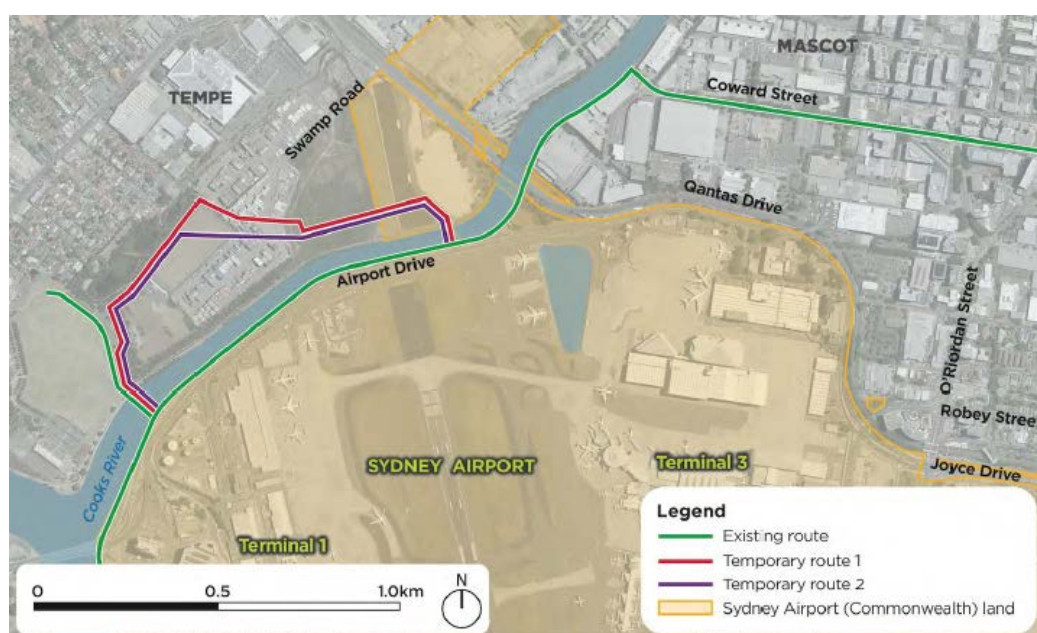


Figure 16 | Temporary active transport link during construction
(Source: Sydney Gateway Road Project RtS)

The provision of a temporary shared user path is supported even though it will result in a small increase in distance and time travelled and, unlike the existing route which is relatively flat, would require cyclists to navigate inclines and declines. To ensure that safe cycling connectivity is maintained, the Department has recommended that a temporary cycling path be provided prior to the closure of the existing path along the eastern side of Alexandra Canal and that the path be constructed to ensure the safety of users.

A new active transport link will be required to provide connectivity between the Airport terminals

As noted in numerous submissions, a notable gap within the cycle network is a shared path between Terminal 1 and Terminals 2/3. The Proponent indicated that this was not possible due to the spatial and operational constraints of providing additional traffic lanes needed within the land area available for the project.

The Department, DITRDC and Sydney Airport Corporation support the construction of an active transport link between Terminal 1 and Terminals 2/3. This would form an important link in the active transport network and avoid the need for cyclists to use major road and tunnels such as the runway underpass at General Holmes Drive. Further discussions with the Proponent has identified that this link could be accommodated through design changes as part of the detailed design process.

The Department has therefore recommended that an active transport link be provided between Terminal 1 and Terminals 2/3. Currently cyclists use an informal path along Qantas Drive, and the delivery of the recommended link would provide a safe, viable, efficient and convenient route between the western and eastern parts of the airport and the wider regional cycle network.

The Department also supports the Proponent's replacement of the existing Alexandra Canal Cycleway with a new shared path along the western side of the canal. The Cycleway is an integral component of a number of existing cycle routes and facilitates connections between Tempe and Mascot (**Figure 15**).

Existing active transport links in the vicinity of the project will be audited and enhanced

The Proponent identified the need to investigate and integrate provision of dedicated cycle paths from Terminals 2/3 to the Coward Street cycle path at Bourke Road, as a means to improve access to inner city areas. This approach is supported, as the existing Coward Street shared path is in poor condition, has uneven surfaces, obstacles within the path, worn line marking and limited wayfinding. As such, the Department has recommended that an audit be undertaken of the existing Coward Street active transport link to determine compliance with relevant walking and cycling guidelines and standards. The audit would determine the types of refurbishment works required to improve the link.

Although the project will provide a public benefit through upgraded active transport facilities, a large number of submissions from the community (including special interest groups) and councils requested enhancements to the existing network and the provision of new active transport routes. In regard to community requests for enhanced pedestrian and cyclist connectivity to the domestic terminal, upgrade works involving the provision of new paths along O'Riordan and Robey Streets are being delivered by the Proponent through a separate process. As such, no additional requirements have been imposed.

The Proponent, in its Response to Submissions report, states that other connections do not form part of the project scope and would be addressed / delivered as part the Priority Cycleways Program and

the Connecting Centres cycling partnership program led by Transport for NSW (TfNSW). This program of works will deliver on future regional connections identified in the Greater Sydney Region Plan, District Plans, and *Future Transport Strategy 2056*. The Department agrees that many of the requested active transport links are beyond the scope of the project and can be delivered as part of the Priority Cycleways Program and the Connecting Centres program of works.

Removal of the Link Road connection cannot be replaced, but alternative routes are available

The project will permanently remove the signalised pedestrian crossing on Airport Drive and Link Road. The new pedestrian arrangements in this area would be along the new freight terminal access bridge and signalised intersection with the Terminal 1 connection resulting in an increase in the distance to be traversed (approximately 700 metres to 1.4 kilometres longer depending on the point of origin). The Proponent has advised that this link is not highly patronised and that a direct link cannot be provided due to the limited space around the bridge abutment (along Airport Drive), navigational clearance requirements (should a bridge be suspended under the road bridges) and conflicts with utilities including a high-pressure gas main. The Department acknowledges that these constraints prevent the direct route from being maintained and notes that alternative, but longer routes are available.

Inner West Council will embark on a master planning process to determine the final uses of residual land with the Tempe Lands area

Inner West Council is in the process of preparing a Master Plan to identify how residual land provided to council following the completion of construction could be utilised, based on its 2018 Recreation Needs Study and outcomes of community consultation during the exhibition of the EIS. Potential future uses include open/space recreation, or other future uses in accordance with the priorities of local and regional strategic planning documents and community needs. The future use of this land would be subject to a separate assessment and approval process.

The Proponent has confirmed that it will retain ownership of the single emplacement mound (see **Table 1** and **Figure 19**) and that it would not form part of the project's residual land.

High quality design finishes will be informed through place, design and landscape planning and independent review

The EIS presented a comprehensive urban and landscape design analysis and concept, which focused on four major components - structures, place making elements, landscape elements and roadside elements. Each of these components include guiding design principles that will influence the final design outcome of the proposal.

To ensure that the concept is translated into the detailed design and delivery of the project, the Department has recommended the Proponent prepare a Place, Design and Landscape Plan which will amongst other matters address the form and finishes of structures. The Plan will facilitate high quality finishes for operational structures that are contiguous with their surroundings and sympathetic to the landscape character. This will include the consideration of Indigenous patterns and motifs, and site-specific public art and interpretation

The Department has also recommended that design outcomes be informed by input and review by independent and qualified practitioners in the fields of public art, heritage, open space design, landscaping and active transport. This will form part of the design review process and panel that the Proponent has committed to.

The EIS referred to potentially providing a living landscaped wall along Qantas Drive. The Department notes that both a living landscaped wall and a dedicated active transport link, may not be possible if provided in the same corridor as there is limited space. Due to the strategic importance of the active transport link, the living landscaped wall along Qantas Drive may not be delivered, which the Department acknowledges.

Tree loss will be offset by replacement plantings

The opportunity to provide replacement trees and increase tree canopy within the project corridor is limited due to spatial constraints within project footprint and the requirements to minimise wildlife strikes in the vicinity of airports. The Proponent has committed to preparing a tree management strategy to offset the loss of trees with the aim of achieving a net increase in tree canopy, with the final location of trees to be confirmed in consultation with relevant Councils and Sydney Airport Corporation. The consultation process will ensure consistency with each councils plans / programs or strategies and Sydney Airport Corporation's Wildlife Management Program. This measure is supported. To facilitate increased tree canopy within the vicinity of the project the Department has recommended a condition which requires the Proponent to prioritise tree planting on public land within 500 metres of the construction boundary.

Design review and hard and soft landscape treatments would minimise visual impacts

The project is located within a landscape comprising various land uses including freight and industrial, open space, Alexandra Canal, Airport, warehousing and employment lands, and residential.

Temporary visual impacts are expected during construction with the degree of impact being low to moderate depending on proximity to construction work areas. Due to location of the proposal and the surrounding land uses, the Departments accepts the proposal will have a limited visual and landscape character impact once operational, with impacts on views limited to outlooks from Tempe and the Wolli Creek area.

The Terminal 1 connection, noise barrier, Terminal 1 bridge and freight terminal bridge would alter the outlook of residents in medium and high rise apartment buildings on the southern side of the Cooks River in Wolli Creek which currently enjoy open panoramic views over the Cooks River, Alexandra Canal and open space in Tempe Recreation Reserve and the Tempe Lands. However, this impact is not considered significant as the nearest residences are located some 900 metres away.

The Department's recommendations that the design be the subject of an independent design review process and a Place, Design and Landscape Plan, will facilitate high-quality design and landscaping outcomes that will further minimise these impacts.

6.4 Land use, social and economic considerations

The project would require the relocation or closure of a number of businesses. However, the overall impact to businesses is considered acceptable as some businesses are already in the process of being relocated and similar facilities and services are available in the Sydney region.

As noted in **Section 6.3**, the project will result in a permanent increase in publicly accessible open space. The final landform / design of this space will form part of the Tempe Lands Master Plan process which is being undertaken by Inner West Council. Through this master planning process,

Council will determine the final land uses as owner of this land, including the establishment of a permanent dog park once the project is operational to offset the loss of the existing Tempe dog park.

Construction of the project has the potential to impact airport operations through impacts to the prescribed airspace including intrusions to the Obstacle Limitation Surface and potential impacts to lighting, navigational aids and turbulence. These impacts are considered manageable and will be subject to approval under the *Airports Act 1996* or managed in accordance with the National Airports Safeguarding Framework (NASF) Guidelines.

Issue

The project will transverse across land that is either owned privately, by Inner West Council or the Commonwealth of Australia as shown in **Figure 17**. Sydney Airport Corporation holds a lease over Commonwealth-owned land for the purposes of operating Sydney Airport. NSW Ports holds a lease on land occupied by the Cooks River Intermodal Terminal. The project will have direct impacts on various business and community facilities which would either cease to operate or would be relocated or there would be indirect or minor impacts (**Table 9** and **Figure 18**).

Table 9 / Impacts to businesses and community facilities

Business / community facility impacted	Type of impact	Management measures
Tyne Container Services (land owned by Inner West Council)	Cease operations as the site will be acquired.	Compensation in accordance with the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> .
Boral Recycling St Peters (Commonwealth land)	Cease operations. Sydney Airport Corporation, as landowner, is terminating the lease.	Subject to negotiations between Sydney Airport Corporation and business.
Boral Concrete St Peters (State land – private ownership)	Loss of area to park trucks and vehicle wash facilities. Area required for construction and operational purposes. 0.1 hectares acquired (less than 3.2% of site).	Alternative arrangements for the parking of trucks.
Visy Paper and Cardboard Recycling (Commonwealth land)	Cease operations. Sydney Airport Corporation, as landowner, is terminating the lease.	Relocating to 112 Euston Road Alexandria.
Qantas Freight (Commonwealth land)	Loss of 40 car parking spaces during construction. Loss of 9 car parking spaces in operation.	An alternate location for parking is being considered.
Qantas Jet Base / Flight Training Centre (Commonwealth land)	During construction, the size of the Jet Base would reduce from the existing 30 hectares to about 25.5 hectares. The project would not affect key maintenance facilities within the Jet Base. Several of Jet Base's support buildings and structures (including	The SSD application was approved in November 2019 for the relocation of the Flight Training Centre to a new site located within Qantas' 'Mascot Campus' on the northern side of the Botany Rail Line. Other facilities will be relocated as part of the Airport Master Plan development.

Business / community facility impacted	Type of impact	Management measures
	workshops, substation, fuel facilities and chemical storage) will be removed. The Flight Training Centre is being relocated.	
Cooks River Intermodal Terminal) (State land – private ownership)	No direct impact to the facility due to design changes outlined in the Response to Submissions. There will be indirect impacts with limits on container stack heights along the eastern boundary of the site due to safety issues associated with the proximity of the roadway.	The operator will have to stack empty containers at a lower height to ensure safety to motorists.
Inner West Council depot	Cease operations.	The Council is investigating options to relocate the depot.
Tempe Golf Driving Range and Academy (land owned by Inner West Council)	Cease operations as the land is being acquired for the project.	Compensation in accordance with the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> . In negotiations to relocate business to Campbelltown.
Swissport (Located in Sydney Airport) (Commonwealth land)	An area of about 0.05 hectares within this facility would be required during construction. This area forms part of a larger area used to manoeuvre, park, load and unload trucks associated with the facility's operation. In addition, an entry gate at the north-eastern end of the facility would be affected.	Vehicles will use an alternate gate or reverse out of the facility.
Off-leash dog area (land owned by Inner West Council)	The facility will cease to operate as the land is being acquired for the project.	The Proponent is working with Council to establish a temporary dog park nearby. Dog owners can use other local facilities in the area such as Cahill Park. The dog park will be reinstated prior to operation in a location within the Tempe Lands, as agreed to through Council's Master Plan process.
Sydney Airport Corporation car parks leased to DHL (Land owner - Sydney Airport Corporation)	Construction would temporarily affect two parking areas near Terminals 2/3 that are accessed off Ross Smith Avenue and Sir Reginald Ansett Drive. These parking areas, which have a combined capacity of 80 spaces, are used by the adjacent DHL business.	Only one of these car parks would be able to be used for construction at any one time, which would reduce the impact for the users. The loss of the above parking spaces and areas is manageable with some reconfiguration of parking areas proposed to minimise the loss.
High intensity approach lighting for the main north-south runway	An area of land (around 0.7 hectares) currently occupied by the high intensity approach lights would be required to construct the project.	Sydney Airport Corporation would adjust these lights prior to the project commencing operation.

Business / community facility impacted	Type of impact	Management measures
Sydney Airport mail handling unit	40 car parking spaces removed during construction activities.	Sydney Airport Corporation is reviewing procurement options for the ongoing management of the site and alternate options for the provision of parking elsewhere on airport land.
Advertising structures	There are 27 advertising signs along Airport Drive, Joyce Drive, Qantas Drive, Sir Reginald Ansett Drive and O'Riordan Street, of which 24 will be removed permanently.	Compensation under the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> is not applicable to advertising signs on Sydney Airport land and will be subject to discussion and agreement by Sydney Airport Corporation.

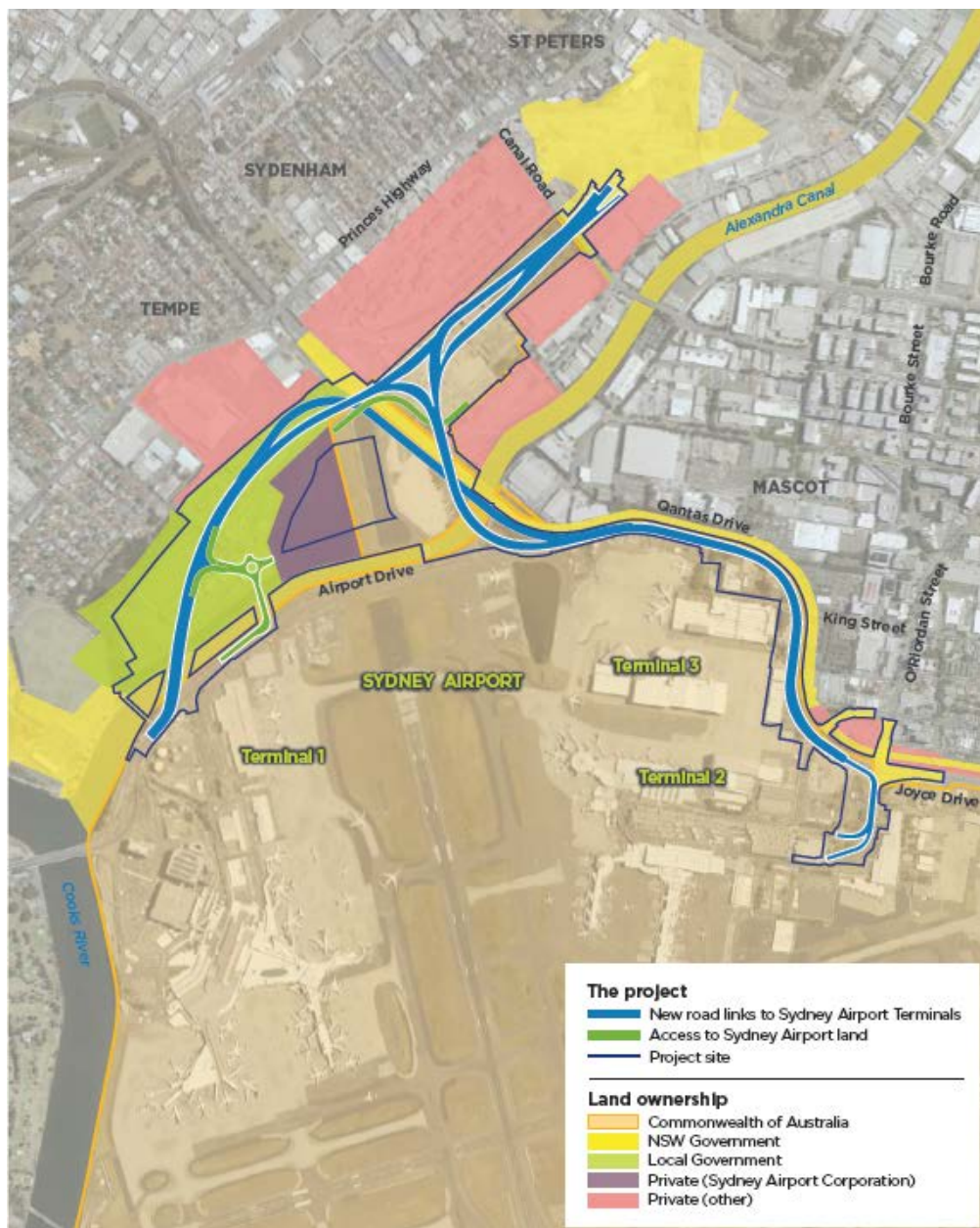


Figure 17 | Land ownership
(Source: Sydney Gateway Road Project EIS/pdMDP)

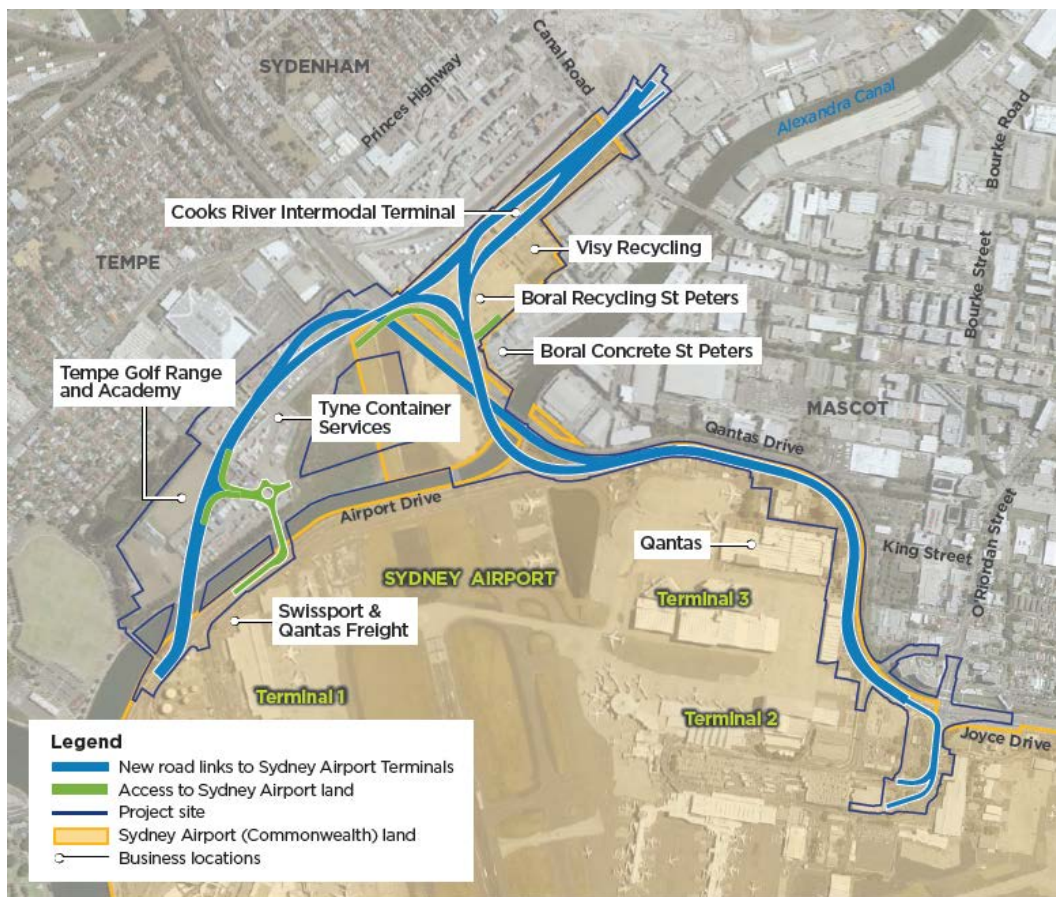


Figure 18 | Impacted businesses and community facilities
(Source: Sydney Gateway Road Project EIS/pdMDP)

Submissions

Community submissions

Issues raised in community submissions, including those from businesses, special interest groups and peak bodies included:

- the need to incorporate direct, dedicated connections for heavy vehicles at Canal Road;
- impacts to empty container storage facilities and industry including reduced storage capacity across Sydney;
- the alignment of the project must not encroach on or sterilise any part of the Cooks River Intermodal Terminal site;
- the project should not preclude a future rail connection / port turn out facility at Cooks River Intermodal Terminal;
- potential impacts of the project on aircraft operations and assurance that the project will not increase wind shear and turbulence;
- Qantas freehold land to the Airport must be maintained;
- impacts to Jetbase operations during construction activities and operation;
- need to minimise impacts to Boral operations and for any interruptions to operations to be agreed in advance; and
- the potential loss of passing trade at the KFC and McDonalds.

Council and Government agency submissions

Inner West Council raised concerns about the removal industrial / employment land from the area. Council indicated residual land must be remediated and returned to council and not be isolated / land locked, limiting its future use. Council noted that it is preparing a masterplan for Tempe Lands.

Bayside Council requested that it be provided with further information on land acquisition and impacts to council assets and local roads. The Council noted that the project does not include the provision of a freight access ramp to the Cooks River Intermodal.

NSW Health – South Eastern Sydney Local Health District identified some errors in relation to the reporting of socio-economic status in the Mascot and Tempe areas. The Local Health District also suggested the Proponent consider opportunities to better identify the population most at risk and develop mitigation and communication strategies that will minimise short- and long-term harms.

Consideration

The project will have both direct and indirect impacts to a number of businesses and community facilities. The majority of impacts will be on airport land and subject to assessment under the Commonwealth assessment process. The Department notes mitigation measures have been developed for impacted businesses on airport land and State land and considers these to be appropriate (**Table 9**).

Regarding impacts on businesses and community facilities on State Land, the Department considers that further consideration and measures are required in relation to empty container services and recreational land use impacts. In addition, there is a need to address the impact of activities on State land that have the potential to impact on airport operations.

The impact on the Tyne empty container park will reduce container storage near Port Botany, but storage capacity exists in other Sydney facilities

There is limited spare capacity available in existing empty container parks in Sydney. The closure of Tyne Container Services empty container park would exacerbate current constraints on the availability of land close to Port Botany where the business could relocate to. In the short term, Tyne Containers Services has advised that half of the approximately 10,000 Twenty-Foot Equivalent Units (TEU) (equating to around 6,500 containers) will be relocated to their Punchbowl and Molineux Point sites between April and September 2020. To offset the remaining 5,000 TEU, the Proponent is working with industry participants, including NSW Ports, to explore options for additional storage at alternative facilities or for containers to be moved offshore by the shipping lines to ease capacity for the whole market.

The intermodal facilities at Enfield and St Marys would provide some short- to medium-term storage relief. In addition, the completion of the proposed Botany Rail Duplication project would complement the increased use of the two intermodal terminals for empty container storage by providing increased capacity for delivery of empty containers to Port Botany by rail.

Acquisition of part of the Cooks River Intermodal Terminal site has been avoided under refined design. However, as noted in **Table 9**, construction of the project would restrict the height of containers stacked along the eastern boundary of the site. This may have a minor impact on the number of containers that can be stored on site.

A number of submissions called for the project to include a direct rail turn-out to and from Port Botany and for ramps to be provided to enable heavy vehicles to directly access the roadway from Canal Road at St Peters. The Proponent has confirmed that the provision of ramps at this location would have high construction costs and require increased land acquisition from Sydney Airport Corporation and the Australian Government. Further, the traffic modelling indicates that existing routes through Mascot would be improved, thus providing improved travel times for freight traveling between Cooks River Intermodal Terminal and the port along the existing road network. The Proponent also advised that ramps could be built in the future subject to funding approval, land agreements and planning approvals as the project design does not preclude the delivery of ramps in the future. Similarly, the project has been designed as not to preclude a future rail turn-out. To ensure that the construction of such facilities in the future is not precluded, the Department has recommended a condition to this effect.

Open space and recreational facilities will need to be relocated and reconfigured, but the project will provide a net increase of publicly accessible open space

The project would result in the permanent loss of the Tempe Golf Driving Range and Academy. With the assistance of the Proponent, the business is planning to relocate to Campbelltown, subject to negotiations with Campbelltown City Council. Although the driving range will be removed from the area, there are other facilities in close proximity that golfers can use including Barton Park Driving Range which is approximately four kilometres away in Arncliffe. It is expected this business would benefit from increased patronage and potentially increased membership.

Regarding the off-leash dog area in Tempe, the Proponent and Inner West Council are in negotiations to provide a temporary dog park within unused bowling greens at Tempe Reserve. This approach is supported and to ensure that the temporary facility is provided the Department has recommended that the Proponent provide an off-leash dog park within Tempe Reserve in consultation with Council. The dog park is to remain until such time that a permanent dog park is provided.

The Response to Submissions estimated that residual land would comprise about eight hectares. To allow flexibility in design, the construction footprint has been increased, resulting in around 6.5 hectares of residual land being provided to Inner West Council of which 4.3 hectares could be public open space (refer **Section 6.3**) and will include provision of a permanent dog park. This would provide Council with an increase in approximately 1.7 hectares of useable open space. To ensure that the loss of existing public open space is offset, a condition has been included requiring the provision of an increase in public accessible and usable open space.

To address Councils concerns regarding the remediation of residual land returned to Council, the Department has recommended conditions for the investigation and remediation of contaminated lands impacted by construction of the project (see **Section 6.6**). These conditions include obtaining a Site Audit Statement stating that the land is suitable for its intended purpose.

Impacts to Sydney Airport operations are manageable and will be subject to further approval

The main runway for the airport is 16R/34L which is directly south of the open space area and freighter container park that will be used for construction. Within this area, the airport Obstacle Limitation Surface (OLS) is at its lowest point. The OLS spans a radius of about 15 kilometres from the runway ends. Infrastructure and terrain within this area is required to be at a height below the OLS to avoid becoming a hazard to aircraft operations. The use of construction plant and equipment will at times exceed the maximum clearance height and penetrate the OLS. Due to the importance of

maintaining Airport operations throughout the construction period, the Proponent intends to undertake a large portion of works during the Airport curfew period to minimise operational impacts to the Airport.

Temporary encroachment into the prescribed airspace of Sydney Airport is a controlled activity and requires approval from either the airport operator (for temporary intrusions of less than three months) or the Commonwealth Department of Infrastructure and Regional Development (if intrusions are greater than three months). If it is determined that an encroachment will occur, an application to undertake a controlled activity must be made to the airport operator in writing. As this process is managed under the *Airports Act 1996* (Cth), the only recommendation made by the Department is for the project to be designed to ensure that all operational structures and their use do not intrude into prescribed airspace.

Lighting can be a distraction to pilots. The *Civil Aviation Regulations 1988* gives the Civil Aviation Safety Authority (CASA) authority to require the modification or extinguishment of lights which may cause confusion, distraction or glare to pilots in the air. The Department has required the Proponent to design the project so that all temporary and permanent project lighting complies and is installed in accordance with the relevant legislative requirements.

The refined design includes one mound (rather than two) in the area bounded by the Terminal 1 connection, the freight terminal access and the western side of Alexandra Canal (shown in **Figure 19**). This refinement would reduce residual land take, allowing more land to be made available for other future uses (to be determined by Inner West Council in accordance with the current master planning process). The mound, which would form part of the project, would be located on land to be retained by the Proponent.

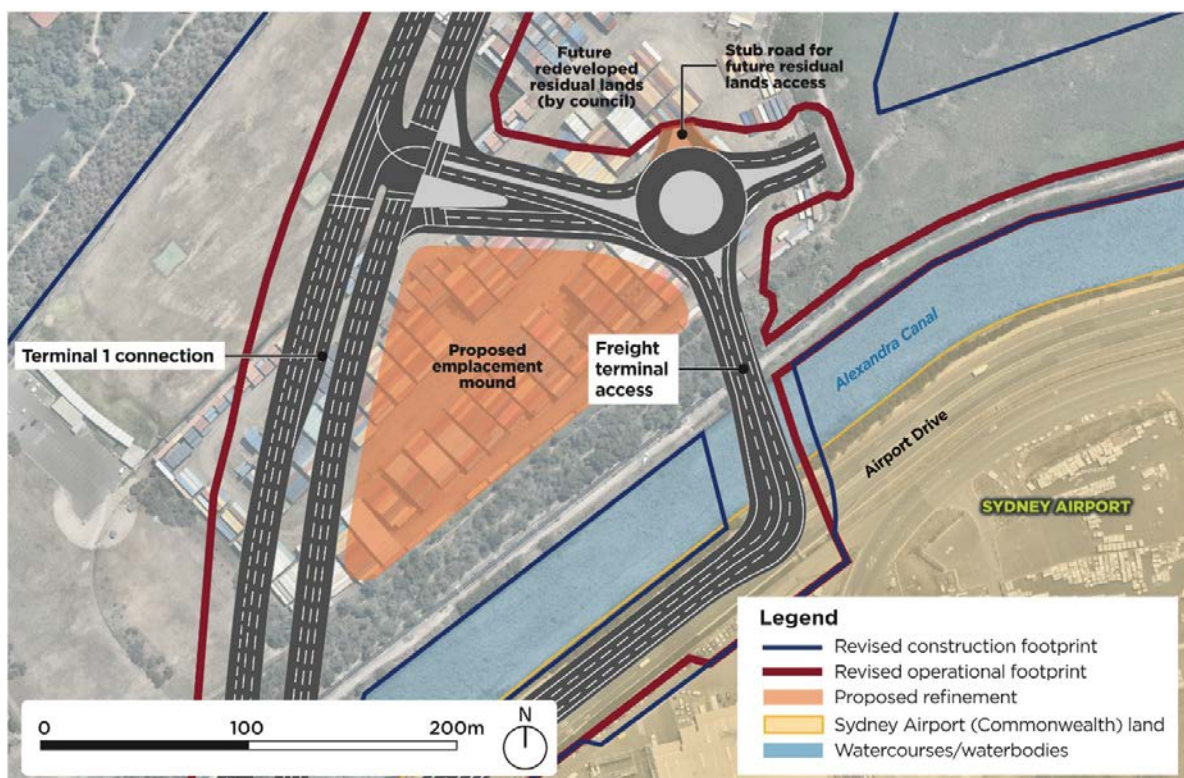


Figure 19 | Proposed emplacement mound
(Source: Sydney Gateway Road Project RtS)

An additional windshear and turbulence assessment was undertaken to assess the impacts of one mound. CASA reviewed the updated assessment and recommended that the influence of the project on turbulence along the approach to Runway 16R be minimised in consultation with DITRDC and relevant regulatory aviation stakeholders. The Department has included this recommendation as a condition of approval

6.5 Non- Aboriginal heritage

Construction of the project would result in heritage impacts to the State significant Alexandra Canal. The Department considered the heritage impacts in the context of the benefits of the project overall and existing constraints of the area and considers these are acceptable. The Proponent's commitments for managing and reducing heritage impacts, in association with the recommended conditions, will ensure that heritage impacts are appropriately managed and minimised to the greatest extent practicable.

Issue

Construction of the project will result in unavoidable impacts to heritage items including:

- a major impact on the State significant Alexandra Canal (listed under section 170 of the *Heritage Act 1977*) and potential archaeology;
- a moderate impact to buildings of local significance on Sydney Airport land;
- a minor to moderate impact on areas with a moderate potential to contain local and State significant archaeology; and
- the potential for vibration impacts to nearby heritage items.

The Alexandra Canal is one of two navigable canals built in NSW and of high historic, aesthetic and technical/research significance. Construction of four new bridges over the canal would alter its existing open sky character, and construction of nine drainage outlets through the canal walls would remove original (major impact) and non-original (minor impact) sandstone fabric and potentially affect sub-surface archaeology that may also be of State significance. The Alexandra Canal is also potentially susceptible to vibration impacts from vibration intensive construction activities.

Cumulative impacts with the M8 would result in a total of six crossings of the Alexandra Canal (two from the M8 project). All crossings will permanently contribute to changing the character of the canal from being relatively 'open' since its establishment in the late 19th century.

Submissions

Council and Government agency submissions

Bayside Council noted that Alexandra Canal and the Sydney (Kingsford Smith) Airport group are listed as local heritage items in the Botany Bay LEP. Council also noted that the *Sydney Airport Management Plan 2009* and the *Draft Sydney Airport Heritage Management Plan 2018* were not available and requested copies be provided to Council for comment to ensure buildings identified for removal had not been revised to have a higher degree of significance.

Inner West Council recommended that a Heritage Management Plan be prepared and that it and the community be consulted in relation to the Cooks River and Alexandra Canal.

City of Sydney noted the works do not appear to impact that section of the Alexandra Canal listed as a local heritage item on its LEP, but that impacts to the canal can potentially affect its State heritage significance. It recommended the mitigation measures outlined in the Statement of Heritage Impact be included as conditions of approval.

The **NSW Heritage Council** commented on the impacts to Alexandra Canal and recommended that the design and works affecting the Canal should be guided by the *Alexandra Canal Conservation Management Plan (Government Architect's Office | NSW Department of Commerce, 2004)*. It also recommended that suitably qualified and experienced heritage specialists be involved when works on the canal are undertaken and that the Proponent prepare a Heritage Management Plan for construction. Further, it recommended the inclusion of heritage interpretation into the Urban Design and Landscape Plan, archival recording of the canal and management of vibration impacts.

Consideration

The Proponent committed to a range of heritage management practices including:

- avoiding heritage items and significant heritage fabric where reasonably practicable;
- minimising the potential visual impacts to heritage items in accordance with an urban design and landscape plan and Statement of Heritage Impact; and
- photographic archival recordings, heritage interpretations and archaeological investigations and salvage (where possible); and
- designing drainage outlets at Alexandra Canal to minimise impacts on significant original fabric and highly visible areas.

However, even with the implementation of these measures there will be direct impacts to heritage items and potential archaeology. In particular, there will be major impacts to Alexandra Canal and Sydney Airport.

Impacts to the Alexandra Canal are unavoidable, but can be minimised and managed through design and interpretation

Three of the nine new drainage outlets to the canal would be constructed through original intact sandstone embankments. The Department supports the Proponent's commitments to avoid areas of the canal wall that have significant heritage fabric in highly visible locations, and for the design to be independently reviewed by a heritage architect or engineer in consultation with NSW Heritage Council and Sydney Water. Further, it supports the Proponents intention to reuse removed significant fabric for interpretation, repair or maintenance of other sections of the canal.

Visual impacts to Alexandra Canal are unavoidable due to the need for road bridges to span the canal to connect the Sydney motorway network with Sydney Airport. The bridges would obstruct view lines towards and along the Canal and alter the 'open sky' character of the Canal, impacting its heritage character.

The Department notes the Proponent's intention to use the UDLP to guide the design of the bridge crossings so that they are sympathetic as possible to the existing heritage character of the landscape and to develop the UDLP in consultation with the NSW Heritage Council. In line with comments from the NSW Heritage Council, the Department has recommended conditions to minimise the visual impacts by requiring a Place, Design and Landscape Plan (PDLP) which:

- has place, design and landscape outcomes informed and reviewed by independent heritage practitioners;
- requires consideration of the *Alexandra Canal Conservation Management Plan (Government Architect's Office | NSW Department of Commerce, 2004)*; and
- is prepared in consultation with the Heritage Council.

In addition, the recommended conditions include requirements for archival recording of those parts of Alexandra Canal that will be physically impacted by construction.

Heritage impacts on Sydney Airport land are minimal

The removal of 11 buildings on Sydney Airport land will alter the appearance of the airport and have a moderate heritage impact despite the buildings themselves having little heritage significance. The removal of these buildings is necessary for the construction of the project and has the agreement of Sydney Airport Corporation. In addition, the Department also recognises that the airport will continue to undergo further change as outlined in the *Sydney Airport Master Plan 2039* (which is outside of the scope of this assessment). The Proponent has committed to several measures to reduce heritage impacts on Commonwealth land.

6.6 Management of contaminated sites

The project will disturb contaminated lands. However, through appropriate management, monitoring and independent auditing, impacts can be negated.

Construction on contaminated lands, including the former Tempe landfill, have the potential to result in the migration of leachate and contaminated groundwater if not carefully managed. In addition, works within the former landfill site have the potential to emanate odour consequent to the exposure of contaminated materials and gases built up within the landfill. Measures will need to be implemented to ensure that works within Alexandra Canal do not disturb contaminated bed sediments.

The Department has considered the potential impacts associated with undertaking construction on contaminated land and within the Canal and is satisfied that the recommended conditions and the Proponent's environmental management measures would adequately reduce the risk of adverse environmental and human health impacts from exposure to contaminated sediments and groundwater.

Issue

Five contaminated areas with elevated levels of contaminants have been identified across the project boundary (**Figure 20**) - the former Tempe landfill, Sydney Airport Northern Lands carpark, Sydney Airport Northern Lands, Sydney Airport land and the Alexandra Canal. The Tempe landfill and Alexandra Canal are declared as significantly contaminated land under the *Contaminated Land Management Act 1997* (NSW). Other identified contamination issues are:

- elevated levels of landfill gases in the Tempe landfill and Sydney Airport Northern Lands carpark; and
- light non-aqueous phase liquid (LNAPL) and volatile chlorinated hydrocarbons (VCH) at the Qantas Jet Base.

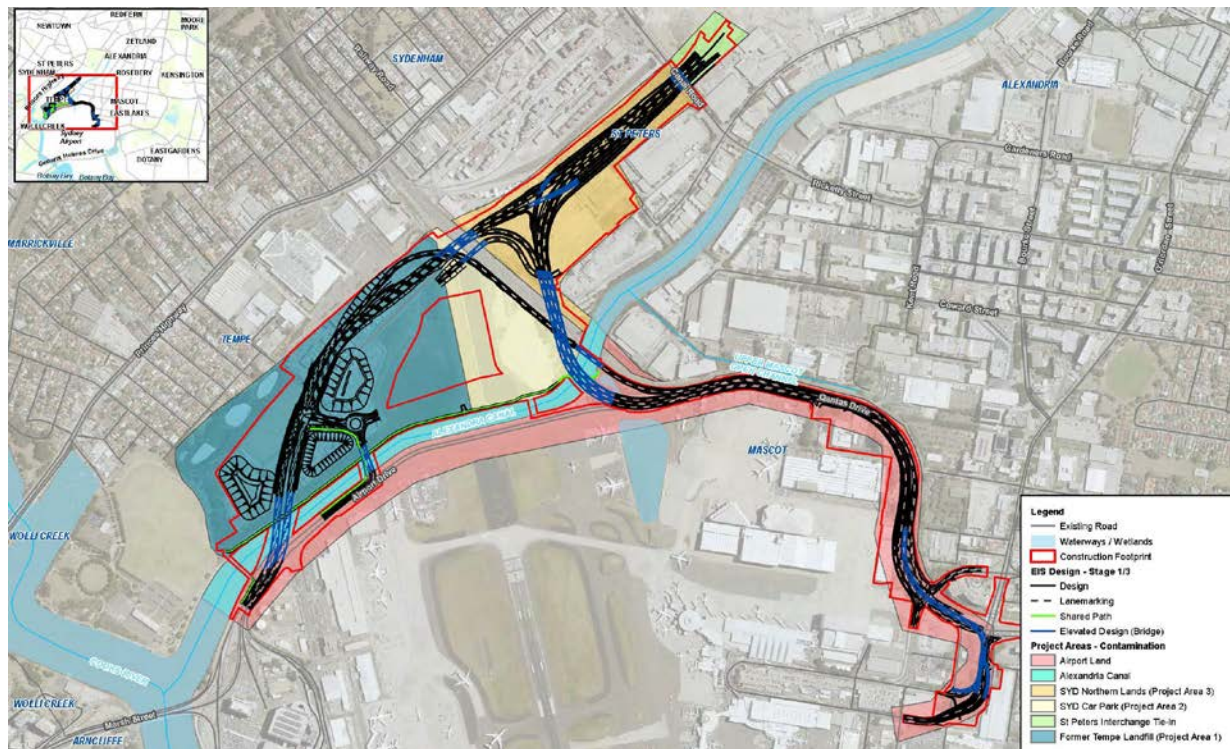


Figure 20 | Identified areas of contamination
(Source: Sydney Gateway Road Project EIS/pdMDP)

Two additional sites were considered although not assessed:

- The rail corridor from Alexandria Canal in the south to the Ikea site in the north – to be investigated further during detailed design; and
- The WestConnex St Peters interchange tie-in, which was assessed for the M4-M5 project.

The Tempe landfill and associated barriers will be penetrated during construction

The former Tempe tip landfill (**Figure 21**) is subject to a remediation order. Investigations of the landfill site have identified a range of contaminants, including asbestos, heavy metals, polyfluoroalkyl substances (PFAS) and pesticides (organochlorine and organophosphorus pesticides). Landfill gases including carbon monoxide, carbon dioxide, hydrogen sulphide and methane have also been detected.

A bentonite barrier wall was constructed in 2004 along the perimeter of the landfill to prevent leachate traveling into Alexandria Canal, a leachate collection and treatment system installed, and the landfill capped. The treated wastewater is discharged to sewer via a trade waste agreement with Sydney Water.

Excavation for the Terminal 1 connection bridge and freight terminal bridge piers, drainage lines, and utilities will remove parts of the landfill capping layer and will penetrate the waste fill layers below. This may release gases, increase the generation and movement of leachate volumes, and expose community and workers to health and safety risks. Caution will need to be exercised to prevent damage to the leachate and gas collection systems and bentonite barrier.

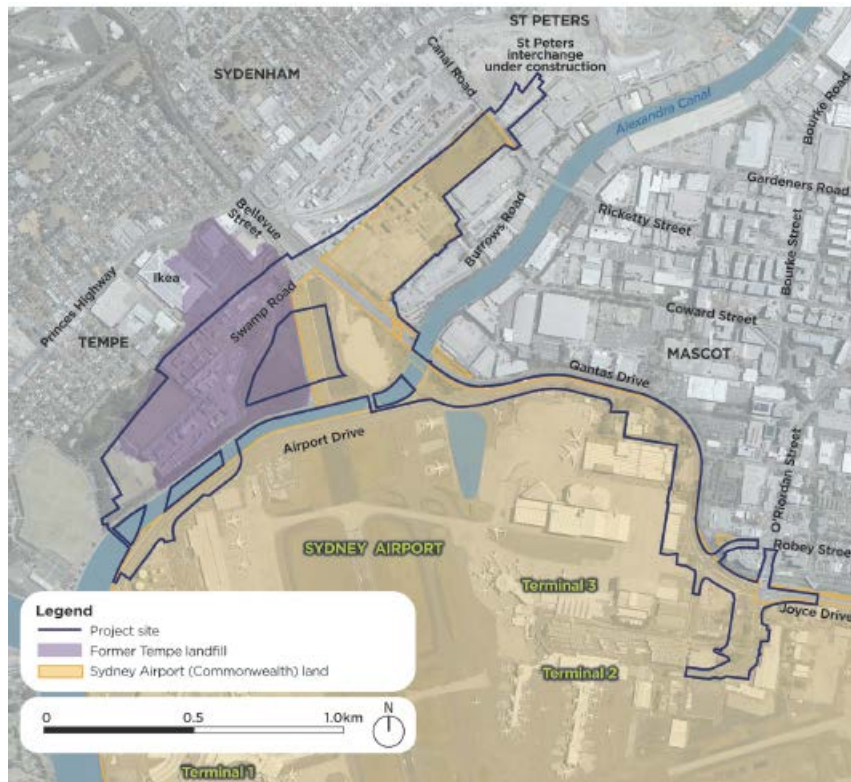


Figure 21 | Location of former Tempe landfill
(Source: Sydney Gateway Road Project EIS/pdMDP)

Approximately 90,000 cubic metres of waste material will be excavated from the landfill site. A large proportion of this waste (and spoil) will be placed in an emplacement mound located on top of the former landfill site within the project's residual land at Tempe (**Section 6.4** and **Figure 19**).

Alexandra Canal sediments are contaminated and could be disturbed during construction and operation

The stormwater system for the project includes installing outlets within and discharging to the Alexandra Canal. The bed sediments of Alexandra Canal are highly contaminated as a result of discharges and runoff from polluting industries since the 1800s and have the potential to present a significant risk of harm to human health and the environment if disturbed. A Remediation Order is in place which requires a plan to be prepared and approved by the EPA before any works or activities can be carried out which would cause disturbance to the bed sediments.

Submissions

Community submissions

Key issues raised in community submissions included:

- construction methodology for Alexandra Canal Works;
- insufficient assessment of potential PFAS impacts and mitigation; and
- contamination remediation works may impact neighbouring properties.

Council and Government Agency submissions

Inner West Council raised concern at the ongoing ownership and management of the Tempe landfill once construction is completed, given potential legacy issues and associated costs that may be incurred. Council requested additional assessment of contaminants in the landfill and recommend replacement of the leachate management system post construction.

Bayside Council requested involvement in the review of management and remediation plans prior to construction commencing, and that transfer of any contaminated soils within the project footprint occur in line with the appropriate guidelines.

Sydney Water raised concern over potential mobilisation of bed sediments in Alexandra Canal and the need to comply with the NSW EPA's Remediation Order for impacts to Alexandra Canal sediments. It requested protection of Sydney Water assets from any contamination impacts and involvement of the site auditor in the remediation process.

Environment Protection Authority recommended measures to manage the risk from contaminated soils, including provision of management plans for the Tempe landfill, and the appropriate framework for undertaking land remediation for affected sites.

Consideration

Contamination can be managed through remediation, existing remediation orders and auditing

The Proponent has committed to implementing a suite of ongoing management and mitigation measures, such as site-specific remediation action plans, additional site investigations and strategies for the management, monitoring and treatment of contaminated soil and groundwater. The Department supports the Proponent's commitments and has reinforced these measures in the recommended conditions of approval that include a management sub-plan for contaminated sediments in Alexandra Canal and contamination and remediation action plans for all contaminated areas within the project footprint. These plans must be consistent with the existing remediation orders for the former landfill site and Alexandra Canal. In addition, the Department has recommended that a NSW EPA accredited site auditor review these plans and provide a site audit statement, once all contamination management and remediation works are completed, verifying that the project site is suitable for the intended land uses.

Regarding the emplacement mound, the Proponent indicated that the mound will be capped and measures will be implemented to minimise any impacts on the integrity and stability of the underlying landfill. This will include a settlement and slope stability analysis to ensure that the mound is designed such that the long-term stability of the capping layer is maintained. The Department supports this approach.

Once the project is operational, the Proponent would be responsible for the ongoing monitoring and maintenance of project infrastructure, including roadway, the emplacement mound and any additional environmental management infrastructure within the road corridor to manage landfill contamination risk. Inner West Council is responsible for the long-term management of Tempe Landfill in accordance with a revised Environmental Management Plan prepared by the Proponent in consultation with Council.

Leachate from the Tempe landfill can be managed and offsite migration avoided

The Proponent will assess the condition of the existing leachate collection and treatment system and undertake any upgrades required to collect and treat any additional volumes of groundwater generated as a result of excavation. As noted above, there is the potential for excavation works to damage / compromise the leachate management system and bentonite wall. The Department has recommended conditions requiring the Proponent to establish a monitoring bore network to monitor any leachate movement offsite and develop and implement measures for preventing offsite migration.

Offensive and nuisance odours from the former landfill can be managed to minimise impacts

There is the potential for nuisance odours when earthworks are undertaken at the former Tempe landfill area. It is anticipated that existing landfill capping over the former Tempe landfill would be broken during excavation activities in the former landfill area which may release methane, hydrogen sulfide, carbon dioxide and other trace gases. Due to the uncertainty of odour impacts (as they are currently capped), the Proponent has committed to:

- preparing an odour management strategy;
- carrying out on-site odour measurements to determine odour emission rates;
- minimising the amount of odorous material exposed at any one time; and
- treating odorous material immediately to reduce odour impacts.

Due to the existing capping and the unknown odour impacts, the proposed mitigation measures are considered appropriate and are similar to approaches undertaken on other projects that impact former landfill sites such as the M6 Stage 1. To ensure odours can be effectively managed, the Department has recommended that the Proponent detail the measures that will be implemented to manage odours in a Construction Landfill Leachate, Gas and Odour Management Sub-Plan. The plan must include a process for engaging with the community in the event that nuisance odours move beyond the construction boundary and impact residents, businesses and recreational areas, while striving to not to cause offensive odour beyond the boundary of the construction footprint.

Impacts on Airport land are manageable

The Sydney Airport Northern Lands car park area on Sydney Airport land will be managed in accordance with a pre-existing environmental management plan, which identifies procedures and processes to be followed for construction works involving ground disturbance.

6.7 Surface water and groundwater management

The recommended criteria and the Proponent's committed management measures will ensure the receiving waters of the Cooks River, Mill Pond Stream and Alexandra Canal are not adversely impacted by construction and operation of the project, and that any potential risks from groundwater drawdown and settlement will be minimised to the greatest practical extent.

Issue

Groundwater is generally contaminated and will require treatment when exposed and disposed of

Excavation for the project will interact with the underlying Botany Sands Groundwater Source, an aquifer with poor water quality and contaminated plumes due to previous and current heavy industrial activities in the area. Excavation for the project is required for stormwater and drainage lines, road cuttings, piles for bridge footings and the flood detention basin in several contaminated groundwater zones including the:

- former Tempe landfill;
- Boral recycling and concrete site;
- taxi staging area south of Keith Smith Avenue (T1);
- Joint User Hydrant Installation site located at the western end of Airport Drive;
- Cooks River Intermodal Terminal; and
- Qantas Jet Base.

Groundwater in these localities exceeds the environmental values for marine water ecosystem protection for various contaminants, including arsenic, chromium, total phosphorus, manganese, naphthalene, total recoverable hydrocarbon, iron, ammonia, chloride, sodium, total dissolved solids and pH, lead and PFAS.

The assessment predicts the maximum volume of groundwater that would be dewatered from the project site is around 4,970 cubic metres per day. Based on the 40-month construction period, it is estimated that the total maximum volume of water to be extracted would be approximately 1,433,000 cubic metres.

Groundwater will be treated before disposal and is most likely to be discharged to surface water locations including the Cooks River, Mill Stream and Alexandra Canal. The Proponent has committed to undertaking further investigations into the feasibility of other management options such as reinjection and onsite reuse, to be considered in a *Dewatering Management Strategy* in consultation with the EPA and Sydney Water.

Groundwater distribution may be affected by the project

Dewatering of excavations will bring groundwater to the surface and may cause temporary drawdown of the groundwater table, altering sub-surface flows and causing migration of contaminated groundwater plumes from the Qantas Jet Base and taxi ranks on Sir Reginald Ansett Drive.

Potential settlement issues may also occur as a result of groundwater drawdown. Further, positioning of the emplacement mound and loading from the road could exert pressure on shallow groundwater resources, resulting in changes to the direction of groundwater flows.

In terms of cumulative drawdown impacts, the closest major infrastructure project to Sydney Gateway is the recently completed M8 (formerly New M5), which is about 300 metres to the north-west of the project site. Groundwater monitoring is being undertaken for this project.

Receiving waterways have poor quality

Surface water quality data indicates that the Alexandra Canal, Cooks River and Mill Stream frequently exceed the ANZECC water quality default trigger levels for the protection of marine water ecosystems

such as total nitrogen, total phosphorus, aluminium, iron, manganese, mercury, zinc and ammonia. PFAS was also detected in almost all samples. Sediment erosion and control measures would be implemented to minimise the potential for sedimentation in adjacent waterways and to ensure that all contaminated water flows are separated from clean overland flows. All contaminated surface runoff would be collected and treated prior to discharge to Mill Stream and Alexandra Canal.

Submissions

Community submissions

Submissions requested additional groundwater assessment be undertaken to demonstrate that the project would not impede remediation of existing groundwater contamination beneath areas of the airport including the Qantas Jet Base.

In terms of water quality, key issues raised in public submissions included:

- use of incorrect water quality objectives;
- options for the reuse of construction water; and
- Alexandra Canal and Mill Stream not achieving the relevant Botany Bay Water Quality Improvement Program targets for operational pollutant load reductions.

Council and Government agency submissions

Inner West Council raised concerns about the potential changed pathways of contaminated groundwater due to excavation to the north-east of Tempe Tip, and potential for works to draw contaminated groundwater from the airport and other areas towards Inner West Council land. Council recommend consideration of *Botany Bay and Catchment Water Quality Improvement Plan* goals, including introduction of full-time water quality monitoring to ensure all impacts on the Cooks River and Tempe Wetlands are controlled.

EPA requested details of the potential measures to minimise pollution from groundwater ingress, treatment of groundwater and contaminated runoff, as well as the potential impact of wastewater discharges on the environmental values of the receiving waterways. It noted that the impact of wastewater discharge was not adequately assessed.

Sydney Water raised concerns about the safety and protection of its assets from construction and operational water discharges. It requested that it be consulted during the design, construction and operation phases to ensure protection of its assets.

EESG questioned the need to discharge groundwater water directly into Mill Stream noting the potential impacts to the Botany Bay receiving environment have not been assessed.

DPIE Water requested a number of measures, including development of a Construction Groundwater Management Plan and monitoring bores.

Consideration

Groundwater drawdown and changes to groundwater flow directions are not significant but will be monitored

The assessment indicates there is a reasonably low likelihood of groundwater drawdown and associated settlement given the short time frames of exposure and relatively minimal scale of excavations. The Proponent has committed to undertake further modelling of groundwater drawdown

and settlement during detailed design, whereby measures to reduce settlement will be confirmed. Other commitments include use of construction techniques such as sheet piling and dynamic compaction to minimise settlement risk. To ensure the risks are further minimised and to track potential changes in groundwater flows, the Department recommends the Proponent undertake groundwater monitoring during both construction and operation to monitor groundwater quality and drawdown. Monitoring must be undertaken adjacent to the former Tempe landfill and within the Botany Bay aquifer to gauge any effects of physical compaction on groundwater resources.

Construction groundwater will be treated prior to discharge and the quality of receiving waters protected through strict water quality discharge criteria

Whilst the Department agrees that the scale of excavations is minimal in comparison to other motorways projects, there is the potential for contaminated groundwater to be brought to the surface during excavations at high volumes and pressures. Based on advice from the EPA, the Department has recommended a condition prohibiting the discharge of groundwater generated through dewatering directly to surface waters unless approved through an Environment Protection Licence.

As noted above, the Proponent has committed to treating extracted groundwater prior to discharge. To address EPA's concern regarding inadequate assessment of wastewater discharges, the Department has recommended strict water quality discharge criteria for construction water treatment plants to ensure that water quality in the receiving environments, such as Mill Stream Creek, is not detrimentally impacted and that aquatic ecosystems are afforded appropriate protection. The criteria have been developed in consultation with the EPA and are consistent with the Australian and New Zealand guidelines for fresh and marine water quality.

6.8 Other issues

The Proponent assessed the potential impacts of the project in relation to Aboriginal heritage, air quality, health and safety, hazards and risk, flooding, waste, climate change and sustainability. The Department considers that the Proponent has adequately assessed these issues and that they can generally be managed through the Proponent's environmental management measures and the conditions of approval.

Table 10 summarises the Department's consideration of these issues and any recommended conditions.

Table 10 | Department's consideration of other issues

Issue	Findings	Recommendations
Aboriginal heritage	<p>The project site is highly disturbed and no registered Aboriginal sites or objects are located within the project site. The closest site, the Shea's Creek Dugong, is located about 250 metres from the project boundary.</p> <p>Two areas, predominantly located on Sydney Airport land, were identified as having a low archaeological potential to contain Aboriginal archaeological deposits as deeper soils are</p>	Conditions are recommended requiring the Proponent to address any unexpected heritage items found during excavation works.

Issue	Findings	Recommendations
	<p>likely to be undisturbed. These areas are located close to Alexandra Canal, adjacent to the rail corridor on either side of the canal.</p> <p>The Proponent has recommended a staged salvage excavation program to identify and salvage any Aboriginal objects within these two areas. The Department has considered this methodology and is satisfied that it is appropriate given the potential for high volumes of contaminated groundwater inflows into any excavation.</p> <p>The Department is satisfied that there is a low probability of any remnant Aboriginal objects or sites remaining in the project area due to this historic disturbance and that the project is unlikely to cause significant impacts to any Aboriginal objects or places.</p>	
Air quality	<p>The existing environment is characterised by elevated levels of air pollutants. The main sources of air pollutants during construction will be dust generation from bulk earthworks.</p> <p>During operation, air quality goals will generally be met and the annual mean PM₁₀ would be below the NSW impact assessment criterion of 25 µg/m³ at most receptors (99.7 per cent), with only two receptors experiencing concentrations just above the criterion in any scenario. Annual mean PM_{2.5}, 24-hour PM₁₀ and PM_{2.5} are predicted to exceed air quality goals as existing background levels of these pollutants already exceed air quality goals.</p> <p>The human health risk assessment indicates that the risk of increases in pollution concentrations impacting human health are predicted to be below the threshold risk level change of 1 in 10,000. As such, the risk of human health impacts resulting from the operation of the project are considered acceptable. Further, there are no predicted chronic risk issues for the local community consequent to the operation of the project.</p> <p>The Proponent has committed to preparing a Construction Air Quality Management Plan, to manage dust generation. The management of dust during construction is a common issue for all linear infrastructure projects and it is considered that standard practice measures are appropriate to suppress dust.</p>	<p>A condition has been recommended requiring the implementation of measures to reduce nuisance dust.</p> <p>There are also conditions relating to the management of odours and contaminated material.</p>

Issue	Findings	Recommendations
Biodiversity	<p>Past land use has resulted in the degradation and fragmentation of the once widespread Botany wetlands to the point where the viability of small pockets of native vegetation is poor without significant intervention.</p> <p>The project would remove around 23.14 hectares of highly disturbed and fragmented vegetation with limited or no native vegetation. No areas containing native vegetation (total of 0.91 hectares) meet the definition of a threatened ecological community under the <i>Biodiversity Conservation Act 2016 Act</i> (BC Act) or <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act).</p> <p>The Eastern Bentwing Bat listed under the BC Act and the Grey-headed Flying-fox listed under both the BC Act and the EPBC Act were recorded in the area. Up to 5.72 hectares of potential foraging habitat including 0.87 hectares of Swamp Oak forest and planted fig, eucalyptus and exotic forage trees along Qantas Drive, would be cleared. A further 18.32 hectares of highly disturbed weed dominated vegetation would be cleared that may also provide foraging habitat for the Eastern Bentwing Bat.</p> <p>The loss of potential foraging habitat within the highly disturbed environment is likely to have a minimal impact to the Grey-headed Flying-fox and the Eastern Bentwing Bat given they are highly mobile species and unlikely to rely on the fragmented vegetation for their survival. Higher quality foraging habitat is present in the wider locality (for example, Wolli Creek and Centennial Park).</p> <p>Surveys completed found no evidence of microchiropteran bats using the bridge over Alexandra Canal as a roosting site. Pre-construction surveys are proposed, as part of a Construction Biodiversity Management Plan, to confirm roosting habitat and the presence of microchiropteran bats. A condition requiring that a roost search is undertaken of built structures in accordance with an appropriate survey methodology prior to construction has been recommended, in accordance with advice from EESG.</p> <p>The Department considers biodiversity impacts can be adequately managed by the Proponent's proposed mitigation measures, including limiting the impact to vegetation to only that needed for the project and implementing protocols to prevent and minimise the spread of weeds, and recommended conditions.</p>	<p>The Department has recommended conditions requiring the Proponent to:</p> <ul style="list-style-type: none"> • use local native species for revegetation with consideration of the NASF Guideline C: Managing the risk of wildlife strikes in the vicinity of airports; • include measures to maximise canopy cover and vegetation growth beneath bridge structures; • provide a net increase in trees and tree canopy consistent with the relevant councils' plans, programs or strategy's for vegetation management and landscaping; and • reuse suitable timber and root balls in habitat enhancement and rehabilitation work in consultation with the local community and relevant public authorities.

Issue	Findings	Recommendations
Flooding	<p>The project may increase flood levels and alter flooding behaviour both temporarily and permanently in the vicinity of the surface works.</p> <p>During construction, it has been identified that several commercial and industrial properties on both sides of the Alexandra Canal will experience increased inundation of up to 30 mm during the 1% AEP event areas upstream of the Botany Rail Line. As the area already experiences inundation during the 1% AEP event, the Proponent has committed to undertaking floor level surveys at this area.</p> <p>New roads will be designed to be above the 10% AEP flood event and where possible, above the 1% AEP. New roads that are not able to be designed above the 1% AEP are constrained by Sydney Airport's OLS height limits.</p> <p>During operation, some areas within Sydney Airport are expected to experience inundation of 30 mm during the 1% AEP event due to the raising of Qantas Drive. The Proponent has committed to undertaking floor level surveys in this location.</p> <p>The Department is satisfied that the Proponent's preparation of a Flood Management Strategy, in consultation with Sydney Airport Corporation, Sydney Water, NSW State Emergency Services and relevant councils, and floor level surveys of at-risk areas will be suitable to identify any further site-specific mitigation that may be required. Further, the Department has recommended limits on flood inundation levels, including no inundation of floor levels which are currently not inundated in a 1% AEP flood event.</p>	<p>Conditions recommended which place limits on flood inundation levels, including no inundation of floor levels which are currently not inundated in a 1% AEP flood event.</p>
Health and safety	<p>The assessment identified air quality, noise and vibration and construction fatigue as potential risk factors to health and safety as a result of the project.</p> <p>The health assessment did not recommend any additional mitigation measures beyond those already proposed to address noise, air quality, contamination, urban design, and social and economic impacts.</p> <p>The Department is satisfied that health and safety risks can be minimised through the Proponent's proposed mitigation measures.</p>	

Issue	Findings	Recommendations
Soils	<p>Acid sulfate soils may be encountered during piling for bridge piers, excavation for stormwater drainage, utility works and outfall connections to Alexandra Canal. Additionally, dewatering for road construction could result in localised drawdown of the groundwater table which could temporarily expose potential acid sulfate soils to air.</p> <p>Excavation and piling would occur within areas of high salinity potential for in the vicinity of the Terminal 1 connection, St Peters Interchange connection, Qantas Drive and terminal links. High salinity soil can have detrimental impacts to vegetation and to concrete and steel.</p> <p>Further investigations would be undertaken within areas of medium and high acid sulfate soil potential, as well as salinity potential, during detailed design and a management plan developed in accordance with the Acid Sulfate Soils Assessment Guidelines. This is standard industry practice and an acceptable approach to managing construction within areas identified as containing acid sulfate soils or saline soils.</p>	
Hazards and risk	<p>The assessment notes there are risks from the use and transportation of hazardous and dangerous goods, proximity to major utilities and pipelines, emergency vehicle movements and the threat of fire, for both the pre-construction and main construction phases of the project.</p> <p>The Department considers that the identified hazards and risks during construction can be adequately managed by adhering to relevant regulations, policies, standards and legislation, and the implementation of emergency management plans including determining the sensitivity of each pipeline to vibration in consultation with the relevant pipeline owners.</p> <p>Potential operational hazards and risks generally relate to traffic incidents and can also be managed through the implementation of relevant regulations and standards and emergency management plans and response procedures developed specifically for the operation of the project.</p>	
Resource use	<p>The Proponent has committed to minimising the use of non-renewable resources through making accurate predictions of materials quantities, avoiding unnecessary resource consumption, incorporating reuse material within design elements, and purchasing a minimum of 20 per cent of construction phase energy and a minimum six per cent of operational phase</p>	

Issue	Findings	Recommendations
	energy from an accredited GreenPower provider. The Department considers these practices would reduce resource consumption.	
Waste	<p>Waste generated during construction is predominantly from site preparation, demolition, construction of road infrastructure and landscaping, with excavated material (spoil) having the largest volume. Contaminated waste is considered in Section 6.6.</p> <p>All waste created by the project would be managed in accordance with relevant waste provisions within <i>Protection of the Environment Operations Act 1997</i>. The Department considers that waste generation and management can be adequately managed by the Proponent's proposed mitigation measures, including the standard waste management practices of reduce, reuse and recycle and recommended conditions.</p>	Recommended conditions for handling, reuse and disposal of waste.
Climate change	<p>The assessment has identified frequency and intensity of rainfall and sea level rise as an extreme risk to the project, while increased maximum temperatures and wind speed have been identified as having a medium risk to the project as a result of climate change.</p> <p>The Department has considered the Proponent's proposed mitigation and adaptation measures included into the project design (including addressing greenhouse gas emissions in the Sustainability Management Plan and the urban heat island effect in the Urban Design and Landscape Plan) and accepts that these would adequately address the risks of Climate Change</p>	
Sustainability	<p>The Proponent commits to meeting the Infrastructure Sustainability Council of Australia's (ISCA) Infrastructure Sustainability (IS) Rating Tool rating of 'excellent'. This would be achieved through a Sustainability Management Plan which outlines project-specific initiatives to be implemented during detailed design, construction and operation.</p> <p>The Department considers these measures to be appropriate and supports the Proponent's commitment to achieving a rating of 'excellent'.</p>	The Department has recommended the preparation of a Sustainability Strategy to achieve a minimum excellent 'Design' and 'As built' rating under the ISCA rating tool.

7 Evaluation

The Department has reviewed the EIS/pdMDP and Submissions Report and assessed the key issues arising from construction and operation of the project. This has included consideration of:

- advice from relevant government agencies and councils;
- key strategic government policies and plans;
- the relevant matters and objects of the EP&A Act; and
- principles of ESD.

The ability to manage impacts and the social benefits of reduced congestion and heavy vehicles on local roads, coupled with the regional transport benefits, are the reasons that the project is considered to be in the public interest and should be approved subject to conditions.

The project is consistent with key government policies and strategies including:

- *Australian Infrastructure Plan* (Infrastructure Australia, 2016) and the *Infrastructure Priority List* (Infrastructure Australia, 2019);
- *Future Transport Strategy 2056* (Transport for NSW, 2018);
- *State Infrastructure Strategy 2018-2038* (NSW Government, 2018);
- *NSW Freight and Ports Plan 2018-2023* (NSW Government, 2018);
- *A Metropolis of Three Cities – the Greater Sydney Region Plan* (Greater Sydney Commission, 2018);
- *Eastern City District Plan* (Greater Sydney Commission, 2018);
- *Greater Sydney Services and Infrastructure Plan* (Transport for NSW, 2018);
- *Sydney Airport Master Plan 2039* (SACL, 2019); and
- *NSW Ports 30 year Master Plan* (NSW Ports, 2015).

The project would create around 1,000 full time jobs during construction and support the efficient distribution of freight to and from Sydney Airport and Port Botany. The project would improve the connectivity of Sydney Airport terminals and the Sydney Motorway network and reduce congestion and heavy vehicle movements on the local road network including through St Peters, Tempe and Mascot.

The Proponent has identified a range of environmental management measures which it has committed to applying to the project to address the identified environmental impacts. The Department is satisfied that the issues raised in submissions have been appropriately considered and responded to by the Proponent.

The recommended conditions are aimed at improving the engagement with the community, the level of environmental management and reducing potential impacts, particularly those related to out-of-hours work during construction and place making.

The project also requires approval under the the *Airports Act 1996* (Cth) and building activity approvals under the *Airports (Building Control) Regulations 1996*. Any intrusions into the prescribed airspace around Sydney Airport also require approval as a controlled activity under the *Airports Act 1996* and *Airports (Protection of Airspace) Regulations 1996*.

8 Recommendation

It is recommended that the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report;
- **accepts and adopts** the findings and recommendations in this report as the reasons for making the decision to approve the application;
- **considers** any advice provided by the Minister having portfolio responsibility for the project;
- **agrees** with the key reasons for approval listed in the Notice of Decision;
- **grants approval** for the application in respect of SSI 9737 as amended, subject to the conditions in the attached project approval; and
- **signs** the attached project approval and recommended conditions of approval.

Recommended by:



Belinda Scott

Senior Planning Officer

Transport Assessments

Recommended by:



Glenn Snow

Director

Transport Assessments

9 Determination

The recommendation is **Adopted** / ~~Not adopted~~ by:



The Hon. Rob Stokes MP
Minister for Planning and Public Spaces

Appendices

Appendix A – List of referenced documents

Department of Infrastructure, Regional Development and Cities (DIRDC), 2018. *Statistical Report – Aviation Domestic Aviation Activity 2017*.

Ernst & Young, 2011. *Port Botany – Sydney Airport Precinct Scoping Study*, prepared for Infrastructure NSW.

Greater Sydney Commission, 2018. *A Metropolis of Three Cities – the Greater Sydney Region Plan*.

Greater Sydney Commission, 2018. *Eastern City District Plan*.

Infrastructure Australia, 2016. *Australian Infrastructure Plan*.

Infrastructure Australia, 2019. *Infrastructure Priority List*.

NSW Government, 2018. *State Infrastructure Strategy 2018-2038*.

NSW Government, 2018. *NSW Freight and Ports Plan 2018-2023*.

NSW Ports, 2015. *Navigating the Future – NSW Ports’ 30 Year Master Plan*.

Sydney Airport Corporation Limited (SACL), 2019. *Sydney Airport Master Plan 2039*.

Transport for NSW, 2018. *Future Transport Strategy 2056*.

Transport for NSW, 2018. *Greater Sydney Services and Infrastructure Plan*.

Transport for NSW, 2019. *Sydney Gateway Road Project Environmental Impact Statement/ Preliminary Draft Major Development Plan – Parts A to C*.

Transport for NSW, 2020. *Sydney Gateway Road Project Response to Submissions Report*.

Appendix B – Environmental Impact Statement

<https://www.planningportal.nsw.gov.au/major-projects/project/10156>

Appendix C – Submissions

<https://www.planningportal.nsw.gov.au/major-projects/project/10156>

Appendix D – Response to Submissions Report

<https://www.planningportal.nsw.gov.au/major-projects/project/10156>

Appendix E – Independent Traffic and Transport Review

Appendix F – Community Views

The key issues raised by the community and considered in the Planning Secretary's Report include strategic context and project need, traffic and access, land use and place making, active transport, noise and vibration, management of contaminated sites, business impacts, air quality, biodiversity, climate change and resource use, water quality and construction fatigue.

Issue	Consideration
<u>Strategic context and project need</u> <ul style="list-style-type: none"> Lack of demonstrated project need and justification Project does not align with policies and plans for active transport Project should be funded by user pays (tolls) and not public money Improved public transport should be provided instead of a roadway 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> The project is consistent with Commonwealth and State strategic planning and transport documents. <p><i>Recommended Conditions/Response</i></p> <p>Conditions include:</p> <ul style="list-style-type: none"> No conditions are required.
<u>Traffic and access</u> <ul style="list-style-type: none"> Need for enhanced public and active transport and decreased station access fees Concern over the use of local roads by construction traffic Construction road changes resulting in traffic delays and access impacts with potential flow-on effects to local businesses Impacts on access for local residents Construction worker parking on local streets 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> Heavy vehicle movements will largely be restricted to arterial roads, with the only local road identified for use by heavy vehicles being Bellevue Street. There will be traffic impacts during construction, however these impacts can be mitigated through careful planning of construction works aimed at minimising disruption to traffic flows and implementation of standard traffic management measures. There will be a shortfall in on-site worker parking with workers potentially occupying available on-street parking. Access to properties not required for construction would generally be maintained at all times. Where some temporary impacts are unavoidable, consultation would be undertaken with the occupant to ensure that alternative access is available or the impact minimised. <p><i>Recommended Conditions/Response</i></p> <p>Conditions include:</p> <ul style="list-style-type: none"> Restrictions on the use of local roads by heavy vehicles used for spoil haulage and concrete deliveries. Requirements for road dilapidation surveys and repairs. Preparation and implementation of a Construction Parking and Access Strategy to manage impacts from construction worker parking. Requirement to maintain pedestrian and vehicular access and to minimise impacts where disruptions cannot be avoided.

Land use, place making and active transport

- Extent and location of shared pedestrian and cycle pathway along Alexandra Canal once the project is operational
- Impacts on pedestrian and cyclist access during construction
- Design of the proposed temporary and permanent active transport links
- Connectivity to other local active transport networks and destinations, including to Sydney Airport
- Consistency of the proposed active transport link with NSW Government and local council strategic planning for cycling and active transport
- Future use of residual land
- Loss of public open spaces during construction and operation
- Impacts on Tempe dog park including temporary relocation during construction and potential future location during operation of the project
- Impact of construction lighting on residents
- Decrease in tree canopy

Assessment

- Active transport links along Alexandra Canal, Qantas Drive and from Tempe via a crossing on Airport Drive and Link Road will be impacted by construction and operation. The Proponent has recommended alternative routes to minimise impacts.
- Safe pedestrian and cyclist access will be maintained during construction.
- A new active transport link will be provided on the western side of Alexandra Canal to offset the loss of the existing Alexandra Canal Cycleway.
- Approximately 2.6 hectares of existing public open space including a dog park, would be impacted.
- The provision of around 4.3 hectares of land to Inner West Council upon completion of construction will enable extension of the existing parklands at Tempe. This equates to an approximately 1.7 hectare increase in land available for open space compared to the existing situation.
- Future use of residual land provided to Inner West Council will be determined through its Master Planning Process.

Recommended Conditions/Response

- To provide an active transport link between T1 and T2/T3 prior to operation.
- The existing Coward Street active transport link must be audited and refurbished.
- Provision of a temporary dog park in Tempe Reserve during construction until a permanent dog park is reinstated on Tempe Lands in consultation with Inner West Council.
- Preparation and implementation of a Place, Design and Landscape Plan (PDLP) in consultation with the community and relevant councils.
- Review of the PDLP by independent practitioners experienced in public art, heritage, open space and landscape architecture and active transport.
- Requirements for minimising light spillage to surrounding properties.
- The project must provide a net increase in publicly accessible and useable open space and in trees and tree canopy.

Noise and vibration

- Construction noise associated with heavy vehicle movements and out-of-hours works
- Construction vibration impacts on buildings, sensitive equipment and infrastructure

Assessment

- Construction noise and vibration impacts in a highly developed urban, industrial and commercial environment are unavoidable.
- The complex construction environment with Sydney Airport, major arterial roads to and around the airport,

- Operational traffic noise impacts on residents
- Cumulative noise impacts during construction and operation

and the Botany Rail Freight line necessitates overnight work for personnel, public and aircraft safety.

- Active and ongoing consultation, flexibility in construction techniques, at-source and at-property mitigation, and coordinating and scheduling work to provide respite can be applied to manage impacts.
- Operational traffic noise impacts of up to 13 dB will be experienced at residents in South and Smith Streets, Tempe and up to 3 dB in Baxter Street Mascot and areas west of O’Riordan Street.
- Increases in ground-based aviation noise from removal of shielding would increase noise up to 3 dB at Tempe and 16 dB near O’Riordan Street Mascot.
- A noise wall at Tempe and at-property treatments are proposed to mitigate operational traffic noise impacts.
- Daytime construction noise managed using industry best practice underpinned by a robust community consultation strategy.

Recommended Conditions/Response

- Out-of-hours works would be approved and regulated through an Environment Protection Licence or Out-of-Hours Work Protocol for work that cannot be performed during standard construction hours.
- Respite from construction must be provided.
- Additional mitigation such as temporary alternative accommodation or other agreed mitigation measures must be considered for out-of-hours work planned for more than two nights over a seven-day rolling period.
- Operational at-property noise mitigation to be provided within six months of commencement of construction at properties identified as eligible for receiving treatment and which would experience construction noise impacts at levels above specified noise management levels.
- An Operational Noise and Vibration Review to confirm efficacy of operational noise and vibration control measures.

Management of contamination

- Excavation and management of contaminated materials, especially at the former Tempe landfill site
- Location of soil emplacement mounds

Assessment

- Construction on contaminated lands, including the former Tempe landfill and Alexandra Canal, has the potential to result in migration of leachate and contaminated groundwater, the generation of offensive odours and resuspension of contaminated bed sediments.
- An emplacement mound containing contaminated material would be located within the project footprint at Tempe and capped and managed to minimise impacts on the integrity and stability of the underlying landfill.

- Contamination can be managed through remediation and auditing.
- Once the project is operational, the Proponent would be responsible for the ongoing monitoring and maintenance of project infrastructure, including roadway, the emplacement mound and any additional environmental management infrastructure within the road corridor to manage landfill contamination risk. Inner West Council is responsible for the long term management of Tempe Landfill in accordance with a revised Environmental Management Plan prepared by the Proponent in consultation with Council.

Recommended Conditions/Response

- Preparation and implementation of management plans for contaminated land to be reviewed by an EPA accredited site auditor, including plans for the management of leachate and odour from the Tempe Landfill.
- Establishment of a groundwater monitoring bore network to monitor for any leachate movement offsite, migration of contaminated groundwater plumes and groundwater drawdown.

Business impacts

- Reduction in storage capacity for empty shipping containers
- Land acquisition
- Impacts on access to local businesses and airport related operations due to construction and road changes
- Project does not include ramps at Canal Road, Mascot to connect to the Cooks River Intermodal

Assessment

- There is limited spare capacity available in existing empty container parks in Sydney.
- The Proponent is working with industry participants and shipping lines to explore options for the relocation/removal of approximately 5,000 Twenty-Foot Equivalent Units (TEU) that cannot be relocated to Tyne Container Services' Punchbowl or Molineux Point sites to ease capacity for the whole market.
- A number of businesses are required to relocate or close with similar facilities and services available in the Sydney Region.
- The project would result in changes to the road network during construction.

Recommended Conditions/Response

- The design of the project must not preclude the construction of ramps at Canal Road or a future rail turn out facility associated with the Cooks River Intermodal Terminal.
- Measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties.

Air quality

- Odour emissions from the former Tempe landfill during construction
- Generation of nuisance dust during construction

Assessment

- The main sources of air pollutants during construction will be dust generation from bulk earthworks.
- Construction on the former Tempe landfill has the potential to result in the generation of offensive odours.

- Increased volume of vehicular emissions during operation due to larger volumes of cars using the roadway

- During operation, air quality impacts would be redistributed, and air quality goals would generally be met.

Recommended Conditions/Response

- Monitoring of landfill gas and odour emissions.
- Preparation and implementation of a management sub-plan to minimise landfill gas emissions and odour generation beyond the boundary of the construction footprint.
- Construction dust impacts would be managed through standard dust suppression measures.

Biodiversity

- Clearing of native vegetation
- Impacts on Tempe Wetlands

Assessment

- Around 23 hectares of highly disturbed and fragmented vegetation would be removed containing limited or no native vegetation.
- No areas containing native vegetation (total of 0.91 hectares) meet the definition of a threatened ecological community under the *Biodiversity Conservation Act* or EPBC Act.
- Vegetation to be removed may provide potential foraging habitat for the Grey-headed Flying-fox and the Eastern Bentwing Bat. The species are highly mobile and unlikely to rely on the fragmented vegetation for their survival.
- Higher quality foraging habitat is present in the wider locality such as Wolli Creek and Centennial Park.
- Microchiropteran bats may use buildings and bridge structures as roosting sites.

Recommended Conditions/Response

- Use of an appropriate survey methodology to search for potential microchiropteran roosts prior to construction.
- Revegetation to maximise tree canopy and use of local native species with consideration to the *NASF Guideline C: Managing the risk of wildlife strikes in the vicinity of airports*.
- Reuse suitable timber and root balls in habitat enhancement and rehabilitation work in consultation with the local community and relevant public authorities.

Climate change and resource use

- Increased greenhouse gas contributions during the construction and operation of the project
- Increased urban heat island effect

Assessment

- A minimum of 20 per cent construction phase energy and six per cent operational phase energy would be sourced from an accredited GreenPower provider.
- The urban heat island effect would be addressed through the Urban Design and Landscape Plan.

- Project encourages the use of motor vehicles rather than public and active modes of transport

Recommended Conditions/Response

- Revegetation to maximise tree canopy and use of local native species with consideration to the *NASF Guideline C: Managing the risk of wildlife strikes in the vicinity of airports*.
- Achieve a minimum excellent 'Design' and 'As built' rating under the Infrastructure Sustainability Council of Australia Infrastructure rating tool.

Water quality

- Discharges to Alexandra Canal and impacts on water quality

Assessment

- Groundwater generated from dewatering of excavations and leachate from Tempe Landfill is expected to contain contaminants.
- Groundwater from dewatering and other wastewater would be treated prior to discharge.

Recommended Conditions/Response

- Discharge criteria set in accordance with the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.

Construction fatigue

- Three years of construction impacts to communities already affected by construction
- Health impacts on vulnerable communities
- Cumulative construction impacts from multiple projects

Assessment

- Cumulative construction impacts and construction fatigue associated with the concurrent and consecutive construction works for nearby infrastructure projects is likely for residents in St Peters, Tempe, Mascot.
- A key contributor to fatigue is the need for night work and reduced periods of respite, particularly where work extends into current airport curfews.

Recommended Conditions/Response

- Maximising and coordinating respite in consultation with other State significant projects and utility works.
- A three-month forward schedule of likely out-of-hours works are to be provided to the community.
- Respite from construction must be provided.
- Additional mitigation such as temporary alternative accommodation or other agreed mitigation measures must be considered for out-of-hours work planned for more than two nights over a seven-day rolling period.

Appendix G – Recommended Instrument of Approval