



Transport for NSW/Sydney Airport Corporation Limited

Sydney Gateway Road Project

Environmental Impact Statement/ Major Development Plan

Executive summary



Executive summary

Transport for NSW and Sydney Airport Corporation have sought planning approval to build new, direct road connections from the Sydney motorway network at St Peters interchange to Sydney Airport and beyond towards Port Botany.

The Sydney Gateway road project (the project) is a NSW Government priority transport project to improve access for passengers and freight, support the economy, reduce traffic congestion, and improve amenity and liveability in local centres.

The project is a critical element of the NSW Government's long-term strategy to invest in an integrated transport network and make journeys easier, safer and faster. By 2036, the project would provide capacity for an additional 60,000 vehicles per day.

This Environmental Impact Statement/Major Development Plan has been prepared to support project development, inform the community, and meet NSW and Australian Government requirements for an application for planning approval.

What is proposed?

The project comprises new and upgraded sections of road as illustrated in Figure ES.1. The project would connect Sydney Airport Terminal 1 (the International Terminal) and Terminals 2/3 (the Domestic Terminals) with each other and with the Sydney motorway network via St Peters interchange. It would also facilitate the movement of traffic towards Port Botany via General Holmes Drive. The project would provide three main routes for traffic:

- Between the Sydney motorway network and Terminal 1, and towards the M5 motorway and the Princes Highway
- Between the Sydney motorway network and Terminals 2/3, and towards General Holmes Drive, Port Botany and Southern Cross Drive
- Between Terminal 1 and Terminals 2/3.

The project also provides improved access to Sydney Airport land located on both sides of Alexandra Canal and across the Botany Rail Line.

Key features

Key features of the project include:

- New road links between Sydney Airport's terminals and the Sydney motorway network at St Peters interchange, consisting of:
 - A new elevated access viaduct and overpass from Qantas Drive into Terminals 2/3
 - Widening Qantas Drive to three lanes in each direction
 - A new access road to Terminal 1 from the Sydney motorway network via St Peters interchange
 - Four new bridges over Alexandra Canal, and new overpasses across the Botany Rail Line and Canal Road
 - New and upgraded intersections along Qantas Drive and Airport Drive
- New road links to Sydney Airport land:
 - Connecting Sydney Airport land on either side of the Botany Rail line
 - Connecting Sydney Airport's existing and proposed freight facilities on either side of Alexandra Canal

- An active transport link to maintain cycle and pedestrian connections between Tempe, Sydney Airport, the Sydney central business district and Mascot
- Other road operational infrastructure.

Location

The project is located about eight kilometres south of the Sydney central business district, in the suburbs of Tempe, St Peters and Mascot. It is located in the Inner West, City of Sydney and Bayside local government areas.

The majority of the project site is owned by the Australian Government and leased to Sydney Airport Corporation. Other land is owned by the NSW and local governments, and private landowners (including Sydney Airport Corporation).

The project location is shown on Figure ES.1.

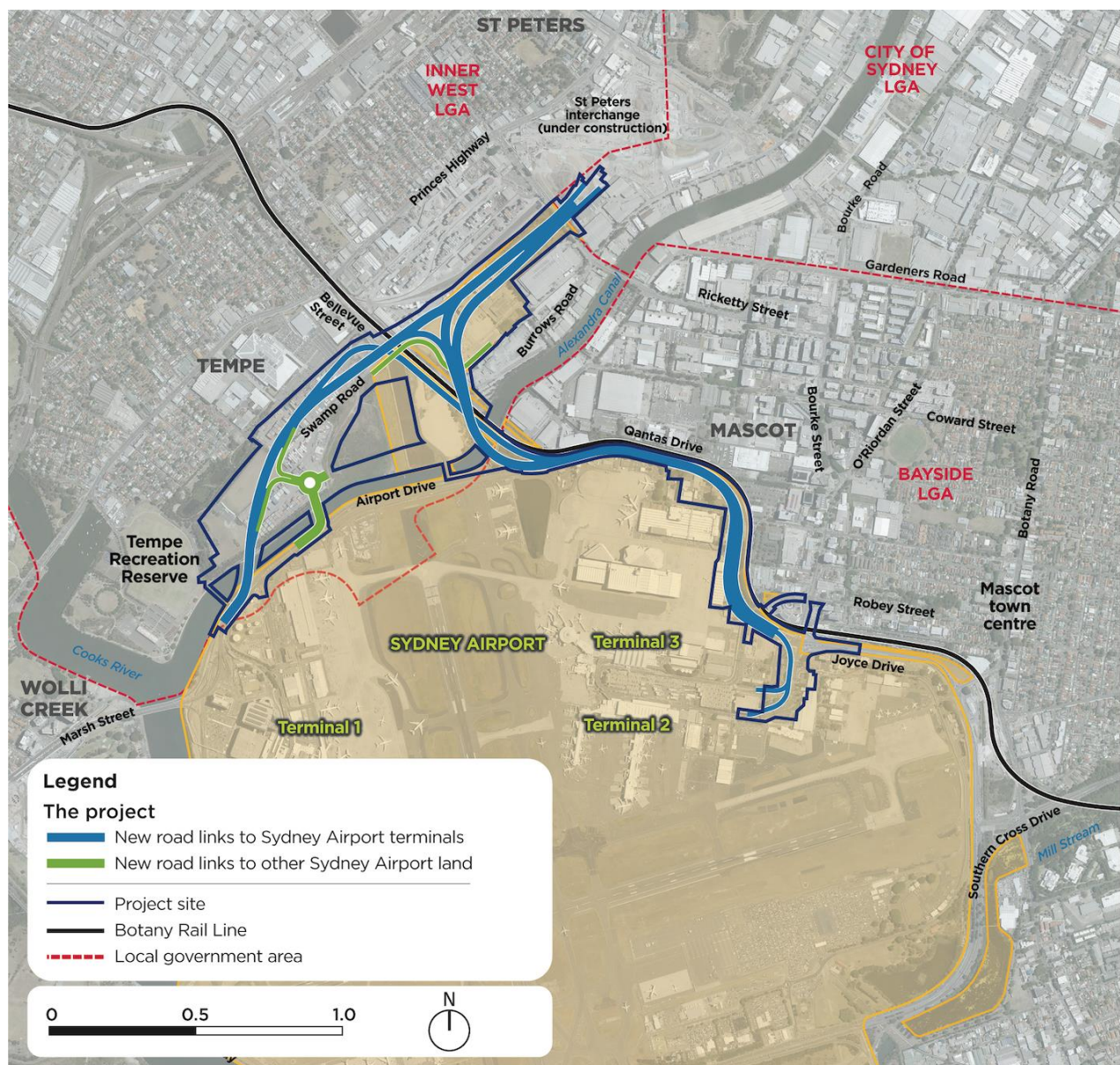


Figure ES.1 The project

What are the project objectives?

The NSW Government has committed to delivering the project to realise the full benefits of its substantial investment in the Sydney motorway network and fulfil the following project objectives:

- Improve connectivity to Sydney Airport terminals by providing high capacity direct road connections that cater for forecast growth in passenger and air freight volumes
- Support the efficient distribution of freight to and from Sydney Airport and Port Botany to logistic centres in Western Sydney
- Improve the liveability of Mascot town centre by reducing congestion and heavy vehicle movements on the local road network.

The project also needs to support the objectives of the *Sydney Airport Master Plan 2039* (the Sydney Airport Master Plan).

Why is the project needed?

The project need was identified in 2012 in the NSW State Infrastructure Strategy. Sydney Airport and Port Botany are two of Australia's most important infrastructure assets, providing essential domestic and international connectivity for people and goods. The Sydney Airport and Port Botany precinct is also the largest employment area in Sydney after the Sydney central business district, with high concentrations of airport and port related businesses that are important to the economy. As a result, high volumes of traffic access Sydney Airport and Port Botany from all over Sydney and NSW. Many of the existing roads surrounding Sydney Airport and Port Botany are already operating near or at capacity in peak periods.

Over the next 20 years, air travel, air freight, container freight and general traffic in and around the Sydney Airport and Port Botany precinct are all expected to grow significantly. This will put more pressure on roads and other infrastructure and impact local communities.

How would the project satisfy this need?

The project is proposed to put in place the necessary infrastructure to address these challenges and keep Sydney moving and growing. The project, together with the Botany Rail Duplication project, the development of the Sydney motorway network (including M4 East, New M5 and M4-M5 Link), and other key road infrastructure projects, would expand transport capacity and assist with meeting the predicted growth in passenger, freight and general traffic movements.

The project would ease congestion on the road network serving Sydney Airport and Port Botany, enhance network capacity, improve access for passengers and freight, and remove heavy vehicle traffic from Mascot's local streets, by providing new direct connections to the Sydney motorway network.

These improvements in road access would support the economy through travel time savings, improved freight efficiency, and improved traveller and visitor experience. Community benefits would include enhanced local amenity through reduction in traffic congestion and a reduction in heavy vehicles using local streets in Mascot. The project would also provide the opportunity to enhance public open space and upgrade active transport links.

The project would not preclude other freight rail and bus service improvements.

The project is consistent with the objectives and future planning needs for ground transport identified in the Sydney Airport Master Plan, and meets Sydney Airport's identified future development, growth and infrastructure needs. In particular, the project meets the Master Plan's objective to 'improve ground access to, from and past the airport'.

What is the approval process for the project?

The project is subject to approval under both NSW and Commonwealth legislation.

Parts of the project located on Commonwealth-owned land leased to Sydney Airport Corporation (Sydney Airport land) are subject to the *Airports Act 1996* (Cth) (Airports Act). In accordance with the Airports Act, these parts of the project are major airport development. A major development plan (MDP) needs to be approved by the Australian Minister for Infrastructure, Transport and Regional Development before a major airport development can be undertaken.

Parts of the project located on other land are State significant infrastructure in accordance with the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). As State significant infrastructure, these parts of the project need approval from the NSW Minister for Planning and Public Spaces. An environmental impact statement (EIS) is needed to support the application for approval for State significant infrastructure under the EP&A Act. It is noted that the project was gazetted as critical State significant infrastructure (under section 5.13 of the EP&A Act) on 15 May 2020.

This document considers the potential impacts of the project. It has been prepared to support an application for planning approval of the project in accordance with the requirements of the EP&A Act (for those parts of the project subject to the EP&A Act), and as a major airport development under the Airports Act (for those parts of the project located on Commonwealth-owned land). It also considers the potential for significant impacts to matters protected by the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), including impacts to Commonwealth land. No significant impacts have been identified.

What options were considered?

Space to build a new road link is limited by existing land uses and the complex operational requirements of key stakeholders, including Sydney Airport, airlines and freight operators, Australian Rail Track Corporation and others. Requirements for the safe operation of aircraft and existing major utilities are also significant constraints to development close to the airport.

A key goal of project development is to minimise impacts to road network operation, airport operations, transport, freight and business services during construction and operation. Sydney Airport must remain accessible for air travellers, employees and freight operators at all times during construction.

Above ground and tunnel road connection options were investigated. Tunnelling was not considered suitable in this location due to soft ground conditions, potential to cause very extensive surface disruption, and the need to pass under Alexandra Canal leading to sub-optimal road gradients.

As a result, six potential surface corridors were investigated. Differences between these six corridors included the location of bridges over Alexandra Canal, one or two main interfaces with the existing road network at Qantas Drive and Airport Drive, and maintaining or closing Airport Drive where it passes between Alexandra Canal and the end of the main runway. The preferred project alignment was selected as it best meets the project objectives, minimises impacts and supports the Sydney Airport Master Plan.

Following identification of the preferred project alignment, further work was carried out to refine the design of key project features. Design features where different options were considered include:

- Location and design of bridges – The project optimises the road network layout and the number of intersections with the existing road network. The current design includes concept bridge designs with no piers in Alexandra Canal. Any significant change to bridge designs, such as including piers, would require further environmental assessment
- Measures to minimise excavation and movement of landfill material – Project construction methods, alignment and pavement designs were optimised to minimise disturbance to the former Tempe landfill
- Route options for relocating the active transport link – The shortest and most direct alignment, along the bank of Alexandra Canal, is proposed following consultation with active transport user groups

- Access from Qantas Drive to Terminals 2/3 – Two grade-separated options to improve access to Terminals 2/3 were investigated.

What are the main community participation outcomes?

Community consultation for the project began in September 2018. Community engagement activities included door knocking, distributing fact sheets to the community, holding three community information sessions, and setting up information booths in Tempe, Wolli Creek, Mascot and Zetland. These activities were in addition to engaging with local stakeholders and government agencies through briefings and face-to-face meetings.

A range of communication channels were also established for the project, to seek input from stakeholders and communities and to support engagement. Key periods of consultation and feedback were:

- Preliminary design and project announcement (September/October 2018)
- Concept design display (May/June 2019).

Feedback and comments from the community and stakeholders were grouped into seven key themes. Active transport and environment were raised the most frequently, as illustrated in Figure ES.2. The majority of environmental issues raised related to noise and vibration, and flora and fauna.

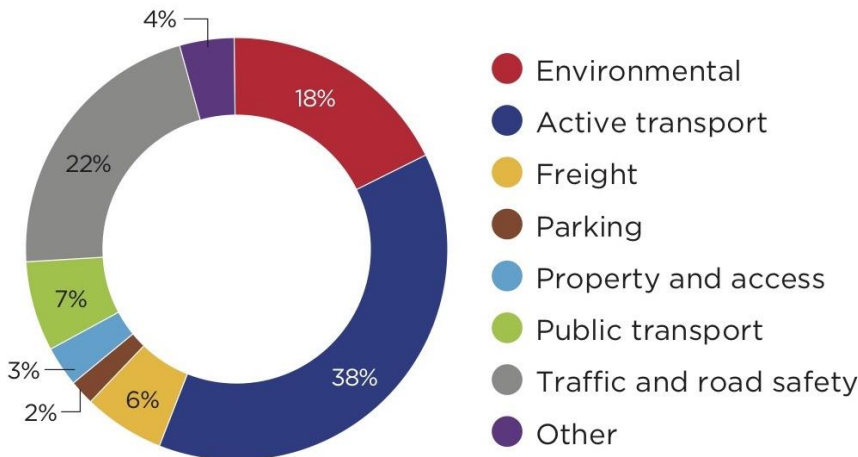


Figure ES.2 Community feedback about the project

What are the main beneficial outcomes expected?

The project alignment, concept design and construction methodology have been developed to maximise benefits and avoid and minimise impacts as far as possible.

The main benefits of the project are related to improved traffic, transport and access, including:

- Improved connectivity, access and faster travel times to and from Sydney Airport and towards Port Botany
- Travel times to Sydney Airport's terminals would substantially reduce as a result of the project. In 2026, travel time improvements of up to 23 minutes are forecast, increasing to up to 30 minutes in 2036 compared to existing alternate routes through Mascot
- Reduced traffic on local streets in Mascot and in the Mascot town centre – daily traffic flows along O'Riordan Street and Botany Road are forecast to reduce by up to 30 per cent with the project
- Travel times to Port Botany would also substantially reduce – in 2026, travel time improvements of up to 17 minutes are forecast, increasing to more than 20 minutes in 2036 compared to existing routes
- The new access roads to Sydney Airport land would facilitate proposed developments under the *Sydney Airport Master Plan 2039* (the Sydney Airport Master Plan).

Other secondary or associated benefits of the project include:

- Potential for increased economic productivity and employment opportunities at Sydney Airport as a result of improved connectivity and access, contributing to the future economic productivity and efficiency of the airport itself, as well as that of businesses on Sydney Airport land
- Facilitating delivery of key planning directions in the Sydney Airport Master Plan by delivering additional road capacity to Sydney Airport. This would have the potential to service and/or facilitate growth of airline services, aviation support facilities, freight and commercial services
- Improved access to Sydney Airport freight terminals for over-height vehicles
- Opportunities to redevelop residual lands (up to about 10 hectares) in Tempe for other uses, including open space and community infrastructure (subject to future planning by Inner West Council).

If the project is not built, the full connectivity benefits of development of the Sydney motorway network would not be realised.

What are the main adverse outcomes expected?

The project has been designed to avoid and/or minimise environmental and social impacts. However, there would still be some temporary and permanent impacts during construction and operation. Key potential impacts are summarised below. With implementation of the mitigation measures identified in this document, none of the identified impacts are considered to be significant.

Construction impacts

Key construction impacts are summarised below for the project as a whole.

Traffic, transport and access

Key potential impacts

The project can be constructed without major reconfiguration of the existing road network. However, there would be substantial works required along Airport Drive, Qantas Drive and Sir Reginald Ansett Drive and to facilitate connection of the new road links to the existing road network. Two lanes would generally be maintained in each direction along Qantas Drive and Airport Drive during Sydney Airport's operating hours when traffic volumes are highest. However, there would be a periods when the number of available lanes would need to reduce to facilitate construction. Where possible, these would be conducted during periods of lower traffic volumes.

There would be impacts to intersection performance within or near the project site, particularly in the vicinity of Terminals 2/3, which would lead to additional congestion and delays for Sydney Airport customers, commuters, public transport (buses) and freight.

Temporary changes to active transport routes, including relocation of the existing Alexandra Canal cycleway, would lead to an increase in travel distance of about 580 metres.

There would also be impacts to some car parks and parking areas on Sydney Airport land.

Key mitigation and management approaches

Prior to the commencement of construction, a Construction Traffic and Access Management Plan would be prepared as part of the Construction Environmental Management Plan (CEMP). The Construction Traffic and Access Management Plan would set out measures to manage the movement of construction-related traffic to minimise traffic and access disruptions in the public road network.

To minimise the potential for traffic and access impacts, short-term road and lane closures would be undertaken during night-time hours as far as possible. However, major crane lifts would occasionally require full weekend closures, with detours established to maintain access to Sydney Airport's terminals and satisfactory operation of the road network. Measures to manage road and lane closures would be defined by the Construction Traffic and Access Management Plan.

Construction staging and temporary work plans would be prepared to:

- Ensure access to Sydney Airport is maintained at all times during operational hours
- Stage construction on key parts of the network, such as Qantas Drive, Airport Drive and access to Sydney Airport terminals, to enable these roads to continue to function effectively.

Transport for NSW would continue to work to ensure that construction traffic, transport, and access impacts, including disruptions to customers' travel plans, access to Sydney Airport and delays to road users, are minimised.

Noise and vibration

Key potential impacts

The project includes some works that cannot be safely undertaken while Sydney Airport and the Botany Rail Line are operational. It also includes works with the potential to affect access to Sydney Airport. As a result, while works would be undertaken during the recommended standard construction working hours, there would also be a need to undertake some works during evenings, at night, and on weekends.

The noise and vibration assessment concluded that construction has the potential to impact surrounding noise sensitive receivers. Moderate exceedances of noise criteria were predicted at residential receivers outside standard construction hours, including potential sleep disturbance impacts.

Noise impacts were predicted at the nearest commercial receivers when noise-intensive equipment is used. Some hotels near Sydney Airport may experience noise impacts.

Key mitigation and management approaches

Construction noise impacts would be managed using reasonable and feasible mitigation and management measures, including scheduling of works, noise reduction measures for plant and equipment, and provision of respite periods for sensitive receivers. Construction contractors would be required to minimise time and duration of impacts to sensitive receivers and keep them proactively informed of likely timing and impacts of noisy activities.

Location and activity specific noise and vibration impact assessments would be undertaken to confirm the measures that would be implemented at each location to minimise the potential for impacts.

Airport operations

Key potential impacts

Construction would result in temporary intrusions of the protected surfaces that form part of Sydney Airport's prescribed airspace. This would include temporary intrusions into the obstacle limitation surface during the use of large equipment (such as cranes), and temporary intrusions into the high intensity approach lights for the main north–south runway.

Night lighting would be required within the specified minimum light intensity zones around the main north–south runway. This has the potential to lead to light spill and pilot distraction in some areas.

Bodies of standing water within construction areas (such as detention ponds) may attract birds, increasing the risk of wildlife strike for aircraft.

Key mitigation and management approaches

Construction planning would ensure that intrusions of Sydney Airport's prescribed airspace are minimised as far as practicable. Where temporary intrusions of the prescribed airspace cannot be avoided, works likely to result in such intrusions would be undertaken in accordance with the requirements of relevant stakeholders and any controlled activity approvals for these works. This would include timing works to avoid Sydney Airport's operational hours.

Construction lighting would be selected and located in accordance with the *National Airports Safeguarding Framework Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports*.

Drainage and flood management infrastructure would be managed during construction to minimise the risk of attracting wildlife.

Air quality

Key potential impacts

Construction would have the potential to generate dust, which could affect human health and amenity if inadequately managed. Uncontrolled dust generation has the potential to create visibility issues for aviation operations.

The project would involve works at the former Tempe landfill, which would have the potential to generate odour associated with the exposure and management of waste material. In addition, as the project would involve removing sections of the existing landfill cap at the former Tempe landfill, there is the potential for the release of trapped landfill gases resulting in increased odour potential.

Key mitigation and management approaches

In general, air quality impacts associated with dust are expected to be minor and manageable by implementing established management measures. An odour management strategy would be developed prior to construction and implemented for the duration of works involving ground disturbance at the former Tempe landfill.

An assessment would be undertaken of the potential hazards associated with landfill gas. Where the need for management measures are identified, these will be described in a remediation action plan (described below).

Contamination and soils

Key potential impacts

There is potential for contamination to be encountered in soils and groundwater. If inadequately managed, disturbance of contaminated areas has the potential to:

- Mobilise contaminants, affecting nearby soils, surface water and groundwater
- Increase the migration of contaminants into surrounding areas via leaching, overland flow and/or subsurface flow (water and/or vapour) or dust, with the potential to impact on receiving environments, such as Alexandra Canal and the surrounding community
- Increase the risk of exposure to contaminants (direct contact and/or inhalation) by site workers, visitors and the local community.

The risk of disturbing or encountering contaminated material during construction varies depending on the extent and type of contamination and the work undertaken. The key potential contamination issues identified relate to disturbance of contaminated groundwater, excavation and ground disturbance at the former Tempe landfill, and construction of stormwater outlets at Alexandra Canal.

Other potential impacts to soils include erosion and sedimentation impacts and exposure of acid sulfate soils.

The project has been designed to minimise the disturbance of the Alexandra Canal bed sediments. Structural supports and foundations associated with the bridge crossings have been located outside of the canal walls.

Key mitigation and management approaches

A Construction Soil and Water Management Plan would be prepared as part of the CEMP and implemented during construction. The plan would detail processes, responsibilities and measures to manage potential soil and water quality impacts during construction, including potential impacts associated with the presence of existing contamination, stockpile management, saline soils and acid sulfate soils.

All potentially contaminated sites and activities with the potential to generate and disturb existing contamination would be subject to detailed investigation, remediation and/or management to ensure that risks to the environment, people and future land uses are minimised. Remediation action plans would be developed (as required) outlining the remediation strategies to be implemented during construction.

In accordance with the requirements of the remediation order for Alexandra Canal, and due to the presence of contaminated sediments, a management plan would be prepared for works within the canal. The drainage outlets at Alexandra Canal would be constructed by first constructing coffer dams around the outlet locations.

Flooding

Key potential impacts

The assessment identified the potential for minor adverse impacts on flood behaviour in some areas, particularly associated with works at the St Peters interchange connection and along Qantas Drive, as the construction footprint would occupy areas of flood storage and intercept existing surface water flows from adjacent areas.

Some construction activities, work sites and compounds would be located in areas where there is an existing flood hazard. However, due to the generally small sizes of compounds and work sites relative to the size of the floodplain, there would be minimal impacts on flood hazard.

There is the potential for temporary drainage works to impact overland flow paths. This could divert or concentrate flows, potentially resulting in scouring of downstream areas, particularly where soil has been exposed during construction.

Key mitigation and management approaches

A flood mitigation strategy would be prepared and relevant measures implemented during construction. The strategy would include undertaking additional flood modelling and taking the results into account during construction planning. Detailed flooding assessments would be carried out for all project components (including ancillary facilities) that have the potential to affect flood levels or be affected by flooding. The results of the assessments would inform the flood mitigation strategy.

Surface and groundwater quality

Key potential impacts

Water quality in receiving watercourses (such as Alexandra Canal and Mill Stream) could be affected by changes to overland flows, erosion of exposed soils, runoff from contaminated soils, or discharge of untreated (contaminated) groundwater.

Construction also has the potential to affect water quality by disturbing and mobilising contaminated Alexandra Canal bed sediments, disturbing the existing capping layer at the former Tempe landfill (increasing the rate of leachate generation), and potential migration of existing contaminants in groundwater during dewatering.

The drawdown of groundwater may also lead to ground settlement.

Key mitigation and management approaches

The potential for water quality impacts would be managed by implementing standard erosion and sediment management measures, in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004). These would be guided by the Construction Soil and Water Management Plan. The plan would include a program to monitor potential surface water quality impacts.

Construction wastewater consisting of extracted groundwater and/or contaminated runoff would be sampled prior to discharge to ensure contaminant levels are below the adopted discharge criteria.

Mitigation and management measures would be implemented to reduce or eliminate the risks posed by the existing groundwater regime. These would include measures to manage dewatering of excavations, manage leachate at the former Tempe landfill, and monitor groundwater quality during construction.

Non-Aboriginal heritage

Key potential impacts

The main potential for direct impacts would be to the following items:

- Alexandra Canal (listed on the State heritage register, local environmental plans and a statutory agency section 170 registers) – impacts to the original fabric of the canal walls would occur in some locations during construction of drainage outlets
- Sydney (Kingsford Smith) Airport Group (listed on a local environmental plan and non-statutory registers) – some buildings with minor heritage significance would be removed at the Jet Base
- Cooks River Intermodal Terminal (listed on a local environmental plan and a statutory agency section 170 register) – an area in the south-eastern corner would be impacted to construct a small section of the roadway.

Key mitigation and management approaches

A Heritage Management Plan would be prepared and implemented to manage non-Aboriginal heritage and minimise the potential for impacts during construction. The plan would take into account relevant conservation and heritage management policies in the Alexandra Canal Conservation Management Plan and the Sydney Airport Heritage Management Plan. Heritage specialists would provide input into the development of the detailed design and construction methodologies to avoid or minimise potential impacts to features of heritage significance.

Aboriginal heritage

Key potential impacts

Excavation during construction has the potential to impact two areas with sub-surface Aboriginal archaeological potential (known as Investigation Areas 1 and 2) and any items located in these areas. This would occur during construction of one of the bridges over Alexandra Canal and a drainage culvert connecting to the canal. Although impacts to the investigation areas are unavoidable, it has not been confirmed whether any items of Aboriginal heritage significance are located in these areas.

Key mitigation and management approaches

Staged salvage excavation would be undertaken prior to construction within those parts of Investigation Areas 1 and 2 where deep sediments would be directly impacted by the project. This would be undertaken by qualified archaeologists with the participation of Aboriginal stakeholders. The aim of salvage excavation would be to identify whether Aboriginal heritage objects are present and, if any are found, to remove the objects from the area of potential impact.

Biodiversity

Key potential impacts

The majority of the project site is located on land that has been significantly modified by clearing and development. About 24 hectares of vegetation would be removed during construction, consisting mainly of exotic vegetation that provides limited habitat resources for native fauna. About 0.9 hectares of native vegetation would be removed.

Key mitigation and management approaches

The potential for impacts would be managed in accordance with a project-specific Biodiversity Management Plan, which would be implemented as part of the CEMP.

Land use and property

Key potential impacts

About 69.1 hectares of land would be required for construction, of which about 32.8 hectares of land would only be required temporarily. The temporary land requirements would include about:

- 16.7 hectares of Commonwealth-owned (Sydney Airport) land
- 11.9 hectares of land owned by the NSW or local government (Inner West Council)
- 4.2 hectares of privately owned land.

The project's temporary and permanent land requirements would affect about 16 properties, three parking areas and a number of advertising structures. Property acquisition would occur during the project planning and pre-construction phases.

Key mitigation and management approaches

Impacts on existing land uses and properties would be minimised as far as possible during the detailed design stage. Consultation with landholders would be ongoing to identify opportunities to minimise property impacts where practicable. Acquisition of privately-owned land or land owned by the NSW or local government would be undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW) and *Determination of compensation following the acquisition of a business* (NSW Government, undated).

Visual amenity

Key potential impacts

Construction would have the potential for visual impacts in the vicinity of work areas and from sensitive viewpoints as a result of visible elements, such as construction work areas, machinery and equipment, fencing, soil stockpiles, waste materials and partially constructed structures.

Trees would need to be removed at various locations across the project site to construct the project. This would have the potential for visual impacts where trees provide screening and contribute to the amenity and character of the local area.

Key mitigation and management approaches

Construction sites would be managed to minimise the potential for visual impacts as far as possible. A tree management strategy would be developed, including measures to offset the loss of trees and achieve a net increase in tree canopy.

Socio-economic impacts

Key potential impacts

The project's land requirements would require relocation or closure of five businesses. It would also result in the loss of empty storage container capacity on land occupied by Tyne Container Services and at the Cooks River Intermodal Terminal.

Construction would affect Tempe Lands, with land that is occupied by two community facilities in Tempe Lands required during construction (Tempe Golf Range and Academy and the off-leash dog exercise area).

Construction also has the potential to affect access, connectivity and amenity for other businesses.

Construction would directly benefit the economy, injecting economic stimulus benefits into the local, regional and NSW economies. The economic benefits of construction would include increased expenditure and direct employment associated with on-site construction activities (ranging from 400 to 1,000 workers during peak periods).

Key mitigation and management approaches

Business management plans would be prepared and implemented for businesses with the potential to be affected by the project. The plans would be developed on a case by case basis and would detail specific measures that are developed in consultation with the business owner.

Ongoing consultation would be undertaken with affected community members and business owners in accordance with the project's communication strategy.

A temporary off-leash dog exercise area would be provided as close as possible to the existing area. The exact location of the temporary area would be confirmed in consultation with Inner West Council.

Implementing relevant mitigation and management measures for other potential impacts would also minimise the potential for socio-economic (amenity) impacts. These include the Construction Traffic and Access Management Plan, Construction Noise and Vibration Management Plan, consultation with hotels to confirm facade performance, the Construction Air Quality Management Plan, and the odour management strategy.

Other issues

A number of utilities would have the potential to be affected during construction, requiring adjustment and/or protection works to avoid impacts. Adjustments and/or protection works would be carried out with the involvement of the asset owner. Impacts to utilities would be managed by implementing well established and proven mitigation and management measures.

Summary of key potential construction impacts on Sydney Airport land

A summary of the key potential construction impacts that are specific to Sydney Airport land is provided in the following table. The approaches to managing these impacts are as described above.

Issue	Key potential impacts during construction – Sydney Airport land
Traffic, transport and access	Potential congestion and delays, particularly at the intersections of Qantas Drive/Sir Reginald Ansett Drive/Joyce Drive/O’Riordan Street and Qantas Drive/Seventh Street/Robey Street, due to temporary traffic changes and road works during construction. Impacts on some parking areas with a temporary reduction in the amount of parking available.
Noise and vibration	Potential noise and vibration impacts to amenity within buildings on Sydney Airport land during use of noise-intensive equipment, demolition of buildings and vibration-intensive works. High or moderate worst-case noise impacts may occur when noise-intensive equipment is used outside hotels. High (worst-case) impacts when noise-intensive equipment is used immediately outside the Qantas Flight Training Centre in its existing location adjacent to Qantas Drive.
Airport operations	Temporary intrusions of the protected surfaces that form part of Sydney Airport’s prescribed airspace. Night lighting has the potential to lead to light spill and pilot distraction in some areas. Bodies of standing water within construction areas (such as detention ponds) may attract birds, increasing the risk of wildlife strike.
Air quality	Potential dust impacts as a result of the generation of dust during construction. Potential impact to the landfill gas venting system within the Sydney Airport northern lands car park.
Contamination and soils	Potential to disturb contamination within the Sydney Airport northern lands car park, land north of the rail corridor and Sydney Airport land along Alexandra Canal and Qantas Drive.
Flooding and water quality	Minor increase in flood inundation of between 10 and 50 millimetres during a large storm event (a one per cent AEP flood event).
Heritage	Direct impacts to elements (buildings) of the Sydney (Kingsford Smith) Airport Group that would be removed by the project. Partial and localised impact to areas with sub-surface Aboriginal archaeological potential (including potential for artefacts).
Biodiversity and trees	About 12.9 hectares of vegetation would be removed from Sydney Airport land, including 0.7 hectares of native vegetation. Trees would need to be removed from various locations on Sydney Airport land.
Landscape character and visual amenity	Potential for landscape character impacts as a result of the loss of vegetation that provides screening and contributes to the amenity and character of the local area.
Land use, property, socio-economic impacts	Temporary land requirements include the use of about 16.7 hectares of Sydney Airport land. The project’s land requirements would affect about six properties on Sydney Airport land during construction.

Operation impacts

Key operation impacts are summarised below for the project as a whole.

Traffic, transport and access

Key potential impacts

The project would improve operation of the local and regional road network in the vicinity of Sydney Airport and beyond. It would provide sufficient capacity to safely and efficiently meet the predicted demands for vehicle movements and forecast growth in passenger numbers and freight transport. The beneficial effects on traffic, transport and access are noted above under the heading 'What are the main beneficial outcomes expected?'.

Relocating the Alexandra Canal cycleway would increase the overall length of the cycleway by about 160 metres, which has the potential to result in slight increases in travel time. In addition, the assessment identified a number of connectivity gaps in the active transport network and potential opportunities to more effectively integrate existing and proposed active transport routes.

Key mitigation and management approaches

Transport for NSW and Sydney Airport Corporation would develop an active transport strategy, with the input of relevant stakeholders, to enhance active transport opportunities and guide the future provision of active transport infrastructure.

Noise and vibration

Key potential impacts

The project has been designed to include traffic noise mitigation measures. Many residential receivers in the study area are subject to relatively high existing road traffic noise. The project would introduce new sources of road traffic noise to some areas, with increases in road traffic noise levels greater than 2 dB predicted in certain areas. Around 231 residential receivers are predicted to experience noise that is higher than the operational road traffic noise criteria, with around 215 receivers predicted to experience noise level increases of greater than 2 dB.

The removal of existing buildings along Qantas Drive (at the Sydney Airport Jet Base) and the removal of containers at the Tyne Container Services site would have the potential to increase noise generated by ground-based airport activities.

Key mitigation and management approaches

Receivers predicted to experience exceedances of noise criteria would be eligible for consideration of reasonable and feasible noise mitigation.

Additional mitigation would be investigated during detailed design to minimise potential impacts where feasible and reasonable. Options to minimise potential impacts include low noise pavement, noise barriers and at-property mitigation. The preferred noise mitigation option would be determined during detailed design, taking into account whole-of-life engineering considerations and the overall social, economic and environmental effects.

Airport operations

Key potential impacts

Depending on the final form and design, the proposed emplacement mounds at Tempe Lands could have the potential for windshear and turbulence effects.

The proposed flood detention basin may attract birds, increasing the risk of wildlife strike for aircraft.

Key mitigation and management approaches

The road infrastructure and final landforms (including of the emplacement mounds) would be reviewed and refined during detailed design to minimise the potential for windshear and turbulence effects in accordance with the *National Airports Safeguarding Framework*.

Drainage and flood management infrastructure would be designed and managed to minimise the risk of attracting wildlife.

Flooding**Key potential impacts**

The project has been designed, as far as practicable, to minimise the impact of flooding on adjacent property and assets whilst also providing an appropriate flood immunity for the project. The flooding assessment determined that, once constructed, the project would have only a minor impact on flood behaviour for floods up to the probable maximum flood, with the exception of some areas within Sydney Airport land and at existing low points along Qantas Drive and Airport Drive.

Key mitigation and management approaches

The flood mitigation strategy, which would be prepared based on further design development and flood modelling during detailed design, would include measures to further minimise the potential for flooding impacts during operation.

Non-Aboriginal heritage**Key potential impacts**

The main potential for impacts on non-Aboriginal heritage during operation would be as a result of visual impacts associated with the presence of new road infrastructure. The four new bridges over Alexandra Canal would impact the heritage significance of the canal, by changing the existing 'open sky' character of the canal and surrounding landscape, and obstructing view lines towards and along the canal.

The new road infrastructure, and removal of buildings at the Sydney Airport Jet Base, would impact the heritage significance of the Sydney (Kingsford Smith) Airport Group. The buildings that would be removed visually contribute to Sydney Airport's post-war development history. The new road infrastructure, together with the removal of buildings and associated landscape elements (including mature trees), would alter the existing appearance of the Sydney (Kingsford Smith) Airport Group when viewed from Qantas Drive.

Key mitigation and management approaches

Further design refinements would be undertaken to minimise the potential impacts on the Alexandra Canal and the Sydney (Kingsford Smith) Airport Group heritage items as far as possible. The bridges over Alexandra Canal would be designed to be sympathetic to the heritage significance of the canal and minimise physical impacts on the canal.

Land use and property**Key potential impacts**

About 36.2 hectares of land would be required for the project's operational footprint. The permanent land requirements would include about:

- 20.6 hectares of Commonwealth-owned (Sydney Airport) land
- 14.1 hectares of land owned by the NSW or local government (Inner West Council)
- 1.5 hectares of privately owned land.

The project would affect about 8.5 hectares of industrial zoned land that is not subject to the Sydney Airport Master Plan, with a permanent change in land use from industrial to transport infrastructure. The project would also affect about 2.7 hectares of land zoned for open space, with a permanent change in land use to transport infrastructure. However, up to about 10 hectares of residual land could be made available for other uses following construction, including recreation and open space uses.

Key mitigation and management approaches

Impacts on existing land uses and property would be minimised as far as possible during detailed design.

Transport for NSW would continue to consult with Inner West Council regarding the future use of residual land. Transport for NSW would support and assist Inner West Council with the master planning process for these areas as appropriate, and ensure that the urban design and landscape plan for the project is consistent with the outcomes of this process.

Visual amenity

Key potential impacts

The project would introduce new elevated road infrastructure, including four new bridges over Alexandra Canal, new overpasses over Canal Road and the Botany Rail Line, and a new elevated access viaduct at Terminals 2/3. This new infrastructure would change the landscape and visual environment, and affect views at some viewpoints.

Development of the concept design, including the design of these features, has been influenced by the urban design principles that have been established for the project. These principles include creating and supporting a sense of place and a memorable sense of arrival and departure that enhances the image of global Sydney, improving multi-modal connectivity and legibility, and achieving a well-designed and sustainable environment. A detailed review and finalisation of the architectural treatment of the project's operational infrastructure would be undertaken during detailed design.

Key mitigation and management approaches

Further design refinements of structures, including bridges, overpasses and the Terminals 2/3 access viaduct, would be undertaken during detailed design to minimise the visual impacts as far as possible, and maximise opportunities for a high quality design outcome.

An urban design and landscaping plan would be prepared to provide a consistent approach to project design and landscaping during detailed design.

Socio-economic impacts

Key potential impacts

The project would generate local and regional socio-economic benefits and opportunities, as a result of improved connectivity and access to Sydney Airport. The project would improve traffic flow and travel times for road users, including local residents, commuters and community members, and travellers accessing Sydney Airport and nearby community infrastructure. Vehicles travelling between St Peters interchange and Sydney Airport terminals via the project would reduce traffic on local streets in Mascot and along Botany Road through the Mascot town centre.

The project would benefit regional and Greater Sydney communities by providing faster and more efficient travel to Sydney Airport, Mascot and Port Botany.

Locally, the project would result in the permanent loss of about 2.7 hectares of open space within Tempe Lands. This area includes land currently occupied by the Tempe Golf Range and Academy and the off-leash dog exercise area. However, upon completion of the project, up to 10 hectares of residual land could be made available for use in this area. The delivery of new open space in this area would be subject to future planning and consideration by Inner West Council.

The project also has the potential to generate some amenity changes, including increases to noise in some areas (described above), and changes to visual amenity as a result of the presence of permanent project features. This could affect the visibility of some businesses from passing traffic.

Key mitigation and management approaches

Transport for NSW would continue to consult with Inner West Council to ensure that impacts on open space and recreational facilities in Tempe Lands are offset.

The business management plans would include measures, developed in consultation with business owners, to minimise the potential impacts of the project where feasible and reasonable.

Sustainability and climate change

Sustainability principles have been incorporated throughout the design development process. Transport for NSW is committed to achieving a minimum Infrastructure Council of Australia rating of 'excellent' rating for the project as a whole. This would require implementation of sustainability initiatives throughout the governance, design, construction and operation of the project.

A preliminary climate change assessment was undertaken to consider climate change risks, opportunities and adaptations to inform the design process. Further consideration of the potential for climate change risks would be undertaken to support detailed design. This would include a detailed climate change risk assessment, considering both direct and indirect risks, conducted in accordance with AS 5334-2013 *Climate change adaptation for settlements and infrastructure – A risk based approach*.

Other issues

Other potential operational impacts that were assessed included biodiversity, contamination and soils, surface and groundwater quality, health, hazards and risks. No issues of major risk or consequence were identified. Notwithstanding this, management and mitigation measures have been identified to minimise any potential impacts.

Summary of key potential operation impacts and benefits on Sydney Airport land

A summary of the key potential operation impacts that are specific to Sydney Airport land is provided in the following table. The approaches to managing these impacts are as described above.

Issue	Key potential operation impacts and benefits – Sydney Airport land
Traffic, transport and access	<p>Increased capacity for an additional 60,000 vehicles per day in 2036.</p> <p>Travel times between St Peters interchange and Sydney Airport's terminals would substantially reduce following implementation of the project. In 2026, travel time improvements of up to 23 minutes are predicted, increasing to up to 30 minutes in 2036 compared with alternative routes.</p> <p>Improvements in intersection performance, specifically at the Joyce Drive/O'Riordan Street and Qantas Drive/Robey Street intersections, would reduce vehicle delays and alleviate congestion at the main access points to Terminals 2/3.</p> <p>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.</p>
Noise and vibration	<p>Noise impacts to some hotels on Sydney Airport land from increased road traffic noise levels.</p> <p>Potential increase in aircraft-related ground-based operational noise emissions from Sydney Airport.</p>
Airport operations	<p>Potential for windshear and turbulence effects from the proposed emplacement mounds in Tempe Lands.</p>
Flooding and water quality	<p>Minor increase in inundation levels on Sydney Airport land during a one per cent AEP event.</p> <p>Potential for substantial inundation, in addition to existing substantial flooding, at the Joint User Hydrant Installation area during a very large flood event (probable maximum flood).</p> <p>Minor changes to peak flows and velocities in areas to the south of the existing low points on Qantas Drive and in the vicinity of the Terminals 2/3 connection.</p>

Issue	Key potential operation impacts and benefits – Sydney Airport land
	Reduction of pollutant loads entering Mill Stream.
Heritage	Changes to the visual appearance of the northern edge of the Sydney (Kingsford Smith) Airport Group as a result of the widening of Qantas Drive and the removal of existing buildings and associated landscape elements.
Landscape character and visual amenity	Changes to the visual environment as a result of the new elevated road infrastructure near Terminals 2/3 would alter views along and from the road corridor.
Land use, property and socio-economic impacts	<p>About 20.6 hectares of Sydney Airport land would be permanently required. The project's land requirements would permanently affect about four properties located on Sydney Airport land.</p> <p>The project would provide socio-economic benefits to Sydney Airport, mainly related to improved connectivity and faster travel times. This could result in increased economic productivity and employment opportunity at Sydney Airport.</p> <p>Changes to the visual environment as a result of the new elevated road infrastructure near Terminals 2/3 would alter views along and from the road corridor.</p> <p>The project would facilitate the delivery of key planning directions in the Master Plan by delivering additional road capacity to Sydney Airport. It would have the potential to service and/or facilitate growth of airline services, aviation support facilities, freight and commercial services on airport land in accordance with the plan.</p> <p>The project would provide enhanced road connections to Sydney Airport, contributing to the future economic productivity and efficiency of the airport itself, as well as that of businesses on Sydney Airport land.</p>