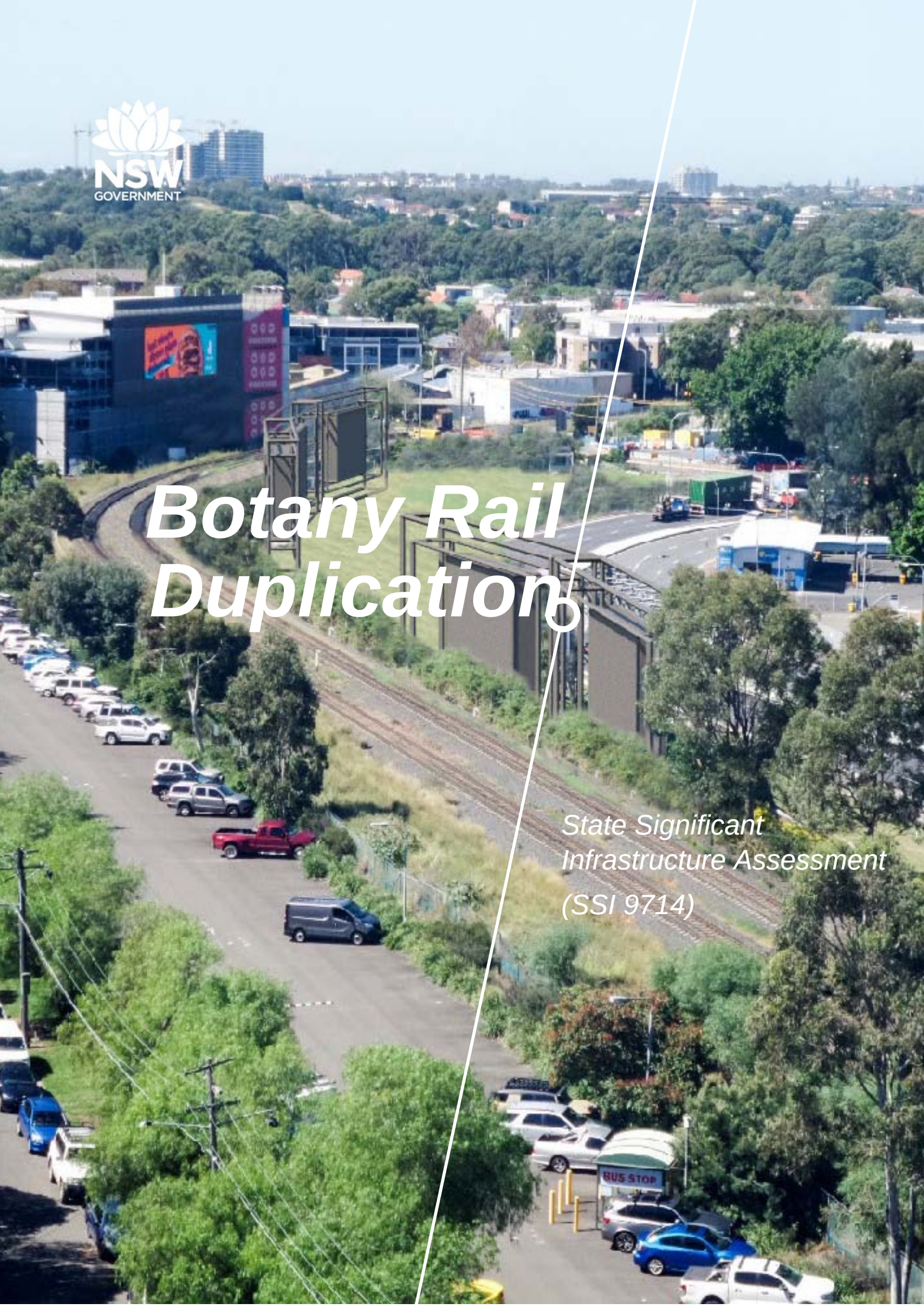

Botany Rail Duplication

State Significant Infrastructure Assessment

(SSI 9714)

July 2020

Photomontage of the Botany Rail Line looking East from Citadines hotel on Baxter Road, Mascot (Botany Rail Duplication Technical Report 11 – Landscape and Visual Impact Assessment, 2019)

Glossary

Abbreviation	Definition
AHD	Australian Height Datum
Amendment Report	A report prepared by the Proponent to describe and assess amendments to an application for a State significant project
Approval	Minister's Approval
CIV	Capital Investment Value
Construction footprint	Area of land required to construct the project
Council	Bayside Council
Department	Department of Planning, Industry and Environment
EESG	Environment, Energy and Science Group of the Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development
MFN	Metropolitan Freight Network
Minister	Minister for Planning and Public Spaces
NRAR	Natural Resources Access Regulator
Proposal	as described in the EIS and amended in the Amendment Report
RtS	Response to Submissions
SEARs	Secretary's Environmental Assessment Requirements
Secretary	Secretary of the Department of Planning and Environment
SEPP	State Environmental Planning Policy
Slewed	Term used to describe moving existing track sideways
SRD SEPP	*State Environmental Planning Policy (State and Regional Development) 2011*
SSI	State Significant Infrastructure
TfNSW	Transport for NSW
WG	Water Group of the Department of Planning, Industry and Environment

Executive Summary

The Botany Rail Line is a dedicated freight only rail track extending from Port Botany to near Marrickville Station. Except for the section between Mascot and Botany, most of the Botany Rail Line is twin tracks. Australian Rail Track Corporation (ARTC) (the Proponent) is seeking approval for the Botany Rail Duplication Project (the proposal), which involves duplicating the existing single track between Mascot and Botany, increasing capacity of the line. The duplicated track is approximately 2.9 kilometres long and would be constructed largely within the existing rail corridor between Mascot and Botany.

The proposal is an important component of the Government's transport infrastructure strategy, which includes providing additional capacity in Sydney's metropolitan freight network (MFN). The proposal would alleviate constraints and increase capacity of the MFN, and improve operational reliability, flexibility and efficiency of freight transportation. In addition to these direct benefits, the proposal would support an increased rail market share for containerised freight and reduce reliance on heavy vehicles into and out of the port.

The potential environmental impacts of construction and operation are, overall, considered acceptable subject to implementation of appropriate mitigation and management measures as most work will occur within the rail corridor. Whilst there will be noise impacts at night during particular work phases, these will occur for short and finite periods of time. In the longer term, although there would be more train movements, more efficient operation and proposed mitigation would manage the increased noise from these movements.

The benefits would outweigh the localised impacts by providing:

- increased rail freight network capacity to meet existing and future demand;
- improved reliability, efficiency and flexibility in freight transportation; and
- a shift from road to rail freight transport

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

The proposal 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*, *2020 Infrastructure Priority List* and *Sydney Metropolitan Freight Strategy*. The proposal 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 16 October 2019 until Wednesday 13 November 2019 (29 days). Submissions were received from eight government agencies, three councils, 15 community and seven special interest groups/non-residential community submissions. Eight community submissions objected to the proposal. Key issues raised in the submissions included increased operational noise, construction noise and vibration and lack of active transport connections.

Key Assessment Issues

Noise and Vibration

Noise and vibration impact to residents and other sensitive land uses are expected throughout construction, particularly along the rail corridor in Botany, Pagewood and Mascot. Significant out of hour works are required due to safety reasons and constraints posed by the surrounding transport networks. The number of highly noise affected residential receivers fluctuates across the construction schedule from one during bridge construction and testing and commissioning, to 123 during vegetation clearing and property adjustment. Up to 72 residences are expected to be highly noise affected during peak track work.

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 of work with other significant projects.

During operation, the Proponent proposes to use track lubrication as a noise control measure in combination with other mitigation measures to be determined in detail design such as a noise wall or at property treatment for residents. The Department supports these measures and has recommended a validation program which must be able to demonstrate whether the track lubrication is effective in managing noise from wheel squeal.

Traffic and Transport

The Department has considered traffic and transport impacts. The proposal would increase the capacity of the Botany Rail Line and improve the reliability of freight transport by rail.

Traffic and access impacts will occur during construction from temporary road closures and traffic diversions of Robey Street, O'Riordan Street and Southern Cross Drive and general construction traffic movements. These impacts are temporary and can be managed with established management measures in consultation with the community.

Provision of active transport connections are considered beyond the scope of the proposal as there are no operational changes to road, cycle or pedestrian links and physical constraints preclude the provision of a safe in-corridor active transport route.

Biodiversity

The proposal would remove 8.12 hectares of vegetation including 0.56 hectares of endangered ecological communities comprising marginal foraging habitat for the Grey-headed Flying-fox and Eastern Bentwing Bat. The Proponent proposes to meet its offsetting obligations in accordance with the Biodiversity Assessment Method and rehabilitate riparian areas disturbed during construction along Mill Stream.

The Department supports these measures and has recommended conditions to ensure consultation with Sydney Airport and key stakeholders to limit the potential for wildlife strikes impacting aircraft.

Contents

1. Introduction

Port Botany is the largest container port in Australia, and container freight handling at the port is predicted to increase from 14.4 million tonnes in 2016 to 25.5 million tonnes in 2036, representing a 77 per cent increase (*NSW Freight and Ports Plan, Transport for NSW 2018*). The Commonwealth and NSW Governments have identified clear objectives to increase the share of freight moved by rail – from 17.5 per cent in 2016 to 28 per cent by 2021 (*NSW Freight and Ports Plan, Transport for NSW 2018* and *Infrastructure Priority List, Australian Infrastructure Plan, Project and Initiative Summaries, Infrastructure Australia 2018*). This increase in freight to and from Port Botany will place significant strain on the single-track Botany Line, which is expected to reach capacity by 2022.

Australian Rail Track Corporation (ARTC) (the Proponent) is seeking approval for the Botany Rail Duplication, which involves the construction of approximately three kilometres of new railway track between Mascot and Botany. This section of the existing Botany Line would be converted from the existing single track to two parallel tracks to improve freight rail capacity and reliability to and from Port Botany.

The Botany Line, which forms part of the Metropolitan Freight Network (MFN), is located between Port Botany and Marrickville. The line is mostly dual-track, except for the single-track section between Mascot and Botany. The proposal would make the MFN dual track from the port to Sefton Junction and increase freight rail capacity and reliability.

The proposal is in the suburbs of Mascot, Botany and Pagewood, in the Bayside local government area (**Figure 1**). Land uses adjoining the proposal site include major transport corridors - both road and rail, Sydney Airport, industrial and commercial, hotels and residential. Most of the Proposal is on land owned by the NSW Government in the existing rail corridor which is managed and maintained by ARTC. Partial acquisition of five commercially owned lots is required to accommodate a wider rail corridor.

Figure 1 | Regional/Local Context Map (Source: *Botany Rail Duplication EIS, 2019*)

2. Proposal

The proposal involves the duplicating the existing single-track MFN between Mascot and Botany for approximately 2.9 kilometres. The additional track would be located on the southern side of and run parallel to the existing track for its length.

Other key features include:

- upgrading and slewing (move sideways) a portion of the existing single track, within the rail corridor, to accommodate the second track
- construction of four new rail crossovers at two locations
- construction of six new bridge structures and remediation of two existing bridges
- embankment/ retaining structures
- ancillary work including bi-directional signalling upgrades, drainage work and protecting/relocating utilities.

2.1 Physical Layout and Design

Key components and operational features of the proposal are described in **Table 1.** The physical layout and key elements of the proposal are shown in **Figure 2**.

Table 1 | Main components of the proposal

Aspect	Description
Track works	• A 2.9 kilometre track to the south of the existing track • 1.4 kilometres of track slewed and 1.5 kilometres of track upgraded *in situ* • track formation, ballast, concrete sleepers and associated rail infrastructure and bi-directional signalling • four new crossovers o two midway between O'Riordan Street and General Holmes Drive in Mascot o two between Bay Street and Banksia Street in Botany • upgrading and adjustment of existing track drainage to accommodate track levels
Rail bridges	• construction of two single span bridge structures and removal of the existing single-track bridge at: o Robey Street o O'Riordan Street • retention of the existing bridge and construction of a new two-span bridge to its south at: o Southern Cross Drive bridge o Mill Stream bridge • minor work to the existing bridge abutments and headstock at Botany Road bridge

Aspect	Description
Embankments, cuttings and retaining walls	• new structural work including embankments, embankment widening, and minor cuttings along the corridor between: o Southern Cross Drive and Botany Road on the southern side of the existing track o the eastern side of the Mill Stream and Southern Cross Drive on the southern side of the existing track o Bay Street and the western side of Mill Stream on the southern side of the existing track • new retaining walls at various locations along the rail corridor, the most significant being between O'Riordan Street and west of Robey Street on the southern side of the rail corridor
Utilities relocation and protection	• relocation or protection of utilities as follows: o relocation and/or protection of the Qenos high pressure ethylene pipeline o protection of the APA group ethane pipeline o protection or relocation of the Jemena gas mains o protection or relocation of other minor utilities as required o protection of the Ausgrid high voltage cables
Billboard adjustments	• temporary removal of five billboards during construction of the second track and associated infrastructure • replacement/ relocation of billboards following the completion of construction in consultation with land and billboard owners
Land acquisition	• five partial property acquisitions, generally between west of King Street and east of O'Riordan Street, Mascot. The land consists of small portions of existing commercially-owned land parcels

2.2 Construction

Construction is anticipated to take approximately two and a half years to complete. This period would include early and enabling work, the main construction and commissioning including track and bridge work, finishing and rehabilitation. The construction program, shown in **Figure 3** has considered restrictions from:

- existing freight operations along the Metropolitan Freight Network - Botany Line
- Sydney Airport operational activities
- adjacent arterial road network functionality.

Construction is proposed in five stages, primarily driven by the need for a substantial amount of project work to be undertaken during rail possessions when rail services are not operating, minimising safety issues and operational impacts. **Table 3** outlines the main construction works to be undertaken in each of the relevant stages.

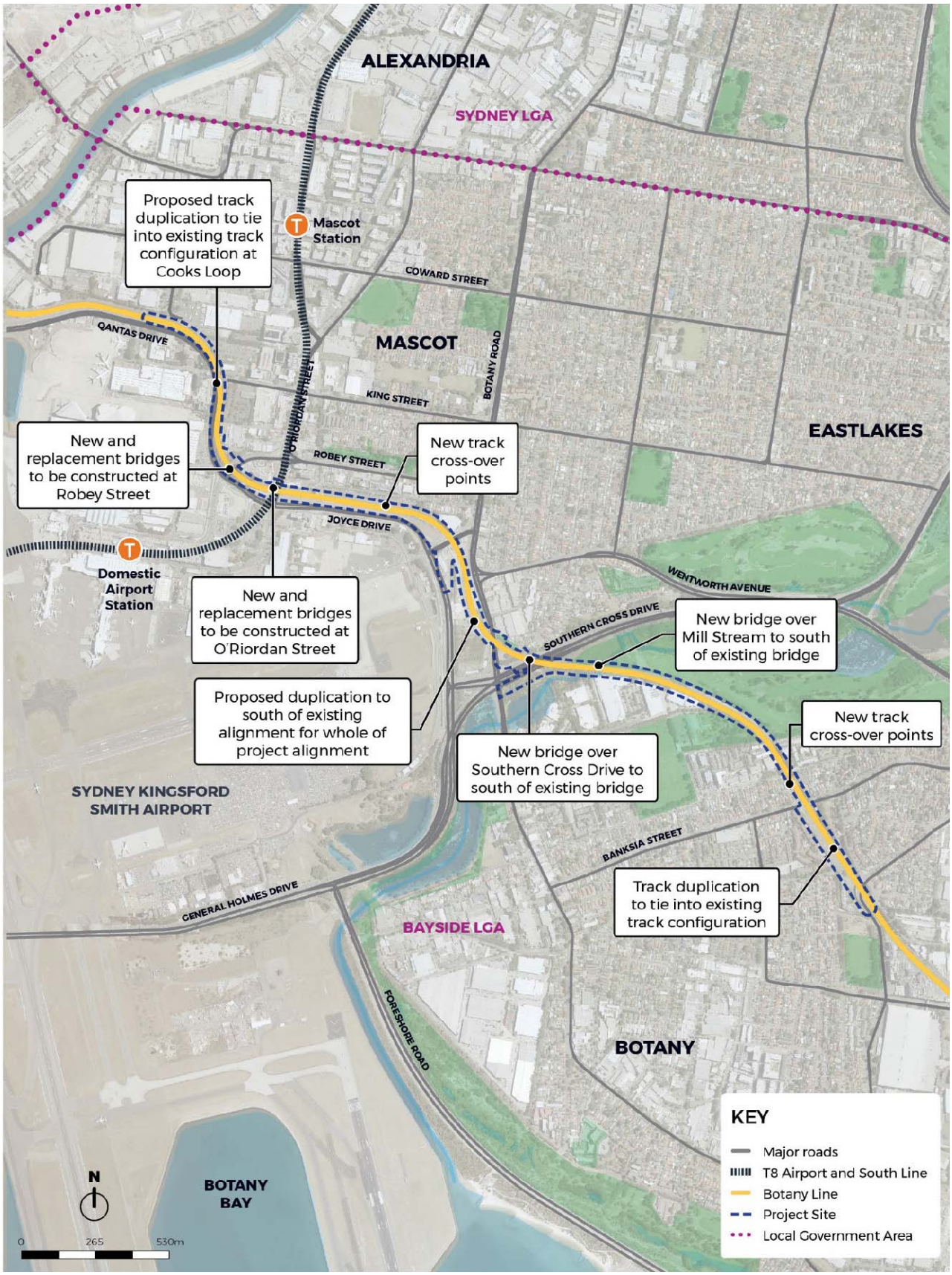

Figure 2 | Key Proposal Components (*Botany Rail Duplication Submissions Report, 2020*)

Figure 3 | Indicative Construction Program (*Botany Rail Duplication EIS, 2019*)

Table 3 | Summary of Construction Staging

Stage	Main Activities	Rail Traffic Movement
Stage 1A: Construct new track	• construct new track, including new embarkments, track formation, combined service routes and signalling infrastructure adjacent to existing Botany Line • construct new bridges at: o Mill Stream o Southern Cross Drive o O'Riordan Street o Robey Street • construct retaining walls • construct noise mitigation measures	Rail operations would continue on existing Botany Line
Stage 1B: Cut over and head shunt	• connect new track to existing track at Banksia Street and Cooks Loop • construct new crossovers between: o General Holmes Drive and O'Riordan Street o Banksia Street and Mill Stream • construct temporary head shunt to allow for shunting via existing Botany Line and Cooks Loop • cut over and commission new track at Banksia Street and Cooks Loop	Rail operations would continue on existing Botany Line Following construction and connection, rail operations would switch to new track
Stage 2B: New O'Riordan Street & Robey Street bridges	• construct new O'Riordan Street and Robey Street bridges • re-construct track for new O'Riordan Street	Rail operations would operate on the new track

Stage	Main Activities	Rail Traffic Movement
	and Robey Street bridges • track, signalling and civil work to existing Botany Line • reinstate billboards and signage	
Stage 3: Commissioning and testing	• remove temporary head shunt • connect existing Botany Line (up line) to track at Banksia Street and Cooks Loop • slew tracks at Cook Loop • commissioning and testing	Rail operations would continue on new second track. Following commissioning and testing, rail operations would commence on duplicated Botany Line

2.2.1 Sydney Gateway Road Project

Transport for NSW is proposing to construct a new road with connections linking the Sydney Motorway network at St Peters Interchange with Sydney Airport Terminal 1 and Airport Drive in the south, and Qantas Drive and Sydney Airport Terminals 2 and 3 in the east. Sydney Gateway, together with the Botany Rail Duplication, aims to improve traffic flow and support efficient distribution of freight around Sydney Airport and Port Botany and the wider freight network. There is the potential for the construction of these projects to overlap; cumulative impacts during construction are considered in **Section 6**. The interaction of Sydney Gateway with Botany Rail Duplication is shown in

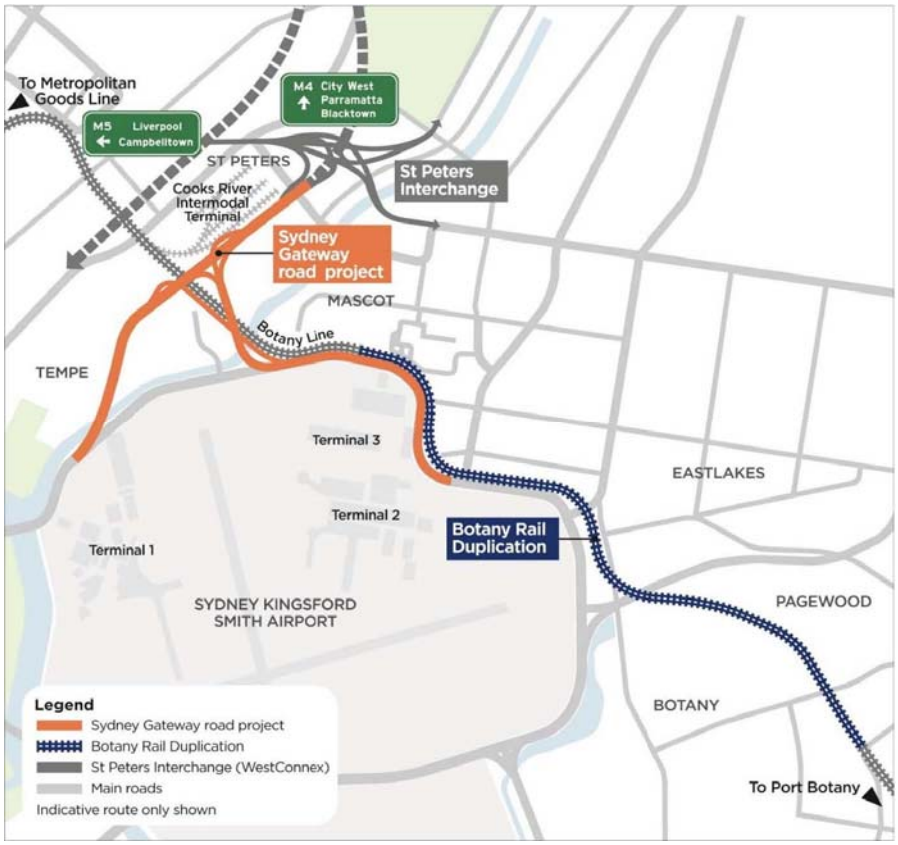

Figure 4.

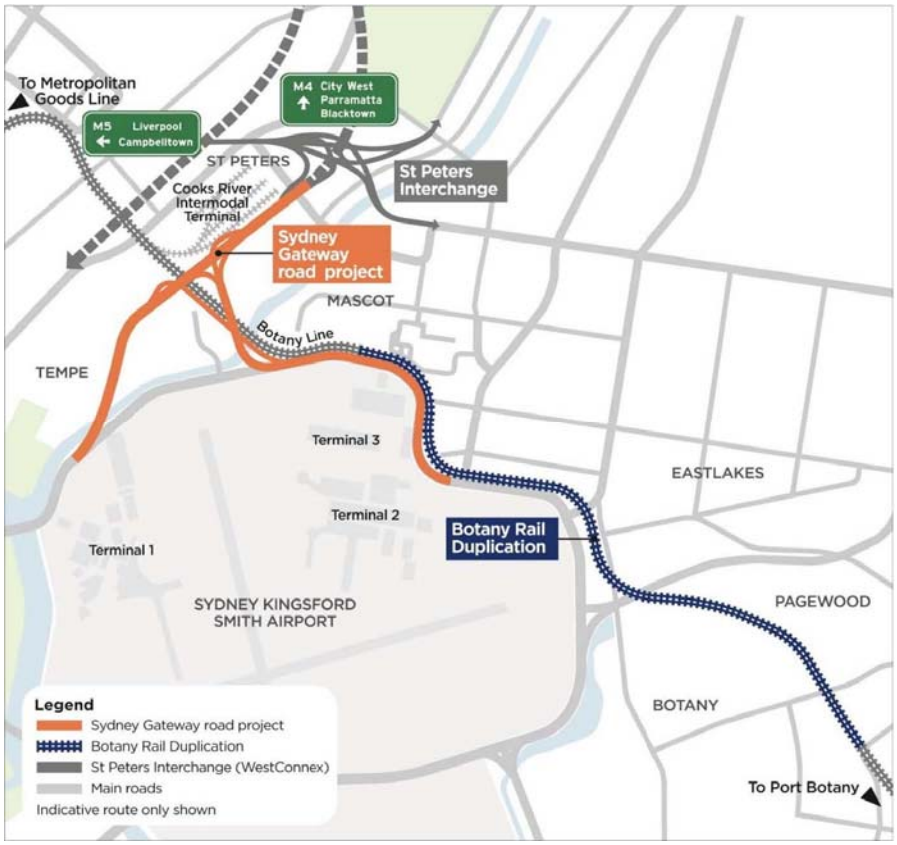

Figure 4 | Sydney Gateway (orange) and Botany Rail Duplication (blue lines) (*Botany Rail Duplication State Significant Infrastructure Scoping Report, 2018*)

3. Strategic Context

3.1 Strategic Justification

By 2036 the annual amount of freight to be moved in NSW is projected to increase from approximately 482 million tonnes (in 2016) to 618 million tonnes (*NSW Freight and Ports Plan, Transport for NSW 2018*), an increase of around 28 percent. Within Port Botany alone, container freight movement is predicted to significantly increase – from 14.4 million tonnes in 2016 to 25.5 million tonnes in 2036, representing an increase of 77 percent (*NSW Freight and Ports Plan, Transport for NSW 2018*). During this period container freight, air freight, air travel and general traffic in and around Port Botany and Sydney Airport are expected to grow significantly.

The Commonwealth and NSW Governments have identified clear objectives to increase the share of freight moved by rail – from 17.5 percent in 2016 to 28 percent by 2021 (*NSW Freight and Ports Plan, Transport for NSW 2018* and *Infrastructure Priority List, Australian Infrastructure Plan, Project and Initiative Summaries, Infrastructure Australia 2018*). In addition, NSW Ports has also set a target of 40 percent of total freight volumes to be transported to and from Port Botany by rail by 2045. This represents a substantial increase compared with the current 14 percent share of freight moved by rail (*Navigating the Future: NSW Ports' 30 Year Master Plan,* NSW Ports, 2015).

The proposal is consistent with Commonwealth and NSW strategic planning policy and framework by improving freight movement to and from Port Botany, including:

- *Australian Infrastructure Plan* (Infrastructure Australia 2016) and the Infrastructure Priority List (Infrastructure Australia, 2018a);
- *State Infrastructure Strategy 2018–2038* (Infrastructure NSW, 2018a);
- *NSW Freight and Ports Plan 2018–2023* (Transport for NSW, 2018b);
- *Metropolis of Three Cities – the Greater Sydney Region Plan* (Greater Sydney Commission, 2018a)
- *Eastern City District Plan* (Greater Sydney Commission, 2018b)*; and*
- *Greater Sydney Services and Infrastructure Plan* (Transport for NSW, 2018c).

3.2 Proposal Benefits

The key benefits include:

- assisting to alleviate constraints within Sydney's freight rail network by allowing for an increase in the capacity of the network;
- supporting connection to, and operation of, current and future metropolitan intermodal terminals, including Enfield, Chullora and Moorebank;

- encouraging a shift in freight transport from road to rail, and support a reduced rate of growth in truck movements and associated traffic congestion around Sydney Airport and Port Botany;
- providing capacity for freight traffic accessing and exiting Port Botany beyond 2030;
- enabling efficient train paths and speeds delivering increased service reliability and productivity to freight rail customers; and
- reduce environmental and other road related externalities.

3.3 Proposal Development and Alternatives

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

- alternative freight transport solutions;
- alternatives to provide additional freight network enhancements; and
- a 'do nothing' alternative.

3.3.1 Alternative freight transport solutions

Freight to and from Port Botany is currently transported by road or rail, with most freight moved by road. Increasing road capacity without improving rail capacity would result in:

- higher transport costs;
- increased road congestion;
- increased potential for traffic accidents; and
- greater road traffic amenity impacts.

The Department notes that improving only road access would be contrary to Government policy, including the *NSW Freight and Ports Plan 2018-2023*, which highlights the need to increase freight movements by rail to improve the efficiency of existing infrastructure and ensure greater connectivity and access along freight routes.

3.3.2 Alternatives to provide additional freight network enhancements

Several alternatives were considered for providing additional rail freight capacity. These included consideration of passing loops along the Southern Sydney Freight Line including at Cabramatta, modifications to the existing Botany Yard and track extension and duplication of the Botany Line.

These options were modelled to determine which projects would provide the greatest capacity and when they would be required based on the forecast demand. Two options were identified, the Botany Rail Duplication and the passing loop at Cabramatta (this proposal is subject to a separate SSI project application).

3.3.3 'Do nothing' alternative

Under this alternative, the section of line between Mascot and Botany would continue to operate as a single-track with passing loops. While this option would continue to meet the current freight demand for Port Botany, it would not provide a suitable outcome to meet future predicted demand or support a modal shift for freight transport from road to rail.

4. Statutory Context

4.1 Critical State Significant Infrastructure

The Botany Rail Duplication is Critical State Significant Infrastructure (CSSI) under section 5.13 *Environmental Planning and Assessment Act 1979* (EP&A Act). The Minister for Planning and Public Spaces is the approval authority.

4.2 Permissibility

The proposal is for the purpose of a rail infrastructure facility and is characterised as development permitted without consent, in accordance with clause 79 of *State Environmental Planning Policy (Infrastructure) 2007*.

4.3 Other Approvals

In accordance with section 5.22(2) EP&A Act, the only environmental planning instruments that apply to the proposal are *State Environmental Planning Policy (Infrastructure) 2007* (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. There are no other environmental planning instruments that substantially govern the carrying out of the project.

The need for an environment protection licence (EPL) issued under the *Protection of the Environment Operations Act 1997,* for construction only, is under investigation.

4.4 Objectives of the *Environmental Planning and Assessment Act 1979*

The Department has considered the objects of the EP&A Act in the stated sections of this report, including to:

- promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources (Section 6),
- facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment (Section 4.5),
- promote the orderly and economic use and development of land (Section 6),
- protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats (Section 6),
- promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage) (Section 6.4),
- promote good design and amenity of the built environment (Section 6.4),

- to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State (Section 5), and
- to provide increased opportunity for community participation in environmental planning and assessment (Section 5).

4.5 Ecologically Sustainability Development (ESD)

The EP&A Act adopts the definition of ESD used 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 proposal would contribute to the sustainability of the project and the meeting of ESD principles. In addition to the objectives, the Proponent has addressed the above principles directly in the EIS and has identified a broad range of mitigation measures to manage impacts associated with these issues.

The precautionary principle is applied throughout the EIS and the Department considers the assessment and 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.

5. Engagement

5.1 Department's Engagement

Under section 5.28(1)(c) EP&A Act, the Planning Secretary is required to make the EIS publicly available. The Department made the EIS publicly available from Wednesday 16 October 2019 until Wednesday 13 November 2019 (a total of 29 days) on the Department's website and electronically at NSW Service Centres. The EIS was exhibited at:

- Eastgardens Library – 152 Bunnerong Road, Eastgardens;
- Mascot Library – 2 Hatfield Street, Mascot; and
- Marrickville Library – 313 Marrickville Road, Marrickville.

The Department advertised the public exhibition in The Sydney Morning Herald, The Daily Telegraph, St George & Sutherland Shire Leader, Inner West Courier and Southern Courier. The Department also notified relevant State and local government authorities of the exhibition.

The Department visited the site on 23 November 2018 and attended the Community Information Session at Eastlakes on 31 October 2019.

5.2 Summary of Submissions

The Department received 33 submissions during exhibition of the EIS: 15 from the public (community); eight from Government agencies; three from local Councils and seven from special interest groups/non-residential community submissions. Community submissions comprised submissions from individuals and strata body/owners' corporations of residential developments. Submissions are summarised in **Table 2** and **Table 3**. A full copy of submissions is provided in Appendix **C**.

Table 2 | Summary of Council, Community and Special Interest Group Submissions

Submitters	Number	Position
Council(s)	**3**	
• Inner West Council		Support
• Randwick City Council		Support
• Bayside Council		Comment
Community submissions:	**15**	
• Owner's Corporation for 2 Victoria Street, Botany		
• Strata Manager for SP56587 Morgan Street and Banksia Street, Botany		
• < 5 km (Mascot, Botany, Pagewood, Alexandria)	8	Object
	0	Support
	6	Comment

Submitters	Number	Position
• 5 – 10 km (Bondi Junction)	0	Object
	0	Support
	1	Comment
Special interest groups	**7**	
• NSW Ports		Support
• BIKEast		Comment
• Bikes Botany Bay		Comment
• Fort Street Real Estate Capital		Comment
• APA Group		Comment
• Qantas Airways Limited		Comment
• Sydney Airport Corporation Limited		Support
TOTAL	**25**	

Table 3 | Summary of Government Agency Submissions

Submitters	Number	Position
Government Agencies	**8**	
• Crown Lands		review – no comment
• Department of Primary Industries		review – no comment
• Heritage Council of NSW		Comment
• Environment Protection Agency		Comment
• Transport for NSW		Comment
• Former Officer of Environment and Heritage		Comment
• Former Roads & Maritime Services		Support
• DPIE - Water Group		Comment

5.3 Key Issues – Government Agencies

Environment, Energy and Science Group of the Department of Planning, Industry and Environment (EESG) (former Office of Environment and Heritage) recommended adopting an avoid and minimise approach to vegetation and riparian corridor clearing, preparation and implementation of a Vegetation Management Plan (VMP). EESG also commented on landscaping, urban tree canopy cover and flooding.

Environment Protection Authority commented on noise and vibration, air quality, water quality, contaminated lands, and waste impacts. The EPA noted that significant air quality impacts were unlikely from construction or operation of the project and recommended the preparation and implementation of management plans for construction noise and vibration; air quality; and construction soil and water.

Heritage Council of NSW recommended mitigation of visual impacts to the Botany Water Reserves and consultation with relevant Council's and State agencies to mitigate impacts on affected items. The Heritage Council also noted the potential existence of archaeological relics within the study area but considered that further historical archaeological research design and associated monitoring and salvage was not necessary. The Council instead recommended that a Site Induction and Unexpected Find Protocol be used to cover any historical archaeological relics.

Transport for NSW (**TfNSW**) identified issues in respect of construction traffic management, operational noise assessment and noise impacts from braking freight trains, modern track lubrication systems, noise monitoring and mitigation.

Transport for NSW (former Roads and Maritime Services) made recommendations for a Construction Transport, Traffic and Access Management Plan in consultation with Transport for NSW Sydney Coordination Office (SCO), former Roads & Maritime Services and Bayside Council and outlined requirements for works within a classified road.

DPIE Water Group – made recommendations, particularly for Mill Stream, with respect to the design of culverts, flow velocities and scour protection.

5.4 Key Issues – Council/Community/Special Interest Groups

5.4.1 Council key issues

Inner West Council indicated that it supports the proposed duplication, acknowledging the resulting reduction in road freight transport and the opportunity it provides to create and improved active transport networks and routes.

Council raised concern about construction traffic using the Inner West road network; and the impact of increased freight rail movement (noise, vibration, hours of operations, air quality, impact on public health and potential timeframe blowout) on adjoining residential land and communities.

Randwick City Council indicated it supports the project, acknowledging the reduction in road freight impacts. Council also raised the opportunities for active transport networks within the rail corridor.

The use of local roads by construction transport and traffic, notably along Wentworth Avenue, was a concern. Randwick Council also raised concerns regarding construction and operation noise impacts on affected residences, notably at night.

Bayside Council commented on traffic and transport; land contamination; air quality and noise; and property impacts. Council raised concerned about construction traffic impacts, opportunities for active transport, the timing and location for the billboard relocation, impacts to public open space, and noise impacts from idling locomotives and the location of noise insulation mitigation measures.

Council had previously made submissions to the proponent in respect of active transport pathways and expressed concern that the EIS did not include active transport opportunities.

5.4.2 Key Issues - Community and Special Interest Groups

Several key issues were raised by the community and special interest groups listed below. Further details of the issues raised in submissions are provided for each assessment issue in **Section 6**.

- noise and vibration
    - adequacy of noise monitoring completed as part of the EIS
    - managing noise resulting from construction and operation
    - increase in number and frequency of trains
    - impact on resident's sleep
    - jolting of buildings due to vibration
    - request for noise barriers to adjoin residential properties - either noise walls or earth mounds
- active transport
    - opportunity to provide active transport connections
    - adherence to Government policy/strategic plans addressing the creation of active transport network connections
- contamination
    - pollutant management
    - request for independent water sampling
- health
    - release of contaminants and/or pollutants into air during construction
    - impact of lack of sleep (due to noise) on mental health
    - impact of 24-hour operation on health and wellbeing.

Key issues raised by organisations included:

- impacts from construction to commercial premises including noise, vibration and traffic and access impacts;
- utility protection measures required for high pressure gas transmission pipelines
- noise, vibration and traffic and access impacts to the Qantas Flight Training Centre.

5.5 Response to Submissions

Following completion of the formal exhibition period, the Department provided the Proponent with the submissions received and requested the Proponent prepare a response to those submissions. The Proponent's Response to Submissions Report (Appendix **D**) was forwarded to agencies for comment and made publicly available on the Department's website on 4 March 2020.

6. Assessment

6.1 Noise and Vibration

The proposal will have noise impacts on adjoining communities, during construction and operation, which will require appropriate management and mitigation. Out of hours construction will be required to provide a safe work environment and to not affect the safe and efficient operation of the transport network. Operational noise impacts would increase due to more frequent freight train movements.

The Proponent has committed to a range of accepted industry-practice management measures. These, along with a proactive and community focussed approach to scheduling and management required by the Department's recommended conditions, is appropriate and would appropriately address noise and vibration impacts.

Construction Noise and Vibration

Noise and vibration impact from a proposal of this scale are unavoidable. Even with the implementation of mitigation, construction impacts can be significant when occurring over an extended period, and therefore effective engagement of the community is required.

Transport network constraints requires that some work be undertaken between 10 pm and 7 am, which includes the airport curfew (11 pm to 6 am). Residential areas close to construction in Mascot, Pagewood and Botany would experience elevated construction noise for most activities and during each time period intermittently across the construction program. In particular:

- Baxter Road, Mascot residents are likely to experience elevated noise levels during each construction phase;
- Bay Street and Banksia Street in Pagewood may experience increased traffic noise from construction traffic accessing the corridor from these streets; and
- hotels, businesses and residences in Mascot and Botany may experience vibration when vibration intensive equipment is used, such as for ballast tamping.

The number of highly noise affected residential receivers fluctuates across the construction schedule from one during bridge construction and testing and commissioning, to 123 during vegetation clearing and property adjustment. Up to 72 residences are expected to be highly noise affected during peak track work, which would last approximately two months.

The Interim Noise Construction Guideline (EPA, 2009) states standard construction hours as 7 am to 6 pm Monday to Friday and from 8 am to 1 pm on Saturdays. The Department recommends extending construction hours on Saturday to 6 pm to encourage work to be completed during daytime hours.

Operation Noise and Vibration

Increased rail noise levels during operation are expected near Myrtle Street in Botany due to:

- increased train speeds which increases rail noise along the corridor and increases the occurrence and noise generated by trains going around curves (wheel squeal);
- more trains using the rail line; and
- the new track being closer to certain receivers.

Existing rail noise levels in this location are already high. Operation of the duplicated line is expected to increase maximum (L_{max}) rail noise levels (in 2034) by up to 8 dB and up to 3 dB for daytime and night-time noise levels and exceed residential noise trigger levels.

Public Submissions

Public submissions raised concerns about noise and vibration during construction and from existing and proposed rail freight movements. Issues of concern included hours of operation of construction compounds near residents and increased operational noise from wheel squeal and poor locomotive maintenance. Submissions also requested noise mitigation including noise barriers and alternatives to concrete sleepers.

Organisation Submissions

APA Group advised of specific concerns relating to vibration limits for the protection of the Moomba to Sydney Ethane pipeline.

Qantas Airways Limited, **Sydney Airport Corporation Limited**, **Fort Street Real Estate Capital** and **Owner's corporations** 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 airport hotels, and mitigation of commercial premises on O'Riordan Street.

Agency Submissions

Bayside Council noted increased noise from more frequent rail movements and requested details of noise mitigation and impacts from locomotives idling during and after construction.

Environment Protection Agency (EPA) emphasised the importance of community consultation during construction. Clarification of train speeds was requested and inclusion of horns and braking noise into the model was queried. EPA recommended all reasonable and feasible operation noise mitigation be installed early, where possible, to maximise noise reduction benefits during construction.

Inner West Council raised concerns about increased rail movements to residents in its council area and requested mitigation to minimise the impact and noise monitoring along the corridor.

Randwick City Council raised concerns about the potential for cumulative construction noise impacts with work in the surrounding Sydney Ports area and sleep disturbance.

Transport for NSW raised omission of braking freight trains from the noise assessment, that a modern track lubrication system should be used in combination with other at-source treatments to further reduce noise and that ongoing noise monitoring of the track lubrication systems should be used to confirm ongoing noise level reductions.

Department's Consideration

Impacts from construction in urban areas vary depending on the duration and intensity of work and its proximity to surrounding development. Areas adjacent to planned construction and demolition of bridges would experience intense work periods and high noise during that time.

A number of matters require careful consideration to ensure that the surrounding community and amenity is not unduly affected and appropriately managed. The Department is satisfied that the overall management of noise can be improved with community engagement and the consideration of "good neighbour" approaches to construction scheduling.

High impact enabling work not supported

Enabling work, including site preparation, is viewed as low impact work which can proceed using standard management procedures and before an environmental management plan is in place. The Proponent proposed to commence a range of activities as enabling work, some of which would be high impact, such as track slewing and utility/asset protection or relocation work. This would be managed under a Site Environmental Management Plan approved by the Environmental Representative (an independent reviewer approved by the Planning Secretary).

The Department is concerned that these high impact activities could start before a consultation program or approved Construction Environment Management Plan (CEMP) was in place. Further, the high impact enabling work would:

- not be discernible from general construction
- occur out of hours at night and in the early morning hours
- exceed sleep disturbance screening criteria at more than 1000 residences.

The Department does not support this approach or consider that project expediency is a reasonable justification to bring forward noisy work without appropriate management frameworks for consultation, mitigation and notification of the community and relevant stakeholders in place. Recommended conditions allow for development of community engagement processes and the staged preparation of a CEMP to address management of environmental impacts for different phases of construction. Low impact enabling work could start outside of the Construction Environment Management framework.

Complex construction environment needs more out of hours work

Flexible construction hours are needed to complete work that affects road, freight rail and airport operations while ensuring a safe working environment. Complexities of this proposal include work:

- requiring arterial road closures (Robey Street and O'Riordan Street, Southern Cross Drive)

- within the airport's obstacle limitation surface and during curfew
- during routine scheduled freight rail maintenance shutdowns (known as rail possessions), typically occurring four times per year.

These constraints require more construction at night and on weekends. The proponent identified the following closures:

- four planned 48-hour rail possessions per year (2 am Saturday to 2 am Monday);
- ten 54-hour full road closures (11 pm Friday to 5 am Monday) for work affecting Robey Street and O'Riordan Street (five closures for each road); and
- three 54-hour partial (one carriageway) road closures (11 pm Monday to 5 am Thursday) for work affecting Southern Cross Drive.

Other times outside of standard construction hours when work may occur are:

- during airport curfew (11 pm to 6 am) for works intruding the Obstacle Limitation Surface (OLS);
- at night (10 pm to 4 am) for works subject to a Road Occupancy Licence;
- between 4 am and 9 am when there is low demand on the freight rail line; and
- for oversized materials and plant delivery (12 am to 6 am).

Work requiring scheduled shutdowns is likely to occur for the entire 48 hour shutdown (over three nights) and at many locations along and adjacent the rail corridor.

Locational and operational constraints in this area mean that the community is likely to be subject to regular and ongoing out of hours work. This is exacerbated in this location because of the existing high noise environment and the limited opportunity for respite (during the airport curfew). Efforts to provide as much relief from construction as possible while still allowing the proposal to proceed in a timely manner is a high priority for the Department.

Whilst the Proponent has committed to completing noisy work before 11:00pm where possible, the Department recommends conditions that require additional mitigation to reduce the effects of prolonged out of hours works where high noise levels occur over consecutive days. Mitigation may include:

- consideration of respite;
- considered scheduling of work;
- temporary alternative accommodation; or
- temporary at-receiver window treatments like noise curtains.

Appointment of an Acoustic Advisor is recommended due to the complexity of scheduling construction and the likely significance of noise impacts to the community. The Acoustic Advisor would be required to provide acoustic expertise and to advise on noise and vibration impacts during construction and operation and best practice mitigation, including impacts from out of hours work.

Cumulative construction impacts with other State significant projects

Cumulative construction impacts with concurrent construction of the Sydney Gateway Project could result in noise level increases of up to 3 dB. Hotels near Qantas Drive and O'Riordan Street and residential receivers near Baxter Road, Mascot are most likely to be affected.

Construction fatigue is an issue for residents in these locations and on Botany Road and McBurney Avenue from the recently completed Airport East, Airport North (currently under construction), future construction of the Sydney Gateway road project, Qantas Flight Training Centre and this project, with the main impact from 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 in consultation with key stakeholders throughout design, construction, and operation to minimise concurrent work.

Operational noise impacts and monitoring of active noise mitigation

The proposal would increase the capacity of the rail line and maximum noise levels are expected to increase by up to 8 dB. Wheel squeal on small radius curves has been identified as the key cause, resulting in exceedances of the sleep disturbance noise level where further mitigation must be considered. There is limited availability to improve the curves as the alignment is constrained within the existing rail corridor. Without mitigation, 137 residences and eight other receivers are predicted to exceed the Rail Infrastructure Noise Guideline Noise trigger levels.

Track lubrication is employed on rail lines to control excessive wear of wheels and rails which causes wheel squeal. It is usually an active (automatic) system which detects and lubricates the wheels of passing trains on approach to a curve which minimises wheel/rail friction as trains pass. These systems require regular maintenance to remain effective in reducing noise. A system of this type is proposed as the primary means of noise control for operation and could reduce maximum noise levels by up to 8 dB at 82 residences.

The Department is aware that a similar system is currently in use on the Epping to Thornleigh Third Track project. While the Department supports noise reductions of the scale suggested with a track lubrication system, it remains concerned about the constant need to maintain such a system. Therefore, ongoing noise monitoring is recommended to monitor noise levels on curves near residential areas. Transport for NSW supports this approach.

A further 55 residences may still experience noise that disturbs sleep. For these receivers, the Proponent has committed to reviewing the efficacy of noise barriers or the application of at property treatment.

The Department supports a review of operational noise mitigation and other recommended conditions include installation of operational noise mitigation before construction starts, where practicable, and 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 is required, consistent with the RING.

Ground borne noise monitoring to inform construction techniques and detailed design

Forty-two residences and the Stamford Hotel near new rail crossovers may experience ground borne noise at up to 5 dB above relevant levels where mitigation must be considered. Ground-borne noise impacts are difficult to predict as they are highly dependent on local geology which varies across an area and may be more noticeable in properties with attenuated facades. This is due to a reduction in air borne noise levels that would have otherwise masked it. It is also difficult to retrofit and effective mitigation must be incorporated into the proposal design.

Conditions are recommended to require completion of baseline ground-borne noise monitoring or detailed modelling before construction to inform design. Where compliance with the trigger levels cannot be achieved through design, other operational measures, such as controlling train speeds, would need to be implemented.

Conclusion

The Department acknowledges the operational and safe working constraints of constructing within a live freight rail corridor, alongside major roads and near Sydney Airport, and the Proponent's approach to flexible construction hours and noise and vibration management. To assist in the management of noise and vibration impacts the Department recommends conditions to:

- extend daytime construction hours, to maximise the amount of work that can be undertaken during daytime hours;
- limit enabling work to low impact activities until an appropriate environmental management framework is in place;
- require an independent Acoustic Advisor to oversee the complex noise and vibration environment of concurrent projects and work hours;
- engage with the affected community and co-ordinate with other major projects to optimise opportunities for respite.

Whilst noise and vibration impacts cannot be eliminated, the implementation of recommended conditions will provide the community with balanced noise and vibration mitigation and management outcomes.

6.2 Traffic and Transport

Traffic impacts during construction would be unavoidable due to the nature of the work adjacent to and over major arterial roads adjacent and leading to the airport; this includes temporary road closures and detours. These impacts will be temporary in nature and can be managed with appropriate coordination and communication between stakeholders and the implementation of established traffic management approvals and processes. The proposal would not have additional operational traffic impacts or result in any permanent change to the existing road, cycling, pedestrian or bus networks.

Traffic impacts during construction

Road closures would be required at times to enable safe work over and adjacent to some of these roads. Existing processes, including formal approval requirements for road occupancy, consultation with affected stakeholders and development of traffic and transport management plans provide an appropriate means to manage road traffic impacts.

Construction traffic using access gates near residential areas is likely to be noticeable over normal operations. However, as no significant earthwork is proposed, it is unlikely that construction traffic would be distinguishable from normal traffic on the operation of regional roads.

The Proponent has committed to maximise employee parking at compounds; carpooling and shuttling employees to work sites are encouraged. Construction workers would also be encouraged to use buses and trains servicing the airport and Mascot to access the area. These measures are accepted practice and considered appropriate to address the likely car parking impacts of the proposal.

Construction may coincide with other projects in the area including the Sydney Gateway, WestConnex Stage 3a (M4-M5 Link), relocation of the Qantas Flight Training Centre, Airport North and East road upgrades. Cumulative traffic impacts is most likely at the western extent of the project. Land use in that area is largely industrial and airport-related, where high traffic volumes are a feature. The Proponent has committed to consult with and notify relevant authorities, councils and other stakeholders; consider special events and emergency services management; and to monitor cumulative traffic impacts.

Submissions

Government Agency and Council Submissions

Roads and Maritime Services (RMS) noted the approval required for construction work within a classified road that may impact traffic flows on the surrounding RMS road network. The submission also advised of the proposed Sydney Gateway Project currently under assessment.

Transport for NSW (TfNSW) raised concern regarding demolition and construction traffic management and required approvals, pedestrian, cyclists and parking impacts, coordination of construction traffic impacts with the Sydney Coordination Office (SCO) and other stakeholders including Sydney Airport.

Inner West Council supports the proposal but raised concerns about construction traffic impacts, increased freight traffic movements impacting residents abutting the rail line and increased heavy vehicle movements at the Enfield Intermodal Facility. Council also requested an in-corridor active transport route be included in the project.

Randwick Council supports the proposal but raised concerns about construction traffic impacts within Randwick LGA and requested estimated vehicle numbers that are expected eastbound along Wentworth Avenue. Council also requested that options be explored to provide for active transport within the rail corridor.

Bayside Council commented on the proposed parking arrangements within the site compounds and the management of complaints, construction trucks entering gates within residential areas, proposed road closures and traffic/bus diversions, communication of road changes, potential road and pavement damage by construction vehicles, vehicle, pedestrian and cyclist safety, coordination of concurrent construction traffic impacts, incentives for transport of freight by rail, and requested inclusion of a shared pedestrian/ cycleway into the project.

Organisation Submissions

Qantas raised concerns about construction traffic impacts via King Street access gate impeding access to the new Qantas flight training centre (once operational) and cumulative construction traffic impacts during its construction. Qantas has suggested conditions of approval requiring consultation with Qantas and relevant stakeholders.

Sydney Airport Corporation Limited (SACL) raised concerns about road closures, working hours/periods, modelling and requested a detailed cumulative construction traffic impact assessment be completed with the Sydney Gateway Road Project. SACL has requested further consultation to understand construction traffic impacts. SACL also suggested that construction cease at 4am and consider the northern winter/summer flight schedule when determining road closures.

NSW Ports supports the proposal noting that it would alleviate the bottle neck on the line between Mascot and Botany but was concerned that freight movement during construction should not be affected.

BIKEast raised concern that the proposal does not align with Government policy to move to more sustainable transport modes, did not consider all cycleways in the area, did not propose additional cycleways and safety for vulnerable road and footpath users during construction. BIKEast also supports ongoing consultation with Bayside Council regarding improved access.

Bikes Botany Bay raised concerns about the provision of active transport.

Department's Consideration

Consultation and notification of arterial road closures and active transport facility relocations

Ten weekend closures of Robey Street and O'Riordan Street are proposed over three years to dismantle billboards, construct new rail bridges and demolish existing bridges. Six closures of Southern Cross Drive (between 11pm and 5am Monday to Thursday) are likely to be limited to one carriageway at any time for preparatory work and installation of a new bridge adjacent to the existing rail crossing between Botany Road and Wentworth Avenue. Closure of these key arterial routes would be unavoidable as much of this work cannot be done under traffic for public safety and that of construction personnel. Potential intrusions to the obstacle limitation surface and the need for a third-party approval, such as Road Occupancy Licences further limit the time available to complete some components of this work.

Access along Robey Street or O'Riordan Street would be maintained with detours and Traffic delays of up to:

- 20 minutes during a weekend closure (11pm Friday to 5 am Monday) of Robey Street;
- 10 minutes when O'Riordan Street is closed; and
- 19 minutes if full closure of Southern Cross Drive is required.

Closures are planned during the lowest traffic period though this is likely to coincide with high construction activities for nearby State significant development (Sydney Gateway and Qantas Flight Training Centre). These closures would be the subject of public information campaigns. In addition, the Department recommends that road closures are planned and co-ordinated in consultation with the proponents of those projects, TfNSW and other relevant stakeholders.

Two bus routes (400 and 420) would be rerouted during the Robey Street and O'Riordan Street closures, resulting in:

- longer trips (both distance and time); and/or
- some stops not being serviced if on-time running is prioritised; and
- relocation of some stops and pedestrian and cycle paths.

Pedestrian and cyclist diversions could extend their pathways by up to 260 metres during the O'Riordan Street closure. These impacts are acceptable as they would be temporary, and the current configurations reinstated after construction is completed. However, conditions are recommended to ensure temporary relocation of facilities are safe and signage installed in consultation with bus service providers and relevant council.

No permanent change to active transport network

There is no public access to the freight rail corridor and the proposal would have no ongoing operational impacts or changes to road, cycle or pedestrian links. Existing accesses across the corridor at Stephen Road and Banksia Street, Botany would not be affected.

Bayside Council and various user groups requested a cycleway be constructed along the corridor. Council exhibited a Transport Discussion Paper in early 2019 seeking input to a transport strategy. Issues raised included the lack of a consistent, separated, high quality cycleway network and road safety, particularly where the road is shared with trucks and that the port and airport create a significant barrier to east west movement. The draft transport vision aims for a transport system which supports active lifestyles and a guiding principle to encourage active transport for short trips.

The Department supports a resilient active transport network, however there is no nexus between the provision of new cycling infrastructure with this project. Public access cannot be provided to the rail corridor, which will be further constrained by the duplication and there is no long-term change or impact to existing cycle and pedestrian infrastructure in adjacent areas. Notwithstanding, the Department considers that temporary relocation of pathways must be reinstated to their pre-construction location and to a relevant standard following construction and options for provision of

active transport infrastructure by others identified in published policies or plans should not be precluded. Opportunities to improve the active transport network will be considered in more detail as part of the Sydney Gateway proposal.

Increased freight rail movement at intermodal terminals

The duplication is expected to increase from an average of 20 trains per day in each direction to 45 trains per day in each direction by 2030. The increased capacity supports a shift from movement of freight by road to rail in line with government policy, tempering an increase in truck movements to and from Port Botany (reducing the increase in road transport). This is expected to increase activity at intermodal terminals, such as Enfield and Moorebank, where freight is then transferred to truck for delivery.

Planning approvals for individual intermodal terminal regulates the operations at each site. The impact from truck movements associated with an intermodal terminal have been considered in the assessment of that development. Operation of the Botany Rail Duplication would not alter the conditions of any intermodal terminal approval.

6.3 Biodiversity

The impacted area has relatively poor biodiversity value; notwithstanding, the proponent has designed the project to minimise biodiversity impacts as far as practicable. Rehabilitation of impacted riparian areas will be undertaken, with residual biodiversity impacts offset consistent with the requirements of the *Biodiversity Conservation Act, 2016.*

Terrestrial flora

The study area is dominated by an urban exotic/native landscape. The project would clear 8.12 hectares of vegetation in a highly disturbed area with limited native vegetation, including 0.56 hectares of Endangered Ecological Communities comprised of:

- Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (0.1 ha); and
- Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (0.46 ha in poor to low condition).

No threatened flora was identified or considered likely to occur in the study area.

Terrestrial fauna

The Grey-headed Flying-fox and Eastern Bentwing Bat (a microchiropteran species) were recorded in the area. Up to 2.51 hectares of canopied foraging habitat (0.62 hectares is native vegetation) would be cleared. Freshwater Wetland habitat (approximately 0.1 hectares) of marginal potential foraging habitat for migratory waders would be cleared.

No evidence was found of microchiropteran bats using bridges as a roost sites, however there is a potential that the Mill Stream bridge could provide a potential temporary roost. Pre-clearing surveys

would include inspections of bridges for bats that may be impacted by construction (noise and vibration).

This project would contribute to increased habitat loss in a highly modified environment with limited natural biodiversity. Surrounding industrial, airport, shipping port and residential development has resulted in continuous degradation of the once widespread Botany wetlands to the point where they are highly compromised by and under pressure from weed infestation and urban stormwater runoff such that the long term viability of the remaining small pockets of vegetation and habitat with moderate value is poor without significant intervention.

Submissions

Environment, Energy and Science Group commented on measures to minimise impacts to riparian vegetation, potential to improve riparian vegetation under the Mill Stream bridge, landscaping, urban tree canopy cover and replacement of any trees removed.

Department's Consideration

Rehabilitation of riparian areas and residual impacts to be offset

The project was designed to avoid and minimise ecological impacts as much as possible. This approach is supported as a fundamental principle of best practice project design. Most clearing is required around Mill Stream and the site compound adjacent to Mill Pond. Rehabilitation of affected riparian areas with locally endemic species is proposed. This will be done in consultation with Sydney Airport to minimise the risk of attracting birds which pose a risk to aviation. Offsetting in accordance with the BAM will be undertaken where impacts cannot be avoided.

Loss of a small portion of foraging habitat within a highly disturbed environment is likely to have minimal impact to the Grey-headed Flying-fox and the Eastern Bentwing Bat. Ecosystem offsets provided in accordance with the BAM would offset impacts to the foraging habitat impacted.

The identified impacts would require 11 ecosystem credits to be obtained. The Proponent has identified two options, either purchasing and retiring biodiversity credits or making a payment to the Biodiversity Conservation Fund to meet its obligations. This approach is consistent with the *Biodiversity Conservation Act, 2016* and is supported.

Biodiversity impacts not to exceed those assessed

While the assessment quantifies the anticipated offset area required, the Proponent has committed to offset any impacts over and above those assessed, should this occur. This position is not supported and is inconsistent with the *Biodiversity Conservation Act*. The EIS should provide an assessment of what could reasonably be expected as the extent of impact and clearing as an upper limit with appropriate mitigation. A condition is recommended to limit the impacts to vegetation to that which is assessed in the EIS. Should there be a need for a larger clearing footprint, this would need to be assessed and determined appropriately.

The Department has recommended conditions to ensure that the species used to rehabilitate disturbed riparian areas is determined in consultation with Sydney Airport and other key stakeholders to limit the potential for wildlife strikes impacting aircraft: to ensure that the required biodiversity offsets are in place before impact to those communities for which offsets are required; and to clarify the extent of vegetation removal.

6.4 Other Issues

The Proponent has also assessed the potential impacts of the project in relation to air quality, health and safety, hazards and risks, socio-economic impacts, waste and climate change. The Department considers that the Proponent has undertaken an adequate assessment of the issues and that they can generally be managed through the Proponent's environmental management measures and the recommended conditions of approval. **Table 4** provides a summary of these issues and the recommended conditions of approval.

Table 4. Summary of other issues raised

Issue	Consideration
Flooding and Hydrology	Community submissions raised concern that the area is prone to flooding and the proposal could exacerbate this further. The assessment, as revised in the response to submissions, demonstrated that the proposal would not exacerbate flooding in residential areas and would make flood free some areas that are currently subject to flooding and reduce peak flood levels in other areas. It would have some residual impacts though these would be localised. The Proponent has committed to further refining the drainage design to mitigate these impacts. EESG and DPIE Water support commitments to revise and refine the design. ***Construction impacts limited and can be managed*** Obstruction of surface water flow paths could affect flood behaviour. Obstructions could include temporary crane pads and piling platforms required to construct bridges at Mill Stream, Robey Street and O'Riordan Street. While these may impact the extent, depth of inundation and flow velocities (in Mill Stream) during a 50 per cent AEP event, the likelihood of this occurring is low as these would only be in place for short periods (up to 48 hours for crane pads). The Department is satisfied that the commitments to not worsen existing flood characteristics, careful siting and staging of construction activities and the implementation of a flood management procedure would appropriately manage flood risk during construction. ***Flood characteristics during operation will not significantly change*** Obstruction and diversion of floodwaters, loss of floodplain storage and altering runoff behaviour may occur. While the proposal would not significantly change flood behaviour, some residual impacts to peak flood levels, flow velocity and duration of flooding remain. A 0.13 m increase on existing a 0.6 m inundation in the Probable Maximum Flood (PMF) is expected at three commercial properties on Lord Street, Botany; Booralee Park; and the Botany Aquatic Centre car park. As this increase is affecting currently flooded properties, it is considered acceptable. Flood inundation between Southern Cross Drive and Mill Stream would increase by 0.01 m during a 10 per cent AEP event, where existing inundation ranges from 0.6 and 1.2 metres, and by up to 0.05 m in some parts of Eastlake Golf

Issue	Consideration
	course by during the 10 per cent AEP event. These impacts are negligible and would not increase hazard or use of those areas in the identified events. A slight increase in inundation of parts of Qantas Drive and Sydney Airport within the Sydney Gateway Road Project footprint may occur. These areas are subject to upgrade should Sydney Gateway be approved. The Proponent has committed to investigating ways to adjustments to drainage infrastructure to reduce this impact through detailed design. This approach is considered appropriate. Minor changes to the extent and duration of flooding are predicted in Mill Stream and within Eastlake Golf course by up to 30 minutes during a one per cent AEP event and this is offset by minor reductions flood duration at some residential properties along Bay Street and Banksia Street, as well as parts of Booralee Park and Eastlake Golf course. This is considered appropriate as it would not affect the use of the area or riparian habitat and vegetation.
Water Quality and Soils (including Contamination)	The proposal is located in the existing rail corridor and on highly disturbed land. On-site contamination from historical uncontrolled filling, rail activities and off-site contamination from industrial and commercial uses is present. Levels of various contaminants were measured in surface and groundwater. ***Asbestos and contamination risks to be managed and independently verified*** Asbestos Containing Material (ACM) would be excavated between Bay Street, Botany and the existing Mill Stream bridge. The remaining ACM would remain *in-situ* and capped. Fragments of potential ACM were also observed on the soil surface in the north western portion of the site (west of Robey Street, Mascot). The Department supports the Proponent's commitments to undertake further investigations as part of detailed design to understand the nature and extent of contamination. This risk would be managed under the actions of an Asbestos Management Plan. The Proponent has also committed to preparing a Remediation Action Plan (RAP) in accordance with the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM), and a Validation Report prepared following remediation. Other contamination specific controls and management plans are proposed to manage the risk associated with contamination, including the preparation of an Unexpected Find Protocol and Soil and Water Quality Management Plan to manage soil and water risks. This is supported by EPA. The EPA has advised that in addition, a Site Audit Statement and Site Audit Report must be prepared by an NSW EPA Accredited Site Auditor to confirm that the site is suitable for the intended use following remediation. The Department has recommended conditions to this effect. ***Groundwater and surface water contamination impacts considered low*** The community raised concerns regarding pollutant management. Local groundwater has elevated concentrations of manganese, arsenic and perfluoro octane sulfonate (PFOS). High concentrations of PFOS and elevated concentrations of total nitrogen, phosphorus, ammonia, heavy metals, turbidity and total suspended solids have been measured in Mill Pond. Surface waters are contaminated and frequently exceed the relevant *Australian and New Zealand guidelines for fresh and marine water quality* (ANZECC) criteria. The Proponent has committed to implementing standard erosion and sediment controls consistent with the principles set out in *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004), as recommended by DPIE Water and NRAR, to manage and mitigate any residual impacts and the Department considers this appropriate to manage the erosion and sedimentation risk to water quality from disturbance of soils during construction.

Issue	Consideration
	No extraction or dewatering is proposed. Detailed design has would seek to minimise the excavation required, minimise soil disturbance and avoid intercepting potentially contaminated groundwater. Incidental groundwater extraction and subsequent disposal and reuse would be managed in accordance with the PFAS National Environmental Management Plan. Proposed capping of some material would reduce generation of contaminated waste and reduce the risk of disturbance during operation.
Non-Aboriginal Heritage	The Botany Rail Line is not a listed heritage item, but it holds historic, associative, social, aesthetic, technical and representative significance due to its relationship with surrounding industrial development, the Metro Goods Line network and freight transportation in NSW. Locally listed heritage items affected by the project include the Mascot (Robey Street) underbridge; Mascot (O'Riordan Street) underbridge; Mascot (Botany Road) underbridge; and the Botany Water Reserves. ***Local heritage items require demolition in order for the project to meet engineering and safety standards*** The Robey Street and O'Riordan Street underbridges would be demolished two and new underbridges constructed. Retaining these bridges would requiring overcoming significant difficulties in strengthening the bridges to ensure they can accommodate additional rail traffic loads and comply with NSW track geometry standards and headroom requirements for vehicles travelling beneath the structure. This demolition may affect the aesthetic and technical significance of the Botany Rail Line, however duplication of the existing rail line would facilitate continued functionality of the freight line into the future.These impacts will be addressed by standard measures outlined in conditions, and commitments to avoiding impacts, photographic archival recording and interpreting affected items are supported Remediation of the Mascot (Botany Road) underbridge headstock and brick abutments is required but impacts to the heritage values are considered minor. The original steelwork, piers and reinforced concrete structures which contribute to the structure's significance and its listing would not be affected. Minor impacts to views of the Botany Water Reserves from the new two-span bridge parallel to the existing bridge over Mill Stream are expected. However, the Department accepts that it is unlikely viable alternatives would reduce this impact.
Aboriginal Heritage	Aboriginal objects or archaeological deposits are unlikely to remain in the area due to past levelling and filling of landforms to facilitate industrial development and transport. The Department is satisfied that any unexpected heritage finds can be appropriately managed according to current policy and outlined in an Unexpected Heritage Finds and Human Remains Procedure.
Risks, Health and Safety	Potential health and safety risks during construction and operation include impacts from changes in air quality, noise and vibration, public safety, contamination and construction close to major utility pipelines. Measures to manage the impacts to air quality, noise and vibration, transport and traffic and contamination to acceptable limits are proposed and further strengthened by proposed conditions would address risks to health and safety. Risks of construction near high pressure pipelines can be adequately managed by the relevant regulations, policies, standards and legislation.

Issue	Consideration
Airport and Aircraft Operations	Intrusion into the Obstacle Limitation Surface (OLS), construction lighting and dust affecting visibility could impact airport and aircraft operations. ***OLS intrusions will be limited and with the approval of Sydney Airport*** Piling rigs, cranes for bridge works, high-rail dump trucks and excavators that intrude the OLS (approximately one kilometre of the project) are unavoidable. Road closures of Southern Cross Drive are also within the OLS. Work within the OLS is proposed within the 11pm-6am airport curfew, or at other times with the approval of Sydney Airport in accordance with the *Airports Act 1996*, to limit impacts to airport or aircraft operations. Current freight train movements, rail infrastructure and maintenance encroach the OLS. This would continue with increased frequency during operation. The Proponent has committed to consulting with Sydney Airport Corporation Limited, CASA and Airservices Australia (ASA) regarding any additional requirements and approvals relating to transient obstacles within the OLS. ***Lighting will meet aviation safety standards*** Lighting may distract or cause glare or confusion to pilots during flight take-offs and landings. CASA is authorised to require lights to be extinguished or modified to limit impacts to airport operations. The Proponent has committed to complying with the Civil Aviation Safety Authority Manual of Standards 139 section 9.21 and the National Airports Safeguarding Framework Guideline E for lighting associated with construction, operation and maintenance of the rail line.
Social impacts	Temporary construction related social impacts include reduced amenity from increased noise and traffic, parking restrictions and traffic, pedestrian and cyclist access changes, and impacts on businesses due to road closures. Potential social benefits include increased freight efficiency and associated economic benefits for Greater Sydney and a reduction in truck movement growth rates around Sydney Airport and Port Botany. Proposed mitigation includes scheduling to provide respite and identification of source at source and at receiver noise mitigation to ensure operational noise is appropriately mitigated and a collaborative approach to traffic management with other traffic generating projects, including temporary relocation and reinstatement of cycleways, footpaths and bus stops with appropriate notification to affected community. The Department considers that the social impacts identified can be adequately managed by the mitigation measures outlined in the related sections for traffic, noise and vibration, air quality and landscape and visual amenity.
Land-use and property	Land use and property related impacts include property acquisition, construction compound site locations, billboard modification/relocation and temporary road closures. Partial permanent acquisitions of five properties zoned B5 – Business development, and privately owned would be required. Large advertising billboards occupy otherwise vacant properties. Land leased temporarily for construction is located adjacent to the existing rail corridor in generally cleared areas and would be rehabilitated to its original condition following the works. Proposed mitigation measures include reducing the construction footprint through design refinement, advanced notification of construction schedules and changes to access arrangements and replacement of billboard structures, where

Issue	Consideration
	possible. These mitigation measures and recommended conditions of approval are appropriate to manage the impacts.
Landscape and visual amenity	The area is primarily semi-industrial with residential and community uses at its northern/western end and residential at its southern/eastern extent. Nonetheless some screening or softening vegetation will be cleared which may have an impact on local amenity. A moderate adverse visual impact due to the replacement of bridges is also expected. ***Visual impacts considered minor with impacted trees to be replaced*** The proposal may result in moderate impacts to landscape character, particularly at the entry point to Sydney from Sydney Airport; however, this area is subject to future changes to access and egress from the domestic terminals and has undergone various changes in the recent past with upgrades to the O'Riordan/Robey/Sir Reginald Ansett Dr and removal of the at grade rail crossing of Wentworth Avenue. The visual impacts of the proposal are considered minor or negligible and the proposed mitigation measures to design refinement to minimise the visual clutter of new bridge structures and replacement of billboards generally in the same location are supported. Conditions have been recommended to replace amenity trees (not subject to biodiversity offset requirements) in consultation with Sydney Airport and the relevant Council.
Waste	Waste generated by the project would be comparable to other similar scale rail projects. Excavated material (spoil) would be classified and reused where possible or disposed of at a licensed waste management facility.
Climate Change	Changes in frequency and intensity of rainfall and flooding events; and increases in extreme high temperatures provide a moderate risk. The potential for damage to communication and signalling systems from flooding is considered a high risk. Proposed mitigation measures include designing drainage systems with consideration to future increased rainfall intensity, locating cable routes outside of future flood inundation zones where possible, and selecting and designing equipment to be resilient to projected temperature changes and are considered adequate to mitigate the climate change risks.

7. Evaluation

The Department has reviewed the EIS and Submissions Report, and assessed the key issues arising from construction and operation of the proposal. 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
- the principles of ecological sustainable development.

The proposal is consistent with key government policies and strategies including

- *State Infrastructure Strategy 2018-2038: Building the Momentum;*
- *Greater Sydney Region Plan: A Metropolis of Three Cities;*
- *Eastern City District Plan;* and
- *NSW Freight and Ports Plan 2018-2023.*

The proposal would create around 100 full time jobs during construction and encourage a modal shift in freight transport from road to rail reducing the increase in truck movements by:

- Increasing the capacity of the Botany Rail Line and the Metropolitan Freight Line more broadly, to meet future demands for rail freight transport;
- support the operation of the various intermodal terminals in metropolitan Sydney, including Enfield, Chullora and Moorebank; and
- facilitate more efficient and reliable freight train services travelling to and from Port Botany.

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

Residual impacts are considered acceptable with the application of recommended conditions and the Proponent's commitments, such that there is no long term and irreversible impact. 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 the noise generated during both construction and lasting operational noise reductions.

The ability to manage these impacts and the social benefits of reduced local traffic, coupled with the regional transport benefits and relief of capacity constraints, are the reasons that the proposal is considered to be in the public interest and should be approved subject to conditions.

8. Recommendation

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

- **considers** the findings and recommendations of this report;
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to approve to the application;
- **considers** any advice provided by the Minister having portfolio responsibility for the proposal;
- **agrees** with the key reasons for approval listed in the notice of decision;
- **grants approval** for the application in respect of SSI-9714 as amended, subject to the conditions in the attached approval; and
- **signs** the attached project approval and recommended conditions of approval (see attachment) or instrument of refusal (see attachment).

Recommended by:

Lisa Mitchell
Team Leader
Transport Assessments

Recommended by:

Glenn Snow
A/Executive Director
Infrastructure Assessments

9. Determination

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

The Hon. Rob Stokes MP
Minister for Planning and Public Spaces
28th July 2020.

Appendices

Appendix A – List of Documents

Botany Rail Duplication Environmental Impact Statement – Parts A to D – dated October 2019

Botany Rail Duplication Submissions Report – dated March 2020

Appendix B – Environmental Impact Statement

https://www.planningportal.nsw.gov.au/major-projects/project/10206

Appendix C – Submissions

https://www.planningportal.nsw.gov.au/major-projects/project/10206

Appendix D – Response to Submissions

https://www.planningportal.nsw.gov.au/major-projects/project/10206

Appendix E – Community Views for Draft Notice of Decision

The key issues raised by the community (including in submissions) and considered in the Planning Secretary's Report include noise and vibration, active transport, traffic, biodiversity, hydrology, and contamination.

Issue	Consideration
Noise and Vibration • Concern with adequacy of noise monitoring completed as part of EIS • Concern regarding construction and operational noise and vibration impacts • Increased frequency of trains • Request for noise treatment including noise barriers and at-property treatment • Independent noise monitoring requested	*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, and the need to continue existing freight operations, necessitates overnight and early morning work for personnel and public 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 these impacts • Wheel squeal (caused by the interaction of rail bogeys on sections of tight curve rail track) is likely to result in peak noise level exceedances during operation. A track lubrication system is proposed to manage these effects and is expected to reduce resultant noise levels by up to 8 dBA • Further investigation is required understand the underlying geology to determine the design response to potential ground borne noise impacts *Recommended Conditions/Response* Conditions include: • Daytime construction noise managed using industry best-practice and underpinned by a robust community consultation strategy • 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 2 nights over a seven-day rolling period • An Operational Noise and Vibration Review to confirm efficacy of operational noise and vibration control measures, including track lubrication, prepared by a noise and vibration expert
Active Transport • Missed opportunity to provide active transport connections • Opportunity to improve active transport route connectivity • Project does not align with policies and plans in respect of active transport	*Assessment* • Incorporation of active transport links were considered by the Proponent during design and development phase of the project • construction and operation would occur in the existing rail corridor with no permanent impact to existing active transport routes; limited scope to provide active transport links outside of the rail corridor. • limited space to provide an active transport route in the freight rail corridor; residual space required for track maintenance • Opportunity for active transport links not diminished by proposal *Recommended Conditions/Response* No conditions are required in relation to this matter

Issue	Consideration
Contamination • Management of pollutants • Independent water sampling requested • Concern over release of contaminants/pollutants into the air and run off during construction	*Assessment* • existing rail corridor with soil contamination from filling, rail activities and off-site contamination from industrial and commercial activities • exposure and mobilisation of contaminants and acid sulfate soils (ASS) possible but negligible impact on surface water • EPA noted that significant air quality impacts were unlikely from construction or operation but recommended further contamination assessment and preparation of management plans • Mitigation measures proposed by the Proponent, and recommended conditions of approval are sufficient to manage water quality, soil and contamination risks *Recommended Conditions/Response* Conditions include: • A Remediation Action Plan (RAP) and Validation Report are required to be prepared Site Audit Statement and Site Audit Reports are required to be prepared by a NSW EPA Accredited Site Auditor to confirm the site is suitable for the intended use following remediation • Site Contamination Report is required to be prepared, documenting the outcomes of Stage 1 and Stage 2 contamination assessments that are suspected or known to be contaminated
Health • Impact of lack of sleep on mental health • Impact of 24hr operation on health and wellbeing	*Assessment* • air quality would not exceed relevant air quality criteria • Sleep disturbance screening criteria is expected to be exceeded without mitigation *Recommended Conditions/Response* Conditions include: • A three-monthly 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 2 nights over a seven-day rolling period • The implementation of noise and vibration mitigation measures and an Operational Noise and Vibration Review to confirm efficacy of these measures • Ongoing monitoring of track lubrication where used as a mitigation measure for operational noise (wheel squeal)

Appendix F – Recommended Instrument of Approval