



Cabramatta Loop Project

State Significant
Infrastructure Assessment
SSI 9186

July 2020

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Cover photo

View of the existing rail corridor from Cabramatta Road West road overbridge towards the south (ARTC).

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Glossary

Abbreviation	Definition
Approval	Minister's Approval
AEP	Annual Exceedance Probability
ARTC	Australian Rail Track Corporation (the Proponent)
CSSI	Critical State Significant Infrastructure
Department	NSW Department of Planning, Industry and Environment
DPIE EES Group	Environment, Energy and Science Group of the Department
DPIE Water Group	Water Group of the Department
EIS	Environmental Impact Statement for the project prepared for the Proponent and dated 15 August 2019
EPA	Environment Protection Authority of NSW
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development
ICNG	<i>Interim Construction Noise Guideline</i> (DECC, 2009)
LGA	local government area
MFN	Metropolitan Freight Network
Minister	Minister for Planning and Public Spaces
NML	Noise Management Level
NRAR	Natural Resources Access Regulator
Proponent	Australian Rail Track Corporation (ARTC)
SEARs	Secretary's environmental assessment requirements
Secretary	Secretary of the Department of Planning, Industry and Environment
Slewing	Technical term used to describe moving or realigning existing track sideways
SSFL	Southern Sydney Freight Line
SSI	State Significant Infrastructure
Response to Submissions Report	Submissions Report for the proposal prepared by the Proponent and dated 20 February 2020
TfNSW	Transport for NSW



Executive Summary

The Southern Sydney Freight Line (SSFL) is a 36-kilometre-long single bi-directional train track line dedicated to freight, located between Macarthur and Sefton in metropolitan Sydney. Australian Rail Track Corporation (ARTC) (the Proponent) is seeking approval for the Cabramatta Loop Project (the proposal), which involves the construction and operation of a passing loop on the SSFL, to enable freight trains up to 1,300 metres long to pass in either direction. The new passing loop track and tie ins would be approximately 1,650 metres in length and would be located largely within the existing rail corridor between the Hume Highway and Cabramatta Road East road overbridges in Warwick Farm and Cabramatta.

The Department has found that the proposed benefits of improved reliability, efficiency and flexibility in freight transportation and increased capacity on the SSFL outweigh localised negative impacts; and it is in the public interest that the proposal is approved.

The proposal is an important component of the NSW 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 increase rail market share for containerised freight and reduce reliance on heavy vehicles.

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 Friday 30 August 2019 until Thursday 26 September 2019 (28 days). Submissions were received from six State government agencies, two councils and nine community submitters. Fairfield City Council objected to the proposal based upon the loss of on-street car parking and potential flooding impacts on residences along Broomfield Street. Three community submissions objected to the proposal. Key issues raised in the submissions included increased operational noise, construction noise and vibration, loss of on-street car parking during construction and operation, loss of access to public open spaces during construction, and loss of public open space and trees.

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 at Broomfield Street between Bridge and Sussex Streets.

The Department has recommended conditions to manage the impact of construction noise and vibration including the provision of respite periods and implementation of management strategies including scheduling of work.

Once the proposal is operational, the Proponent proposes a combination of controls, including the relocation of an existing noise wall to reduce operational noise to Broomfield Street residents. These measures are supported by the Department and early implementation during construction to minimise construction noise impacts is recommended. Implementation of a review and the preparation of a compliance report have also been recommended to ensure that noise and vibration levels generated comply with specific noise criteria once operation commences.

Traffic, Transport and Access

The proposal would improve the reliability and safety of freight movements as well as increase the capacity of the MFN.

Some local traffic and access impacts would occur during construction from temporary road closures and traffic diversions in the vicinity of Broomfield Street, Sussex Street and Railway Parade, and construction traffic movements. These impacts are temporary and can be managed with established management measures and in consultation with the community.

In response to concerns raised by Fairfield City Council and the community regarding the permanent loss of up to 11 car park spaces on Broomfield Street, the Proponent has committed to provide replacement car spaces on Railway Parade. These replacement spaces would be designed in consultation with Council and would consider impacts on landscaping and streetscape.

Flooding and Drainage

The proposal may cause localised increases in flood levels and alterations in flooding behaviour along Broomfield Street during construction and operation during rare to extreme flood events. The Proponent will prepare a flood management procedure to manage the impact on flood behaviour in the surrounding area during construction.

The Department has recommended conditions to ensure that the design and construction of the project do not worsen existing flood characteristics within the project area. Measures necessary to minimise the potential for flooding impacts on adjoining land uses during operation would be considered during the detailed design process. The Proponent will further refine drainage design, which may include adjusting levels of Broomfield Street or changes to gutter invert levels to increase capacity, diverting local flows and duplicating the proposed drainage pipes.

Social Impacts

Land would be temporarily acquired for construction compounds, work sites and the Sydney Water main relocation. Recreational use of Jacquie Osmond Reserve would be restricted in parts during construction. A five to ten-metre-wide section of land on the eastern side of the rail corridor would be permanently acquired, a portion of which is in Jacquie Osmond Reserve.

To address the social impacts of this land acquisition and the effect on final configuration of the softball facilities, the Department has recommended conditions requiring the existing level of softball activity at the Reserve be maintained through enhancement of existing or the provision of new facilities, and that these be designed in consultation with the Southern District Softball Association and Liverpool City Council. The Department has also recommended that the Proponent enhance access to the Reserve before decommissioning of the construction compound in the Reserve.



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1. Introduction

The Australian Rail Track Corporation (ARTC) (the Proponent) is seeking approval for the Cabramatta Loop Project (the proposal) which involves the construction and operation of a passing loop as part of the Southern Sydney Freight Line (SSFL) to enable freight trains up to 1,300 metres long to pass in either direction. The proposal would be approximately 1650 metres long and located within the existing rail corridor between the Hume Highway and Cabramatta Road East road overbridges in Warwick Farm and Cabramatta respectively.

The SSFL was commissioned in 2013 and is a 36-kilometre-long single bi-directional train track line dedicated to freight, adjacent to the Main Southern Line between Macarthur and Sefton in south-western Sydney (**Figure 1**). The SSFL is managed and maintained by the Proponent.

The proposal is in the local government areas (LGAs) of Fairfield City (to the north) and Liverpool City (to the south). The area traversed is urbanised and characterised by low to medium density residential development at Cabramatta, and a mix of residential, recreational and commercial uses towards Warwick Farm. Lawrence Hargrave School is located to the west (see **Figure 3**) and two community/religious centres are located on Broomfield Street to the east of the proposal. The proposal crosses Cabramatta Creek and traverses part of Jacquie Osmond Reserve and adjacent to Stroud Park/Warwick Farm Reserve in Warwick Farm.

Figure 1 shows the location of the proposal within the Metropolitan Freight Network (MFN). **Figure 2** shows the location of the proposal in Warwick Farm and Cabramatta.



Figure 1 | Regional/Local Context Map (Source: EIS)



Figure 2 | Location of the project (Source: EIS)



2. The Proposal

2.1 Proposal Overview

The proposal involves the construction and operation of a passing loop on the SSFL to enable freight trains, up to 1,300 metres long and travelling in either direction, to pass each other between Warwick Farm and Cabramatta train stations. Key operational features of the proposal are described in **Table 1**.

Table 1 | Proposal components

Aspect	Description
New rail tracks	<ul style="list-style-type: none">approximately 1,605 metres of new track adjacent to the existing track, with connections at the northern and southern ends to form a loop
Track realignment	<ul style="list-style-type: none">slewing approximately 550 metres of existing track to make room for the new track
Road works	<ul style="list-style-type: none">reconfiguring Broomfield Street between Bridge Street and Sussex Street approximately seven metres to the east to accommodate widened rail corridor
Bridge works	<ul style="list-style-type: none">construction of two new rail bridges adjacent to the existing bridges over Sussex Street and Cabramatta Creek
Ancillary infrastructure	<ul style="list-style-type: none">communication, signaling and power upgrades including installation of bi-directional signaling along the rail corridorrelocation of existing noise wall along Broomfield Streetremoval of street trees on Broomfield Street and relocation of the shared pedestrian and cycle waytemporary diversion of the shared pedestrian and cycle way near Cabramatta Creek during constructiontrack and road drainagerelocate approximately 90 metres of rail corridor retaining wall at Warwick Farmembankment construction along the length of Jacquie Osmond Reserveprotection and relocation of utilitiesadditional on-street parking on Railway Parade.

The proposal would operate as part of the SSFL and would continue to be managed by the Proponent, allowing up to 72 freight train movements (36 in each direction) per day. This is an increase in 10 movements per day from the existing capacity of the SSFL.

2.2 Physical Layout and Design

The physical layout and key elements of the proposal described in **Table 1** are shown in **Figure 3**. Areas adjacent to the existing rail corridor required for the proposal include:

- approximately 220 square metres of the Peter Warren automotive sales yard;
- sections of the existing road corridor in Broomfield Street; and
- approximately 750 square metres of Jacquie Osmond Reserve.

Landscaping and rehabilitation work would be undertaken to restore part of Jacquie Osmond Reserve temporarily acquired for construction to at least its pre-construction condition. Landscaping and planting of Broomfield Street would occur once realignment and reconfiguration is complete.

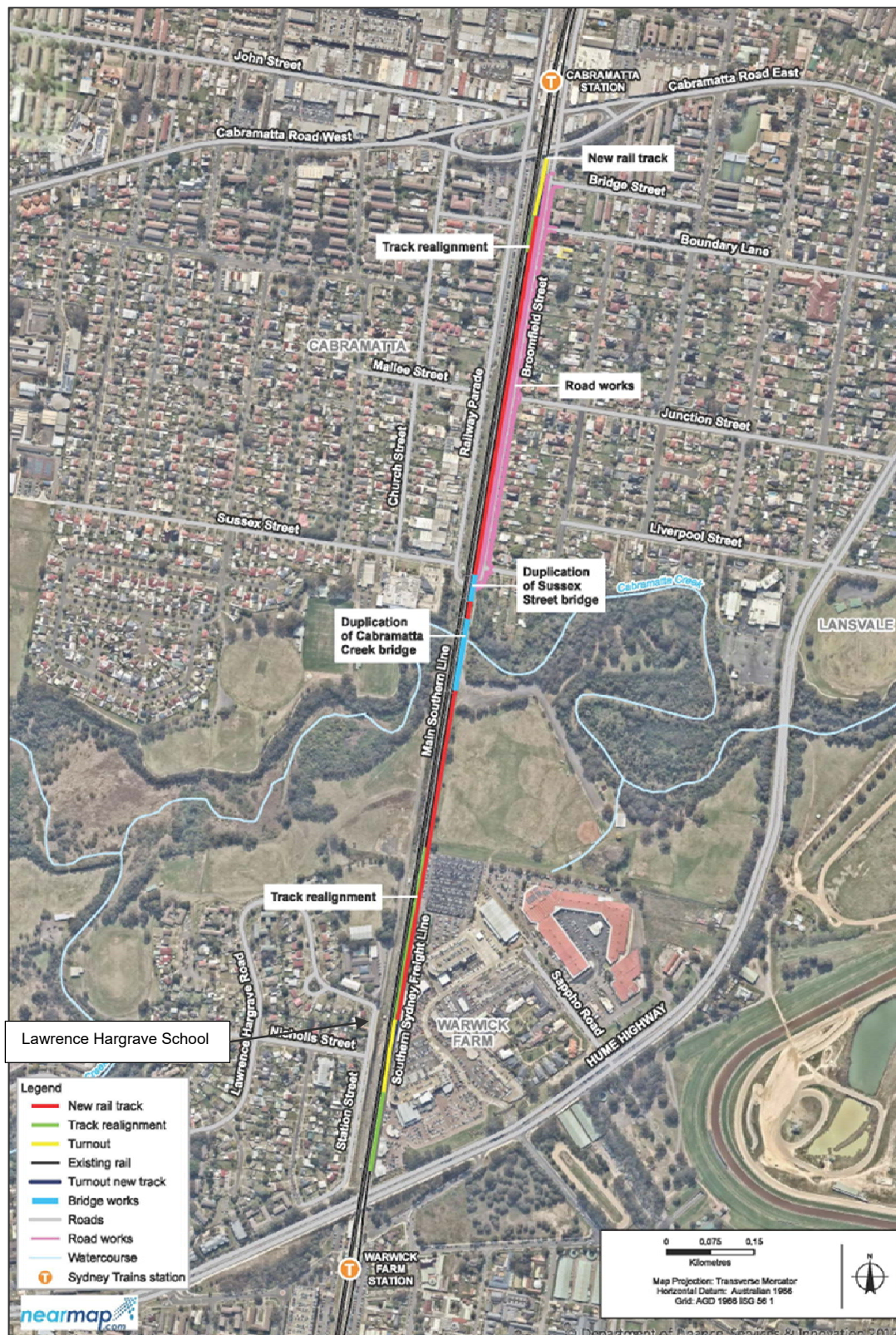


Figure 3 | Key features of the proposal (Source: EIS)

2.3 Construction Activities

Key construction activities are summarised in **Table 2**.

Table 2 | Main construction phases and activities

Phase	Activity
Site establishment and enabling works	<ul style="list-style-type: none">• environment management and traffic controls• heritage investigation, protection and archival recording• compound/work site and access establishment• temporary pedestrian and cyclist diversions• utilities protection/relocation/adjustment of including stormwater drainage pipes, wastewater mains, Sydney Water main, and power poles and power lines• vegetation clearing.
Track construction	<ul style="list-style-type: none">• new formation layer construction and ballast, sleeper and rail track placement• installing and connecting track drainage• ballast tamping• installing new signaling equipment• removing existing and constructing new track• welding and adjusting the track to interface.
Bridge works	<ul style="list-style-type: none">• divert shared pathway to temporary alignment• construct access ramps and crane pads for piling rigs and cranes• pile boring and construct pile caps, erect pre-cast piers and install headstock and bearings• install girders during possession periods• place ballast, sleepers and rail, ballast tamping and track welding• reinstate shared pathway and install furnishing such as handrails and walkways.
Road works	<ul style="list-style-type: none">• road surface removal and earthworks formation• install culverts and drainage infrastructure• paving and road tie-in, line-marking and signage• street-light installation.
Ancillary infrastructure and works	<ul style="list-style-type: none">• remove and reconstruct retaining walls• remove and replace noise wall• urban design treatments and furnishings, such as handrails and green walls.
Finishing and rehabilitation	<ul style="list-style-type: none">• demobilise construction compounds and work areas• site cleanup and restoration, including revegetating and landscaping• decommission temporary work areas including access road and fence removal.
Testing and commissioning	<ul style="list-style-type: none">• test and commission rail line and communication/signaling.

Construction compounds would be used for storing plant, equipment and materials, construction worker parking, and/or construction site offices and worker facilities. Three are proposed:

- within the existing rail corridor to the south of Warwick Farm station;
- in Stroud Park to the west of the rail corridor at Warwick Farm; and
- in Jacquie Osmond Reserve to the east of the rail corridor.

In addition to the construction compounds and general construction activities within the rail corridor, there would also be work sites located outside the rail corridor. These work sites would be used to house a truck turning circle or crane pads.

Construction compound and work site locations are shown in **Figure 4** and **Figure 5**.

Most construction activities (except for those undertaken during rail possession periods) would occur during standard construction hours (7:00 am to 6:00 pm weekdays and 8:00 am to 1:00 pm on Saturdays). However, some work would need to occur outside of these hours for safety and operational reasons.

2.4 Timing

Construction (enabling works) is anticipated to commence in late 2020 and is expected to take approximately two and a half years.

Table 3 | Indicative construction program (Source: EIS)

Construction activity	Indicative construction timeframe									
	2020		2021			2022			2023	
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Enabling works										
Stage 1 – Sussex Street and Sussex Street bridge (southern abutment)										
Stage 2 – Broomfield Street and Sussex Street bridge (northern abutment)										
Stage 3 – Cabramatta Creek Bridge										
Stage 4 – Jacquie Osmond Reserve and Peter Warren Automotive works										
Stage 5 – Track works										
Stage 6 – Finishing and rehabilitation										

Construction along Broomfield and Sussex Streets would be staged to minimise the impact on traffic, access and parking.

The proposal would be constructed while the existing rail line continues to operate, to minimise the impact to freight services. Some features would need to be constructed during programmed rail

possession periods when rail services along the SSFL and, in some cases, adjacent commuter train lines, are not operating. Standard possession periods typically occur over a weekend, four times per calendar year.

A workforce of approximately 80 people would be required during non-rail possession periods, increasing to approximately 220 people during rail possessions (comprising two 12-hour shifts of 110 people each per day).

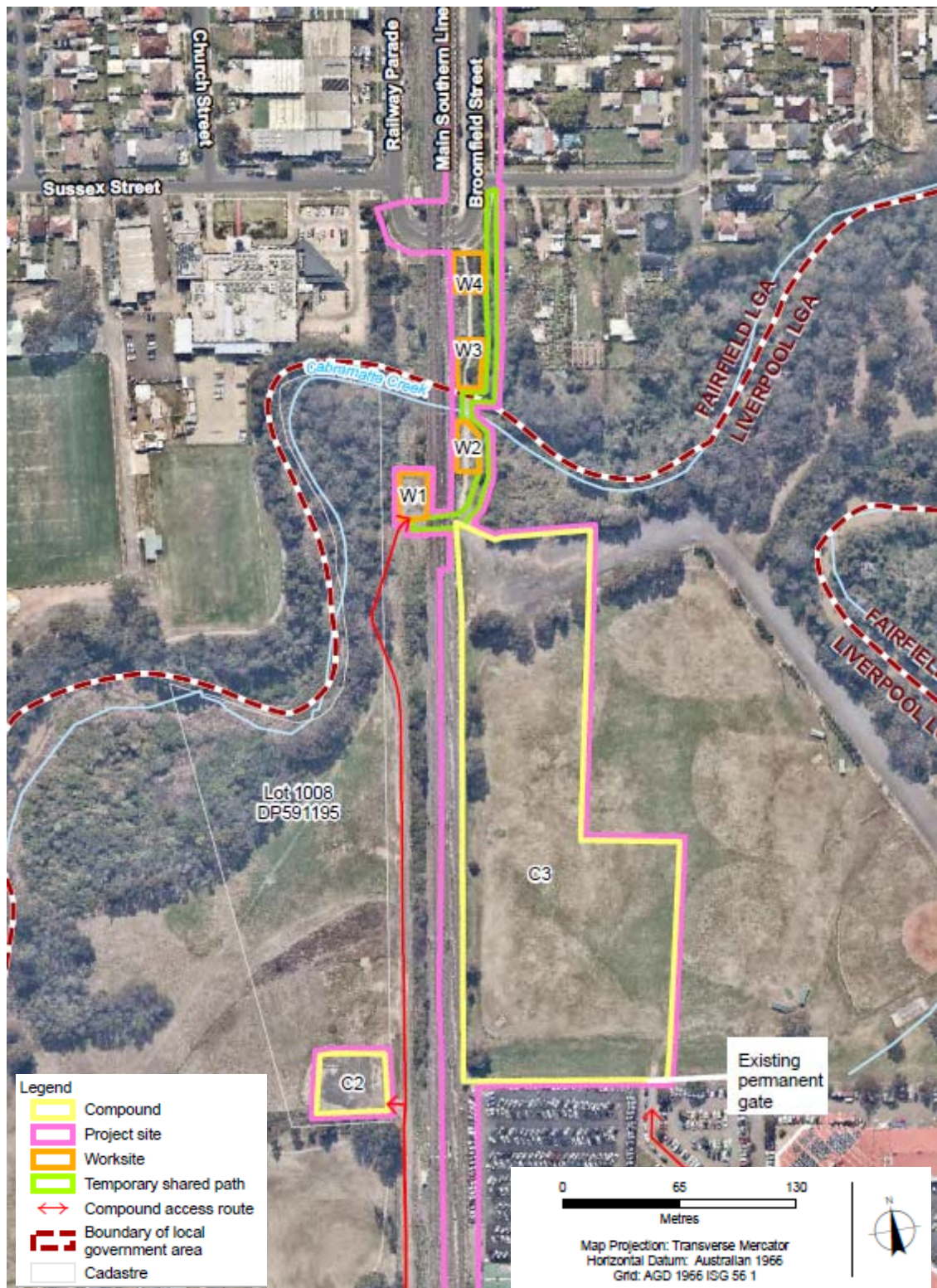


Figure 4 | Construction work areas (northern) (Source: EIS)



Figure 5 | Construction work areas (southern) (Source: EIS)



3. Strategic Context

3.1 Strategic Justification

Over the next 20 years, container freight, air freight, air travel and general traffic in and around metropolitan Sydney are expected to grow significantly. By 2036, the amount of freight moved in NSW is projected to nearly double to 618 million tonnes (*NSW Freight and Ports Plan 2018-2038*, 2018). This would put more pressure on roads and other infrastructure, increase the use of heavy trucks and subsequently impact local communities.

The Australian 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 in the *NSW Freight and Ports Plan 2018-2038* (TfNSW, 2018) and *2020 Infrastructure Priority List* (Infrastructure Australia).

The *Sydney Metropolitan Freight Strategy* (ARTC, 2015) considers existing rail freight capacity issues and identifies priority actions to respond to rail freight demands on Sydney's rail freight network, including the SSFL. The proposal is one of several initiatives proposed to increase the capacity of Sydney's rail freight network.

3.2 Proposal Justification

The SSFL was commissioned in 2013 and is predicted to reach capacity of 62 movements per day by 2023, limiting its ability to adequately service future demand for rail freight transport. The single-track section of the SSFL between Cabramatta and Warwick Farm requires freight trains to wait at existing passing loops at other locations on the SSFL to allow for the passing of freight trains running in the opposite direction, which ultimately constrains the ability to increase the number of freight train movements on the SSFL.

The key benefits include:

- transport benefits – alleviate constraints on, and increase capacity of, metropolitan Sydney's freight rail network and to meet the forecast demand for container freight transport on the SSFL;
- customer benefit – improved reliability for freight customers;
- productivity benefits – support the operation of intermodal terminals, including Enfield, Chullora and Moorebank, and support the operational efficiency of the freight rail network that would be gained from the future Botany Rail Duplication;
- operational benefits – increase in operational reliability, efficiency and flexibility; and
- modal shift benefits – increase rail market share for containerised freight and reduce reliance on heavy trucks and associated traffic congestion and pollution.

In addition to freight benefits, the proposal would deliver approximately 680 metres of new and upgraded pedestrian and cyclist infrastructure along Broomfield Street at Cabramatta.

During construction, around 80 fulltime jobs would be created (with up to 220 during possession periods).

3.3 Proposal Development and Alternatives

The merits of the proposal were considered by the Proponent in the context of a number of alternative options, including:

- do nothing/do minimum;
- alternative freight transport solutions;
- alternative freight network enhancements; and
- alternative passing loop locations.

The assessment also addressed four corridor options and alternative designs within the proposal including track alignment, the Sussex Street and Cabramatta Creek bridges, retaining walls and noise wall, and alignment and formation of Broomfield Street. These are summarised in **Table 4**.

Table 4 | Alternatives considered

Alternative	Consideration
Do nothing/do minimum	<ul style="list-style-type: none"> • Operation of the SSFL with its existing configuration and constraints with a single track: <ul style="list-style-type: none"> ○ would result in worsening delays for freight access to and through metropolitan Sydney; ○ would lead to a lower rate of rail freight growth than would otherwise be the case; ○ may result in road freight traffic volumes growing at a higher rate than rail freight, with consequential impacts on other road users and the environment in the form of worsening traffic congestion and pollution; and ○ would compromise the ability to achieve the freight efficiency and reliability objectives of the North-South Corridor Strategy. • The Department is satisfied that this option is not preferred as: <ul style="list-style-type: none"> ○ the current SSFL and Metropolitan Freight Network (MFN) would not support predicted freight growth; and ○ it would not meet the objectives of the <i>NSW Freight and Ports Plan 2018-2038</i>, impacting on the NSW economy through longer, more unreliable delivery and transport times, particularly for businesses that seek to connect with Port Botany from Sydney and regional NSW.
Alternative freight transport solutions	<ul style="list-style-type: none"> • Improvements and upgrades to road network infrastructure, as an alternative freight transport option. • The State Government is upgrading road infrastructure and/or delivering motorway projects around metropolitan Sydney and regional NSW to enhance freight movements around Sydney and regional NSW. • While investment in road projects forms part of the overall solution, these alternatives in isolation are insufficient to address forecast demand growth.

	<ul style="list-style-type: none"> • This option does not address the Australian and State governments' objectives to increase the share of freight moved by rail (as discussed in Section 3.1 above).
Alternative freight network enhancements	<ul style="list-style-type: none"> • The Proponent considered alternative freight network enhancement options of the SSFL and the MFN. • Construction and operation does not preclude development and implementation of alternate freight transport solutions. • The Proponent is investing in various upgrades and solutions, including enhancements of the intermodal terminals and the Botany Rail Duplication which are subject to other applications or approvals processes. • The Department supports a multi-option approach.
Alternative passing loop locations	<ul style="list-style-type: none"> • Alternative passing loop locations were considered. • Cabramatta is mid-way between loops at Glenfield and Leightonfield. • This would provide the best solution to increase capacity by up to 12 services per day.



4. Statutory Context

4.1 State Significant Infrastructure

The proposal 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 *State Environmental Planning Policy (Infrastructure) 2007* (the Infrastructure SEPP).

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 the Infrastructure SEPP (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). No other environmental planning instruments substantially govern the carrying out of the proposal.

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

The Department has considered the objects of the EP&A Act including:

- social and economic welfare (**Section 6**);
- the principles of ecologically sustainable development (**Section 4.5**);
- protection of the environment, including in relation to biodiversity, traffic, noise and vibration, air quality, surface and groundwater hydrology, urban design, amenity and socioeconomic issues (**Section 6**);
- sustainable management of built and cultural heritage, including Aboriginal cultural heritage (**Section 6**);
- good design and amenity of the built environment (**Section 6**);
- promote the sharing of the responsibility for environmental planning and assessment between the different levels of government (**Section 5**); and
- public involvement and community participation in the assessment of the proposal (**Section 5**).

4.5 Ecologically Sustainable Development (ESD)

The EP&A Act adopts the definition of ESD 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.

Objectives which guide the delivery and operation of the proposal would contribute to its sustainability 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 such as sustainable procurement practices; minimising water use during construction and considering opportunities for water reuse; design to avoid and minimise impacts on the Grey-headed flying fox colony; vegetation rehabilitation and weed management measures.

The Department has also recommended a condition of approval that requires the Proponent endeavour to achieve a minimum 'Design' and 'As built' rating score of 65 rating using a market leading sustainability ratings tool, such as that produced by the Infrastructure Sustainability Council of Australia.

The precautionary principle is applied throughout the EIS and the Department considers the assessment and the range of mitigation measures adequately address the principle. The Department is also satisfied that the valuation and pricing of the environmental resources associated with the proposal have been adequately undertaken and internalised through 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 EIS (**Appendix A**) was made publicly available from Friday 30 August 2019 until Thursday 26 September 2019 (28 days) on the Department's website and electronically at NSW Service Centres. The EIS was publicly available at the following locations:

- Department of Planning, Industry and Environment (Pitt Street Office);
- Fairfield City Council – 86 Avoca Road, Wakeley;
- Liverpool City Council – 33 Moore Street, Liverpool;
- Whitlam Library Cabramatta – 165 Railway Parade, Cabramatta; and
- Liverpool Local Library – 170 George Street, Liverpool.

The Department advertised the public exhibition in the Fairfield Advance, Fairfield City Champion, Liverpool City Champion and Liverpool Leader, and notified State and relevant local government authorities of the exhibition.

The Department undertook site inspections along the route numerous times including April 2018, March 2019, and October 2019 to obtain a better understanding of the proposal, its environmental context, its sensitivities and issues raised in submissions by the community and councils.

The Department:

- consulted with Liverpool City and Fairfield City Council, holding conference calls with each council following the exhibition to discuss details of each council's submission on the EIS; and
- discussed matters concerning Jacquie Osmond Reserve with the Southern District Softball Association.

5.2 Summary of Submissions

Submissions were received from six State government agencies, two local government councils and nine community submitters (**Appendix D**). The community submissions were from seven individuals and two from organisations and special interest groups. Of the 17 submissions lodged, two submissions supported the proposal, four submissions objected to the proposal and ten submissions provided comments. A breakdown of submitters is shown in **Table 5** and **Table 6**.

5.3 Key Issues Raised in Submissions

The following sections summarise issues raised in submissions made during exhibition of the EIS relevant to the proposal. The issues raised in the submissions are further assessed in **Section 6**.

Key Issues – Local Councils

Fairfield City Council objected to the proposal and raised concerns around:

- temporary and permanent loss of on-street car parking spaces; and
- potential flooding of properties on Broomfield Street.

Table 5 | Summary of submissions

Submitter Type	Number	Position
Community	9	
• Individuals		
• Organisations and interest groups		
Local Councils	2	
• Fairfield City		Object
• Liverpool City		Comment
Government Agencies	6	
• DPIE Water Group and NRAR		Comment
• EPA		Comment
• DPIE EES Group		Comment
• Heritage Council of NSW		Comment
• NSW Ports		Support
• Transport for NSW		Comment
TOTAL	17	

Table 6 | Issues raised in submissions

Issue	Number
• traffic, transport and access	11
• noise and vibration	7
• landscape, visual amenity and urban design	4
• proposal features and design	4
• hydrology and flooding	4
• Aboriginal and non-Aboriginal heritage	3
• air quality	3
• proposal justification/options analysis	3
• social and economic impacts	2
• stakeholder and consultation	2
• proposal need	1
• biodiversity	1
• contamination and soils	1

Liverpool City Council raised concerns regarding:

- loss of public recreation space and rehabilitation of Jacquie Osmond Reserve following construction;
- visual impact of new rail embankment along Jacquie Osmond Reserve;

- access to public recreation space during construction;
- removal of shared path along Broomfield Street and Cabramatta Creek;
- operational noise impacts on Jacquie Osmond Reserve users; and
- emissions from idling freight trains.

Council also recommended:

- preparation of a construction transport management plan;
- a tree replacement ratio of three trees for each one removed; and
- preparation of a local employment or procurement statement to benefit workers local workers.

Key Issues – Government Agencies

The **Environment, Energy and Science Group** of the Department (DPIE EES Group) recommended conditions to address Aboriginal heritage and biodiversity management. With regards to assessing floodplain risk, DPIE EES Group raised concern that the Proponent's assessment lacked detail on design performance in the area around Broomfield Street and Sussex Street. DPIE EES Group considered it prudent to assess the Broomfield Street catchment for a range of events which would determine flooding impacts and inform appropriate mitigation measures.

The **Water Group** of the Department (DPIE Water Group) and the **Natural Resources Access Regulator** (NRAR) recommended conditions for dewatering and soil and water management should approval be recommended.

The **Environment Protection Authority** (EPA) recommended conditions requiring consultation with the community about construction activities, especially out of hours work. EPA requested information regarding the:

- assumptions used in applying the ARTC Noise Prediction and Mitigation Guideline and noise assessment methodology;
- difference between the modelled and measured day/night noise levels reported;
- long-term noise impacts; and
- rail vibration validation.

The EPA considers rail possessions to be reasonable justification for out of hours works. Any proposal to carry out these works must be supported by mitigation measures and managed through an Environmental Protection Licence (EPL) and is further discussed in **Section 6.1**.

The EPA has recommended conditions in relation to unexpected contamination, acid sulfate soils and other unexpected finds.

The **Heritage Council of NSW** noted that some of the works, including the installation of signalling structures, may indirectly impact on the Liverpool Railway Station Group, an item listed on the State Heritage Register, and recommended measures to mitigate impacts to heritage.

NSW Ports identified the importance of the proposal in increasing the operational capacity of freight train movements on the freight train network to and from Port Botany and Port Kembla and stated support for the proposal.

Transport for NSW (TfNSW) raised concerns regarding potential noise from braking and idling of freight trains. TfNSW further requested clarification on noise modelling and the eligibility of various residential properties for noise mitigation measures.

Key Issues – Community

The main issues raised by public and special interest groups are summarised below considered further in **Sections 6.1** through to **Section 6.4**.

Table 7 | Issues raised in community submissions

Aspect	Issue
Project Design and Options	<ul style="list-style-type: none"> design and location of the proposal and key features of the proposal; and concern that the proposal would detrimentally impact on any future expansion of commuter rail infrastructure.
Construction	<ul style="list-style-type: none"> details of temporary road closures and construction timeframes.
Consultation	<ul style="list-style-type: none"> further opportunities for consultation with the community after the exhibition of the EIS.
Traffic, Transport and Access	<ul style="list-style-type: none"> car parking impacts on Broomfield Street during construction and operation; construction traffic impacts on local road network; proposed alignment and configuration of Broomfield Street; loss of access to Jacquie Osmond Reserve during construction; loss of active transport corridor during construction; and road safety deterioration of the Broomfield and Sussex Streets intersection due to the reconfiguration of Broomfield Street and the new Sussex Street rail overbridge.
Noise and Vibration	<ul style="list-style-type: none"> operational noise mitigation measures such as extension of Broomfield Street noise barrier; excessive noise from construction works, especially at night-time; and excessive operational noise and vibration, including from idling trains.
Hydrology and Flooding	<ul style="list-style-type: none"> flash flooding of properties on Broomfield Street; and loss of flood storage in Jacquie Osmond Reserve.
Heritage	<ul style="list-style-type: none"> concern that normal procedures for heritage protection do not apply for the proposal; and damage to significant heritage items.
Air Quality	<ul style="list-style-type: none"> diesel emissions from idle freight trains
Socio-Economic, Property and Land Use	<ul style="list-style-type: none"> offset strategy to address the loss of use and access to recreational open space in Jacquie Osmond Reserve during construction and operation; impact on the amenity of the local area and the health and wellbeing of the community; and

Aspect	Issue
	<ul style="list-style-type: none"> relocation of utilities on Broomfield Street.
Visual Amenity and Urban Design	<ul style="list-style-type: none"> concerns regarding future landscape design; loss of trees, tree canopy, landscape and public space; and insufficient detail on the proposed vertical landscaping on the noise barriers.

5.4 Response to Submissions

Following the exhibition period, the Department directed the Proponent to prepare a response to the submissions received as part of the exhibition of the EIS. The Proponent submitted a Response to Submissions Report (**Appendix E**) which was made publicly available on the Department's website on 27 February 2020.



6. Assessment

The Department in its assessment, including the consideration of submissions received, identified the key issues as being associated with noise and vibration; traffic, transport and access; flooding and drainage; and social impacts (**Sections 6.1 to 6.4**). Other issues are discussed in **Section 6.5**.

6.1 Noise and Vibration

The existing noise environment along the alignment varies with land use and is generally dominated by rail noise from freight trains and passenger rail services, road traffic noise from the surrounding road network, and noise from nearby industrial and commercial uses.

Construction noise impacts would vary depending on the type and location of construction activities undertaken. Impacts would occur outside of standard construction hours when construction is undertaken during rail possessions (when there are no rail services operating) or to reduce disruption to traffic on Broomfield and Sussex Streets. Noise associated with construction vehicles is expected to be minimal and to comply with the road noise objectives set out in the *Road Noise Policy* (DECCW, 2011). Notwithstanding, construction noise and vibration impacts would be managed using a series of mitigation measures including community engagement, site layout, equipment choices, scheduling, monitoring and responding with an iterative process to continually review and amend such measures.

Operational noise is expected to increase to the east along the proposal's length due to location of track closer to residences on Broomfield Street (see **Figure 6** below), Jacque Osmond Reserve and commercial uses to the south as well as increased freight train capacity on the SSFL. The Proponent is required to provide mitigation, including at-property treatment, for increases in noise that trigger the goals set in the *Rail Infrastructure Noise Guideline* (EPA, 2013) (RING). Further, operational noise is regulated through the Proponent's EPL which sets an objective to improve noise from rail operation and noise limits for approved locomotives that can operate on the SSFL.

Based upon the Proponent's assessment and the Department's consideration, the noise and vibration impacts of the proposal are expected to be reasonable, subject to the Proponent's mitigation measures and the Department's recommended conditions.

Submissions

Community

Submissions from the community raised concerns relating to noise and vibration impacts as follows:

- construction noise impacts on sensitive land uses, particularly from out of hours works;
- operational noise impacts on residences from increased train movements, particularly at night;
- and

- the provision of construction and operation noise attenuation measures including extension of Broomfield Street noise barrier to the south.



Figure 6 | Construction on Broomfield Street (Source: EIS)

Local Councils and Government Agencies

The **Environment Protection Authority (EPA)** requested that the Proponent provide an assessment against the appropriate *Rail Infrastructure Noise Guideline* (EPA, 2013) noise trigger levels, to determine the predicted rail noise levels. The EPA also requested that the Proponent undertake a rail vibration validation method of similar detail to that undertaken for noise validation.

The EPA recommended conditions of approval and mitigation options, including the Proponent consider options for alternative accommodation where there are excessive residual noise impacts and the equitable application of at-property noise treatment to sensitive land uses located in the same multistorey development.

Transport for NSW (TfNSW) requested an assessment of brake noise impacts and clarify where at-property noise mitigation is required. TfNSW also recommended a review of highly sleep disturbed residences, noting the assessment identifies significant sleep disturbance impacts.

Locations of locomotive standing points in a loop or near a signal away from residences were recommended to minimise idling freight train noise and ensure consistency with its *Noise Prediction and Mitigation Guideline*.

Liverpool City Council noted potential noise impacts on the softball facilities at Jacquie Osmond Reserve and recommended further investigation of the need for a noise barrier in this location.

Fairfield City Council did not raise any issues associated with noise and vibration.

The **Heritage Council of NSW** recommended conditions to protect heritage-listed structures from construction vibration including dilapidation surveys of structures located within safe working buffer distances and use of equipment with lower vibration emissions.

Department's Consideration

Construction noise

Construction is expected to take approximately two years and is planned to occur during standard hours (7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday) where possible. Work would also be required outside of standard hours and during rail possession periods identified in **Section 2.4**.

Multiple land uses, including residential properties, community/religious centres and a school, would be impacted by construction noise. Although some construction scenarios, such as noise barrier construction, would have short-term impacts (limited to days to weeks), other construction scenarios and activities, including construction compound establishment and use, would have longer-term impacts (over several months).

Residences located to the east of the rail corridor at Cabramatta (primarily those along Broomfield, Bridge and Sussex Streets) are predicted to experience the greatest noise impacts due to the density of dwellings in the area and their proximity to construction on the rail corridor and Broomfield and Sussex Streets. Sensitive land uses, mostly residential, along Railway Parade to the west of the rail

corridor at Cabramatta and along Manning Street to the southeast of Warwick Farm Station, are expected to experience highly intrusive noise as well. 161 receivers were identified as experiencing noise above the construction noise management level (NML) during standard construction hours. 102 of these would experience construction noise exceeding the highly noise affected level of 75dB(A). Further detail on construction noise impacts is set out in **Appendix C**, which demonstrates a worst case non mitigated outcome.

Most of the construction scenarios involve linear work (for example, road work along Broomfield Street, noise wall construction, track construction and track installation) where work in any set location is temporary, and noise exposure at each receiver would likely fluctuate. Construction activities would generally move along the alignment and predicted worst-case noise levels would only be experienced when construction is closest to the receiver. Noise levels would generally dissipate as distance to the work face increases.

Further, the Department recognises that predicted noise levels are based on a worst-case scenario where no mitigation measures are included, the existing Broomfield Street noise barrier is removed for the duration of construction and all construction plant and equipment would be operating simultaneously. This is not a realistic or likely scenario.

While it is noted that construction noise impacts are unavoidable in highly urbanised areas, the Department recognises and supports the Proponent's measures to reduce construction noise impacts which include:

- providing appropriate noise management training to workers;
- constructing during standard working hours where feasible and reasonable;
- locating structures and enclosures, such as site sheds, earth bunds and fencing to shield stationary noise sources where practicable;
- scheduling highly intensive noise and vibration generating activities during less sensitive times; and
- providing respite from highly intensive noise generating activities (such as jack and rock hammering, sheet and pile driving, rock breaking and vibratory rolling).

Further, the Proponent has committed to noise monitoring at residences likely to experience highly intrusive noise levels to respond accordingly where this eventuates. In the event noise management levels are exceeded, implementation of further mitigation would be considered, with the objective to reduce residual noise impacts to acceptable levels.

The Department considers that there is scope to strengthen the Proponent's commitments, to further improve performance in relation to construction noise. Accordingly, the Department recommends conditions requiring the iterative process of monitoring and reviewing the effectiveness of mitigation measures. Any unreasonable noise impacts would require action, with the implementation of further management and mitigation measures such as additional community engagement or changes to site layout, equipment choices, or scheduling and respite.

Sequencing Broomfield Street Works

The existing noise barrier along Broomfield Street reduces operational rail noise levels (L_{Aeq}) by up to 9 dB and maximum operational rail noise levels by up to 12 dB at residences located along Broomfield Street.

The existing noise barrier would be demolished in stages along Broomfield Street to widen the rail corridor and facilitate construction of the new loop. The barrier would be replaced to mitigate operational noise from the modified rail corridor. Realignment of Broomfield Street (including removing and relocating the noise wall) is expected to take approximately 65 weeks.

Under the worst-case scenario, the noise wall would be fully demolished with no partial retention/reinstatement of the noise wall during the entire 65-week period of Broomfield Street works. To prevent this situation occurring, the Department has recommended a condition requiring construction sequencing along Broomfield Street, so that the noise barrier is demolished and replaced section by section, with work on each section coinciding with the sequenced closure of Broomfield Street to traffic.

The Department also requires that the replaced wall provide a single continuous barrier and remove the gap opposite 158 and 160 Broomfield Street. This gap originally provided access to a signal hut that has since been removed. This measure reduces operational noise levels by 8 to 9 dB at those residences on Broomfield Street.

Lawrence Hargrave School

Noise at Lawrence Hargrave School (see **Figure 3** for location) is expected to be below the construction, construction traffic and operational noise level triggers. Nevertheless, it is considered that the special needs of students should be given particular consideration in managing noise impacts. The Proponent has committed to consult with the school to identify and develop mitigation measures to manage specific construction impacts that affect the school. The Department supports this approach and has recommended that any highly noise generating works be timetabled to avoid sensitive periods or important events.

Out-of-Hours work

Work outside of the standard hours is required for operational or safety reasons. **Table 8** below outlines the types of work and justification for these outside of standard hours.

Table 8 | Out-of-Hours Works (Source: EIS)

Activity	Justification
Delivery of certain materials and plant to fixed facilities	<ul style="list-style-type: none">• to ensure worker safety and safety of the surrounding community• to minimise potential impacts to properties and the environment
Work required to occur within the operational rail envelope during rail corridor possession periods, including formation and track configuration work	<ul style="list-style-type: none">• to ensure worker safety in the rail corridor• to minimise risks to rail network operation
Relocation of services such as overhead electricity	<ul style="list-style-type: none">• to ensure worker safety and safety of the surrounding community• to minimise potential impacts on the surrounding community
Some bridge works such as lifting of girders	<ul style="list-style-type: none">• to minimise potential impacts on the surrounding community
Some road works to be carried out at night (generally between 10.00 pm and 4.00 am)	<ul style="list-style-type: none">• to minimise traffic disruptions• to maintain pedestrian and cyclist safety (i.e. traffic realignment, asphaltting, line-marking)
Emergency work	<ul style="list-style-type: none">• work to avoid loss the loss of life or damage to property, or to prevent environmental harm.

There are circumstances where flexibility in working hours is warranted: for worker safety, for efficiency, to potentially contain environmental impacts and to reduce disruption. The proposed construction program is based on using four annual rail possession periods permitted by the Proponent's existing EPL to undertake much of the work required within the existing rail corridor. This EPL governs both maintenance and construction during standard hours and out-of-hours in the rail corridor.

The sleep disturbance screening criterion is likely to be exceeded for most night-time construction scenarios, with the most significant exceedances occurring during road earthworks, noise wall construction and track installation. Residences mainly along Broomfield Street, Railway Parade, Station Street and Manning Street, opposite the rail corridor, would likely experience sleep disturbance at stages during night-time construction. However, the night-time construction scenarios involve linear works where construction activities would generally move along the rail alignment and the level of noise would vary depending on the distance between the work face and a receiver.

The Department considers that mitigation measures committed to by the Proponent are appropriate and effective means of addressing potential sleep disturbance from excessive construction noise during the night-time period. To further preserve the amenity of residents, the Department has recommended restricting highly noise intensive works to standard hours with respite periods, except where these can be regulated by the Proponent's EPL.

With these measures in place, an acceptable balance can be achieved between the need to work non-standard hours, noise and vibration impacts to nearby residents, and completing construction as quickly as reasonably possible.

Construction vibration

Residences along Broomfield and Sussex Streets and two heritage-listed structures (comprising the archaeological remains of a Federation Cottage and the Cabramatta, Railway Parade and Sussex Street Underbridge) are located within the vibration safe working buffer distance of vibration intensive works (vibratory rolling and impact piling respectively). These may experience vibration which exceed the level for when cosmetic damage could occur.

Vibration can generally be managed using the following mitigation measures committed to by the Proponent:

- carrying out building dilapidation surveys for all structures within the safe working buffer distance to determine structural integrity;
- if a structure is structurally unsound, vibration would be measured and tested to confirm the buffer distances;
- strategies to minimise vibration would include selection of alternative equipment with lower vibration emissions and a detailed review of work methods; and
- compliance vibration monitoring where there are still structures located within vibration safe working distances.

To strengthen the Proponent's commitments, the Department has recommended a condition requiring the Proponent undertake condition surveys of buildings and structures at risk of damage from vibration which would be followed up after construction is completed. Any property damage attributable to construction would be rectified by the Proponent.

Operational noise

An increase in operational noise is expected with the rail line moving closer to residences (which is closer than the SSFL, though as a passing loop, trains would be stationary on it up to 24 times across the day) and an increase in freight train movements on the SSFL.

The existing noise barrier would be relocated to the east of its current location to shield Broomfield Street from noise from the widened rail corridor. Further mitigation would need to be considered where noise levels exceed the operational noise level triggers set out in the RING. To avoid the incremental increase of operational noise impacts, the Department considers it appropriate that the cumulative noise impacts of the Cabramatta Loop and the operation of the SSFL be considered, as the proposal cannot operate independently of the SSFL. This is addressed in the recommended conditions that sets as a baseline period which does not include freight train traffic generated by the SSFL. At property treatment must be installed before commencement of construction near the affected receiver.

Community submissions raised noise from idling locomotives on the passing loop as a concern. Idling noise was assessed from a locomotive at the two turnout signals where the passing loop ties in to the SSFL. This concluded that the contribution from idling to overall noise levels is negligible, due to existing noise contributions from the Sydney Trains and SSFL lines. The Department concurs that the additional noise from idling locomotives would not cause an unreasonable increase in operational noise and notes that an idle train on the passing loop would likely reduce noise for those receivers to the east of the rail corridor from passenger and freight train pass-bys.

The existing Broomfield Street noise barrier currently ends at the intersection of Broomfield and Sussex Streets; community submissions requested the extension of this barrier to mitigate operational noise. The Department has recommended a condition requiring the replacement wall provide a single continuous barrier, removing the gap opposite 158 and 160 Broomfield Street. This gap is understood to have previously allowed access to the corridor which is no longer required.

To ensure the efficacy of the proposed noise mitigation against the final design, the Department recommends an iterative design development process which includes a review of the final design against noise and vibration predictions in the EIS. Operational noise monitoring would follow to determine whether further noise mitigation is required.

Operational rail noise not directly associated with the proposal is regulated through the SSFL's existing conditions of approval and the Proponent's EPL which sets an objective to improve noise from rail operation and noise limits for approved locomotives that can operate on the SSFL.

Conclusion

The Department is satisfied the range of management measures the Proponent has committed to, combined with the recommended conditions of approval, are appropriate to address the noise and vibration impacts of the proposal. Construction mitigation measures and condition recommendations require the Proponent to clearly outline how noise and vibration would be managed, the types of mitigation available and how it would be applied; an iterative process of regular monitoring, analysing

results and implementing additional mitigation measures to address any unexpected exceedances; and restricted hours for highly noise intensive works.

The Department acknowledges that there would be residences affected by higher operational noise levels than currently experienced, but most would continue to experience noise below the levels at which mitigation must be considered. Where this level is exceeded, the Proponent has committed to further investigating mitigation specific to those locations.

To ensure operational noise levels are appropriately mitigated and verified, the Department has recommended approval conditions including a review of the modelled noise and vibration results against the final project design, and compliance monitoring of operational noise levels to confirm the efficacy of the measures installed in addressing noise impacts. Further mitigation, such as at receiver treatment may be required if monitoring identifies noise exceedances.

6.2 Traffic, Transport and Access

The proposal facilitates the objective of increasing the share of freight moved by rail in the *NSW Freight and Ports Plan 2018-2038* (TfNSW, 2018) and is expected to improve efficiency and reliability in freight rail transportation on the SSFL and the MFN overall. It would also reduce reliance on road freight transportation, and the increase of freight trucks and congestion on Sydney's road network.

Notwithstanding, the proposal would have temporary impacts on on-street car parking, access to private properties and public spaces, cycle and pedestrian movements and local traffic flows during construction. However, these impacts are relatively minor and can be effectively managed through stakeholder engagement, and with standard traffic control and diversion measures.

The Department supports the Proponent's efforts to replace permanent parking lost due to the reconfiguration of Broomfield Street, the maintenance of pedestrian and cyclist access throughout construction, and the sequencing of works along Broomfield Street to minimise impacts. As a result, the impacts are acceptable and can be appropriately managed with the proposed commitments and recommended conditions of approval.

Submissions

Community

Submissions from the community raised concerns relating to traffic, transport and access impacts as follows:

- the project design will affect ability for future expansion of the commuter rail infrastructure;
- parking impacts on Broomfield Street and adjoining streets during construction and operation as a result of a loss of on-street car parking;
- reconstructed Broomfield Street must maintain separation between vehicles and pedestrians/cyclists, two-way vehicular traffic, a nature strip and public on-street parking;
- loss of access to Jacquie Osmond Reserve during construction;
- loss of active transport corridor during construction;

- request that there is a commensurate increase in bicycle parking to replace permanently lost on-street car parking around Cabramatta Station;
- concern regarding the deterioration of road safety near the intersection of Broomfield Street and Sussex Street as a result of the additional rail bridge over Sussex Street; and
- impacts on east-west access across the rail corridor during construction.

Local Councils and Government Agencies

Fairfield City Council objected to the proposal and raised concern regarding the temporary loss of on-street car parking spaces during construction and the permanent loss of 11 on-street car parking spaces.

Liverpool City Council raised concerns regarding accessibility impacts to public recreation space, including Jacquie Osmond Reserve and Stroud Park/Warwick Farm Recreation Reserve, and the temporary removal of the existing shared path along Broomfield Street and Cabramatta Creek, during construction.

NSW Ports identified the importance of the proposal in increasing the operational capacity of freight train movements on the freight train network to and from Port Botany and Port Kembla and provided support for the proposal.

Department's Considerations

Project design constraining expansion of Sydney Trains

The proposal would not affect the Sydney Trains assets. There are currently no plans to duplicate the Main South Line in this corridor. The proposed loop would be located to the east of the existing freight rail track and does not impact on the existing commuter rail infrastructure which is on the western side of the rail corridor. The loop is identified in a range of strategic transport planning documents and is integrated with the other identified projects across the rail network.

On-Street car parking during construction

The Proponent proposes to sequence work along Broomfield Street so that the number of on-street car parking spaces temporarily lost due to construction works on Broomfield Street is minimised. Notwithstanding, at various times, between 10 and 66 on-street car spaces on Broomfield Street would not be available. Fairfield City Council is of the opinion that on-street car parking on Broomfield Street is near capacity and any loss of spaces on the street would affect users of on-street parking in Broomfield and adjacent streets.

There are 379 car spaces available on Broomfield Street between Bareena Street and Sussex Street within walking distance of Cabramatta Station. Seventy-two per cent of on-street car parking spaces in that section of Broomfield Street were in use when surveyed on a weekday during school term, suggesting there is existing capacity as well as available parking on side streets that is not fully utilised.

The Proponent has committed to a number of measures to minimise the impacts to surrounding streets by providing 60-80 construction worker parking spaces within various construction compounds

to minimise the impact of construction employee parking on local streets, providing a temporary parking area for 40 cars within 800 metres of Cabramatta Station subject to negotiation with property owners, as well as providing offset parking on Railway Parade before Broomfield Street construction commences and sequencing of work to reduce construction impacts on on-street parking.

Construction personnel would also be encouraged to use public transport given the entire project area is located a 15-minute walk from a train station. In addition, the construction workforce would be greatest during weekend rail possessions when general demand for on-street car parking is expected to be less than weekdays when commuter parking is greatest.

The Department accepts that some parking spaces would be temporarily lost during construction but is satisfied that this can be managed due to available supply and the Proponent's commitments to encourage the construction workforce to use sustainable transport options including car share/pooling.

Construction access

Work along Broomfield and Sussex Streets would be sequenced to minimise the impact on traffic and access. Details of the proposed closures, traffic management measures, and traffic and access impacts on Broomfield and Sussex Street are summarised in **Table 9** below.

Table 9 | Proposed road closures and impacts

Road	Proposed Closure	Diversion / Traffic Management	Traffic and Access Impact
Broomfield Street	Sequenced partial road closure during its realignment to east. Full road closure for short periods at night time (typically only one night) for activities such as line marking.	One lane closed for periods of construction. One lane to remain open with traffic controllers allowing bi-directional traffic.	Access – potential delays of between 1 and 2 minutes as residents and visitors wait for traffic controllers to change direction of traffic so they can access property driveways.
Sussex Street	Sequenced partial road closure during road alignment and some bridge construction work.	One lane closed for periods of construction. One lane to remain open with traffic controllers allowing bi-directional traffic.	Traffic – potential delays of between 1 and 2 minutes to vehicles that travel via Sussex Street (bridge underpass) as vehicles wait for traffic controllers to change direction of traffic.
Sussex Street	Full closure at night time only (for approximately 12 hours at a time) during some bridge construction work for safety reasons (such as girder positioning).	Closure of Sussex Street bridge underpass.	Traffic – increase in travel times of less than 5 minutes with vehicles taking alternate routes across rail corridor, such as Cabramatta Road.

This would extend the overall construction period at these locations and, as a result, extend the duration in which adjacent land occupants would be negatively impacted by construction. However, the Department recognises the benefits of maintaining traffic flow and access under the circumstances and supports this approach.

On-Street car parking after construction

Reconstruction of Broomfield Street to accommodate the widened rail corridor and new track would require realignment of on-street parking due to space constraints. A key concern raised in community and Fairfield City Council submissions was the potential for permanent reduction in on-street parking of up to 11 spots from the realignment.

The Proponent investigated opportunities to replace parking in response to community concern, although surveys identified that there is sufficient latent supply in the Broomfield Street area to absorb this loss. The investigations showed that 11 to 13 spaces could be provided on Railway Parade between the Cabramatta Road West road overbridge and Mallee Street, up to 200 metres closer to Cabramatta station than the southern end of angled parking on Broomfield Street and up to 580 metres closer than parallel parking at the southern end of Broomfield Street. This would be achieved by reducing the size of the median kerbs between existing perpendicular parking and eliminating four angled parking spaces opposite Boundary Lane.

Fairfield City Council has objected to this proposed replacement parking solution based upon the lost opportunity for landscaping to meet Council's objectives for tree canopy cover and its visual amenity impact from the rail line. As an alternative, Council recommended the Proponent provide a designated off-street parking area close to Cabramatta Station or provide a monetary contribution to the planned construction of an additional level on Council's Fisher Street car park. The Department does not support Council's recommendation for a contribution to the Fisher Street carpark upgrade as it does not immediately address the issue of loss of parking and does not set a timeframe for when the additional car parking level would be completed.

The Department believes the proposed location of replacement parking is sufficiently close to the train station, to Cabramatta town centre and within an existing parking precinct and favours the Proponent's strategy to provide replacement before the Broomfield Street spaces are removed.

The Department also considers that the need to address visual amenity and provide landscaping be considered against the need to provide replacement parking and therefore has recommended that replacement parking consider the ability to provide landscaping. Should this result in less replacement parking, the Department considers this minor loss acceptable due to existing supply and the strategic benefits of the project.

Pedestrian and cyclist facilities

There is a shared pedestrian and cycle way between Cabramatta Station (formal path on the eastern side of the rail corridor to Jacquie Osmond Reserve) and Warwick Farm Station (informal pathway on the western side of the rail corridor) forms part of the Parramatta to Liverpool Rail Trail. The reinstatement of the active transport corridor after construction is an opportunity to integrate cycling and pedestrian elements with the surrounding active transport network, through the provision of wayfinding signage, greater awareness of the Parramatta to Liverpool Cycle Trail and improved user experience. To ensure this objective is achieved, the Department recommends that replacement

infrastructure must meet relevant design, engineering and safety guidelines and provide appropriate signage and wayfinding measures.

Over height vehicles on Sussex/Broomfield Street

The community noted the low height bridges over Sussex Street are obscured to drivers on approach from Broomfield Street to the north and Sussex Street from the east. Anecdotal evidence suggests many over height vehicles do not recognise the low height clearance of the existing bridges until it is too late, making sudden stops to avoid impact. The community raised concern regarding the potential deterioration of road safety at this location with the new bridge exacerbating this poor situation.

Whilst noting that this is an existing situation and that the Proponent is obliged to ensure a safe approach to the underbridge, the Department has recommended a Road Safety Audit be prepared by an independent auditor to assess the safety performance to ensure it meets appropriate safety requirements.

Conclusion

The proposal provides significant regional transport and traffic benefits by facilitating greater capacity of the freight rail network. However, temporary localised traffic, parking and access impacts are expected due to local road changes, construction traffic movements and the loss of on-street car parking. The Department acknowledges that some of these impacts are unavoidable but is satisfied that they can be appropriately managed and reduced through the Proponent's commitment to implement traffic, transport and access mitigation measures and the Department's recommended conditions of approval.

6.3 Flooding and Drainage

The rail corridor crosses urbanised land in the Cabramatta Creek catchment, which includes predominantly impervious surface areas. The rail corridor contains several earth-lined and concrete open drainage channels. The capacity of these channels is unknown but only caters for rainfall runoff that falls in the rail corridor. Earthworks to widen the rail corridor would reduce the flood storage volume of the surrounding catchment.

The Department has considered existing flooding, impacts on flood behaviour, overland flows and flooding during the construction and concludes that any increase in flooding would be localised and minor and would be effectively managed through the implementation of mitigation measures committed by the Proponent and through the recommended conditions of approval.

Submissions

Community

Submissions from the community raised concerns related to hydrology and flooding as follows:

- existing drains located under the railway bridge near 10 Sussex Street experience flash flooding; and
- how the additional buildup of water as a result of the construction of the new bridge would be managed.

Local Councils and Government Agencies

Liverpool City Council requested that the loss of flood storage due to the addition of fill be compensated to prevent increased flooding within the Cabramatta Creek and Georges River Floodplain.

Fairfield City Council objected to the proposal and expressed concern regarding the Proponent's review of other urban projects not within the Fairfield City LGA with similar environments (Sydney Metro Sydenham to Bankstown project). Council recommended that flood risk management controls of Council's City Wide Development Control Plan (DCP) 2013 be considered when addressing flooding impacts.

Council also stated that the proposed maximum increase of 50 mm in flood levels during the 1 in 100-year flood event is unacceptable and requested mitigation be provided that does not result in a net increase in flooding to properties in Broomfield Street.

DPIE EES Group noted the flooding increase on Broomfield Street during operation. It commented that the assessment may underestimate flooding in this location and recommended that flood maps include the changes in flood depths with and without the proposal.

Department's Considerations

Potential impacts relating to flooding and drainage during operation include:

- modification to flow volumes and rates downstream of the rail corridor as a result of the drainage constructed for the proposal;
- increase in flood level and extent as a result of the additional increase in obstructions and embankment fill that would remove flood storage areas from the floodplain; and
- increased flow depths, durations, hazard and load on the downstream stormwater drainage pipes and outlet location.

The Proponent committed to performance criteria for flooding on adjoining lands, based on those set out for recent similar urban transport infrastructure projects and has committed to refine the proposal and undertake further assessment during detailed design with the objective of not exceeding certain flood characteristics, including in a one per cent Annual Exceedance Probability (AEP) event. These are summarised in **Table 10** below:

Table 10 | Design criteria for flood impacts on adjoining lands (Source: EIS)

Flooding characteristics	Proposed criteria for flooding on adjoining lands
Duration of flooding during a one per cent AEP event	Maximum increase in time of inundation of one hour in a one per cent AEP event.
Maximum increase in flood level at properties where floor levels are already exceeded in a one per cent AEP event	10 mm
Maximum increase in flood level at properties where floor levels are not exceeded in a one per cent AEP event	50 mm
Increase in flood velocities	Identification of measures to be implemented to minimise scour and dissipate energy at locations where flood velocities are predicted to increase.

With the proposal, the predicted increase in flooding throughout most of the affected area in a one per cent AEP event without and with climate change event is less than 10 mm and is within the ability to measure. However, eight properties on Broomfield Street may experience flood levels in the one per cent AEP event above 50 mm, with most of these properties receiving flood levels up to 58mm and one up to 175 mm. The areas of these properties impacted is generally small and confined to the front yard. In the maximum flood (PMF) event, the impacts are predicted to increase up to approximately 75 mm but are expected to occur only in areas where inundation of several metres already occurs. The duration of flooding affectation would not likely change. The Department also considers that the loss of flood storage would be minor compared to the size of the catchment.

Whilst these levels of impact are comparable to other approved State significant transport projects that have been approved, the Department considers that cumulative flooding impacts associated with the SSFL should be considered and that the criteria proposed by the Proponent does not provide sufficient incentive to strive for an improved outcome. Therefore, it is recommended that the allowable

increase in flooding at properties be reduced to no additional over floor flooding at residential accommodation and no more than a 30 mm increase on existing flood levels (which includes properties that are already subject to flooding in the yard and those that would be subject to less than 30 mm in the yard where the property boundary would be breached by floodwater due to the proposal) unless agreed by the Planning Secretary. In seeking the Planning Secretary's agreement, the Proponent must demonstrate that design changes to meet the 30 mm criteria are not practical. Notwithstanding, an increase in flood levels of more than 50 mm within a property boundary must not be exceeded in a one percent AEP event.

The Department also notes that much of the existing flooding along Broomfield Street and at the discharge point to Cabramatta Creek is a consequence of the capacity of the existing Council-owned upstream stormwater network. Measures to improve the hydraulic capacity upstream are outside the scope of the proposal and could have further consequential impacts which have not been assessed.

However, the Department does not accept that the proposal should reduce the functionality of the stormwater system and has recommended conditions to this effect. The proposal is to not worsen the overall efficiency of the existing stormwater drainage system affected by the proposal except for work to ensure compliance with the Department's recommended flooding design criteria. Measures to address this could involve the Proponent changing gutter invert levels to increase capacity, diverting local flows and duplicating drainage.

Conclusion

A small number of properties may experience an increase in flood depth in their yards during less frequent flooding events where yards are already subject to inundation. Whilst the Proponent has committed to further design refinement to reduce flooding and to meet accepted criteria, the Department has recommended more stringent flood criteria to account for existing SSFL impacts and to further minimise impacts.

6.4 Social Impacts

The Department acknowledges that socio-economic, property and land use impacts are likely in an established urban environment.

There would be economic benefits experienced from construction including 80 full-time jobs. In addition, the Proponent proposes to commit to an Australian Industry Participation Plan which would direct 100 per cent of project funds to Australian companies. Once the proposal is in operation, it would provide rail efficiency gains that improve freight transit times, delivering broader economic benefits to the Sydney metropolitan region and the State.

The proposal would require temporary possession of mostly public land around Broomfield Street, Warwick Farm Recreation Reserve and Jacque Osmond Reserve and a portion of Peter Warren Automotive car dealership during construction. Permanent acquisition of a five to ten-metre-wide section of land on the eastern side of the rail corridor would be required. This consists of public land and a car dealership. Land acquisition would be done in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

Social impacts to the wellbeing and way of life of the community relate mainly to amenity and their ability to access and use public open spaces. Amenity impacts associated with noise and vibration, traffic and access, and other issues are addressed in **Sections 6.1, 6.2 and 6.5** of this report.

The Department was concerned with the impact of the proposal on access to and use of public open space by the community during construction and operation. Although the Proponent has committed to ensure that access and use of Jacquie Osmond Reserve is maintained and managed, the Department has recommended conditions requiring the existing level of programmed softball activity at the Reserve be maintained at all times during construction and operation.

Submissions

Community

Submissions from the community raised concern regarding the loss of green public open space. Further, the Southern District Softball Association seeks offset measures to address loss of use and access to the softball fields in Jacquie Osmond Reserve during construction and operation.

Local Councils and Government Agencies

Liverpool City Council advised that the loss of public recreation space at Jacquie Osmond Reserve warrants an effective offset strategy to mitigate the impacts. Council recommended investigating the upgrade and enhancement of the softball fields that would remain during construction to alleviate the temporary loss of recreational space/facilities. Further, following the removal of the construction compound in Jacquie Osmond Reserve, the land must be rehabilitated and returned to recreation use in a satisfactory condition.

Department's considerations

Public open space and recreational facilities

The Department recognises the importance of existing public open spaces and recreational facilities for the community's way of life and contributing to its wellbeing. The local community raised significant concerns regarding the proposal's direct impact on public open space, including loss of use of Jacquie Osmond Reserve during construction and the softball facilities located within the Reserve.

Jacquie Osmond Reserve is green space that has a particularly active focus and contains the Jacquie Osmond Softball Centre with 12 softball fields (including one undersized field used for T-ball), informal parking, lighting along the access road and a canteen. The softball fields have been used by the Southern District Softball Association (SDSA) for over 35 years as its training ground and hosting grounds for local competitions, the NSW State Championships and international games, and are used by a number of local secondary schools.

Construction could disrupt softball training, games and competition in the Reserve and use of the eastern portion as a construction compound would require the temporary removal of two existing softball fields, a T-ball field and portions of the outfield of a further one or two softball fields. The Proponent would widen the existing rail corridor and construct an embankment of up to ten metres in width and up to 1.5 metres in height along the length of the Reserve. Prior to operation, the Proponent

would reinstate access to the Reserve as well as the two softball and one T-ball fields, temporarily removed during construction, albeit several metres towards the east.

The Proponent recognises the social and wellbeing impacts on the community's use of the Reserve and has engaged with Liverpool City Council and the SDSA to understand access and operational requirements of the softball centre. The Proponent proposes to investigate opportunities to provide appropriate temporary lighting to facilitate night games, thus allowing the remaining fields to be used with greater intensity during construction, and has also committed to restore public spaces that were temporarily acquired to their pre-construction condition, including access paths and recreational facilities.

The Department supports the consultative approach taken and encourages continued collaboration with Liverpool City Council and SDSA. However, the Department remains concerned that the Proponent's commitments do not adequately address or compensate for the three fields temporarily removed during construction which would result in reduced capacity for programmed activity on the remaining fields in the Reserve for approximately two years. The Department recognises there may be additional means of ensuring the level of programmed softball activity at the Reserve is maintained other than lighting, such as improved field covering or player facilities. Further, considering the amount of outfield would be reduced due to the new embankment, the Department required greater assurance that the three fields reinstated after construction would provide at least the same level of programmed softball activity as presently allowed.

Consequently, after discussions with Liverpool City Council and the SDSA, the Department has recommended conditions that require the Proponent to ensure that existing level of programmed softball activity at the Reserve can be maintained at all times during construction and operation; that the design of the altered facilities be undertaken in consultation with Council and the SDSA; and that the design of those facilities be approved by the Planning Secretary. The Department has also recommended that no work commence at the Reserve that may restrict the use of the existing softball facilities until the design of the altered facilities has been completed.

To address the existing poor access to the Reserve, which was also raised in consultation with Liverpool City Council and the SDSA, the Department has recommended that the access road be improved beyond standard repair of damage through regrading and re-sheeting of the existing surface at the end of construction.

Conclusion

The Department recognises that the proposal would potentially affect the wellbeing and way of life of the community through impacts to existing open space and sporting facilities. To address this matter, the Department has recommended conditions to ensure the continuity of use and improved facilities at Jacquie Osmond Reserve. Impacts to landscaping and tree loss is addressed in **Section 6.5**. Based upon the Department's recommended conditions, in conjunction with the Proponent's committed mitigation measures, the Department concludes that the social impacts would be appropriately managed.

6.5 Other Issues

The Proponent has also assessed the potential impacts of the proposal in relation to Aboriginal heritage; air quality; biodiversity; climate change and greenhouse gases; health, safety and hazards; landscape and visual amenity; non-Aboriginal heritage; soils, contamination and water quality; and waste management. The Department is of the opinion that the Proponent has undertaken an adequate assessment of these issues and that they can generally be managed through the Proponent's management commitments and recommended conditions. **Table 11** provides a summary of these issues and any recommended conditions.

Table 11 | Summary of other issues raised

Issue	Consideration
Aboriginal heritage	<p>Areas of archaeological interest are confined to the area south of Cabramatta Creek across undeveloped recreational land. An area of high archaeological potential is present to the west of the rail line in Warwick Farm Recreation Reserve with moderate scientific significance due to the presence of previously recorded AHIMS sites with demonstrated archaeological deposits, and low levels of previous ground disturbances observed. Jacquie Osmond Reserve (to the east) is more disturbed and is considered to exhibit moderate potential. Compound locations have been selected to avoid recorded sites and minimise the impact to areas of moderate to high potential and work areas confined to areas of existing disturbance.</p> <p>Utility adjustments would be required in areas of moderate potential that cannot be avoided. Piling for bridge structures may intercept areas of archaeological potential and the use of compounds could result in compaction of any <i>in situ</i> archaeological resource.</p> <p>The Department agrees that test excavations should be carried out before work commences in these locations and has recommended conditions to this effect. The information obtained would be used to further refine the compound location and project design, add to the knowledge base and the environmental mitigation measures committed to. This includes protecting areas of high archaeological potential and high cultural significance.</p> <p>The Department is satisfied that the potential for residual or unexpected impacts to any archaeological resources would be appropriately managed by the Proponent's commitments and with conditions to guide the management of unexpected finds.</p>
Air quality	<p>During construction, dust and particulate matter would be generated during road construction, excavation for compound sites and use of plant and machinery.</p> <p>The Department notes that standard best-practice management measures to prevent dust emissions would be implemented. Given the temporary nature of these impacts, and with accepted management measures such as orientation of plant and equipment and watering of exposed areas, the Department considers that the impacts can be managed to an acceptable level.</p> <p>Operation would see an increase in diesel locomotives traversing the rail corridor as well as intermittent idling on the loop.</p> <p>The maximum worst-case scenarios modelled included idling assuming a locomotive idling at either end of the passing loop, idling for 12 hours per day during which the annual average PM_{2.5} (i.e. particles up to and including those with a 2.5 µm diameter) increasing by up to 0.2 µg/m³ at the nearest sensitive receptor on a background (existing) average PM_{2.5} of 9.4 µg/m³ without the proposal. The Department considers this acceptable.</p> <p>To mitigate operational impacts more generally, air quality would be managed in accordance with the Proponent's EPL, which regulates the locomotives that are permitted to use the rail corridor, and its standard operating procedures, including in its Environmental Management System and the Southern Sydney Freight Line Operational Air Quality Management Plan. Notwithstanding Liverpool City Council's and community</p>

Issue	Consideration
	<p>concerns regarding operational air quality, the Department is satisfied that impacts can be managed by using existing management frameworks.</p>
<p>Biodiversity</p>	<p><i>Flora</i></p> <p>Cumberland River-flat Forest and Coastal Freshwater Wetland, both Endangered Ecological Communities, are present near the rail corridor. Downy wattle (<i>Acacia pubescens</i>) and a single narrow-leaved peppermint (<i>Eucalyptus nicholii</i>) are present in and adjacent to the rail corridor. Neither of these communities would be directly affected by construction and the small population of Downy Wattle can be protected from work areas using physical measures committed to by the Proponent.</p> <p>Ongoing weed management activities are a regular maintenance activity in the rail corridor and managed through implementation of the ARTC's environmental management system. No further conditions are considered necessary to manage this matter.</p> <p><i>Grey-headed Flying-fox and Microbats</i></p> <p>A Grey-headed Flying-fox roost camp is located approximately 300-350 metres east of the construction site and about 225 metres west of the Hume Highway and three microbat species, all of which are listed as vulnerable in the EPBC Act and BC Act, are known to be close to the site. This roost camp has been identified as critical to the survival of the species.</p> <p>The roost camp would not be directly affected by construction. Activities most likely to disturb the camp would be short term and unlikely to result in permanent dispersion of the camp. Flying-foxes are known to be loyal to a camp and, while they are nomadic and may visit numerous camps, they generally return to their permanent camp. Background noise during construction is expected to be consistent with what could be expected adjacent to a busy road such as the Hume Highway and therefore it is unlikely that construction noise would be discernible at the camp. Given the relatively short construction timeframe, it would be difficult to attribute changes to the camp size to construction over a short period of time and not the daily, monthly or seasonal camp size fluctuations.</p> <p>The species is unlikely to be affected by night-time construction due to its nocturnal habitats. Following a review of further information provided in the Response to Submissions Report, the DPIE EES Group concluded that there is not likely to be any direct impact on threatened flora or fauna and that the proponent's conclusions were reasonable.</p> <p>The Proponent committed to a range of measures to ensure that any potential habitat is cleared of Microbats before being removed or affected. This includes checking and clearing of hollows and culverts, use of low impact tree felling for hollow bearing trees, and capture and release of animals into pre-determined habitat.</p> <p>These measures are considered appropriate to manage the potential impacts of this proposal. No further conditions are considered necessary to manage the risks to flora and fauna likely to result from the construction or operation of the proposal.</p>
<p>Landscape and visual amenity</p>	<p>The area is characterised by the established rail corridor, residential and open space areas, and some commercial and industrial land use.</p> <p>The changes to landscape character and visual amenity during construction is expected to be moderate to negligible. Removal of the noise walls and streetscaping would make the elevated construction workfaces and plant more visible, albeit temporarily from residences on Broomfield and Sussex streets. The Department recommends boundary screening be provided during construction.</p> <p>Over 120 trees would be removed, mostly street trees and planted trees in public open space. Councils and the community raised concern with the number of trees to be removed and the effect this would have on canopy cover. Liverpool City Council requested that every tree removed be replaced by three new trees, with Council to be consulted on species/type and location. Council also proposed that landscaping be extended to include Station Street in Warwick Farm to provide visual relief to an area devoid of vegetation with no screening from houses into the rail corridor.</p>

Issue	Consideration
	<p>Fairfield City Council requested that trees and vegetation affected by construction be removed and replaced as required. The Department supports the replacement of trees and has recommended a condition which requires:</p> <ul style="list-style-type: none"> • a net increase in trees and aim to enhance Council's position in the Sydney Green Grid; • replacement of trees within 500 metres of the boundary, in consultation with the relevant council. <p>The replacement of the noise wall rail embankment/retaining wall along Broomfield Street would provide an element consistent with what is currently in that location. However, removal of street trees required to accommodate the widened rail corridor and realigned roadway would bring these five metres closer to residences and without the ability to screen with street trees.</p> <p>The Proponent has committed to consider a range of finishes, consistent with the current panels during detailed design, as well as the introduction of climbing plants to provide a green wall and offset the loss of street trees on the western side of Broomfield Street. These would be finalised through detailed design. The installation of the green wall does not derogate the Proponent's obligation under the recommended condition to provide a net increase in trees.</p> <p>The Proponent proposes an urban design and landscape plan (UDLP) to build on the existing landscape concept. The Department's recommended conditions provide a framework to implement appropriate urban design and landscaping measures based on the concept in the EIS, and in consultation with Council.</p> <p>Fairfield City Council objected to the provision of replacement parking on Railway Crescent in part due to the potential impacts of landscaping. To address this matter, conditions have been recommended to ensure that the design of replacement parking consider landscaping objectives in consultation with Fairfield City Council.</p>
Non-Aboriginal heritage	<p>There are no direct impacts to the Liverpool Station Railway Group State Heritage Register listed items. A commitment to locate signalling work outside the vibration buffer distances would ensure that there are no vibration impacts. Nonetheless, surveys would also be undertaken on all structures in the vibration buffer distance with a view to understanding the structural integrity of all structures and to ensure the most appropriate construction methods are used. The Department is satisfied that these measures are appropriate to ensure the protection of heritage items in proximity to the construction boundary.</p>
Soils, contamination and water quality	<p>The proposal area does not contain any sites listed on the EPA's contaminated land register and the limited contamination assessment confirmed that the soils are considered suitable to remain on the proposal site. The local watercourses are highly modified and generally comprise poor water quality. Soil erosion, leaks and spills could further reduce water quality if they occur. Measures are proposed to ensure that scour does not occur around new bridge piers and abutments. Rip rap removed during construction around existing structures would be reinstated to ensure this does not contribute to changes in water quality.</p> <p>Liverpool City Council commented on the lack of water quality treatment systems and requested that the proposal consider Water Sensitive Urban Design (WSUD) principles. The Proponent has committed to minimise water quality impacts and incorporate WSUD elements in its detailed design. Given the limited space and the potential for water quality impacts to be minimal, the Department considers the absence of a water quality treatment system acceptable.</p> <p>Considering the generally flat topography, minimal earthworks and temporary exposure of soils, the standard erosion and control measures proposed are considered appropriate to manage potential soil erosion.</p>
Climate change and greenhouse gas	<p>The Proponent's assessment considered the risks of climate change and identified extreme weather as a risk to the proposal, particularly from storm and flooding events.</p> <p>Adaptive measures have been built into the design of the proposal and its maintenance schedule to ensure these risks have been minimised as much as possible. The</p>

Issue	Consideration
	Department has considered these measures and accepts they are appropriate for the scale of the potential impact to the surrounding assets.
Health, safety and hazards	During construction, there would be public health and safety risks due to the proximity of sensitive land uses to the site. This may result in traffic confusion, injury, potential exposure to contaminated land, access issues, air quality impacts and noise and vibration impacts. During construction and operation, the storage and handling of dangerous goods and hazardous materials could cause leaks and spills, with resultant contamination and health impacts. Once operational, there may be potential security risks associated with unauthorised access to the rail corridor. The Department considers that the potential impacts are manageable through established mitigation and management measures and recommended conditions.
Waste management	Approximately 4000 cubic metres of spoil is expected to be generated but re-used for track formation and construction. Any contaminated spoil would be disposed of off-site. Waste management would follow the waste hierarchy approach of avoidance and re-use before consideration of waste disposal in accordance with the <i>Waste Avoidance and Resource Recovery Act 2001</i> and <i>Protection of the Environment Operations Act 1997</i> .



7. Evaluation

The Department has reviewed the EIS and Response to Submissions Report, and assessed the key issues arising from the construction and operation of the proposal. This has been undertaken with advice from relevant government agencies and councils, and in consideration of key strategic government policies and plans. The Department's assessment considered all the relevant matters and objects of the EP&A Act and the principles of ecological sustainable development. The proposal is in the public interest as it would relieve capacity constraints and respond to growth in freight transport, and should be approved subject to conditions.

The key issues associated with the proposal are:

- noise and vibration;
- traffic, transport and access;
- flooding and drainage; and
- social impacts.

The Proponent has identified a range of environmental management measures which it has committed to applying to the proposal. Based on its assessment, the Department recommends conditions aimed at improving the level of environmental management and reducing potential impacts.

The proposal is consistent with the *2020 Infrastructure Priority List of Infrastructure Australia*, *State Infrastructure Strategy 2018-2038: Building the Momentum*, *Future Transport Strategy 2056*, *Greater Sydney Region Plan: A Metropolis of Three Cities*, *Western City District Plan* and *NSW Freight and Ports Plan 2018-2023* as it would:

- increase capacity of, and alleviate constraints on the SSFL specifically, and the MFN more broadly, to meet existing and forecast future demands for rail freight transport;
- support the operation of 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.

Further, the proposal would maintain regional and local amenity and accessibility due to less congestion on the road network by encouraging a modal shift in freight transport from road to rail and deliver upgraded active transport and recreational infrastructure in the proposal area whilst mitigating any unreasonable negative environmental impacts. During construction, around 80 fulltime jobs would be created (with up to 220 during possession periods). In addition, the Proponent proposes to commit to an Australian Industry Participation Plan which would direct 100 per cent of project funds to Australian companies.

The proposal, subject to conditions, would ensure that disruptions to the use of the remaining softball facilities in Jacque Osmond Reserve are minimised during construction and appropriate amenity is

reinstated in Jacquie Osmond Reserve after construction. The impact of construction noise would be effectively managed through recommended conditions including the provision of respite periods and the implementation of management strategies such as work scheduling. Further, the proposal must be designed and constructed to minimise changes to existing flood characteristics within the project area.

The Department is satisfied that the issues raised in submissions have been appropriately considered and responded to by the Proponent and by the Department. Residual impacts are considered acceptable when managed through recommended conditions and the Proponent's commitments, such that there is no long term and irreversible impact.



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 findings and recommendations in this report as the reasons for making the decision to approve the application;
- **considers** any advice provided by the Minister having portfolio responsibility for the proposal;
- **agrees** with the key reasons for approval listed in the notice of decision;
- **grants approval** for the application in respect of SSI-9186 as amended, subject to the conditions in the attached approval; and
- **signs** the attached project approval and recommended conditions of approval (see attachment).

Recommended by:

Lisa Mitchell

Team Leader Metro Rail
Transport Assessments

Recommended by:

Glenn Snow

A/Executive Director
Infrastructure Planning Assessments



9. Determination

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

The Hon. Rob Stokes MP

Minister for Planning and Public Spaces



Appendices

Appendix A – List of Documents

1. Cabramatta Loop Project Environmental Impact Statement – Volumes 1 to 5 – dated 15 August 2019 (EIS)
2. Cabramatta Loop Project Submissions Report dated 20 February 2020 (Response to Submissions Report)

Appendix B – Environmental Impact Statement

<https://www.planningportal.nsw.gov.au/major-projects/project/10231>

Appendix C – Additional Information

Highly Noise Affected Receivers

The table below is representative of an absolute worst-case scenario representing the number of receivers impacted across the entire duration of each construction scenario without mitigation. The modelling also assumes simultaneous operation of all equipment while the construction equipment is at the nearest location to each receiver's location. Most of the construction scenarios involve linear works (for example, road works along Broomfield Street, noise wall construction, track construction, track installation) and as such noise exposure at each receiver would reduce as the distance between the works and the receiver increases as works progress along the alignment.

Table 12 | Number of Receivers Predicted to Experience Noise Levels about NMLs (Source: ARTC)

		Standard Hours					Out of Hours					
Duration (weeks)	Construction Scenario	Number of receivers exceeding the NML			Worst-case noise level (dB(A))	Number of highly noise affected receivers >75 dB(A)	Number of receivers exceeding the NML				Worst-case noise level (dB(A))	Number of receivers exceeding the sleep disturbance screening criteria (RBL + 15)
		1-10 dB(A)	11-20 dB(A)	>20 dB(A)			1-5 dB(A)	6-15 dB(A)	16-25 dB(A)	>25 dB(A)		
104	CS01 – Compound establishment and operations	157	26	13	94	7	913	515	84	20	94	7
104	CS02 – Vegetation removal and utility relocation	742	286	101	79	28	703	1517	545	272	79	41
104	CS03 - Road earthworks (Stage 1/2)	1011	304	154	92	79	575	1638	665	357	92	75
104	CS04 - Road pavement works (Stage 1/2)	622	209	117	100	59	908	1374	414	257	100	57

104	CS05 - Road furniture installation (Stage 1/2)	108	38	35	80	11	234	271	81	54	80	7
65	CS06 - Noise wall construction (Stage 2)	1033	303	154	88	71	518	1697	693	352	88	74
104	CS07 – Bridge construction prework (Stage 3)	233	31	7	82	3	762	1015	124	28	82	3
104	CS08 – Bridge construction works (Stage 3)	370	38	10	83	4	910	1194	185	38	83	4
104	CS09 - Bridge rail installation (Stage 3)	32	5	3	72	0	289	96	24	6	72	0
78	CS10 - Retaining wall installation (Stage 4)	1171	107	17	74	0	656	1946	534	64	74	8
104	CS11 - Track construction (Stage 1-3 and Stage 5)	565	190	69	78	20	888	1135	384	167	78	14
52	CS12 - Track installation (Stage 5)	1175	389	172	85	73	440	1634	756	389	85	79
13	CS13 - Finishing and rehabilitation (Stage 6)	100	15	10	91	7	573	289	46	17	91	7

Appendix D – Submissions

<https://www.planningportal.nsw.gov.au/major-projects/project/10231>

Appendix E – Response to Submissions Report

<https://www.planningportal.nsw.gov.au/major-projects/project/10231>

Appendix F – Community Views for Draft Notice of Decision

The key issues raised by the community (including in submissions) and considered in the Planning Secretary's Assessment Report include project design; construction; consultation; noise and vibration; traffic, transport and access; flooding and drainage; and social impacts.

Issue	Consideration
<u>Project Design</u>	<p>Assessment</p> <ul style="list-style-type: none"> Concern that the proposal will detrimentally impact on any future expansion of the commuter rail infrastructure. The proposal would not detrimentally impact on the assets of Sydney Trains nor its potential to expand commuter rail service in the future. There are no plans to duplicate the Main South Line The proposal is identified and integrated with other projects across the network in strategic planning documents <p><i>Recommended Conditions/Response</i></p> <p>Conditions include:</p> <p>No conditions are required in relation to this matter.</p>
<u>Project Construction</u>	<p>Assessment</p> <ul style="list-style-type: none"> Details of temporary road closures and construction timeframes. An indicative construction program was provided in the EIS. The Department supports the staging of construction along Broomfield Street to maintain access throughout construction. Full road closure would be required under limited circumstances and would occur after consultation with the community. <p><i>Recommended Conditions/Response</i></p> <p>Conditions include:</p> <ul style="list-style-type: none"> Preparation and implementation of a Traffic and Transport CEMP Sub-Plan which will set out the construction schedule and road closures. Preparation and implementation of a Communication Strategy to facilitate communication with the community.
<u>Noise and Vibration</u>	<p>Assessment</p> <ul style="list-style-type: none"> Operational noise mitigation measures such as extension of Broomfield Street noise barrier; Excessive noise from construction works, especially at night-time; and Excessive operational noise and vibration. Construction noise is expected to exceed noise management levels at residences on Broomfield Street, including some highly noise affected. Noise mitigation is required for construction and operation. Work required outside of construction hours will be subject to noise goals that minimise exceedances of sleep disturbance criteria. Respite must also be provided. <p><i>Recommended Conditions/Response</i></p> <p>Conditions include:</p> <ul style="list-style-type: none"> Construction on Broomfield Street to be sequenced to minimise the period any portion of the noise barrier is removed. An Operational Noise and Vibration Review must be undertaken to monitor effectiveness, assess compliance and determine whether additional mitigation is required. Restricted hours when highly noise intensive work can occur and provision of respite. Construction noise to be managed and monitored by application of measures established in a Noise and Vibration Construction Environmental Management Plan (CEMP) Sub-Plan.

Issue	Consideration
<p><u>Traffic, Transport and Access</u></p> <ul style="list-style-type: none"> Car parking impacts on Broomfield Street during construction and operation; Construction traffic causing damage on local road network; Proposed realignment of Broomfield Street to maintain two-way traffic and landscaping opportunities; Access to Jacquie Osmond Reserve constrained during construction; Loss of active transport corridor during construction; and Road safety deterioration of the Broomfield and Sussex Streets intersection due to additional Sussex Street bridge. 	<p>Assessment</p> <ul style="list-style-type: none"> There will be traffic, active transport and access impacts during construction; however, these impacts can be mitigated. Construction on Broomfield Street will be staged to minimise on-street car parking and access impacts. The Proponent has committed to provide replacement car parking spaces on Railway Parade to offset the loss of up to 11 spaces on Broomfield Street. Broomfield Street will remain two-way after construction and landscaped in accordance with an Urban Design and Landscape Plan in consultation with council. <p><i>Recommended Conditions/Response</i></p> <p>Conditions include:</p> <ul style="list-style-type: none"> Provision of safe pedestrian and cyclist access around construction work sites, access to Jacquie Osmond Reserve, utilities and private property during construction. Preparation of an Urban Design Landscape Plan for the detailed design of Broomfield Street and the active transport corridor along the rail corridor. Requirements relating to road dilapidation surveys and repairs. The access road between Station Street and Jacquie Osmond Reserve is to be repaired. Replacement on-street car parking must take into account the ability to provide landscaping. Review of the safety performance of new or modified local roads, through a Road Safety Audit.
<p><u>Flooding and Drainage</u></p> <ul style="list-style-type: none"> Flash flooding of properties on Broomfield Street; and Loss of flood storage in Jacquie Osmond Reserve. 	<p>Assessment</p> <ul style="list-style-type: none"> Increased flooding is anticipated due to reduced flood storage on Broomfield Street. The Proponent committed to manage the flood risk to the project and to mitigate the impact of the project on flood behaviour in detailed design. The accepted flooding impacts should consider those from the SSFL and the design criteria should provide an incentive to strive for an improved outcome compared to the assessment levels in the EIS. The loss of flood storage would be minor compared to the size of the catchment. <p><i>Recommended Conditions/Response</i></p> <p>Conditions include:</p> <ul style="list-style-type: none"> The allowable increase in flooding at properties be reduced to no over floor flooding at residential accommodation and no more than a 30 mm increase on existing flood levels unless agreed by the Planning Secretary. Any request for higher flood levels must demonstrate that project design changes are not practical. Except for work to ensure compliance with the flooding design criteria, the project must not to worsen the overall efficiency of the existing stormwater drainage system.
<p><u>Social Impacts</u></p> <ul style="list-style-type: none"> Offset strategy to address the loss of use and access to 	<p>Assessment</p>

Issue	Consideration
<p>recreational open space in Jacquie Osmond Reserve during construction and operation; and</p> <ul style="list-style-type: none"> Impact on the amenity of the local area and the health and wellbeing of the community. 	<ul style="list-style-type: none"> The proposal will potentially affect the use of open space and sporting facilities. Temporary acquisition of open space for construction compounds and work sites is required. Access to parts of Jacquie Osmond Reserve would be temporarily restricted. <p><i>Recommended Conditions/Response</i></p> <p>Conditions include:</p> <ul style="list-style-type: none"> The existing level of programmed softball activity at Jacquie Osmond Reserve be maintained and that altered facilities be designed in consultation with the SDSA and Liverpool Council. Access to Jacquie Osmond Reserve from Broomfield Street must be returned to a standard equal to or better than the existing facility. The access road between Station Street and Jacquie Osmond Reserve must be rectified to a standard suitable for public users and include the grading and asphalt re-sheeting of the road.

Appendix G – Recommended Instrument of Approval