BOTANY YARD BI-DIRECTIONAL SIGNALLING

SUBMISSIONS REPORT

JUNE 2020

Australian Government

BUILDING OUR FUTURE

Revision History

Revision	Date	Prepared By	Reviewed By
0.1	2 June 2020	Jamie Fermio (Environment Advisor)	Stephanie Mifsud (Environment Manager)
0.2	11 June 2020	Jamie Fermio (Environment Advisor)	Stephanie Mifsud (Environment Manager)

Glossary and Abbreviations

Term	Meaning
ARTC	Australian Rail Track Corporation
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CSSI	Critical State Significant Infrastructure
Detailed design	The concept/reference design is the preliminary design presented in the REF, which would be refined by the Construction Contractor (should the Proposal proceed) to a design suitable for construction (subject to ARTC acceptance)
DPIE	NSW Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	The NSW Environment Protection Authority
EPL	Environment Protection License issued for scheduled activities under Schedule 1 of the *Protection of the Environment Operations Act 1997*
LGA	Local Government Area
NSW	New South Wales
Points	Track points are movable rails which enable trains to be guiding from one track to another
Proposal	The construction and operation of the Botany Yard Bi-Directional Signalling upgrade
REF	Review of Environmental Factors
RING	Rail Infrastructure Noise Guideline (NSW EPA, 2013)
Sensitive receiver	Land uses and activities that are sensitive to potential noise, vibration, air and visual impacts, such as residential dwellings, schools and recreation areas
SEPP	State Environmental Planning Policy
Siding	A rail siding is a portion of a rail line which is separate to the running lines.

Contents

1 Introduction

1.1 Background

Port Botany, New South Wales' largest container port by volume, is a key freight transport asset in Australia that provides essential international connectivity to businesses and the wider community. Efficient access to Port Botany is critical to the economic growth and prosperity of Sydney, NSW and Australia.

The Australian Rail Track Corporation (ARTC) is a Government-owned statutory corporation that manages more than 8,500 km of rail track in NSW, Queensland, South Australia, Victoria and Western Australia. ARTC manages the Botany Line, a dedicated freight only rail line which connects Port Botany to the wider metropolitan and regional freight rail network.

Botany Yard is an approximately 4km long section of Botany Line rail corridor between Port Botany to the south and the Banksia Street footbridge in Botany to the north. The existing Botany Yard signalling system currently has uni-directional signalling and partial bi-directional signalling along the arrival and departure tracks. This configuration limits operational efficiency of the Botany Line as trains occasionally are required to wait for longer periods to enter and depart Port Botany.

ARTC propose to undertake signal and track upgrades within Botany Yard to facilitate bi-directional signalling and improve the operational efficiency of train movements within Botany Yard (the Proposal). The Proposal is described further in Section 2 of this Submissions Report.

A Review of Environmental Factors (REF) (May 2020) was prepared by NGH Environmental on behalf of ARTC to consider the environmental impacts of the Proposal. The REF also considered the potential cumulative impacts of concurrent construction and operation of the Proposal and other potential projects which may be constructed at the same time including the Botany Rail Duplication (BRD) project. The BRD project and the Proposal are adjacent to each other and will share construction work areas towards the north of the Proposal site near the Banksia Street pedestrian footbridge. The BRD project is a separate proposal by ARTC to duplicate a section of single track between Botany and Mascot. The BRD project is being assessed as Critical State Significant Infrastructure (CSSI) by the NSW Department of Planning, Industry and Environment (DPIE).

The REF for the Proposal was placed on public display by ARTC for a period of 14 days from 18 May until midnight 31 May 2020.

1.2 Assessment and approval process

The Botany Yard B-Directional Signalling REF (May 2020) (the REF) was prepared by NGH Environmental on behalf of ARTC in accordance with the ARTC Code of Practice for Environmental Impact Assessment of Development Proposals in NSW (Code of Practice), sections 5.5 and 5.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and clause 228 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) to ensure that ARTC takes into account, to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the Proposal.

The REF was placed on public display from 18 May until midnight 31 May 2020 in accordance with the consultation requirements of the ARTC Code of Practice. It is noted that in light of the Government COVID-19 restrictions in place at the time the REF was publicly displayed, display of the REF in a

public location and face-to face information sessions were not possible. Publishing an advertisement in local newspapers was also not possible as local newspapers had ceased operating.

Four submissions were received during the public display period. All submissions received were from the community. No Government, organisation or agency submissions were received. Issues raised in the submissions received on the Proposal are addressed in Section 4 of this report.

In accordance with the ARTC Code of Practice, this Submissions Report has considered the submissions received on the Proposal. ARTC will consider the REF and this Submissions Report in determining whether the Proposal should proceed. The reasons for this decision will be documented in a Determination Report.

A copy of the Submissions Report and the REF will be published on the ARTC website following determination of the Proposal.

1.3 Changes to the REF following public display

Following public display, the REF (May 2020) was updated to:

- Rectify minor formatting inconsistencies;
- Remove the responsibilities column on the summary of safeguards and mitigation measures table in Section 8.2 to avoid confusion in the delegation of responsibilities between ARTC and the Construction Contractor; and
- Include details of the consultation activities undertaken during the public display period.

The final REF is dated June 2020 and was prepared by NGH Environmental. The project scope and environmental assessment in the final REF dated June 2020 has not changed since the original REF dated May 2020 unless otherwise clarified in Section 1.4 of this Submissions Report. Any references to the REF in this Submissions Report is a reference to the final REF dated June 2020.

It is also noted that in response to issues raised in the submissions, the list of safeguards and mitigation measures presented in Section 8.2 of the REF has been updated. Two new measures (N25 and N26) have been added and the wording of one existing measure (N1) has been adjusted. An updated list of safeguards and mitigation measures is included in Appendix A of this Submissions Report. The safeguards and mitigation measures in Appendix A of this Submissions Report supersedes the mitigation measures presented in the REF.

1.4 Clarifications on the REF

Section 3.2 of the REF identifies that construction for the Proposal is anticipated to commence in mid-2022. Section 7.1 of the REF also identifies that construction of the Botany Rail Duplication (BRD) project is expected to commence in mid-2022. These dates in the REF are a typographical error.

The anticipated commencement date for the Proposal is early 2021. In accordance with the Botany Rail Duplication Submissions Report (March 2020), the anticipated commencement date for the BRD project is Q2 2021.

This Submissions Report clarifies that the anticipated construction commencement dates for the Proposal and the BRD project are both 2021, not mid-2022 as described in the REF. The Proposal as described in Section 3 of the REF otherwise remains unchanged.

1.5 Purpose and structure of this report

This Submissions Report has been prepared to document and consider the issues raised in the submissions that were made to ARTC during public display of the REF.

This Submissions Report should be read in conjunction with the final REF prepared for the Proposal dated June 2020 and the updated summary of safeguards and mitigation measures provided in Appendix A.

Section 4 of this Submissions Report identifies the issues raised in the submissions and provides responses to each issue.

2 Proposal overview

2.1 Overview of the proposal as described by the REF

Botany Yard is an approximately 4km long section of Botany Line rail corridor between Port Botany to the south and the Banksia Street footbridge in Botany to the north. The Proposal is located in Bayside Local Government Area (LGA) and the southern portion of the Proposal borders Randwick LGA.

A detailed description of the Proposal is provided in Section 3 of the REF. In summary, the Proposal comprises:

- Installation of new signalling infrastructure to accommodate bi-directional train movements including new cable routes, signal huts and signal posts including;
- Removal of redundant signalling infrastructure including signal posts and signal huts;
- Removal of a dis-used siding (Kelloggs siding) track connection; and
- Motorising existing manual points at Gelco siding.

Key features of the Proposal and the location of Botany Yard (the Proposal site) is illustrated in Figure 1.

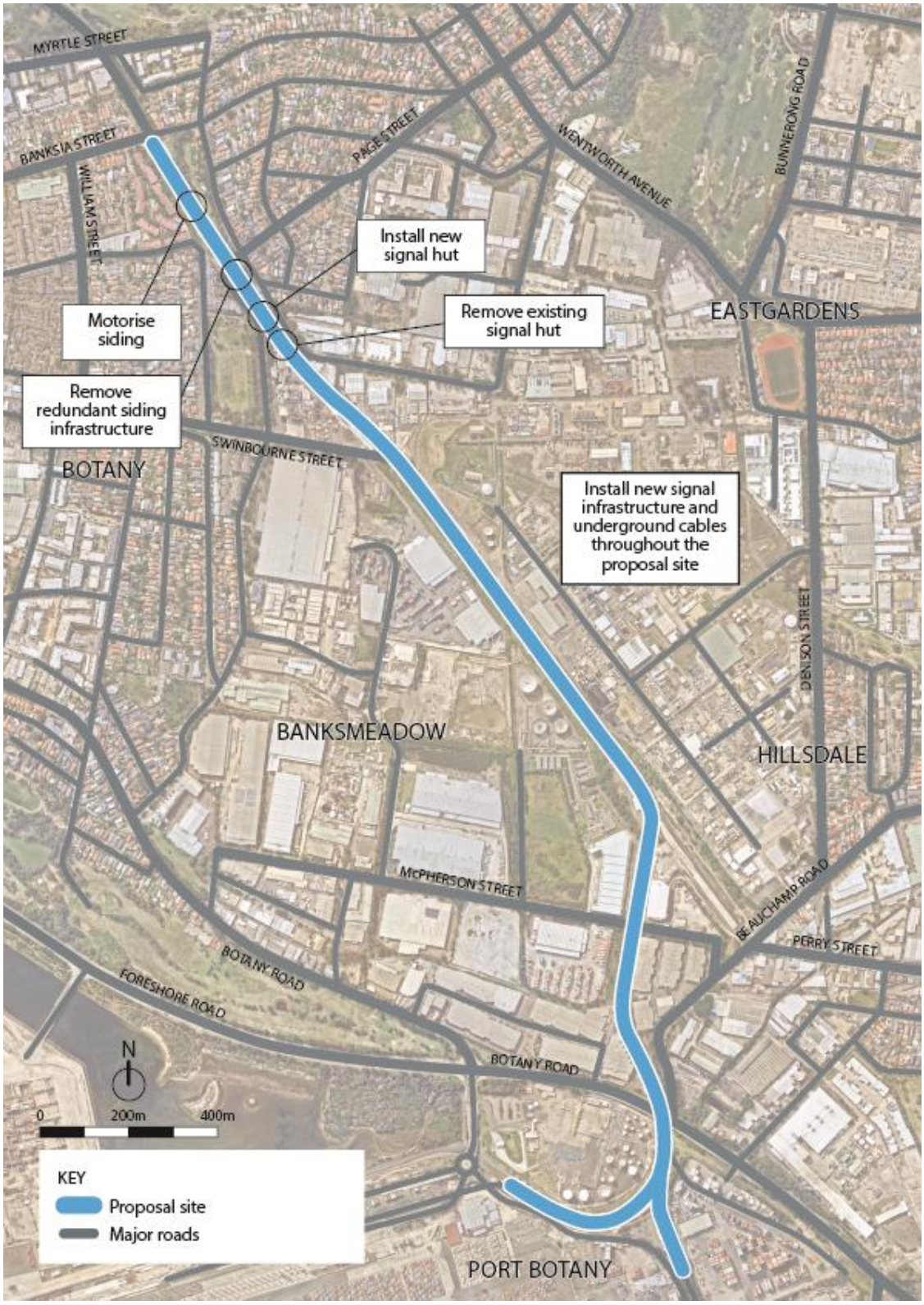
Construction of the Proposal is expected to commence in 2021 and be completed intermittently over a period of approximately 36 months. It is noted that Section 3.2 of the REF states that the Proposal would commence in mid-2022, however this is a typographical error and the Proposal is anticipated to commence in 2021 rather than mid-2022 as explained in Section 1.4 of this Submissions Report.

Site compounds are required for the Proposal. The following compound locations options were assessed in the REF:

- Adjacent to the Swinbourne Street access gate
- Adjacent to the McPherson Street access gate
- Between Banksia Street and Stephen Road bridge
- Adjacent to the Botany Road bridge

The locations of the proposed compound sites are further detailed in Section 3.7 of the REF. Multiple site compound options are proposed as works are likely to occur progressively along the approximately 4km long section of the rail corridor and will require efficient access, materials storage and workers amenities at different locations near the worksites.

Figure 1 Key features of the Proposal



2.2 Proposal need and benefits

The NSW Freight and Ports Plan 2018-2023 (Transport for NSW, 2018) identified that access by both road and rail to and from freight facilities such as ports is becoming increasingly constrained due to the increased demand of general road users and the capacity of the existing freight network. Currently, the ability to increase the share and efficiency of freight moved by rail through Port Botany is constrained by a number of issues. In order to address these issues, a capacity analysis of the Botany Line as part of the Sydney Metropolitan Freight Strategy 2015-2024 (Australian Rail Track Corporation, 2015) was conducted by ARTC. Based on the predicted growth at the time (2014), it was concluded that the Botany Line would reach capacity by 2022.

ARTC developed a Program of Works, funded by the Federal government under the National Building Program to improve the efficiency of Botany Line, as well as increase its capacity for freight traffic.

The existing Botany Yard signalling system currently allows uni-directional signalling and partial bi-directional along the arrival and departure tracks. This configuration limits operational efficiency of the line as trains occasionally are required to wait for longer periods to enter and depart the Port. The reconfiguration of the Botany Yard signalling system to enable bi-directional signalling will improve the operational efficiency of train movements in Botany Yard.

Botany Yard also includes a disused siding which runs into the Kelloggs factory (a portion of line where rail traffic can be placed clear of running lines; Kelloggs siding) and a non-motorised siding (Gelco siding). The existing configuration at Gelco siding requires the train driver to contact the Network Control Centre to enable the points (moveable components of paired rail that move to allow tracks to diverge or converge) at the siding to be manually operated. As a result, trains are required to idle in this location for some time as they wait to access the siding. Motorising the points at the Gelco siding would remove these constraints and enable trains efficient access to the siding. The Proposal includes the provision of works to remove the redundant infrastructure associated with the track connection to the Kelloggs siding and motorisation of the points at Gelco siding.

The Proposal will deliver improved operational performance of Botany Yard, which will assist with meeting the objectives of the NSW Freight and Ports Plan 2018-2023 and the Sydney Metropolitan Freight Strategy 2015-2024.

The objective of the proposal is to improve the operational efficiency of train movements through Botany Yard to deliver broader benefits between Port Botany and the wider freight network, consistent with the overarching objectives of the NSW Freight and Ports Plan 2018-2023 and Sydney Metropolitan Freight Strategy 2015-2024.

3 Stakeholder and community consultation

3.1 REF public display

The REF was publicly displayed from 18 May to midnight 31 May 2020 on the ARTC website and submissions were invited on the Proposal.

Additional engagement activities and tools used to encourage community and stakeholder participation during the public display period included:

- Distribution of approximately 4,000 flyers to properties in proximity of the Proposal site;
- Notification email to Bayside Council, Randwick Council and NSW Ports;
- A virtual community drop-in information session (via videoconferencing) on 27 May 2020 from 4pm to 6:30pm;
- Creation of a dedicated project webpage on the ARTC corporate website which included project information, a link to the electronic copy of the REF, details on a call back service and the virtual community drop-in information session as well as instructions on how to provide feedback on the Proposal;
- A call back service to speak to the project team available from Monday-Wednesday between 8am and 5:30pm;
- Information on the project made available on the Bayside Council Advocacy Hub webpage; and
- Inclusion of Proposal information on the Port Botany Community Consultative Committee Community Report (May 2020) - this was provided as an email update in lieu of community meeting due to the COVID-19 restrictions.

During the public display period, feedback from the community was encouraged to be submitted by mail or email to the following addresses:

- **Mail:** GPO Box 14, Sydney 2001
- **Email:** enviroline@artc.com.au

During the public display period ARTC received:

- No requests to use the call back service;
- One attendee at the virtual community drop-in information session;
- Four requests to sign up to ARTC's Project E-News which will provide updates on the Proposal; and
- Four submissions from the community via email.

Further detail on the submissions received is included in Section 4 of this Submissions Report.

3.2 Future consultation

Should ARTC proceed with the Proposal, consultation activities would continue. Residents, businesses and community members would be notified in the lead up to and during construction. The consultation activities would aim to ensure that:

- The community and key stakeholders have a high level of awareness of processes and activities associated with the Proposal;
- Accurate and accessible information is made available;
- A timely response is given to issues and concerns raised by the community;
- Feedback from the community is encouraged; and
- Opportunities for input are provided.

The Enviroline email address (enviroline@artc.com.au) and phone number (1300 550 402) would continue to be available during the construction phase. Targeted consultation methods such as letters, notifications, signage and verbal communications would continue to occur. The Botany Yard Signalling Project webpage would also include updates on the progress of construction.

Table 1 outlines the consultation tools and activities to be implemented in the future stages of the Proposal.

Table 1 Consultation tools and activities to be implemented in future stages of the Proposal

Consultation Activities	Detailed Design	Construction	Operation
1300 telephone number and project email address	✓	✓	✓
Project website updates	✓	✓	
Targeted letters, notifications and project updates	✓	✓	
Project signage		✓	

4 Overview of submissions

4.1 Submissions received

A total of four submissions were received by ARTC during the public display period. No submissions formally objected to the Proposal although they did provide comments and/or raised queries and concerns in relation to impacts of the Proposal.

4.2 Consideration and response to submissions

An assessment of each community submission received during public display of the REF was undertaken, with each submission individually reviewed to understand the issues raised. The key issues raised in the submissions primarily related to construction and operational noise and vibration. Where relevant, input to the responses was sought from the specialists who assisted with preparation of the REF.

Each submission has been examined individually to understand the issues being raised. Based on the understanding of the issues raised, responses have been provided in Section 4.2 of this Submissions Report.

The content of each submission was reviewed and categorised according to the key issues (e.g. noise and vibration) and sub-issues (e.g. construction noise and vibration) raised. These categories formed the basis for the structure of responses to the submissions, which are issue-specific. Each issue identified in Table 2 is presented as a summary of similar issues raised by individual submissions. This means that, while the exact wording of a particular submission may not be presented in the summary of the issue, the intent of each individual issue raised has been captured. A response has been provided to each grouped issue summary in Table 2 below.

The submissions have been categorised into submission numbers 1-4 based on the order submissions were received. Individual submitters will be contacted to inform them of how to view this Submissions Report once it has been made publicly available.

Table 2 Response to submissions

Submission No.	Issue/s raised	ARTC response
Noise and Vibration		
Construction Noise and Vibration		
01	Request clarification on what the figures relating to noise and vibration increases mean: - During the construction phase	Construction noise for the Proposal was assessed in accordance with *the NSW Interim Construction Noise Guideline* (DECC, 2009) (ICNG). The Noise and Vibration Assessment (Appendix B of the REF) establishes 'noise catchment areas' (NCAs) around the Proposal site that reflect surrounding land uses. An NCA can provide a logical grouping of receivers affected by the same works to assist with

Submission No.	Issue/s raised	ARTC response
		assessment, consultation or notification. They represent a typical noise environment in an area. Figure 6-3 in the REF details the boundaries of the NCAs and identifies the mapped land-uses within them, and Table 6-3 of the REF describes the boundaries of the NCAs. Once NCAs have been established, 'noise management levels' (NMLs) for sensitive receivers are determined based on the existing background noise levels in the area. When construction noise levels are above the NMLs, the ICNG specifies that reasonable and feasible mitigation should be considered. NMLs for residential receivers are shown in Table 6-8 of the REF. However, the subjective response of people affected by construction noise typically changes based on the level of the exceedance above the NML. Table 6-20 in the REF categorises the impact of this response based on the relative exceedance of the NML as follows: • **0 dB**- Barely noticeable • **1 to 10 dB**- Marginal- minor • **11 dB to 20 dB**- Moderate • **> 20dB**- High Table 6-21 details the likely exceedance (and subjective response) for each construction scenario in each NCA. Figures 6-5- 6-11 of the REF show the predicted exceedances for each construction scenario at a property-based level. There may be scenarios were properties are identified as experiencing 'high exceedances' during a particular scenario (such as track works) but no exceedances during a different scenario (such as signal works). Scenarios are also differentiated as 'peak' and 'typical'. A peak scenario represents the nosiest stage of works when noise intensive equipment (such as concrete saws) is used. The peak scenario generally lasts for relatively short periods of time. The typical scenario represents typical noise emissions when noise intensive equipment is not in use. The cumulative construction noise assessment for the Proposal and the BRD project sets out the noise

Submission No.	Issue/s raised	ARTC response
		assessment and figures in a similar way in Section 7.1.4 of the REF.
01	What night-time hours are proposed for construction?	The proposed construction hours are described in Section 3.6 of the REF. Some of the works for the Proposal are required to be undertaken during periods where trains are not operating to protect the safety of workers and infrastructure. The majority of this work will occur during planned track possession periods, when trains are not operating in this section of track. Some works may also be undertaken where an area between two signals can be made non-operational temporarily called controlled signal blocks (CSBs). This is typically permitted during low demand periods. Low demand periods can vary across the day but may include times prior to 9am. Track possessions typically occur approximately four times per year and are generally undertaken over the weekend. The approximate hours of work during a track possession are from 2am Saturday until 2am Monday. It is estimated that approximately six track possessions within the 36-month construction period will be required to construct the Proposal. The requirement for CSBs will be determined throughout detailed design and construction.
01	Request clarification on what compensation will be available for potential vibration damage to a building caused by construction	Construction of the Proposal does not require extensive use of vibration intensive equipment, except for limited occasions were jackhammers and a ballast tamper may be required for track works. Jackhammers typically only cause localised vibration in the works area and vibration from ballast tampers would be consistent with the vibration levels from existing rail maintenance activities performed along the rail line. As such, the Noise and Vibration Assessment (Section 4.2 of Appendix B of the REF) considered that potential vibration impacts during construction of the Proposal would be low. In addition, minimum working distances for vibration intensive equipment can be applied to ensure the structural damage and human comfort vibration limits set in British Standard BS 7385, German Standard DIN 4150 and *NSW Assessing Vibration: a*

Submission No.	Issue/s raised	ARTC response
		technical guideline (DEC, 2006) are met when works are undertaken next to sensitive receivers. To address concerns surrounding potential building damage from vibration caused by construction activities, mitigation measure N1 in Appendix A has been updated to include a requirement that the CNVMP identify minimum working distances for vibration intensive equipment. New mitigation measures N25 and N26 have also been added to Appendix A which include additional requirements for vibration monitoring where vibration intensive works are undertaken within the minimum safe working distances, and a requirement to undertake condition surveys at any properties identified at being risk of damage from construction vibration. Any damage identified to be directly caused by construction vibration associated with the Proposal will be rectified in agreement with the property owner. New and amended mitigation measures are shown in **red bold text** in Appendix A.
01	What days and times were the noise levels in the report taken?	As described in Section 2.3 and Appendix B of the Noise and Vibration Assessment (Appendix B of the REF), unattended noise monitoring was completed in June 2018 as part of the adjoining BRD project at the following locations and times within the Proposal study area: • 13 Morgan Street, Botany on Tuesday 19 June 2018- Sunday 1 July 2018 (inclusive) • 38 Ocean Street, Pagewood on Tuesday 19 June 2018- Monday 2 July (inclusive) The unattended noise monitoring was undertaken over the daytime (7am-10pm) and night-time (10pm-7am) periods. Attended noise monitoring was also completed at each monitoring location to verify the unattended noise monitoring results. The noise monitoring results at these locations were used to determine the existing noise environment

Submission No.	Issue/s raised	ARTC response
		and set the criteria to assess noise impacts from the Proposal.
01	What night-time hours are proposed for construction?	The proposed construction hours are described in Section 3.6 of the REF. Some of the works for the Proposal are required to be undertaken during periods where trains are not operating to protect the safety of workers and infrastructure. The majority of this work will occur during planned track possession periods, when trains are not operating in this section of track. Some works may also be undertaken where an area between two signals can be made non-operational temporarily called controlled signal blocks (CSBs). This is typically permitted during low demand periods. Low demand periods can vary across the day but may include times prior to 9am. Track possessions typically occur approximately four times per year in the Sydney Metro region and are generally undertaken over the weekend. The approximate hours of work during a track possession are from 2am Saturday until 2am Monday. It is estimated that approximately six track possessions within the 36-month construction period will be required to construct the Proposal. The requirement for CSBs will be determined throughout detailed design and construction.
01, 04	Request that construction be limited to daytime workday hours only.	In accordance with mitigation measures N3, N15 and N24 in Appendix A of this Submissions Report, works will be scheduled for standard construction hours wherever possible. However, due to the location of the works within and adjacent to an operational rail line, there is a requirement for some works to be undertaken during periods when trains are not operating to protect worker safety and infrastructure. Works carried out in the danger zone (within 3 metres of the centerline of the rail track) are affected by rail safety constraints and these works can only be carried out when trains are not operating. As such, some works must be carried out outside of standard construction hours, such as during

Submission No.	Issue/s raised	ARTC response
		scheduled track possessions, when trains are not operating on the rail line. These works are critical to delivering the Proposal and must be undertaken as safely and efficiently as possible.
04	Requests further clarification on what 'early morning' periods of works means.	Section 3.6 of the REF identifies that some works may be undertaken during controlled signal blocks (CSBs), which typically occur during low demand periods such as early mornings. A CSB is a safe working arrangement where a signal or multiple signal are blocked to stop trains from entering a location where workers are carrying out works. The REF considers that CSBs (if required) may occur during the early morning to minimise disruptions to rail services as this is when rail demand is lower. Typically, an early morning period of low demand is before 9am. However, rail demand fluctuates throughout the day and CSBs may also be used during standard working hours when demand is low. As this demand fluctuates, the need for CSBs and the timing of these works would be determined during detailed design and throughout the construction period.
04	Concern that advertised working hours is not specific and allows ARTC to undertake work at any time without considering sleep impacts to residents.	The hours of work proposed for the Proposal are described in Section 3.6 of the REF in accordance with ICNG, including a description of occasions where works which may be required outside of standard hours, such as during weekend track possession periods or CSBs. A sleep disturbance screening assessment was undertaken for the Proposal and identifies that the sleep disturbance criterion is likely to be exceeded when night works are occurring near residential receivers. Mitigation measure N4 in Appendix A requires the need for consecutive night-time works and likelihood of sleep disturbance impacts to be reviewed during detailed design. Where sleep disturbance impacts are anticipated, appropriate noise mitigation will be applied. In accordance with mitigation measure N12 in Appendix A, notification would also be provided to

Submission No.	Issue/s raised	ARTC response
		sensitive receivers prior to commencement of the works.
04	Rejects a possible solution of stacking site offices to protect residents from noise.	The REF has not identified stacking site offices as noise mitigation tool at this stage. Appropriate noise mitigation for any impacts associated with the use of the Banksia Street compound will be identified through detailed design and documented in the CNVMP.
Operational Noise and Vibration		
01	Concern with how long-term increase in rail traffic will impact health and wellbeing over time	The objective of the Proposal is to improve the operational efficiency of train movements within Botany Yard. While the Proposal does not directly increase rail traffic, an increase in traffic may occur over time as demand for freight rail increases and efficiency of the yard is improved, additionally it is noted that the separate BRD project proposes to increase the capacity of the Botany Line. This is outlined further in Section 2.1 of the REF and Section 2.2 of this Submissions Report, The REF has considered the potential environmental impacts associated with construction and operation of the Proposal and potential cumulative impacts associated with the construction and operation of the BRD project. The REF determined that the Proposal would not have a significant impact on the environment and would have a positive economic benefit by providing more efficient and effective signalling and track infrastructure in Botany Yard. In addition, the safeguards and mitigation measures outlined in Appendix A of this Submissions Report provide a range of measures related to potential noise, traffic and transport, air quality and amenity will aim to ensure potential environmental impacts are minimised and managed.
01	Currently experience vibration through the home from train movements and this is increased with the speed of train.	As described in Section 3.1 of the Noise and Vibration Assessment (Appendix B of the REF), ground-borne noise and vibration from passing trains can cause perceptible vibration impacts to occupants of nearby buildings. It should be noted that people can perceive floor vibration at levels well below the criteria likely to cause damage to buildings or their

Submission No.	Issue/s raised	ARTC response
		contents. As such, the 'human comfort' vibration criteria set by the relevant guidelines is the most stringent measure for assessing vibration. The Noise and Vibration Assessment (Appendix B of the REF) determined that in accordance with the relevant guidelines, the Proposal does not result in any changes to rail infrastructure (such as moving tracks closer to receivers) that would likely increase rail related ground-borne noise or vibration during operation of the Proposal. ARTC operates the existing network, including the Botany Line, in accordance with its existing Environment Protection License (EPL) (EPL #3142). ARTC operates a community contact service (Enviroline). ARTC encourages residents to contact them at the time of a concern where it relates to a particular event so that these concerns can be investigated.
01	Identified that most homes in the area do not have air-conditioning and rely on windows being open during the year, and noise of trains is noticeable.	The assessment of operational noise for the Proposal in the Noise and Vibration Assessment (Appendix B of the REF) was undertaken in accordance with the *Rail Noise Infrastructure Guideline* (RING) (EPA, 2013). In accordance with the RING, noise levels at residences are assessed one metre in front of the most affected building façade. This means that the operational noise levels assessed consider a conservative scenario where an internal occupant may have windows open. Noise levels would be expected to reduce when windows are closed. The RING applies to heavy and light rail infrastructure projects including the construction of new rail lines and upgrades to existing lines. It acknowledges that rail infrastructure can be inherently noisy and provides a procedure for the consideration of feasible and reasonable noise mitigation measures as part of the noise assessment and is considered in the REF. The RING includes trigger levels to identify a point at which additional mitigation should be considered. No properties were identified as experiencing noise levels exceeding the RING absolute and increase noise trigger levels during operation of the Proposal.

Submission No.	Issue/s raised	ARTC response
01	Request clarification on what the figures relating to noise and vibration increases mean: - As a result of long-term increase in train movements	The operational noise assessment was undertaken in accordance with the *Rail Noise Infrastructure Guideline* (RING) (EPA, 2013). The RING specifies noise criteria for upgrade or redevelopment of an existing rail line. The need to consider mitigation is considered when the results of the noise modelling show that noise levels are above the threshold criteria. To exceed the criteria specified in the RING the Proposal would need to contribute 2 dB (L_{eq}) or 3 dB (L_{max}) on top of the existing rail levels. The results of the operational noise assessment for residential receivers are presented in Table 27 of the Noise and Vibration Assessment (Appendix B of the REF). An assessment was also undertaken to consider the cumulative noise impacts of the Proposal combined with the BRD project and this is presented in Table 31 of the Noise and Vibration Assessment (Appendix B of the REF). These tables show the predicted noise levels during the daytime and night-time at each NCA for different operational scenarios. The operational scenarios include: • **At opening (2024)**- Without project • **At opening (2024)**- With project • **Design year (2034)**- Without project • **Design year (2034)**- With project The 'without project' scenario represents the existing track alignment and operational noise features, and the 'with project' scenario represents the modifications included in the Proposal. The 2034 design year represents the design capacity for the Project and is typically 10 years after opening of the Proposal. This ensures future rail traffic increase is considered in the assessment of the Proposal. The results in Table 27 and Table 31 demonstrate that operation of the Proposal, including the cumulative operation of the BRD project, would not exceed the threshold criteria identified by the RING.
01	Request clarification on what compensation will be available for potential vibration damage to a	Section 4.5 of the Noise and Vibration Assessment prepared by SLR (Appendix B of the REF) identified that the Proposal will not change any rail infrastructure features (such as moving tracks closer to receivers) that would increase vibration levels

Submission No.	Issue/s raised	ARTC response
	building caused by operation	during operation. As such, no additional operational vibration impacts are expected as a result of the Proposal that would trigger further assessment or mitigation.
Other- Noise and Vibration		
04	Concern that regular ARTC track possessions throughout the year causes sleep disturbance.	ARTC currently undertake approximately four track possessions per year on the Botany Line to undertake routine maintenance and project activities. Any works undertaken outside of standard hours for maintenance activities are regulated under ARTC's Environment Protection License (EPL) (#3142), which requires noise impacts to managed in accordance with the *Interim Construction Noise Guideline* (DECCW, 2009). This includes identifying sensitive receivers that may be affected by the works, identifying noise impact (such as sleep disturbance) at these receivers and applying work practices to minimise noise impacts. ARTC also provides notification to impacted noise sensitive receivers prior to the commencement of the works.
04	Request that ARTC provide double glazing for all dwellings impacted by the project.	The operational noise impacts from the Proposal have been assessed against the requirements of the *Rail Infrastructure Noise Guideline* (RING) (EPA, 2013). The RING contains criteria for rail upgrade projects and requires mitigation to be investigated where a Proposal results in an exceedance of the criteria at a receiver. No properties were identified as exceeding the RING criteria during operation of the Proposal (refer to the results contained in the Noise and Vibration Assessment in Appendix B of the REF). This means there is no requirement to consider operational noise mitigation for residential receivers, such as double glazing. Appropriate mitigation measures to minimise temporary impacts associated with construction noise will be developed during detailed design and documented in the Construction Noise and Vibration Management Plan (CNVMP). The CNVMP will consider and recommend mitigation measures

Submission No.	Issue/s raised	ARTC response
		based on the hours of work, location of works and types of equipment used.
Traffic and Transport		
02	When trains are not running during the upgrade, will transport be replaced by trucks and will there be rule changes for trucks accessing local roads?	ARTC schedules a number of track possessions per year across the network, typically around four in the Sydney Metro region. These track possessions allow a range of maintenance and project activities to take place. Freight movements are restricted for these limited periods and not typically transferred to road via trucks. Construction of the Proposal would be carefully planned, including through scheduled track possession periods, to minimise the potential for additional disruptions to the operation of the Botany Line. As such, it is anticipated that rail operations would continue throughout construction and the impacts to existing operations would be minimal. As no long-term impacts on the capacity of freight rail traffic on the Botany Line is anticipated, no changes to the surrounding road network are proposed as part of the Proposal. As discussed in Section 6.3 of the REF, there may be a noticeable increase in the number of construction vehicles accessing the Proposal site, particularly at Banksia Street, Swinbourne Street, McPherson Street, Penrhyn Road and Ocean Street where access is available. Approximately 5-10 workers per day and infrequent truck deliveries are anticipated to arrive and depart from the site during standard working hours. During weekend rail possessions, larger work crews are required and there may be additional vehicle movements to and from the site during these periods. No requirements for road closures or detours during construction have been identified at this stage for the Proposal. Overall, the REF determined that impacts to traffic and access during construction are considered to be low and manageable with the implementation of the mitigation measures detailed in Appendix A.

Submission No.	Issue/s raised	ARTC response
03	Note that the project will alleviate traffic in the area.	Noted. The Proposal, together alongside other Government initiatives, aims to improve the operational efficiency and capacity of the Botany Line and wider metropolitan and regional freight rail networks to cater to a growing demand for freight rail transport. Increasing the share of freight transport on rail relative to road has substantial benefits to the economy and may also have some benefit for motorists.
Use of Banksia Street Compound		
04	Concern that the proposed use of the Banksia Street compound site for both projects during construction will cause sleep disturbance and dust impacts at residences.	The cumulative construction impacts of the Proposal and the BRD project have been assessed in Section 7 of the REF, including an assessment of potential air quality and noise and vibration impacts. Ground disturbance work for the Proposal which may have the potential to create dust is generally limited to minor trenching to install new cabling. Excavation/trenching would typically be backfilled following installation of the cabling, meaning these areas would not be exposed for long periods and are unlikely to generate significant levels of dust at sensitive receivers. Dust can also be managed onsite through dust suppression measures such as water carts, soil binders and scheduling work to avoid ground disturbance on windy days. With the implementation of dust suppression measures detailed in Appendix A, dust impacts from the Proposal and the BRD project in the vicinity of the Banksia Street compound are likely to be low and manageable. A sleep disturbance screening assessment was also undertaken for the Proposal and identifies that the sleep disturbance criterion is likely to be exceeded at nearby residential receivers during track works associated with Gelco siding and Kelloggs siding. The screening assessment identified the sleep disturbance criteria may be exceeded at several receivers during compound operation, although no receivers were identified as being ‘highly noise affected’ in accordance with the ICNG definitions.

Submission No.	Issue/s raised	ARTC response
		It is also noted that compound operation for the Proposal generally has no requirement for noise intensive equipment. The impacts assessed in the Noise and Vibration Assessment (Appendix B of the REF) are based on all equipment working simultaneously at the closest point to the receiver. Construction noise impacts are frequently lower than predicted as the worst-case situation is typically only apparent for a relatively short period when noisy equipment is in use nearby. Mitigation measure N4 in Appendix A requires the need for consecutive night-time works and likelihood of sleep disturbance impacts to be reviewed during detailed design. Where sleep disturbance impacts are anticipated, appropriate noise mitigation will be applied in accordance with the Construction Noise and Vibration Management Plan (CNVMP).
04	Object to use of the Banksia Street compound due to proximity to residents.	Three other compound locations within the 4km section of Botany Yard were identified in Section 3.7 of the REF, however these locations are not proximate to the work sites required to undertake track and signal works at Gelco siding and Kelloggs siding. The Banksia Street compound was selected as a suitable compound site for the Proposal to facilitate the works at Gelco and Kelloggs siding as it is proximate to these work sites, has adequate area for laydown areas and can be accessed by existing access gates and the existing access road within the rail corridor. Section 7 of the REF considers potential noise and vibration, visual, soil, water, contamination, biodiversity, traffic and access, community and socio-economic, heritage, waste and air quality impacts associated with the cumulative construction of the Proposal and the BRD project, including the operation of the proposed site compound near Banksia Street. With the implementation of the safeguards and mitigation measures identified in Appendix A, it is considered that potential cumulative impacts associated with the use of the compound site near Banksia Street can be minimised and managed.

Submission No.	Issue/s raised	ARTC response
General		
04	Support the project	Supported noted.
02	Request to be added to project updates list	ARTC has added the submitter to ARTC'S Project E-News recipient list.
03	Propose that when freight trains aren't running on the line, a small passenger service could run between Port Botany and connect with urban city lines and this would reduce traffic flow even more.	The Botany Line is a dedicated freight only railway line. ARTC manages and maintains freight rail infrastructure across Australia, including the Botany Line. ARTC does not control or manage any passenger rail lines.
04	Concern that ARTC does not consider resident concerns and feedback on their major projects.	ARTC's approach to engagement is focused on providing information on the Proposal and providing opportunities for the community and other stakeholders to express their views on the Proposal. This enables ARTC to understand and access valuable local knowledge which is considered throughout the stages of the Proposal. Section 3 of this Submissions Report and Section 5.1 of the REF provide a detailed overview of the consultation activities undertaken by ARTC for the Proposal. This Submissions Report considers and responds to the feedback received during the public display of the REF for the Proposal.

5 Conclusion

The REF included a comprehensive assessment of the potential environmental impacts associated with the Proposal and, where appropriate, proposed mitigation and management measures to address these potential impacts. The REF concluded that with the implementation of the proposed mitigation and management measures, the potential environmental impacts of the Proposal would be adequately managed.

The primary issues raised by the community members were related to:

- Construction noise and vibration; and
- Operational noise and vibration.

Section 4 of this report provides responses to each issue raised in the submissions. Based on issues raised, some of the mitigation measures presented in the REF have been updated and some new mitigation measures have been added. A summary of the updated safeguards and mitigation measures is included in Appendix A of this report.

The Proposal as described in this Submissions Report is generally consistent with the:

- project needs and objectives discussed in Section 2 (Proposal Needs and Considerations) of the REF; and
- project description provided in Section 3 (Description of the Proposal) of the REF.

Having regard to the assessment in the REF and consideration of the submissions received, it is concluded that the conclusion as described in section 10 of the REF has not changed and the Proposal:

- Is not likely to significantly impact on the environment and therefore an Environmental Impact Statement under Division 5.2 of the EP&A Act is not required to be prepared
- Is not likely to significantly impact threatened species, populations, ecological communities or their habitats and therefore a Species Impact Statement is not required
- Is recommended to be approved subject to the proposed safeguards and mitigation measures documented in Appendix A of this Submissions Report.

Once ARTC has completed its assessment of the REF and this Submissions Report, a Decision Report will be prepared which will include reasons for the decision on the Proposal and any additional recommended conditions of approval. A copy of the Submissions Report and the REF will be published on ARTC's website following determination.

Appendix A Updated Summary of Safeguards and Mitigation Measures

The list of safeguards and mitigation measures presented in Section 8.2 of the REF has been updated with consideration given to the submissions received. Two new measures have been added, and the wording of one existing measure has been adjusted. This table supersedes the mitigation measures presented in the REF.

New mitigation measures or additions to existing mitigation measures are shown in **red bold** text.

The measures are broadly grouped according to the main stage of implementation; however, it is noted that the implementation of some measures may occur across a number of stages.

Reference	Impact	Safeguards and mitigation measures	Timing
Soil, Water and Contamination			
WQC1	**Asbestos**	• Areas of identified or known potential asbestos containing material will require asbestos controls during intrusive works. Asbestos works shall be completed in accordance with the Code of practice for the safe removal of asbestos and site management procedures for asbestos handling and disposal shall include at a minimum asbestos air monitoring, removal of asbestos by a NSW SafeWork licenced asbestos removalist and removalist to provide an Asbestos Removal and Control Plan (ARCP). Asbestos management procedures shall be included in the site-specific Environmental Work Method Statement or Contaminated Land Management Plan for intrusive works as required by WQC3	During Construction
WQC2	**Asbestos**	• NSW Safework Licenced Asbestos Assessor (LAA) to provide an Asbestos Clearance Certificate following the completion of removal.	After construction
WQC3	**Exposure to Contaminants**	• The Botany Yard SMP (AECOM, 2018) should be used as a guide to prepare a site-specific Environmental Work Method Statement or Contaminated Land management plan for intrusive works (excavations and managing groundwater). The management plan should address: ○ PPE requirements ○ Training ○ Personal hygiene ○ Containment ○ Waste classification ○ Spoil disposal or reuse options	Pre-construction

Reference	Impact	Safeguards and mitigation measures	Timing
WQC4	**Exposure to Contaminants**	• Potential reuse of materials is to be assessed in accordance with the National Environment Protection Measure.	During construction
WQC5	**Exposure to Contaminants**	• If previously unidentified contamination is identified the works should cease and the area be isolated so that the potential contamination can be sampled and identified by an Environmental Consultant' so this doesn't capture known contamination dealt with the Contaminated Land Management Plan or Environmental Work Method Statement.	During Construction
WQC6	**Exposure to Contaminants**	• Delineate and sign the known areas of contamination as no go zones (if contamination remains in-situ).	During Construction
WQC7	**Soil Erosion and Sedimentation**	• The proposal is to be undertaken in accordance with the requirements of Landcom's "Managing Urban Stormwater: Soils and Construction", Volume 1, 4th Edition, March 2004 (the Blue Book).	During Construction
WQC8	**Soil Erosion and Sedimentation**	• Temporarily segregate and store excavated topsoil material for reuse during site stabilisation and backfilling.	During Construction
WQC9	**Soil Erosion and Sedimentation**	• Ensure any stockpiles of excavated material or ballast and other construction materials are not stored or temporarily placed within drainage lines. and provide appropriate containment measures around the stockpiles, to prevent impact from any contaminated runoff	During Construction
WQC10	**Soil Erosion and Sedimentation**	• Install sediment controls on the downslope side of any disturbed areas including excavated, graded and stockpile sites where erosion may result in impact to the surrounding area.	During Construction
WQC11	**Soil Erosion and Sedimentation**	• Where possible, work areas and stockpile sites and access tracks should be established in already disturbed, un-vegetated areas.	During Construction
WQC12	**Soil Erosion and Sedimentation**	• Restrict the height of stockpiles to two metres.	During Construction
WQC13	**Soil Erosion and Sedimentation**	• Temporary stockpiles shall be stabilised to prevent wind and water erosion where they are	During Construction

Reference	Impact	Safeguards and mitigation measures	Timing
		located for an extended period of time (i.e. 2 weeks).	
WQC14	**Soil Erosion and Sedimentation**	• Minimise works during and after periods of high rainfall to minimise site disturbance and sedimentation.	During Construction
WQC15	**Soil Erosion and Sedimentation**	• Maintain and monitor erosion and sediment controls until the site is no longer at risk of erosion or sedimentation.	During Construction
WQC16	**Soil Erosion and Sedimentation**	• All disturbed areas are to be appropriately stabilised following completion of the works to prevent risk of erosion or sedimentation after construction.	During Construction
WQC17	**Soil Erosion and Sedimentation**	• At the end of each working day inspect site access locations for mud tracking and remove/clean up if present.	During Construction
WQC18	**Drainage**	• Any negative impacts observed during construction to the natural drainage system via track patrols and during works in the corridor will be reported to the Project Manager.	During Construction
WQC19	**Drainage**	• Do not discharge water or wastewater to stormwater, creeks, and drainage channels or into surrounding land.	During Construction
WQC20	**Pollution**	• Concrete washout, refuelling or other chemical use is to be conducted within a sign posted, designated and bunded area, and where possible, a minimum 40 metres from a watercourse or drainage channel.	During Construction
WQC21	**Pollution**	• Do not perform maintenance of equipment or vehicles on site. If unavoidable, conduct within a designated area and use drip trays or catch trays beneath equipment / vehicles being maintained.	During Construction
WQC22	**Pollution**	• Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transportation.	During Construction
Biodiversity			

Reference	Impact	Safeguards and mitigation measures	Timing
B1	**Clearing and prevention of over-clearing**	• If clearing of vegetation is required outside the proposal site these areas will need to be assessed by an ecologist for potential impacts to TECs, threatened species and their habitats.	During Construction
B2	**Clearing and prevention of over-clearing**	• Trees to be retained, including trees adjacent but outside of the proposal site, require an adequate tree protection zone (TPZ) for the duration of works. Details for calculating TPZs are provided within Australian Standard 4970-2009 – Protection of trees on development sites.	During Construction
B3	**Clearing and prevention of over-clearing**	• If the TPZ cannot be avoided during works, the Structural Root Zones (SRZ) of trees will be retained. Details for calculating the SRZs are provided within Australian Standard 4970-2009 – Protection of trees on development sites.	During Construction
B4	**Direct impact to threatened fauna**	• Do not disturb fauna. Avoid fauna until it has relocated away from the site	During Construction
B5	**Direct impact to TEC and to threatened flora**	• Toolbox talks will identify threatened flora that may be encountered onsite. Where unexpected threatened flora species are suspected by construction crew within the worksite the following actions would take place: o All work within the vicinity would stop and the ARTC Environmental Officer contacted. o The area containing the threatened species would be surveyed by an ecologist who would determine appropriate actions to protect any individuals if required (e.g. translocation).	During Construction
B6	**Introduction and spread of noxious weeds and pathogens**	• Priority weeds (Bitou Bush, Green Cestrum, Fireweed, Lantana, Pampas Grass) will be eliminated and prevented from spreading from the proposal site so far as is reasonably practicable. All priority weed waste will need to be disposed of at a registered waste management facility. Management and disposal of weeds, including the priority weeds will be conducted in accordance with the *Biosecurity Act 2015* and the *NSW Weed Control Handbook* (Department of Primary Industries, 2018).	During Construction
B7	**Introduction and spread of noxious**	• All machinery (e.g. bulldozers, excavators, trucks, loaders etc.) will be cleaned prior to	During Construction

Reference	Impact	Safeguards and mitigation measures	Timing
	weeds and pathogens	entering and exiting work sites. All plant material containing seed heads, weeds that have allelopathic properties, and weeds that are able to reproduce vegetatively, including topsoil containing weed propagules, will be disposed of at an appropriate waste management facility or otherwise properly treated to prevent weed growth.	
B8	**Introduction and spread of noxious weeds and pathogens**	• Pesticide application will be undertaken in accordance with ARTC's Pesticide Application procedure	During Construction
B9	**Disturbance to woody debris and litter and bush rock**	• Any fallen timber and dead wood encountered on site will be left in situ wherever possible or relocated to a suitable place nearby. Rock will be removed with suitable machinery so as not to damage the underlying rock or result in excessive soil disturbance.	During Construction
Traffic and Access			
T1	**Traffic**	• All heavy vehicles will travel within daylight hours where feasible. For road safety purposes, it will be necessary to undertake some deliveries out of hours. Additional measures for heavy vehicles will include: o Administrative controls to limit truck activities during peak periods. o Implement radio communication and designated truck idling areas to minimise impact of truck queuing on public roads o Temporary traffic controls.	Preconstruction / during construction
T2	**Traffic**	• When on site, vehicles will park within designated areas or cleared areas without vegetation.	Preconstruction / during construction
T3	**Traffic**	• Provide suitably designed construction site access which will consider: o Road design guidelines o Visible temporary regulatory, warning and guide signs o Use of accredited traffic controllers where appropriate	Preconstruction / during construction

Reference	Impact	Safeguards and mitigation measures	Timing
Noise and Vibration			
N1	**Construction Noise and Vibration Management Sub-Plan**	A CNVMP will be prepared as a sub plan to the CEMP before any construction works begin. This will include: • Identification of nearby sensitive receivers • Description of works, construction equipment and hours of work • Criteria for the proposal and any relevant licence and approval conditions • Any requirements for noise and vibration monitoring • Details of how community consultation and notification would be completed • Procedures for handling complaints • Details on how respite would be applied where ongoing high impacts are seen at certain receivers. • **Identification of minimum working distances for vibration intensive plant** • **Identification of any buildings, structures and utilities that are at risk of damage due to construction vibration** • The CNVMP will also consider cumulative construction impacts and define a suitable management approach.	Pre-construction
N2	**Noise Impacts during out of hours work**	• Out of hours work would be undertaken in accordance with the requirements of an applicable Environmental Protection Licence (EPL) and/or Conditions of Approval, including any notification procedures.	Pre-construction
N3	**Construction Noise Exceedances**	• The assessment has identified that high impacts are likely when works are close to residential receivers in NCA01 and NCA02, particularly when noise intensive equipment such as concrete saws or ballast tampers are in use during evening and night-time periods. • Where noisy works are required near to sensitive receivers in NCA01 and NCA02, the works will be scheduled for Standard Construction Hours, where possible. If it is not possible to restrict the works to daytime then they will be scheduled so noise intensive equipment is not used after 11:00 pm, where possible, noting that there is a requirement for many of the works to be completed during possessions and restrictions	Construction

Reference	Impact	Safeguards and mitigation measures	Timing
		on working hours during these periods are generally not feasible.	
N4	**Sleep Disturbance**	The need for consecutive night-time works and likelihood for sleep disturbance impacts will be reviewed during detailed design. Where impacts are considered likely, appropriate noise mitigation will be applied which takes into consideration factors such as the existing facade performance of affected residential receivers. Appropriate respite would be provided to affected receivers to limit impacts from night-time works in the same location, as required by the conditions of approval. Unless subject to an Environment Protection Licence, an Out-of-Hours Work Protocol would be prepared and be included as part of the CNVMP for main construction works. It will identify a process for the consideration, management and approval of works which are outside standard hours. The protocol would be prepared	Pre-construction
N5	**Compounds with Long Term Works**	• Hoarding, or other shielding structures, will be used where receivers are near to compounds (such as the Banksia Street Compound) or worksites with long term works. To provide effective noise mitigation, the hoarding should break line-of-sight from the nearest receivers to the works, noting that some affected receivers are multi-storey, and be of solid construction with minimal gaps. Hoarding for construction sites is typically around 3 m in height.	Construction
N6	**Compound layout**	• Noise generating items in compounds will be positioned away from receivers where possible. Items such as sheds can also be used to shield receivers from noise generated in other parts of the compound.	Construction
N7	**Compound between Banksia Street and Stephen Road**	Noise impacts are predicted for the Banksia Street compound due to the proximity of the nearest receivers. The use of this compound site during out of hours works will be avoided as far as practicable. • It is noted that both Botany Signalling Works and Botany Rail Duplication propose to use this compound.	Construction
N8	**Monitoring**	• Monitoring will be carried out at the start of noise and vibration intensive activities which are near to receivers to confirm that actual levels are consistent with the predictions. Where mitigation measures have been specified, the	Pre-construction Construction

Reference	Impact	Safeguards and mitigation measures	Timing
		measurements should be to confirm their effectiveness.	
N9	**Construction traffic**	Where construction routes are along local roads there is potential for impacts at the adjacent residential receivers, depending on the volume of construction traffic. The potential impacts will be managed using the following approaches: • Vehicle movements will be away from sensitive receivers and during less sensitive times, where possible • The speed of vehicles will be limited and will avoid the use of engine compression brakes • On-site storage capacity will be maximised to reduce the need for truck movements during sensitive times • Restriction of heavy vehicles idling near to residential receivers.	Pre-construction Construction
N10	**Community preference**	• In locations where 'moderate' or 'high' impacts are predicted, engagement with the affected communities will be undertaken during detailed design to determine their preference for mitigation and management measures.	Pre-construction
N11	**Operation**	• Within six months of commencement of operation, validation noise monitoring should be undertaken to confirm the operational noise predictions and impacts'.	Operation
N12	**Implement community consultation measures**	Community consultation measures will be included in the CNVMP, including: • Periodic notification (monthly letterbox drop or equivalent) detailing all upcoming construction activities delivered to impacted sensitive receivers at least 14 days prior to commencement of relevant works.	Pre-construction
N13	**Site inductions will be included in the CNVMP**	All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include: • All relevant project specific and standard noise and vibration mitigation measures • Relevant licence and approval conditions • Permissible hours of work • Any limitations on noise generating activities with special audible characteristics • Location of nearest sensitive receivers • Construction employee parking areas	Pre-construction Construction

Reference	Impact	Safeguards and mitigation measures	Timing
		• Designated loading/unloading areas and procedures • Site opening/closing times (including deliveries) • Environmental incident procedures.	
N14	**Behavioural practices**	• No swearing or unnecessary shouting or loud stereos/radios/phone calls on speaker on site. • No dropping of materials from height, throwing of metal items and slamming of doors. No unnecessary idling of vehicles near to receivers.	Construction
N15	**Construction hours and scheduling**	• Where feasible and reasonable, construction will be carried out during Standard Construction Hours. Work generating high noise and/or vibration levels will be scheduled during less sensitive time periods, where possible.	Construction
N16	**Equipment selection**	• Use quieter and less vibration emitting construction methods where feasible and reasonable. • For example, when piling is required, bored pile rather than impact-driven piles will minimise noise and vibration impacts.	Construction
N17	**Use and siting of plant**	• Simultaneous operation of noisy plant within discernible range of a sensitive receiver will be avoided. • The offset distance between noisy plant and adjacent sensitive receivers will be maximised. • Plant used intermittently will be throttled down or shut down. • Noise-emitting plant will be directed away from sensitive receivers, where possible.	Construction
N18	**Plan worksites and activities to minimise noise and vibration**	• Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.	Construction
N19	**Non-tonal reversing alarms**	• Non-tonal reversing beepers (or an equivalent mechanism) will be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.	Construction
N20	**Minimise disturbance arising from delivery of goods to construction sites**	• Loading and unloading of materials/deliveries will occur as far as possible from sensitive receivers. • Site access points and roads will be selected to as possible away from sensitive receivers. • Dedicated loading/unloading areas will be shielded if close to sensitive receivers.	Construction

Reference	Impact	Safeguards and mitigation measures	Timing
		• Delivery vehicles will be fitted with straps rather than chains for unloading, wherever possible.	
N21	**Silencers on Mobile Plant**	Where possible noise from mobile plant will be reduced through additional: • Residential grade mufflers • Damped hammers such as 'City' Model Rammer Hammers • Air Parking brake engagement is silenced.	Construction
N22	**Shield stationary noise sources such as pumps, compressors, fans, etc**	• Stationary noise sources will be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained. • Appendix F of AS 2436: 1981 lists materials suitable for shielding.	Construction
N23	**Shield sensitive receivers from noisy activities**	• Structures, such as site sheds, will be used to shield residential receivers from noise (where practicable), noting that upper floors of multi-storey buildings would be unlikely to benefit.	Construction
N24	**Cumulative construction impacts**	• Cumulative construction impacts may affect residential receivers in NCA01 and NCA02 due to concurrent construction works with Botany Rail Duplication. It is noted that both Botany Signalling Works and Botany Rail Duplication propose to use the Banksia Street compound and residential receivers are immediately adjacent to the western boundary of this site • The potential cumulative impacts from Botany Yard Bi-Directional Signalling Works and other major projects will be investigated further as the proposal progresses. Specific additional management and mitigation measures designed to address potential impacts will be developed and used to minimise the impacts as far as practicable, in consultation with the affected community. • Where works on multiple projects are occurring outside of Standard Construction Hours in similar areas there is potential for increased impacts at nearby receivers. Co-ordination will occur between the various projects to minimise concurrent works in the same areas, where possible, and to ensure appropriate respite is applied to the affected receivers. • It is noted that it could be preferred by the affected community for works to occur on both Botany Yard Bi-Directional Signalling Works and Botany Rail Duplication at the same time so that the total duration of the works from both projects is reduced.	Pre-construction

Reference	Impact	Safeguards and mitigation measures	Timing

N25	**Construction vibration**	• **Where vibration intensive works are required within the minimum working distances and considered likely to exceed the cosmetic damage objectives, construction works should not proceed unless:**
		  • **A different construction method with lower source vibration levels is used**
		  • **Attended vibration measurements are undertaken at the start of the works to determine the risk of exceeding the vibration objectives.**
			Construction

N26	**Construction vibration**	• **Before commencement of any vibration intensive works, a structural engineer must undertake a condition survey of all buildings, structures, utilities and the like that are identified in the CNVMP at being risk of damage due to construction vibration. The results of the surveys must be documented in a Condition Survey Report for each item surveyed. Copies of the Condition Survey Reports must be provided to the owners of the items surveyed.** • **After completion of construction, condition surveys must be undertaken by a structural engineer for all items for which condition surveys were undertaken. The results of the surveys must be documented in a Condition Survey Report for each item surveyed and provided to the owners of the items.** • **Where liable, any property damage caused by construction vibration must be rectified at not cost to the owner of the item, unless otherwise agreed with the owner.**	**During/ after Construction**
Community and Socio-economic			
CS1	**Socio-economic**	• Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner.	Construction
CS2	**Complaints**	• A project information board will be displayed at all entrances to the site. A contact phone number/email address for community enquiries would be on display.	Construction
CS3	**Complaints**	• A complaint handling procedure and register will be included in the CEMP.	Pre-construction/ Construction
CS4	**Complaints**	• A complaints register will be established and maintained throughout construction.	Pre-construction/ Construction

Reference	Impact	Safeguards and mitigation measures	Timing
CS5	**Communication**	• Start of work letters would be distributed one week (minimum 5 working days) prior to commencement of works.	Detailed design/Pre-construction
CS6	**Communication**	• Targeted communication with Bayside Council regarding timing of the most intrusive noise intensive works and changed traffic conditions that may affect public spaces and transport routes within the LGA.	Detailed design/Pre-construction
Visual Impacts			
VI1	**Visual Impacts**	• Construction areas will be maintained in a tidy manner.	Construction
VI2	**Light Spill**	• Any lights required will be directed onto the site, with a maximum position angle of 30º from vertical, and back spill shields, therefore minimising any unwanted light spill and impacts at night.	Construction
VI3	**Light Spill**	• Lighting should not cause reflected glare.	Construction
Aboriginal Heritage			
AH1	**Unexpected finds**	• All ground disturbance activities shall be confined to within the rail corridor, as this will eliminate the risk of harm to Aboriginal objects that may be located beyond this area. Should the parameters of the proposal extend beyond the assessed area, then further archaeological assessment may be required.	Construction
AH2	**Unexpected finds**	An unexpected finds procedure will be prepared and included in the CEMP. The procedure will include requirements for: o Protecting any unexpected finds (including Aboriginal heritage items and human skeletal remains) encountered during construction activities o Procedures to manage reporting and investigation when unexpected finds are encountered	Construction
Non-Aboriginal Heritage			

Reference	Impact	Safeguards and mitigation measures	Timing
NAH1	**Harm to a non-Aboriginal heritage item**	• An unexpected finds procedure will be established and implemented in the case of unexpected non-Aboriginal heritage finds.	Construction
Waste			
W1	**Waste generation**	• General waste and recycling receptacles will be provided onsite and waste collected from site regularly.	Construction
W2	**Waste generation**	• All waste will be managed in accordance with the Protection of the Environment Operations Act 1997. A licensed waste contractor must be used for the collection and transport of all non-domestic/ commercial wastes for either offsite processing and/or disposal to a licensed facility.	Construction
W3	**Waste generation**	• Segregate and stockpile reusable and recyclable wastes such as ballast, sleepers, troughing, pallets, bridge transoms, drums, jewellery, cables and other scrap metal for salvage where possible.	Construction
W4	**Waste generation**	• All excavated natural, non-contaminated soil, aggregate or rock should be stockpiled separately and re-used onsite where possible.	Construction
W5	**Waste disposal**	• All material proposed to be removed from the work site, for recycling or disposal or otherwise, must be waste classified using the Waste Classification Guidelines (NSW EPA, 2014) and segregated to ensure opportunities for reuse, recovery and recycling of wastes are optimised. Waste needs to be assessed for contamination due to the nature of the site.	During/ After construction
Climate and Air Quality			
CAQ1	**Air Quality**	• Works likely to generate dust will be avoided where possible during strong winds or weather conditions where high levels of dust is likely.	Construction
CAQ2	**Air Quality**	• Activities involving excavation or disturbance of soils or vegetation must implement controls to prevent and/or minimise the generation of dust as required (i.e water carts or apply soil binders for dust suppression as required).	Construction
CAQ3	**Air Quality**	• Minimise vehicle movement and speed on unsealed tracks and access paths.	Construction

Reference	Impact	Safeguards and mitigation measures	Timing
CAQ4	**Air Quality**	• All plant and equipment must be serviced regularly to ensure exhaust emissions generated are within the specified plant and equipment standards.	Construction
CAQ5	**Air Quality**	• If dust is observed migrating offsite, additional dust controls such stopping dust generating works in high wind conditions or use of water carts, water sprays or application of dust suppression polymers.	Construction
CAQ6	**Air Quality**	• Machinery must not be left running idle when not in use.	Construction

BOTANY YARD BI-DIRECTIONAL SIGNALLING

SUBMISSIONS REPORT