Cross River Rail Project

Coordinator-General's change report — Temporary Roma Street Coach Terminal

August 2018

Queensland Government

The Department of State Development, Manufacturing, Infrastructure and Planning

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Synopsis

The Cross River Rail Project (the project) as evaluated in the 2011 environmental impact statement (EIS) comprised an 18 km link from Salisbury to Bowen Hills, including 10 km of tunnel from Yeerongpilly under the Brisbane River and Central Business District (CBD). On 20 December 2012, the Coordinator-General approved the project, subject to conditions, and released his Coordinator-General's evaluation report (2012 CGER) on the EIS for the project.

On 10 February 2017, the then proponent, the State of Queensland represented by the Department of Transport and Main Roads (DTMR), lodged a final application for project change with the Coordinator-General (the February 2017 project change application). The proposed changes to the project included:

- a reduction of the proposed total length of the project, from 18 km to 10.2 km, including some alterations to the underground alignment of the tunnel
- a reduction in the proposed extent of underground tunnelling from 10 km to 5.9 km
- changes to the southern and northern portal locations
- minor changes to the location of the proposed Albert Street, Boggo Road, Woolloongabba, Roma Street and Exhibition Railway stations
- pedestrianisation of sections of Albert Street between Charlotte Street and Elizabeth Street
- changes to tunnel construction methods for some sections, from bored to mined
- a reduction in the number of surface properties requiring acquisition from 108 to 29, with no residential properties proposed for acquisition
- demolition of the Brisbane Transit Centre (BTC) west tower due to the realignment of the Roma Street Railway station
- a change in the number of spoil placement locations from one (Swanbank) to five potential sites (Brisbane Airport, Swanbank, Pine Mountain, Larapinta and Port of Brisbane).

Following assessment of the February 2017 project change application, on 9 June 2017 the Coordinator-General released the Coordinator-General's change report (CGCR – the June 2017 CGCR) approving the changes to the project, subject to conditions.

As part of the February 2017 project change application, the proponent identified that to facilitate the construction of the underground Cross River Rail Roma Street station, the existing BTC west tower at Roma Street (including the Roma Street long-distance coach terminal) would need to be demolished. In the February 2017 project change application, an alternative location for the coach terminal had not been determined. The June 2017 CGCR indicated that the coach terminal would be relocated prior to the demolition of the BTC west tower, in consultation with coach operators.

On 12 June 2017 DTMR wrote to the Coordinator-General giving notice of a change of the proponent for the project to the Cross River Rail Delivery Authority (CRRDA).

On 28 June 2018, the CRRDA (the proponent) lodged a project change application (the June 2018 project change application) with the Coordinator-General to facilitate the relocation of the coach terminal prior to the demolition of the BTC west tower. The key changes proposed include:

- a change to the previously approved use of the carpark and drop-off area adjacent to Roma Street Station Platform 10, from a construction storage and laydown area to a temporary coach terminal
- amendments to the June 2017 CGCR conditions and definitions to better facilitate the design, construction and operation of the project.

The following is a summary of the main issues arising from my evaluation of the project changes.

Traffic and transport

The potential traffic and transport impacts of the proposed temporary coach terminal are generally consistent with the impacts of the previously evaluated and approved project in this location, with the exception of the coach movements on Parkland Crescent.

In order to mitigate the potential impacts of coach movements in this location, I note the proponent has committed to design improvements of the Parkland Boulevard/Parkland Crescent ramp intersection in consultation with Brisbane City Council.

Noise and vibration

The potential construction noise and vibration impacts of the proposed temporary coach terminal are generally consistent with the impacts of the previously evaluated and approved project in this location. The Roma Street station precinct is currently characterised by approximately 673 daily train movements and residential buildings that are likely to have been constructed with high levels of façade noise attenuation. I note that operational noise is an unavoidable potential impact of the temporary coach terminal, however I consider the operational noise levels predicted to be consistent with the existing noise environment.

In order to manage any potential impacts of construction noise and vibration, I have imposed conditions requiring the proponent to monitor noise and vibration for the duration of construction works to ensure human health and cosmetic damage impacts are avoided.

Air quality

The potential air quality impacts of the temporary coach terminal works are generally consistent with the impacts of the previously evaluated and approved project in this location. The predicted impacts are not expected to result in exceedances of the Cross River Rail project air quality goals outlined in the June 2017 CGCR.

In order to manage the potential impacts, I have imposed conditions requiring the proponent to monitor and report on air quality in accordance with a construction environmental management plan.

Land use, tenure and cultural heritage

The potential land use, tenure and cultural heritage impacts of the temporary coach terminal are generally consistent with impacts of the previously evaluated and approved project in this location. However, the proposed project change will alter the approved use of the site from a construction storage and laydown area to a temporary coach terminal. The permanent use of the site is to be determined by the Roma Street precinct master planning process which includes the Brisbane Live project, currently at the business case development phase being led by the CRRDA. The proponent has advised of agreements to transfer the land on which the temporary coach terminal is situated to the CRRDA during construction and then to Translink once operational.

Visual amenity and lighting

The potential temporary coach terminal construction, visual amenity and lighting impacts are generally consistent with the impacts of the previously evaluated and approved project in this location, however the potential impacts will occur for a shorter duration. I am satisfied that the coach terminal design will ensure potential visual amenity and lighting impacts are managed.

Coordinator-General's conclusion

I am satisfied that the requirements of Part 4 of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) has been met and that sufficient information has been provided to enable the evaluation of the proposed changes to the project and the proposed amendments to the conditions of the June 2017 CGCR.

I consider that the changes to the project and the conditions imposed (Appendix 1) for the temporary coach terminal works stated in this report would result in acceptable overall outcomes for the project's delivery and that the potential impacts can be adequately managed.

Accordingly, I approve the changes to the project and I have imposed conditions for the temporary coach terminal (Appendix 1).

The appendices of the June 2017 CGCR are replaced by Appendix 2 and 3 of this change report, therefore the appendices of the June 2017 CGCR no longer have effect.

In accordance with section 35 of SDPWO Act, this report will lapse on 8 June 2020.

A copy of this report will be issued to the proponent and will be available on the Department of State Development, Manufacturing, Infrastructure and Planning website at **www.dsdmip.qld.gov.au/crr**.

Barry Broe

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Barry Broe
Coordinator-General
30 August 2018

1. Introduction

This change report has been prepared pursuant to section 35I of the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act) and provides an evaluation of the proposed changes to the Cross River Rail project (the project) outlined in the project change application dated 28 June 2018 (the June 2018 project change application). The proponent's project change application specifies the proposed changes to the project and these are summarised in Section 3.1 of this report.

This report does not re-evaluate the project as a whole. Further, it is not intended to revisit all the matters that were identified and subsequently addressed in the project's environmental impact statement (EIS) assessment process. Rather, this report concentrates on the particular issues identified in the June 2018 project change application. The change report:

- summarises the change report process
- summarises the proponent's proposed changes to the project
- summarises the key issues associated with the proposed changes
- presents an evaluation of the proposed changes, based on information contained in the project change application
- provides a set of revised conditions under which the project may proceed.

2. About the project

2.1. The proponent

On 12 June 2017, the Department of Transport and Main Roads (DTMR) wrote to the Coordinator-General giving notice of a change of the proponent for the project, from DTMR to the Cross River Rail Delivery Authority (CRRDA).

The proponent for the project is the CRRDA, an independent statutory body established under the *Cross River Rail Delivery Authority Act 2016* to facilitate and manage the delivery of the project. The CRRDA commenced operation on 14 April 2017.

2.2. The project

The project is described in the Coordinator-General's Evaluation Report dated 20 December 2012 (2012 CGER) and was amended in the Coordinator-General's change report dated 9 June 2017 (June 2017 CGCR). The project is now a 10.2 km north-south rail line connecting Dutton Park to Bowen Hills with 5.9 km of tunnel under the Brisbane River and CBD. The project also includes stations at Boggo Road, Woolloongabba, Albert Street, Roma Street and Exhibition Showgrounds.

This report considers the potential impacts associated with the temporary Roma Street coach terminal. The June 2017 CGCR stated that the relocation of the long-distance

coach terminal would be determined prior to the delivery of the project, in consultation with coach operators.

2.3. Project delivery

The proponent advised in their change application that the construction of the temporary coach terminal would take 38 weeks, anticipated to commence in November 2018 and be completed by August 2019. The temporary coach terminal works would be completed prior to the commencement of works associated with the construction of the Cross River Rail Roma Street station.

3. Change report process

3.1. Application for proposed change

In the previous project change application dated 10 February 2017 (the February 2017 project change application), the proponent identified that to facilitate the construction of the underground Cross River Rail Roma Street station, the existing Brisbane Transit Centre (BTC) west tower at Roma Street (including the Roma Street long-distance coach terminal) would need to be demolished. At the time of the February 2017 project change application, an alternative location for the coach terminal had not been determined. Following evaluation, the June 2017 CGCR indicated that the long-distance coach terminal would be relocated prior to the demolition of the BTC west tower, in consultation with coach operators.

The proponent submitted a project change application to the Coordinator-General on 28 June 2018 (the June 2018 project change application) in accordance with section 35C of the SDPWO Act. The June 2018 project change application addresses the requirements of section 35E of the SDPWO Act, in that the written application describes the proposed changes and its effect on the project and states reasons for the proposed changes.

In the June 2018 project change application, the proponent proposes to temporarily relocate the Roma Street long-distance coach terminal to an area adjacent to Roma Street Station Platform 10 currently used as a carpark and drop off area (Figure 3.1). The area was previously identified and approved for use as a general construction site area (for construction storage and laydown) for the project in the June 2017 CGCR (Figure 3.2).

The proposed temporary coach terminal comprises (Figure 3.3 and Figure 3.4):

- five coach bays on a central platform to accommodate coaches up to 14.5 m in length
- two mini bus bays
- an awning and partial roof structure over the terminal platform and pedestrian access ways
- on-platform ticketing kiosk
- platform amenities

- a pedestrian crossing to connect to the long-distance rail services at Platform 10 of Roma Street station
- passenger pick-up and drop-off area on Parkland Boulevard
- works to improve the reliability of the existing elevator and escalator (which provides access to and from the Roma Street Parklands and city) for access to the pick-up and drop-off area on Parkland Boulevard.

The temporary coach terminal construction methodology will limit the need for earthworks and ground disturbance, relying on prefabricated materials with surface engineered footings to limit the potential for noise generating activities at the construction worksite.

The construction storage and laydown area was approved for a total of five years for the duration of construction works for the Cross River Rail project, while the construction of the temporary coach terminal would occur at the same location for a period of 38 weeks. The proponent has advised that construction is scheduled to commence in November 2018 and be completed by August 2019.

The proponent has identified that the temporary coach terminal could be operational for up to 10 years, pending a permanent location decision as part of the Roma Street precinct master planning process. The operation of the temporary coach terminal will involve up to 150 daily coach movements with an estimated peak of 13 coaches per hour, with an overall average of three to four coaches per hour.

The June 2018 project change application also seeks to make amendments to the June 2017 CGCR conditions and definitions to better facilitate the design, construction and operation of the project.

The amendments to conditions includes amending the definition of project works as defined in the June 2017 CGCR, allowing the works associated with the temporary coach terminal to be mitigated and managed under a set of conditions (Appendix 1) separate to the Cross River Rail project conditions (Appendix 2).

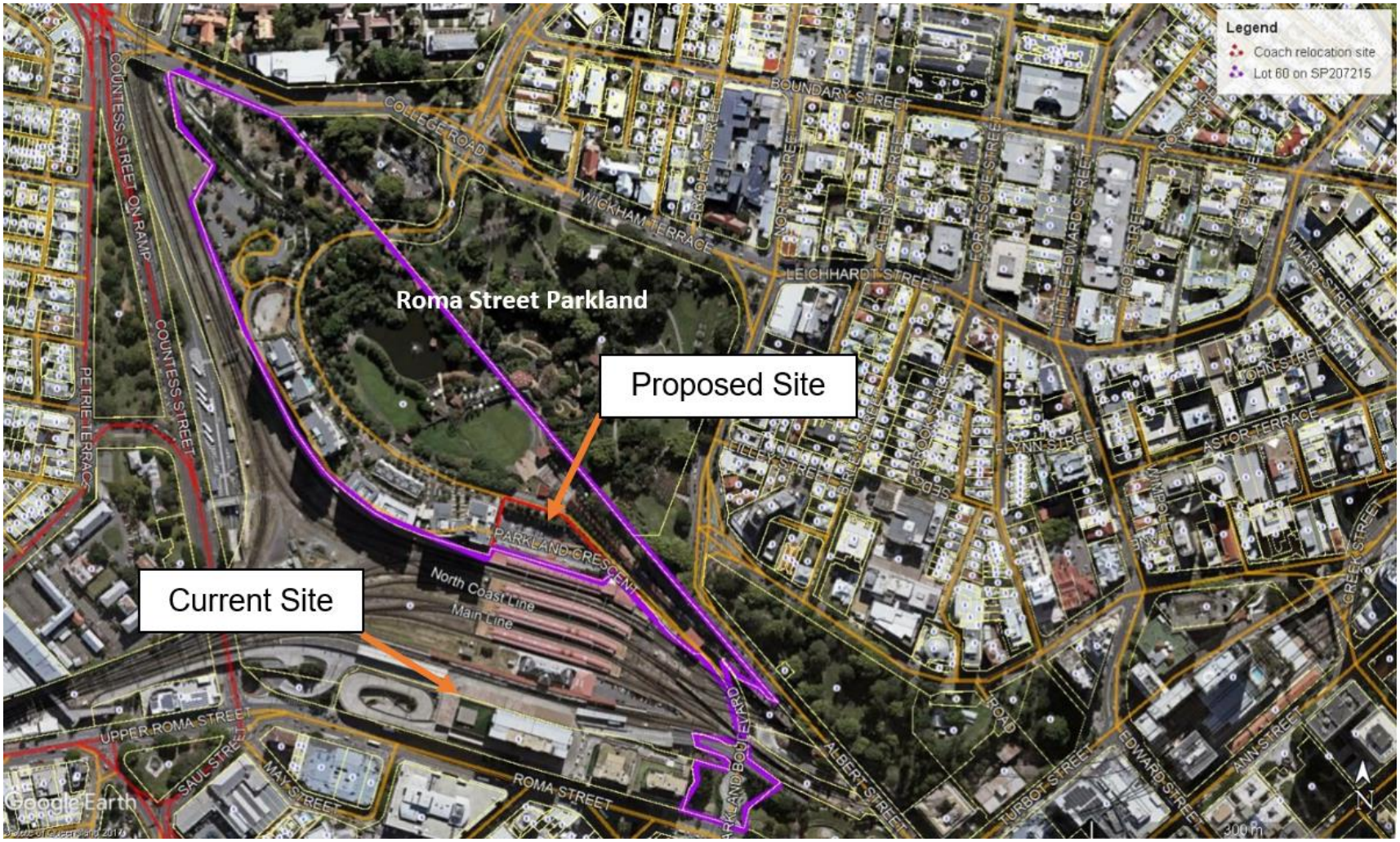

Figure 3.1 Site of proposed temporary Roma Street coach terminal (Source: June 2018 project change application)

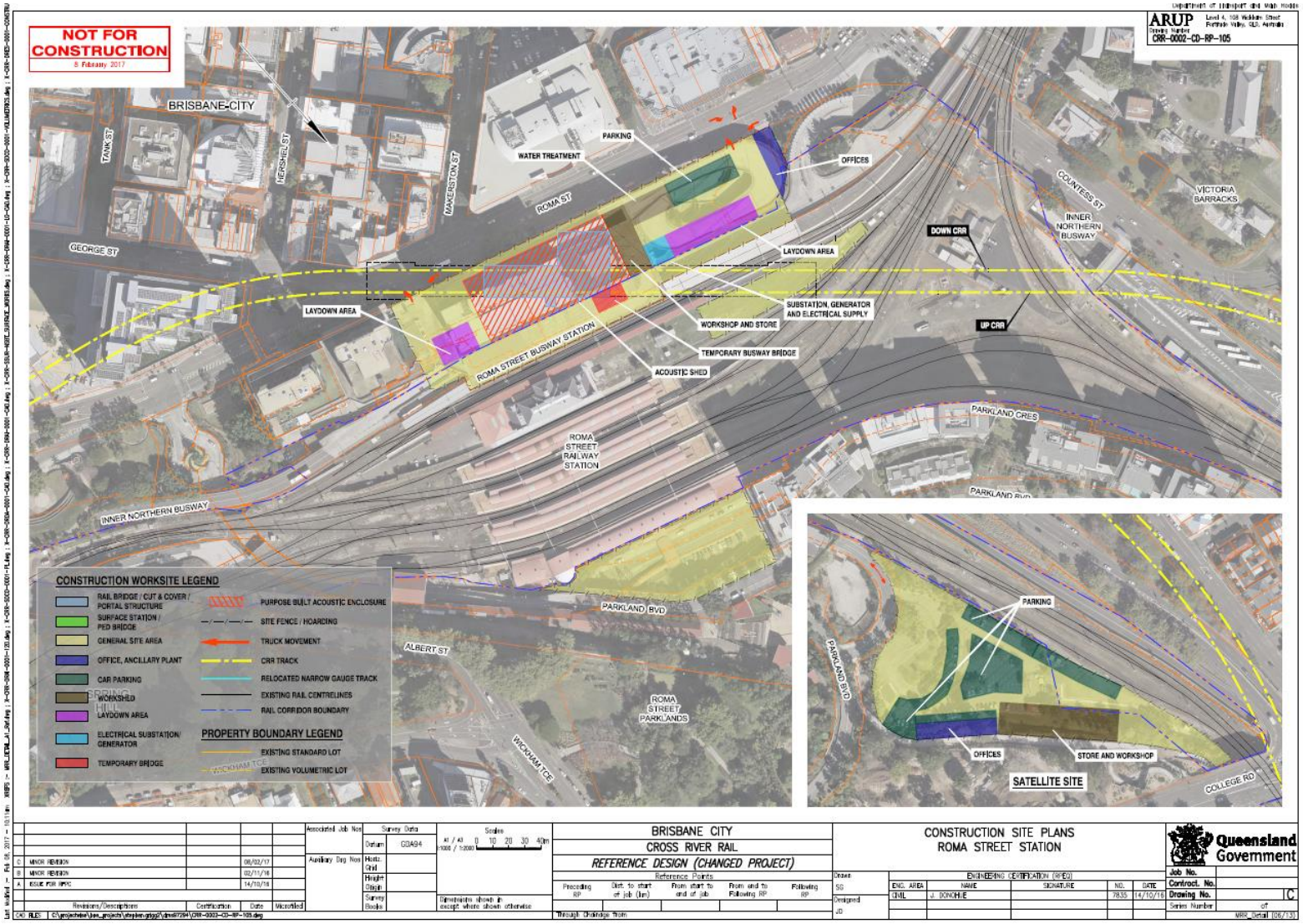

Figure 3.2 **Approved Roma Street station construction site areas (yellow), including the construction site adjacent to Platform 10 (Source: June 2018 project change application)**

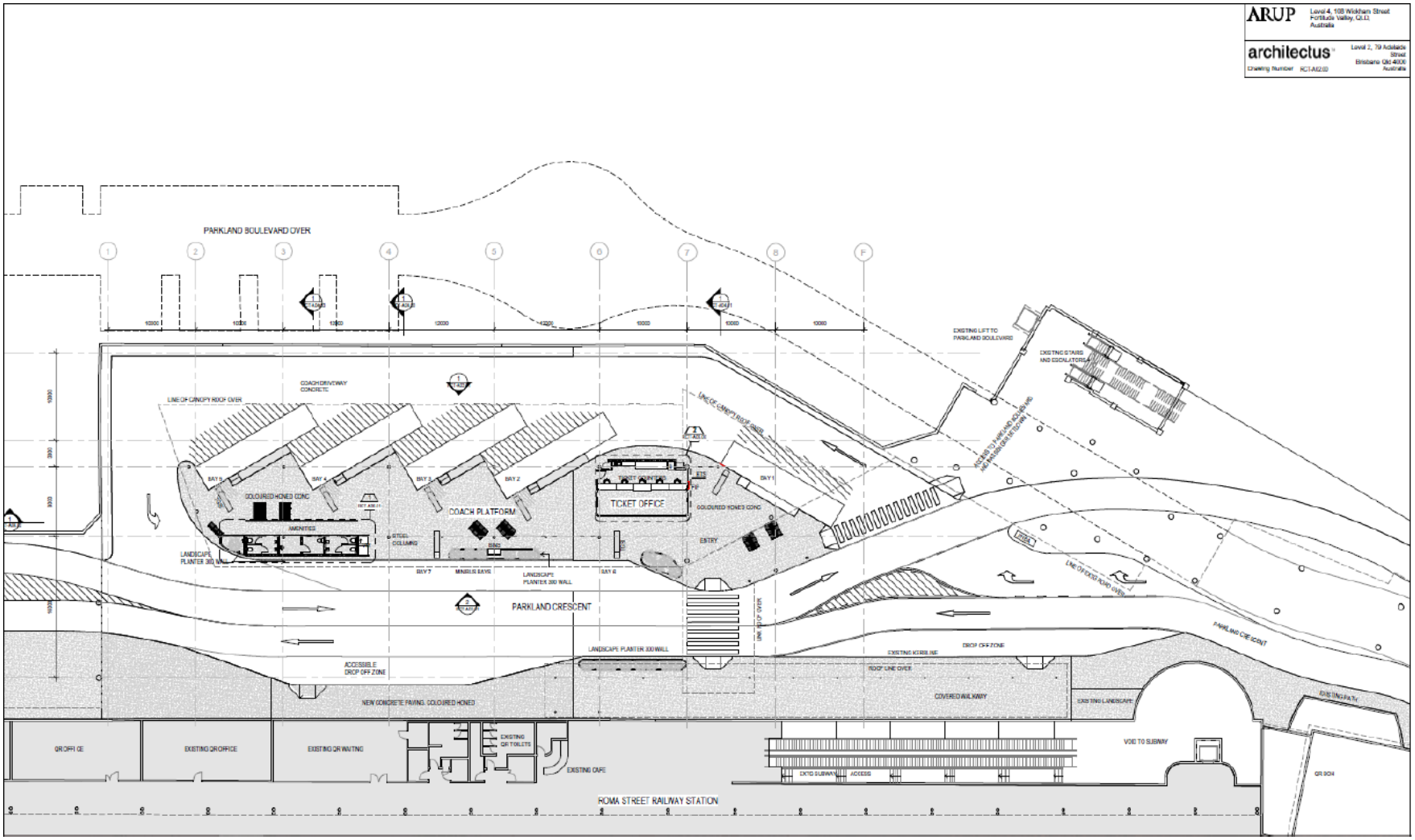

Figure 3.3 Proposed temporary coach terminal concept design site plan ground level (Source: June 2018 project change application)

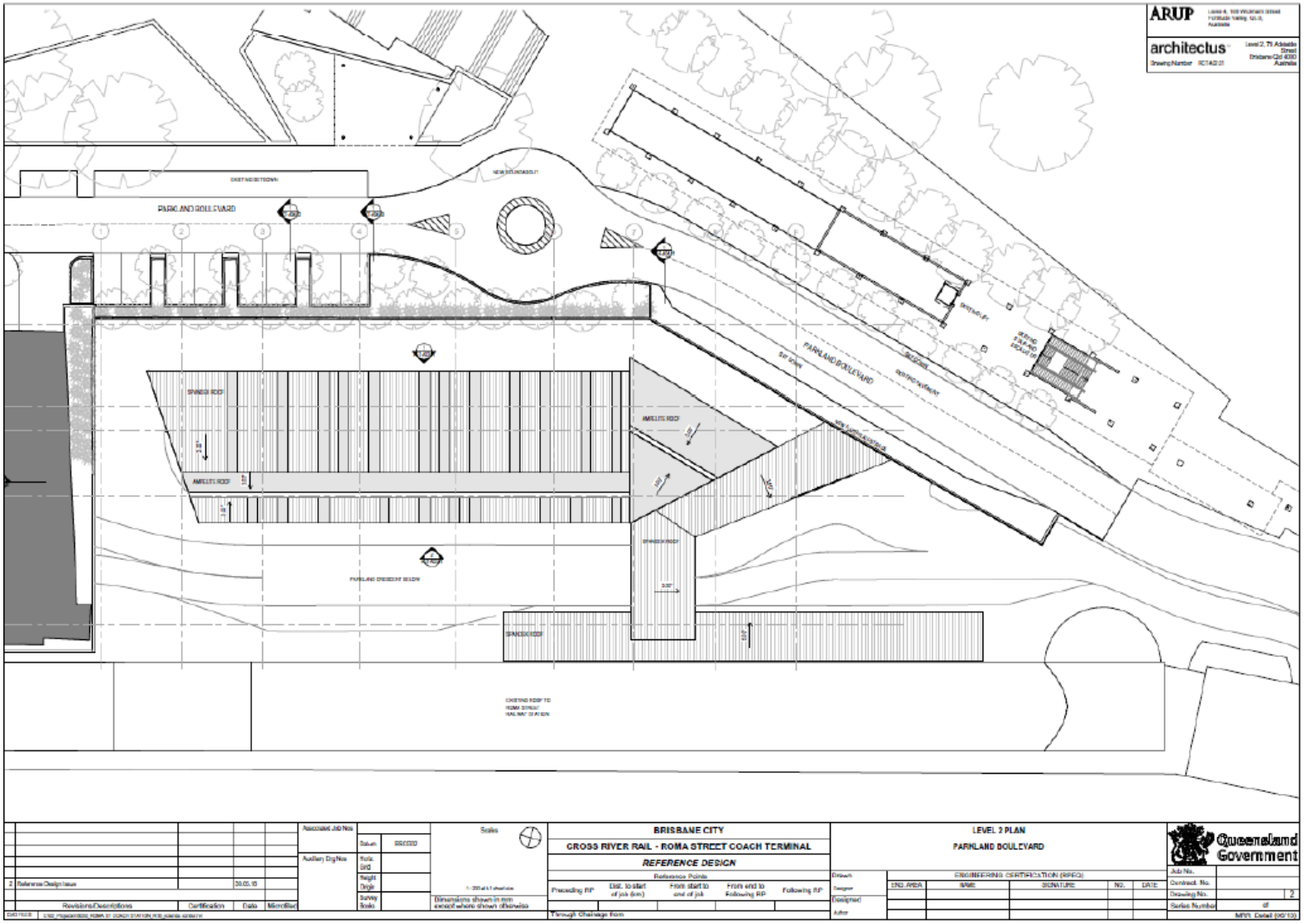

Figure 3.4 Proposed temporary coach terminal concept design site plan upper level (Source: June 2018 project change application)

3.2. Community and stakeholder engagement

3.2.1. Engagement to support the change application

The proponent has undertaken a targeted engagement program to support the June 2018 project change application, which included consultation with the following key stakeholders:

- residents of the Parkland Boulevard apartments
- coach operators
- Brisbane City Council (BCC)
- Queensland Rail
- Department of Housing and Public Works (DHPW)
- DTMR
- Translink.

The proponent advised that consultation with residents of the Parkland Boulevard apartments was undertaken between 18 June 2018 and 22 June 2018. The consultation program was developed in consultation with the Parklands Apartments' on-site building manager, the chairperson of the principal body corporate and the chairperson of the body corporate committee for Parkland Boulevard apartments.

The proponent sent letters to the residents of the 400 apartments within the Parkland Boulevard apartments. The letters outlined the proposed temporary coach terminal and invited residents to attend public information sessions in the foyer of the Parkland Boulevard apartments. Flyers were also displayed on notice boards to advertise the information sessions.

Approximately 110 individuals attended the information sessions which involved presentations from CRRDA personnel and display of supporting material, such as architectural renders and design drawings.

The key concerns raised by residents, including Directly Affected Persons (as defined in Appendix 1, Schedule 2), during the information sessions were:

- pedestrian safety
- cyclist safety
- traffic impacts, including potential capacity and delay impacts at intersections
- disabled access, including the reliability of the existing elevator connecting Platform 10 to the Roma Street Parklands
- potential environmental impacts (excessive noise, light nuisance and pollution)
- construction impacts including a reduction in carpark availability.

The proponent provided a detailed response to the key concerns raised by residents in the information sessions in the June 2018 project change application. For further detail, refer to Section 4.1.1 (traffic and transport), Section 4.1.2 (noise and vibration), Section 4.1.3 (air quality), and Section 4.1.5 (visual amenity and lighting).

The proponent also consulted with coach operators regarding the proposed design of the temporary coach terminal (this was a requirement of the June 2017 CGCR).

This consultation included a forum held by the CRRDA on 1 June 2018 with all coach operators that are currently utilising the Roma Street long-distance coach terminal within the BTC. At this forum, coach operators were briefed by the CRRDA on the need for the proposed relocation, the concept design for the temporary coach terminal, timetable analysis and operational models based on the existing long-distance coach terminal.

The proponent has assessed the proposed terminal design against the capacity requirements outlined by coach operators and predicted that the terminal will meet operator requirements. The proponent has identified that ongoing consultation with coach operators initially identified concerns relating to capacity constraints, lack of luggage storage facilities and the long-term plan for the coach terminal at Roma Street. The proponent has indicated that with minor timetable adjustments, the proposed capacity of five bays and two mini bus bays would meet the current operational needs. Timetable adjustments have been agreed with coach operators.

The proponent met with Greyhound, the key operator with over 75% use of the existing long-distance coach terminal regarding the feasibility and design of the proposed temporary coach terminal. Greyhound advised of its preference for temporary coach terminal to remain within the Roma Street area, due to its proximity to the CBD, rail and Translink bus services. The proponent also met with Queensland Rail and DTMR regarding the proposed location and design for the temporary coach terminal. The proponent has advised that both Queensland Rail and DTMR are satisfied with the proposed solution, with Queensland Rail advising that the temporary coach terminal concept design presented does not impact on rail operations.

The proponent has held regular meetings with BCC regarding the proposed project change, specifically the proposed temporary coach terminal. Matters relating to land use, parking and traffic management were discussed and BCC has advised that they are satisfied with the engagement undertaken by the CRRDA to date. The proponent has committed to continuing to consult with BCC regarding the temporary coach terminal.

Consultation between the CRRDA and DHPW regarding the proposed change to the project has focussed on tenure and the transfer of ownership. DHPW currently own the land (on behalf of the State of Queensland) on which the proposed temporary coach terminal is located. Negotiations regarding terms of agreement for the transfer of ownership of the land are continuing between the proponent and DHPW.

I consider the consultation undertaken by the proponent to date to be adequate for the purposes of informing my assessment of the June 2018 project change application. The scope of the potential impacts associated with the proposed changes are comparable to those described in the publicly notified February 2017 project change application and June 2017 CGCR. Statutory public notification of the June 2018 project change application was not required.

3.2.2. Requirements for future engagement

To ensure that the proponent's engagement activities are effective and responsive to stakeholder concerns, I have imposed a condition requiring the proponent to prepare a stakeholder engagement plan (SEP) as part of the construction environmental management plan (CEMP). The SEP will provide a practical framework for the delivery of ongoing engagement and is to be submitted to me for approval at least 20 business days prior to the commencement of construction.

The SEP is to identify key stakeholder groups and provide community consultation plans for each. The SEP must:

- provide for ongoing engagement with directly affected persons, including residents of the Parkland Boulevard apartments, who are to be consulted regarding proposed project activities, potential impacts and mitigation measures
- detail the measures for informing potentially affected stakeholders such as public transport users, road users, pedestrians and cyclists about proposed project activities and potential impacts
- incorporate a complaints management system which has been developed specifically for the proposed temporary coach terminal works.

4. Evaluation of the change application

In accordance with section 35I of the SDPWO Act, I have prepared this change report following an evaluation of the environmental effects of the proposed change, its effects on the project and any other related matters. I have considered:

- the nature of the proposed change and its effects on the project as identified in the June 2018 application for project change
- project documentation, as currently evaluated, including the 2012 CGER and the June 2017 CGCR
- technical reports
- advice from the proponent.

The steps taken in the project's EIS assessment and change application process and the EIS process documents including the CGER are available at: **www.dsdmip.qld.gov.au/crr**

The following is an evaluation of the proposed changes to the project (Part A) and the proposed amendments to the June 2017 CGCR imposed conditions (Part B).

4.1. Part A – Temporary Roma Street Coach Terminal

4.1.1. Traffic and transport

Introduction

The proposed temporary coach terminal will result in potential minor localised traffic and transport impacts. The key traffic and transport impacts during construction and operation are discussed below.

Impacts and mitigation

Potential impacts during construction

Construction of the proposed temporary coach terminal is expected to take approximately 38 weeks, scheduled to commence in November 2018. The construction phase is anticipated to result in approximately 2-3 peak construction vehicle movements per hour, which is less than 10 peak construction vehicle movements per hour for the previous proposed use of the site as a construction storage and laydown area.

During construction, minor localised traffic and transport impacts anticipated in the vicinity of the temporary coach terminal worksite include:

- minor detours and delays to vehicle and pedestrian traffic on Parkland Crescent
- minor detours and delays to cyclist movements on Parkland Boulevard
- loss of BCC public car parking spaces
- potential reduction in the available nearby workforce parking.

The proponent has advised that the construction of the proposed temporary coach terminal may require temporary occupation of some segments of the roadway on Parkland Crescent, resulting in detours and minor delays for vehicles and pedestrians. The temporary occupation of Parkland Crescent may include altered traffic arrangements and minor diversions, however property access will be maintained at all times during construction.

The construction of the temporary coach terminal will result in the loss of the 32 BCC public carparks which are currently located on the site of the proposed temporary coach terminal. I previously approved the use of the carpark area as a construction storage and laydown area in the June 2017 change report, which would also have resulted in the loss of these 32 carparks. The proponent acknowledges the loss of these carparks and has advised that access will be maintained to the commercial carpark located underneath the Parkland Boulevard residential buildings, currently operated by Cornerstone Parking.

I note that throughout construction and operations, the potential for impacts to public carparking availability due to increased use by construction workers was raised as a concern by the residents of the Parkland Boulevard apartments and BCC. The proponent responded that the construction contract will stipulate that workers must not utilise carparking bays within the Roma Street Parklands. Alternative parking areas for construction workers will be provided within the construction site, where possible, supplemented by paid public parking at the Cornerstone Parking facility. To further reduce the impact on nearby local streets during construction, including Parkland Boulevard and Parkland Crescent, the proponent has committed to preparing a construction traffic management plan that will actively encourage construction workers to use public transport or park within the construction site or at the commercial carpark.

Potential impacts during operations

The proponent has undertaken a traffic and transport assessment of the potential impacts of the operation of the proposed temporary coach terminal. The key potential operational traffic and transport impacts include:

- changes to vehicle, pedestrian and cyclist movements as a result of additional traffic volumes
- constrained movements and manoeuvring of coaches on Parkland Crescent, requiring modification to existing barriers, vegetation and signage
- increased vehicle movements on Parkland Boulevard compared to existing levels as a result of the proposed passenger pick-up and drop-off and facility.

The proponent undertook an analysis of the existing coach terminal operations to determine the operational capacity requirements for the proposed temporary coach terminal using a combination of timetable analysis and physical surveys. The analysis determined that on average, 75 coaches use the existing terminal on a daily basis, with five or less coaches

typically at the facility at any one time. Peak demand periods were identified as occurring on Friday and Saturday afternoons.

The proponent undertook a review of the traffic performance based on the requirements of DTMR's Guide to Traffic Impact Assessment (GTIA). This includes an assessment of the existing average daily traffic movements on Parkland Boulevard and Parkland Crescent, which were estimated at approximately 4200 and 1200 respectively. The assessment confirmed that the temporary coach terminal, which when operational would result in 150 daily coach movements and an increase of up to 190 daily vehicle movements along Parkland Boulevard, will not have a significant impact on the local traffic network. The two intersections analysed as part of this assessment were:

- the Roma Street/Parkland Boulevard intersection
- the Parkland Boulevard/Parkland Crescent (south) intersection.

The intersection assessment indicated a 4.6% increase in delay at these intersections, which is less than the 5% delay threshold requiring mitigation, as per DTMR's GTIA. Although the impact is predicted to be below the threshold requiring mitigation, the proponent has committed to further investigate the need for traffic signal phasing for the Roma Street/Parkland Boulevard intersection with BCC, and to address concerns relating to signalling and intersecting delays raised during the consultation undertaken with the residents of Parkland Boulevard. I note that during the community consultation sessions provided by the CRRDA, residents of the Parkland Boulevard apartments raised concerns with the potential for increased congestion at the intersection of Roma Street and Parkland Crescent and the intersection of Parkland Boulevard and College Road. The proponent has advised they have commenced negotiations with BCC regarding the phasing of the intersections to allow for increased traffic movements.

The June 2018 change application indicates that increased vehicle movements (up to 190 per day) associated with the proposed pick-up and drop-off area on Parkland Boulevard has the potential to adversely impact the function of the existing shared zone adjacent to the café currently used by pedestrians, cyclists and vehicles. The design of the proposed pick-up and drop off area includes the construction of a roundabout to improve access for vehicles accessing the site in both directions, and passenger set down areas on both sides of Parkland Boulevard.

I note that Parkland Boulevard residents also raised concern with the potential loss of the two disabled parking bays for the roundabout on Parkland Boulevard. The proponent has committed to working with BCC to reallocate two other nearby carparks for disabled use.

The existing shared zone is a low speed environment with a posted speed limit of 10km/hr which is well below the 30km/hr limit recommended for a shared zone in the DTMR Technical Note 128 – *Selection and Design of Cycle Tracks May 2015* (TN128). The proponent has indicated that the existing 10 km/hr speed limit would not change, and that the detailed design of the shared zone with a focus on minimising conflict between vehicles, cyclists and pedestrians. The proponent has also indicated that the pick-up and drop-off zone on Parkland Boulevard will be operational prior to construction commencing on the temporary coach terminal in Parkland Crescent. Passengers will be able to access the pick-up and drop-off zone on Parkland Boulevard from the Platform 10 area of Roma Street station via the existing elevator and escalator. I note that Parkland Boulevard residents raised concern with the reliability of the existing elevator providing a connection to the Roma

Street Parklands from Platform 10, and the potential for impacts to disabled access to and from the existing drop-off area on Parkland Boulevard. The proponent responded that discussions with BCC have commenced regarding the potential for the installation of a new elevator. Further, mobility impaired passengers will be encouraged to utilise a small drop-off zone adjacent to the temporary coach terminal on Parkland Crescent once operational.

I also note the concerns raised by residents of the Parkland Boulevard apartments regarding potential safety impacts for pedestrians, school students and cyclists who travel through the Roma Street Parklands and along Parkland Boulevard each day. The proponent has committed to improving the safety of existing pedestrian crossings where required and reducing the speed limit along Parkland Boulevard, in consultation with BCC. The proponent has also committed to engaging with the local Bicycle User Groups regarding the potential impacts of the temporary coach terminal.

Proposed coach movements may also pose a safety concern to on-road cyclists who travel on Parkland Boulevard. Parkland Boulevard is a priority cycle route on the South East Queensland Principal Cycle Network Plan (SEQPCNP) and is a popular route for cyclists. Traffic counts undertaken by the proponent indicate that approximately 160 cyclists travel down the Parkland Boulevard ramp during the morning peak hour during weekdays.

The Parkland Boulevard/Parkland Crescent (south) intersection is currently a priority-controlled (stop sign) intersection with limited sight lines due to the configuration of the ramp and concrete barriers. The volume of vehicles using this intersection is anticipated to increase upon operation of the temporary coach terminal which may lead to an increased risk of conflict between cyclists and traffic. In recognition of these concerns I have imposed a condition which requires the proponent to undertake the following design improvements (Figure 4.1) of the intersection in consultation with BCC:

- move the existing stop line forward approximately 8 metres to improve vehicle visibility
- remove existing kerbed island on the northern verges and boulders on the southern verge to create more road space and straighten the alignment of the intersection.
- remove the existing median island and replace with a narrower painted island to create more road space which will improve manoeuvrability.

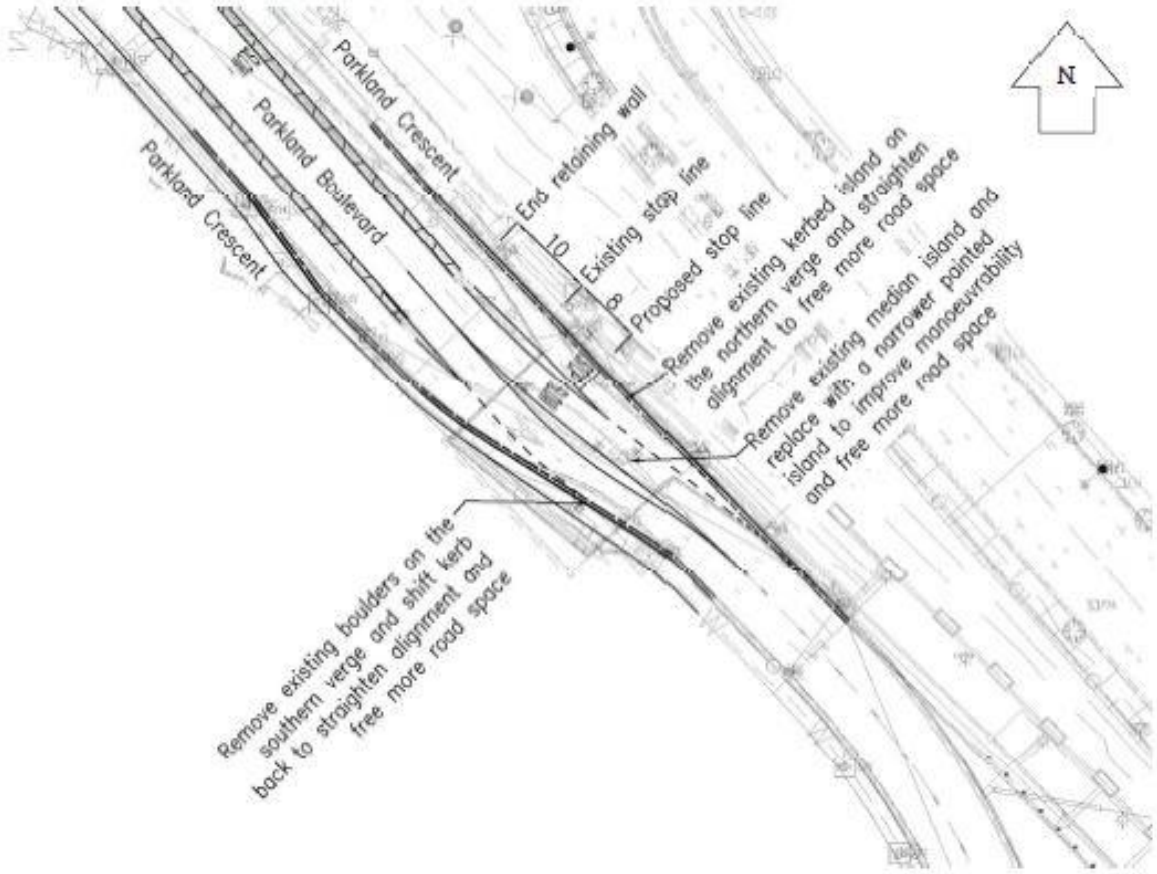

Figure 4.1 Proposed design improvements for the Parkland Boulevard and Parkland Crescent intersection (Source: June 2018 project change application)

The proponent undertook an analysis of the proposed temporary coach terminal layout which confirmed that coaches will be able to drive in and reverse out of all five proposed coach bays. The analysis also confirmed that coaches will be able to traverse Parkland Boulevard and Parkland Crescent to access and exit the terminal, however in a number of locations the analysis found that coach movements conflict with minor obstructions including barriers, vegetation and signage. I expect the proponent to continue to engage with coach operators during the detailed design stage to ensure any conflict with these obstructions are resolved during construction and prior to the commencement of operations.

Coordinator-General's conclusion

The project change application has identified potential localised traffic and transport impacts associated with the temporary coach terminal at Roma Street. I note that the residents of the Parkland Boulevard apartments raised concerns relating to pedestrian and cyclist safety, the potential for increased congestion at intersections and issues relating to the accessibility for people with disabilities and the functionality of existing elevator connecting to the Roma Street Parklands from Platform 10.

The outcomes from the negotiations with operators have been implemented to ensure that the operation of the proposed temporary coach terminal does not exceed its capacity and increase the risk of safety concerns or delays for passengers. Further, the proponent has

committed to continue to engage with BCC to address the identified impacts and concerns raised by residents regarding intersections, pedestrian safety and disabled access.

I have also imposed a condition (Appendix 1) requiring the proponent to develop mitigation measures through a construction traffic management plan (CTMP) to address and manage the potential construction traffic and transport impacts. The CTMP that will include provisions for:

- access routes to construction worksites, avoiding local or minor roads
- a process for advance notification to Directly Affected Persons and local communities within the vicinity of haulage routes and worksite accesses
- traffic management measures developed in consultation with BCC (including in relation to maintaining operations for bus services along streets affected by temporary coach terminal works), Queensland Rail (in relation to maintain access to railway stations) and the department administering the *Transport Infrastructure Act 1994*.

I have also imposed a condition (Appendix 1) requiring that, during construction, the proponent must ensure that workforce car parking will be provided within the worksites where possible, and parking on local streets is to be avoided.

The proponent must also ensure that construction traffic be managed to avoid or minimise adverse impacts on road safety and traffic flow, public transport, freight rail movements, pedestrian and cyclist safety and property access. The proponent must also ensure heavy construction vehicles are limited to designated routes for spoil haulage and deliveries of major plant, equipment and materials, in accordance with the CEMP. The CEMP must be submitted for my approval at least 20 business days prior to commencement of construction.

I am satisfied that the mitigation measures the proponent has committed to implementing and the imposed conditions will reduce the potential localised traffic and transport impacts as much as practicable. I expect the potential traffic and transport impacts will be further reduced with the development of the CTMP.

4.1.2. Noise and vibration

Introduction

Noise and vibration impacts for the construction and operation of the proposed Roma Street temporary coach terminal have been assessed based on the previously approved impacts in the 2012 CGER and February 2017 project change application.

The proponent has stated that the existing Roma Street station and the adjacent areas are characterised as high noise operating environments, with frequent road and rail noise occurring throughout the day, evening and night-time periods. Approximately 673 trains pass through Roma Street station each day, and the residential properties are exposed to noise from the operational rail corridor with a maximum noise criteria of 87 decibels (dB(A)), which is considerably higher than the anticipated noise levels of the coaches. Residential buildings within the area are likely to have been constructed with façade noise mitigation to reduce the impacts of the surrounding environment.

Sensitive receptors adjacent to the proposed site of the temporary coach terminal include the café and the residents of the seven apartment buildings on Parkland Boulevard, the Roma Street Station commercial premises and recreational users within Roma Street Parklands.

As part of the EIS assessment, the proponent conducted background noise monitoring in May 2010 at Roma Street station. The findings are summarised in Table 4.1.

Table 4.1 Typical existing noise levels at the nearest Parkland Boulevard apartment (Source: June 2018 project change application)

	Day (6am – 6pm)	Evening (6pm – 10pm)	Night (10pm – 6am)
Average ambient noise levels	64 dBL_{Aeq}	62 dBL_{Aeq}	57 dBL_{Aeq}
Typical maximum noise levels	77 dBL_{Amax}	75 dBL_{Amax}	73 dBL_{Amax}

The key noise and vibration impacts during construction and operation are discussed below.

Impacts and mitigation

Potential impacts during construction

The construction noise and vibration impacts of the temporary coach terminal would be generated by:

- construction vehicle movements to and from the site
- removal of existing concrete slabs and pavement
- minor ground works and trenching
- laying of concrete foundations and pavement
- construction of new structures including shelters and ticketing machines.

The anticipated 38 week construction period for the temporary coach terminal would be significantly less than the 5-year construction use of the site as a construction storage and laydown area identified in the 2011 Environmental Impact Statement for the Cross River Rail Project (2011 EIS) and the February 2017 project change application. The construction works for the proposed temporary coach terminal would be located 30 m from the closest Parklands Boulevard apartment.

Construction vehicle noise was based on the previous assessment undertaken for the 2011 EIS, which estimated 10 peak construction vehicle movements per hour, predicted to result in a 0.3 dBL_{A10} increase in existing traffic noise levels. This impact was predicted to comply with the DTMR road traffic noise criteria and was not expected to be a detectable change in traffic noise. Given that the construction vehicle movements for the temporary coach terminal would be reduced (two to three movements reduced from 10), impacts are expected to be similar or reduced from the previous assessment.

The proponent also predicted that construction activities for the temporary coach terminal are expected to generate noise levels similar to that previously assessed for the 2011 EIS during site establishment, which predicted mitigated (3 m noise barrier) noise levels of 52 to 58 $dB(A)_{LA10,adj}$ during the day at the Parkland Boulevard apartments.

As construction works for the temporary coach terminal would be located 120 m closer than construction works identified in the 2011 EIS, correction factors have been applied to accommodate for the change in proximity and for the inability to construct noise barriers at the temporary coach terminal worksite. Accordingly, the June 2018 project change

application predicted that the worst-case unmitigated noise generated by plant and machinery at the temporary coach terminal worksite would be 76-82 dB(A) at the nearest apartment during site establishment activities. This is an estimated 24 dB(A) increase in the potential construction noise impacts from the 2011 EIS.

The February 2017 project change application identified construction noise goals for activities at Parkland Boulevard of 67 $dB_{LAeq,adj,15min}$ for steady state noise and 77 $dB_{LA10adj,15min}$ for non-steady state noise. The assessment concluded that temporary coach terminal construction noise may result in exceedances of the noise goals by up to 5 dB(A). These exceedances are associated with the worst-case noise generating construction activities of site establishment, which is a short duration activity. The latter stages of the 38-week construction period are expected to generate considerably lower levels of construction noise.

Construction vibration has been predicted to reach 0.04 mm/s peak particle velocity (PPV) at the Parkland Boulevard residences. This is significantly lower than the most stringent night-time vibration limit of 0.5 mm/s PPV and is not expected to result in significant impacts.

As the residential apartments would directly overlook the temporary coach terminal construction worksite, noise barriers will not be able to be erected to mitigate construction noise impacts due to site constraints. To ensure that noise impacts are avoided during the most noise sensitive periods of the day the proponent is proposing to limit construction works to standard construction hours, being between 6:30 am and 6:30 pm, Monday to Saturday. This would ensure that noise impacts are avoided during the most noise sensitive periods of the day.

Further, the temporary coach terminal construction methodology limits the need for earthworks and ground disturbance, relying on prefabricated materials to limit the potential for noise generating activities at the construction worksite. Additional mitigation measures include the implementation of a complaints management system and advance notification to sensitive receptors of activities likely to result in exceedances of the project's noise goals. Additional noise attenuation would be considered for items of plant that fail to meet planning design noise goals.

Potential impacts during operations

The operation of the temporary coach terminal will involve up to 150 daily coach movements with an estimated peak of 13 coaches per hour, with an overall average of three to four per hour. Additional operational noise sources include the noise generated by coach reversing alarms and noise generated by up to 3500 passengers that may pass through the terminal each day.

Coach and passenger noise at the terminal

Noise generated through the acceleration of coaches away from the terminal was assessed and predicted to reach levels of 70 dB(A), which would be 2 dB(A) above the DTMR Road Traffic Noise Code of Practice criteria of 68 $dBL_{A10,18hr}$ for noise generated from road traffic operations. As this level of noise would be generated only up to 75 times per day, intermittently and for short durations (approximately 1 minute), coach acceleration noise is likely to achieve compliance with the DTMR criteria.

The noise assessment undertaken by the proponent estimated that the worst-case noise levels produced by coach reversing alarms would be 97 dBL_{Amax} when measured one metre from a coach. The equivalent worst-case noise level at the nearest residential apartments would result in noise levels of 70 dBL_{Amax}, which would be three to seven dB(A) lower than the typical existing maximum noise levels during the day, evening and night. As the assessment is based on a worst-case scenario, actual noise levels are likely to be lower than predicted. Further, the assessment predicted that operational noise from plant and equipment at the temporary coach terminal is also expected to be consistent with the existing background noise levels in this locality.

I note that the targeted consultation report prepared by the proponent included detail of concerns raised by residents regarding excessive noise from passengers during operation. The assessment predicted that any additional noise generated by up to 3500 passengers per day while at the temporary coach terminal would not materially impact the existing background noise environment, which is characterised by rail noise.

To reduce the potential operational noise impacts of the temporary coach terminal, the proponent has advised they will:

- incorporate dynamic signage rather than public announcements to further reduce the potential for operational noise impacts to nearby sensitive receptors
- encourage coach operators to avoid idling while at the temporary coach terminal to reduce noise generated by coaches.

Traffic noise

The June 2018 project change application assumed that noise generated by a coach would be similar to that produced by a spoil haulage truck. Therefore, operational coach noise has been assessed based on the spoil haulage noise impacts previously identified in the 2011 EIS and February 2017 project change application.

The 2011 EIS determined that the daily movement of 130 spoil trucks along the Roma Street network would result in a 0.3 dBL_{A10} increase to the existing traffic noise levels. As the impacts for the temporary coach terminal are expected to be similar, it is predicted that an increase in road traffic noise of 0.3 dBL_{A10} or less across the 10 years of operation would result in negligible change in current road traffic noise levels.

Cumulative Impacts

The June 2018 project change application included a cumulative impact assessment of the frequency of maximum noise events, comparing the number of train movements and the number of proposed coach movements. The findings are summarised in Table 4.2.

Table 4.2 Frequency of maximum noise events based on operational timetables for trains at Roma Street station and coaches at the Brisbane Transit Centre

	Daytime (6 am-6 pm)	Evening (6 pm-10 pm)	Night (10 pm-6 am)
No. of trains	471	109	93
No. of coaches	71	3	1

A review of the operational timetable for passenger trains passing through Roma Street station identified 673 trains in a 24 hour period; the maximum noise events are associated with these existing train movements. The movement of the 75 coaches through the proposed temporary coach terminal will result in a 12% increase in maximum noise events. The assessment noted that a majority of the coach movements (95%) and associated noise events will occur during the daytime (6am-6pm) with only four coach movements during the evening and night-time period. The proponent predicted that this is not expected to alter the existing noise environment.

Consideration was also given to the cumulative noise impacts of the of the proposed temporary coach terminal in addition to the existing noise environment. The findings are summarised in Table 4.3.

Table 4.3 Cumulative noise levels of the predicted temporary coach terminal and existing noise levels at the nearest Parkland Boulevard apartment May 2010 (Source: June 2018 project change application)

Description	dBL_{aeq}						dBL_{amax}					
	Day 6am-6pm		Evening 6pm-10pm		Night 10pm-6am		Day 6am-6pm		Evening 6pm-10pm		Night 10pm-6am	
	Avg[1]	Max[2]	Avg	Max	Avg	Max	Typ[3]	Max	Typ	Max	Typ	Max
Existing measured noise range	64	75	62	67	57	65	77	80	75	76	73	76
Predicted coach terminal noise	57		34		28		69		69		69	
Cumulative noise range	65	75	62	67	57	65	78	80	76	77	74	77
Range of cumulative change	1	0	0	0	0	0	1	0	1	1	1	1

Cumulative noise levels of the proposed coach terminal operation combined with the existing noise levels at the nearest Parkland Boulevard apartments were assessed for both the ambient (L_{Aeq}) and maximum (L_{Amax}) noise parameters for the day-time, evening and night-time. As can be seen in Table 4.3, the predicted operational coach terminal noise levels at the Parkland Boulevard apartment building overlooking the proposed coach terminal would be lower than the existing noise levels across the daytime, evening and night-time periods. Cumulatively, the assessment identified that operational coach terminal noise combined with train noise would result in a 1 dB(A) increase in average ambient noise levels, while for existing maximum ambient noise levels, no cumulative change is expected. It should also be noted that this minor increase would occur during the least noise sensitive time of the day (6am-6pm).

[1] Average
[2] Maximum
[3] Typical

Cumulative noise impacts were also assessed for the maximum noise levels for the predicted temporary coach terminal and for the existing day-time, evening and night-time noise experienced at the Parkland Boulevard apartments. The assessment found that the cumulative impacts of extraneous noise events such as train movements and coach acceleration movements would result in up to 1 dB(A) increase to the maximum noise levels across the daytime, evening and at night, which is unlikely to be detectable. The proponent noted that a change in noise level of 1 to 2 dB(A) (difficult for most people to detect) is not considered a significant impact. It should also be noted that existing timetabling arrangements show there is typically only a single coach accessing the terminal in the night-time hours and that this minor impact would only occur for a short duration (approximately up to 1 minute) whilst the coach accelerated away.

The cumulative impacts of the proposed temporary coach terminal on the existing noise levels are considered to be a negligible change to the Roma Street Precinct noise environment. It is likely that the façade noise reductions for residential buildings located within the CBD, such as the Parkland Boulevard apartments, are substantially higher than the 10 dB(A) which was assumed for this assessment.

Coordinator-General's conclusion

I am satisfied that the proponent has assessed the potential noise and vibration impacts for the construction and operation of the proposed temporary coach terminal.

The proposed temporary coach terminal construction noise is expected to increase from that predicted in the 2011 EIS and result in up to 5 dB(A) exceedance of the project's noise goals during site establishment activities during construction. However, the overall potential construction noise impact for the temporary coach terminal will be limited to a 38-week period and the latter stages of construction are expected to generate lower noise levels than the earlier site establishment phase. Due to the construction methods proposed for the temporary coach terminal, the expected construction vibration levels of 0.04 mm/s PPV are significantly lower than the most stringent vibration criteria.

I note that operational noise is an unavoidable impact that would result from the project, however I consider levels to be consistent with the existing environment characterised by high road and rail noise levels. The operation of the temporary coach terminal is not expected to significantly alter the existing noise environment. I have imposed a condition which requires the proponent to incorporate dynamic signage into the design of the temporary coach terminal to remove the need for public announcements. This condition also requires the proponent to provide equitable access for vision impaired persons.

I have imposed conditions (Appendix 1) setting noise and vibration goals and requirements for monitoring during the construction period. This would ensure that noise and vibration associated with the construction of the temporary coach terminal is managed to avoid cosmetic damage and human health and well-being impacts at sensitive receptors. Where works are predicted to exceed the noise goals by 20 dB(A) or more, coach terminal works are authorised to occur only if the proponent has provided advance notification and developed mitigation measures on a 'case by case' basis with Directly Affected Persons (as defined in Appendix 1, Schedule 2).

The proponent must also ensure that construction works for the temporary coach terminal are undertaken only within the hours of 6:30 am to 6:30 pm Monday to Saturday, with the exception of works that cannot be undertaken reasonably or practicably during standard hours due to disruption to peak traffic flows or bus operations. Such works would include delivery of 'in-time' materials such as concrete, hazardous materials and large components and machinery.

The imposed conditions (Appendix 1) also require the proponent to prepare a SEP as part of the CEMP. The SEP will provide for early and ongoing consultation with Directly Affected Persons about the timing, duration and predicted impacts of the temporary coach terminal works. This would also include a process for advance notification regarding temporary coach terminal works.

4.1.3. Air quality

Introduction

Existing sources of emissions affecting the site adjacent to Platform 10 at Roma Street station include emissions produced by vehicles idling in the carpark and drop-off areas, and emissions from vehicles travelling along Parkland Crescent and Parkland Boulevard. Average daily traffic movements on Parkland Boulevard and Parkland Crescent are currently approximately 4200 and 1200 respectively. Surrounding sensitive receptors include the café and residents of the Parkland Boulevard apartments and transient community members and train passengers.

Background air quality monitoring was undertaken as part of the 2011 EIS and was based on data collected from four monitoring stations located in Cannon Hill, the Brisbane CBD, South Brisbane and Rocklea. Monitoring results are summarised in Table 4.4.

The results indicated that background concentrations of pollutants were below the Cross River Rail project air quality goals outlined by the proponent in the February 2017 project change application. The goals are consistent with the National Environment Protection Measure (NEPM) (Ambient Air Quality) 2017 and the Environmental Protection Policy (Air) 2008 (EPP (Air)) air quality objectives.

Impacts and mitigation

Potential impacts during construction

Construction dust

Air quality impacts during the construction of the proposed temporary coach terminal may occur as a result of the removal of pavement and pavers from the existing carpark and drop-off area, wheel and wind generated dust from unsealed exposed areas, the movement of equipment on site and construction vehicle emissions.

Table 4.4 Background air quality concentrations and 2017 Cross River Rail project air quality goals (Source: June 2018 project change application)

Air quality indicator	Averaging period	Units	Background concentration	Cross River Rail project air quality goal	Criterion
Total suspended particles (TSP)	24 hour	$\mu g/m^3$	26	80	Nuisance
	Annual	$\mu g/m^3$	24	90	Human health
Particulate matter less than 10 micrometres in diameter (PM_{10})	24 hours	$\mu g/m^3$	17	50	
	Annual	$\mu g/m^3$	14.5	25	
Dust deposition	30 days	$mg/m^2/day$	60	120	Nuisance

The construction site is protected from wind by surrounding buildings, a retaining wall and road infrastructure, which currently provides mitigation from any dust generated by wind. As such, the assessment concluded that dust nuisance and health issues as a result of the construction of the temporary coach terminal would be negligible and temporary, due to minimal ground disturbance. However, the assessment predicted that the café adjacent to the proposed Parkland Boulevard drop-off and pick-up area may experience construction dust nuisance on days with strong southerly to westerly winds. The proponent identified that consultation with the café tenant would be undertaken prior to the commencement of construction to inform individual mitigation measures to address the level of risk of dust impacts.

The assessment undertaken by the proponent concluded that mitigation measures for the construction of the temporary coach terminal would be consistent with the mitigation measures included in the February 2017 application for project change, and may include:

- the preparation of an air quality management plan, as part of the CEMP to achieve the environmental outcome for air quality for the duration of construction activities
- monitoring meteorological conditions, including wind speed and direction to determine if additional measures are required, such as increased dust suppression or targeted consultation with Directly Affected Persons
- cessation of work until meteorological conditions improve, when no other reasonable or practical measure is available to manage a significant air quality impact.

Vehicle emissions

The assessment undertaken by the proponent estimated that current average daily vehicle movements along Parkland Boulevard and Parkland Crescent are approximately 4200 and 1200 movements respectively.

The assessment predicted that the temporary coach terminal construction air quality impacts would be comparable with the outcomes presented in the 2011 EIS and the February 2017 project change application, which estimated peak hourly construction vehicle movements of 10 and six vehicles respectively. The February 2017 project change application assessment was based on six vehicle movements per hour, with up to 66 heavy vehicle movements per

day over the five years of construction. Comparatively, the peak hour truck volume for the site establishment and construction for the temporary coach terminal is expected to be three per hour.

The February 2017 project change application predicted that there would be a traffic and emissions increase of 0.7 % along Parkland Boulevard and 2.4 % along Parkland Crescent due to the increased construction traffic travelling along these routes. Although vehicle emissions for the construction of the temporary coach terminal are expected to be similar, the impact would occur over a significantly shorter timeframe than previously approved, reduced from five years to 38 weeks.

The proponent has committed to installing an air quality monitor adjacent to the Parkland Boulevard apartments during the early temporary coach terminal works (which would include the removal of existing concrete and pavement and minor ground works) to monitor air quality throughout the construction period. The proponent has indicated that the monitor would be located approximately 100 m from the construction site to provide an accurate representation of existing background air quality levels and any impacts associated with construction vehicle emissions. The monitor would also assist in identifying if construction air quality goals are met and inform the need for any additional mitigation measures.

Potential impacts during operations

The proponent estimated that once operational, 75 coaches will pass through the temporary coach terminal each day, with three or four movements on average per hour and a maximum peak movement of approximately 13 per hour. During peak, approximately 95 vehicles per hour would access the pick-up and drop-off area to be located on Parkland Boulevard.

The air quality assessment was based on the findings from the 2011 EIS and February 2017 project change application. The assessment predicted that the increase in traffic movements associated with the operation of the temporary coach terminal would result in an increase in daily traffic levels along Parkland Boulevard and Parkland Crescent, with a corresponding increase in vehicle emissions, as summarised in Table 4.5.

Table 4.5 Predicted change in traffic volumes (Source: June 2018 project change application)

	Parkland Boulevard, south of ramp (both directions)	Parkland Crescent (both directions)
Existing daily traffic volume	4178	1206
% increase in vehicles for the EIS	5.9%	4.6%
% increase in vehicles for the 2017 request for project change	0.7%	2.4%
% increase in vehicles for the proposed coach terminal	3.5%	11.1%

The assessment predicted that the increase in vehicle movements and emissions on Parkland Boulevard and Parkland Crescent of 3.5% and 11.1% respectively would not significantly alter background emission levels in the local area, and will remain within the Cross River Rail project air quality goals identified in Table 4.4.

I note that the residents of the Parkland Boulevard apartments raised concerns with idling coaches and the potential for exhaust emissions to affect local air quality and amenity. The proponent's response indicated that air quality monitoring would be undertaken to establish how the operation of the temporary coach terminal may impact existing air quality within the area. The proponent has also stated that coach idling outside of loading and unloading times is to be discouraged as much as possible.

Coordinator-General's conclusion

I am satisfied with the proponent's commitment to minimise dust and emissions from construction of the temporary coach terminal. I note the proponent's approach to managing potential air quality impacts which includes real time monitoring during construction and specific mitigation measures and processes for consultation with Directly Affected Persons.

I have imposed a condition (Appendix 1) requiring the proponent to monitor and report on air quality in accordance with a CEMP. This would ensure that the construction of the temporary coach terminal does not result in human health or nuisance impacts for sensitive receptors.

I have also imposed a condition (Appendix 1) requiring the proponent to develop a SEP as part of the CEMP. The stakeholder engagement plan will provide for early and ongoing consultation with Directly Affected Persons about the timing, duration and predicted impacts of the temporary coach terminal works. This would also include a process for advance notification to local communities regarding the temporary coach terminal works.

I note that operational air quality impacts are an unavoidable potential impact of the project and that the operation of the temporary coach terminal would result in greater vehicle emissions along Parkland Crescent than currently exist. Although this is an impact consistent with that assessed in the June 2017 CGCR, the potential operational impacts of the temporary coach terminal are expected to remain within the Cross River Rail project air quality goals, which are consistent with both the NEMP and EPP (Air).

I note that the proponent has committed to installing air quality monitoring equipment above the existing carpark facilities at Parkland Crescent to gather baseline data, as an outcome from the consultation with residents of the Parkland Boulevard apartments. I expect that the proponent fulfils this commitment.

I am satisfied that through the identified mitigation measures, imposed conditions and the ongoing consultation with Directly Affected Persons, the potential for human health impacts due to excessive dust and emissions during construction will be managed.

4.1.4. Land use, tenure and cultural heritage

Introduction

The key land use change associated with this request for project change relates to the change in use for the subject site, from a construction storage and laydown area for five years (as identified in the June 2017 CGCR), to a temporary coach terminal with a 38-week construction period and a design life of up to 10 years.

The key land use, tenure and cultural heritage impacts during construction and operation are discussed below.

Tenure

The site identified for the temporary coach terminal is situated on part of a large freehold lot described as Lot 60 on SP207215. This lot also contains a significant section of the wider Roma Street Parklands precinct (Figure 3.1).

The proponent has advised that the DHPW currently owns the land on which the coach terminal is proposed to be constructed, which is used as a public carpark and is part of a lease to BCC under its parkland management arrangement with DHPW for the Roma Street Parklands. The site is subject to a number of rights and interests listed below in Table 4.6.

Table 4.6 Property tenure and interests (Source: June 2018 project change application)

Right/Interest	Tenure	Use
Freehold – Estate in Fee Simple	Lot 60 on SP207215	Roma Street Parklands (partly)
Freehold – Estate in Fee Simple	Lot 44 on SP152171 (volumetric)	Access roadway through Roma Street Parklands known as 'Parklands Boulevard' and 'Parklands Crescent'
Easement No. 706224195	EMTs BA, BB, BC and BD on SP152188 (volumetric)	Access, drainage, encroachment and services easement in favour of Queensland Rail
Easement No. 706224199	EMT BE on SP152188 (volumetric)	Access easement in favour of Queensland Rail
Easement No. 706035654	Lot 44 on SP152171 (whole)	Access along roadway constructed within Lot 44 on SP152171 in favour of adjoining landowners including Queensland Rail, residential Body Corporate schemes at 'Parklands Boulevard CTS', Queensland Rail and DHPW

The proponent has identified that no changes to the existing easements over the site would be required. The proponent has advised of agreements to transfer the land to the CRRDA to enable the construction of the temporary coach terminal, while ownership of the operational coach terminal would be transferred to Translink.

Impacts and mitigation

Impacts during construction and operations

The proposed site of the temporary coach terminal is currently used as a passenger drop-off and pick-up area, a carpark comprising 32 spaces and a thoroughfare for traffic and pedestrians. The construction and operation of the proposed temporary coach terminal will result in the reduction in the capacity of the drop-off and pick-up area in this location and the loss of the 32 car parks, however the thoroughfare for traffic and pedestrians will be retained. The loss of car parks and changes to the drop off and pick up area are discussed in Section 4.1.1 of this change report.

This area was previously approved as a construction storage and laydown area in the June 2017 CGCR. As a result of the proposed change in land use to a temporary coach terminal, there will be a reduced amount of construction storage and laydown area available in the

Roma Street precinct when the Cross River Rail project commences construction. The proponent has advised that the construction storage and laydown requirement would be accommodated within the land that will be made available following the demolition of the BTC, therefore additional land for construction storage and laydown would not be required to accommodate the proposed change in use of the site.

The proposed site of the temporary coach terminal is listed on the Environmental Management Register. Remediation is not proposed, as ground disturbance during the construction of the temporary coach terminal will be minimal, due to the intended use of surface engineered footings.

The proposed temporary coach terminal has also been designed to reduce where possible construction activities that involve ground disturbance and excavation works which have the potential to cause harm to Aboriginal cultural heritage. Where construction activities require excavation or ground disturbance, the proponent will meet its obligations under the *Aboriginal Cultural Heritage Act 2003* which may involve the development and approval of a cultural heritage management plan.

Roma Street precinct planning

The permanent use of this site will be determined by the Roma Street precinct master planning process which includes the Brisbane Live project. The Brisbane Live project is being led by the CRRDA in partnership with Building Queensland separately to the Cross River Rail EIS process. The Brisbane Live project is currently at the detailed business case phase.

The business case for the Brisbane Live project is investigating the development of a new arena consisting of 17,000-18,000 seats located on a large deck structure built over railways, roads and property. The project may include ancillary facilities to support the arena's operation as well as public spaces and active transport connections with other central business district locations. The business case is expected to be completed in Q4 2018 and will include a further delivery model that will consider risk, operational impacts and value for money.

In March 2018, the Brisbane Metro project was confirmed as a High Priority Project on the nation's Infrastructure Priority List. The Brisbane Metro Project is now full funded, with funding commitments of $644 million from BCC and $300 million from the Federal Government. The Brisbane Metro draft Design Report released in April 2018 identified station upgrade requirements for the Roma Street Busway station, and indicated that Roma Street was a key interchange location.

The coach terminal provides a temporary solution that will allow the area to continue to function as a central transit hub for Brisbane, whilst a permanent location for the coach terminal can be integrated into the broader Roma Street precinct master plan. This would include considerations for the Brisbane Live and Brisbane Metro projects.

Coordinator-General's conclusion

In the June 2017 CGCR I approved the use of the area adjacent to Platform 10 of Roma Street station as a construction storage and laydown area for the Cross River Rail project. This request for project change will result in the loss of this construction site through a change in use to a temporary coach terminal. However, the proponent has advised that this

loss can be accommodated within the existing approved construction footprint for the Cross River Rail project at Roma Street.

I have imposed conditions (Appendix 1) requiring the proponent to ensure that temporary coach terminal works that involve excavation, construction or other activities that may cause harm to Aboriginal cultural heritage must not take place without the development and approval of a cultural heritage management plan in accordance with the *Aboriginal Cultural Heritage Act 2003*.

4.1.5. Visual amenity and lighting

During the construction and operation of the temporary coach terminal, there will be minor changes to the visual amenity and lighting impacts at the site adjacent to Platform 10 of Roma Street station, when compared to the construction storage and laydown area approved in the June 2017 CGCR.

The current outlook north-west from the Parkland Boulevard apartments and from Parkland Boulevard to the north of the site is of asphalt, streetlights, covered walkways, line marking and a variable number of cars, with a six-metre-high concrete retaining wall surrounding the site.

The key visual amenity and lighting impacts during construction and operation are discussed below.

Impacts and mitigation

Construction impacts

As the east-facing residents of the Parkland Boulevard apartments directly overlook the proposed temporary coach terminal construction site, visual amenity and lighting impacts are likely during the 38-week construction period. Visual impacts from the street parking area located on Parkland Boulevard to the north-west of the site will remain limited, due to the existing landscape screening located along the top of the retaining wall. Minor changes to the landscape screening on Parkland Boulevard is proposed, including the removal of some trees and shrubs to facilitate the construction of the new roundabout. The proponent is not proposing to impact the row of pine trees on Parkland Boulevard adjacent to the café.

The following measures would be implemented to address the potential construction visual amenity and lighting impacts:

- limiting construction works to occur between 6:30 am and 6:30 pm, eliminating the need for lighting during sensitive periods, except as required for personal and property safety and security
- utilising urban design input to ensure where changes are made there is seamless integration with the existing precinct environment, particularly around Parkland Boulevard with the introduction of the roundabout and passenger drop-off area
- providing visual hoarding to the edge of the terrace area throughout construction works.

Operational impacts

In the February 2017 project change application, following use for five years as a construction storage and laydown area, the proponent indicated that the site would likely

revert to its former use as a carpark and drop off area, or be redeveloped as part of the larger Roma Street Station precinct master planning process.

The roof of the temporary coach terminal will be constructed below the existing level of Parkland Boulevard, lower than the existing retaining wall that surrounds the site. Due to the variation in heights, the proponent predicted that there would be no visual impacts on the Roma Street Parklands from the construction of the temporary coach terminal. Further, the proposal for an elevated roof over the temporary coach terminal would replace the existing lower covered walkways, which would open views from Platform 10 to the Roma Street Parklands.

Changes to the existing passenger drop-off area on Parkland Boulevard would include the addition of a roundabout adjacent to the café, which would assist to increase vehicular use and reduce the pedestrian character of the area. The proponent has committed to integrating urban design principles to ensure changes in the precinct are sympathetic to the existing character, particularly around Parkland Boulevard. Furthermore, the proponent has committed to providing additional landscaping to improve the visual amenity of the temporary coach terminal.

I note that residents of the Parkland Boulevard apartments raised concerns regarding the potential for impacts resulting from the additional lighting required for the temporary coach terminal. The assessment noted that the first apartment level is located approximately 12 m above the proposed level of the temporary coach terminal. The proponent has advised that the design of the temporary coach terminal has taken these concerns into consideration, and that there would be no increase in light spillage compared to the existing carpark infrastructure.

The following measures will be implemented to address potential operational visual amenity and lighting impacts:

- compliance of all lighting with AS/NZ 1158.3.1 Lighting for roads and public spaces
- installation of all lights under the roof awning as far as practicable to minimise light spill up to the Parkland Boulevard apartments
- installation of directional lighting at the roundabout on Parkland Boulevard onto the roadway, to reduce the potential impacts at the apartments and café
- use of translucent materials to allow for natural lighting during the daytime at the temporary coach terminal
- use of bright white artificial lighting to ensure a safe and visually attractive environment for night-time
- design of the temporary coach terminal roof and material selection to avoid glare from sun reflection for the nearby Parkland Boulevard apartments
- integrating signage into the precinct via pillar signs and underneath awnings, with suitable wayfinding to and from the temporary coach terminal
- additional landscape integration with the temporary coach terminal to enhance the precinct at Platform 10 level.

Coordinator-General's conclusion

I am satisfied that the visual amenity and lighting impacts during the construction of the temporary coach terminal would be temporary and minor, and less than previously approved.

I am also satisfied that the temporary coach terminal will be designed to ensure potential lighting impacts to nearby residents are reduced and where possible avoided, a concern raised during the consultation with residents of the Parkland Boulevard apartments. Once operational, the temporary coach terminal will present an improved visual environment, compared to that of the existing carpark area.

I am satisfied that the mitigation measures outlined by the proponent would ensure that visual amenity and lighting impacts are managed during both construction and operation phases.

4.2. Part B – Amendments to June 2017 CGCR imposed conditions

As part of the project change application, the proponent is seeking amendments to the June 2017 CGCR imposed conditions.

The requested amendments include:

- an amendment to remove the works associated with the temporary coach terminal from the definition of project works (as defined in the June 2017 CGCR)
- an amendment to ensure a more efficient and timely assessment of management plans
- an amendment to ensure consistency with current technical assessment guidelines
- an amendment to provide for a set of conditions that would manage the works associated with the construction and operation of the temporary coach terminal, separate to the June 2017 CGCR imposed conditions and commensurate with the level of impact predicted.

The requested amendments, including the proponent's justification for the requested amendment and my evaluation of their request is provided in Table 4.7.

Table 4.7 Proposed amendments to June 2017 CGCR imposed conditions

Section reference	Condition reference	Condition amendment/ new condition	Reasons	Evaluation
Part A. Imposed Conditions (General)	Condition 1. General conditions (a)	(a) The project must be carried out generally in accordance with the Cross River Rail Request for Project Change dated February 2017 **and amendments to the Project identified in the Cross River Rail Request for Project Change dated June 2018.**	The proposed change would capture the 2018 request for project change.	The proposed amendment to condition 1 (a) seeks to capture the proposed change in the use of the previously approved construction storage and laydown facility to the temporary coach terminal. I accept the proposed change to the condition.

Section reference	Condition reference	Condition amendment/ new condition	Reasons	Evaluation
	Condition 1. General conditions (c)	**New condition** (c) The Roma Street Coach Terminal relocation must be carried out in accordance with the conditions imposed at Part E.	This additional condition has been proposed to ensure it is clear the temporary coach terminal works are being delivered under a separate set of conditions	The proposed condition ensures that the temporary coach terminal works are undertaken in accordance with a separate set of conditions commensurate with the predicted level of potential impact. I accept the proposed new condition.
	Condition 2. Outline Environmental Management Plan (a)	(a) ~~Six~~ **Two** months prior to the commencement of Project Work submit a final Outline Environmental Management Plan to the Coordinator-General for approval.	A nominated 8-week review and approval timeframe has been proposed as an acceptable timeframe to minimise the risk of project program delays resulting from this process.	The proposed amendment seeks to make reporting arrangements more efficient and streamlined, without reducing the assessment rigour. I accept the proposed change to the condition.
	Condition 2. Outline Environmental Management Plan (c)	**New condition** (c) Any further amendments to the Coordinator-General approved Outline Environmental Management Plan will be issued to the Coordinator-General 20 business days prior to the commencement of Relevant Project Works.	This additional condition has been nominated to ensure any additional OEMP requirements resulting from Requests for Project Change (RfPCs) are captured. Approval of amendment is not proposed as OEMP amendments will only occur in response to any additional or	The proposed new condition seeks to ensure that any amendments made to the OEMP approved by the Coordinator-General are submitted to the Coordinator-General, prior to the commencement of Relevant Project Works. This will ensure any amendments are recorded and

Section reference	Condition reference	Condition amendment/ new condition	Reasons	Evaluation
			amended conditions resulting from RfPCs, with amendments transparent to the community (via publication on the CRRDA's website)	monitored as part of the OEMP. I accept the proposed new condition.
Part C. Imposed Conditions (Construction)	Condition 6. Reporting (c)	(c) The Monthly Report must be provided to the Coordinator-General and the Environmental Monitor, and be made available on the project website within ~~one~~ **four** weeks of the end of the month to which the report relates, and continue to be available and the project website until commissioning is complete.	Due to the timeframes required by the contractor to obtain all required information for the monthly report, including environmental monitoring data, this timeframe was identified as being too short. Four weeks is proposed based on assumption of obtaining laboratory data at the end of the month (2 weeks), interpreting and reporting on the date to the CRRDA for review (1 week), and submitting the final report (1 week).	The proposed amendment seeks to ensure that all required environmental monitoring data is be captured within the relevant Monthly Report within a practical timeframe. I accept the proposed change to the condition.
	Condition 17. Surface Water (a)	Project Works, and worksites, must be designed and implemented to avoid inundation from stormwater due to a 2-year (**6hr**) ARI rainfall event	The proposed change is to ensure consistency with the nominated guideline (Section E3.2, Best Practice Erosion and	The proposed change seeks to align with current widely implemented best practice guidelines.

Section reference	Condition reference	Condition amendment/ new condition	Reasons	Evaluation
		and flood waters due to a 5-year ARI rainfall event.	Sediment Control Guidelines, 2008 (International Erosion Control Association)).	I accept the proposed change to the condition.
Schedule 3.	Definitions	Project Work means any works, including early works, demolition works, or site preparation works, for construction of the project. Project Work does not include: • any works associated with the demolition of buildings and structures on State owned land; • works involving the relocation or replacement of public utilities when undertaken by a public utility authority or provider; • the placement and management of spoil at spoil placement locations; • **the relocation of the Roma**	The proposed change to the definition of Project Work will remove the temporary coach terminal works from the full Project scope, which will be managed under its own condition set and Construction Environmental Management Plan, remove the trigger for the OEMP six months prior to Project Works, and remove the need for an Independent Environmental Monitor and Community Relations Monitor.	The proposed change allows the works associated with the temporary coach terminal to be mitigated and managed under a set of conditions (Appendix 1) separate to the Cross River Rail project conditions (Appendix 2). I accept the proposed change to the condition.

Section reference	Condition reference	Condition amendment/ new condition	Reasons	Evaluation
		Street Coach Terminal.		

The following details how conditions, recommendations and commitments are included in this report:

- Appendix 1 provides the complete set of imposed conditions for the temporary coach terminal works
- Appendix 2 provides the complete set of updated imposed conditions for the Cross River Rail project
- Appendix 3 provides the complete set of Coordinator-General's recommendations, consistent with those in the June 2017 CGCR.

5. Conclusion

This report concludes my evaluation of the proposed project change pursuant to section 35I of the SDPWO Act.

I am satisfied that the requirements of the SDPWO Act have been met and that sufficient information has been provided to enable the evaluation of the project change and the amendment of conditions of approval.

I consider that the changes to the project and the conditions imposed in this report would result in acceptable overall outcomes. Accordingly, I approve the changes to the Cross River Rail project as set out in the June 2018 project change application, subject to the conditions in Appendix 1. The imposed conditions (Appendix 1) aim to mitigate and manage the works associated with the construction of the temporary coach terminal. I also approve an updated set of project wide conditions (Appendix 2).

In accordance with section 35K of the SDPWO Act, the Coordinator-General's report on the EIS for the project, and the Coordinator-General's change report, both have effect for the project. However, if the reports conflict, this Coordinator-General's change report prevails to the extent of the inconsistency. The proponent must implement all conditions in this report.

In accordance with s.35 of SDPWO Act, this report will lapse on 8 June 2020.

A copy of this report will be issued to the proponent.

A copy of this report and all relevant EIS assessment documentation are available on the Department of State Development's website at **www.dsdmip.qld.gov.au/crr**

Appendix 1. Imposed conditions – Temporary Roma Street Coach Terminal Works

This appendix includes conditions imposed by the Coordinator-General under section 54B of the SDPWO Act.

All of the conditions imposed in this Appendix take effect from the date of this Coordinator-General's change report.

These conditions do not relieve the proponent of the obligation to obtain all approvals and licenses from all relevant authorities required under any other Act.

In accordance with section 54B(3) of the SDPWO Act, I have nominated entities to have jurisdiction for the imposed conditions for the project in Schedule 1.

Pursuant to section 54D of the SDPWO Act, these conditions apply to anyone who undertakes the project, such as the proponent and an agent, contractor, subcontractor or licensee of the Proponent.

Defined terms that are part of the imposed conditions are contained in Schedule 2.

Part A Imposed Conditions (General)

Condition 1. General conditions

(a) The temporary coach terminal works must be carried out generally in accordance with the Cross River Rail Request for Project Change dated June 2018.

(b) The proponent must notify the Coordinator-General in writing of the commencement of construction of the temporary coach terminal and the commencement of the operational phase at least 20 business days prior to the relevant commencement date.

(c) The temporary coach terminal works must be carried out in accordance with the Imposed Conditions (temporary coach terminal works) in Appendix 1.

Part B Imposed Conditions (Temporary Coach Terminal Works)

Condition 2. Construction Environmental Management Plan

(a) A Construction Environmental Management Plan must be submitted to the Coordinator-General for approval at least 20 business days prior to the commencement of construction of the temporary coach terminal.

(b) The Construction Environmental Management Plan (temporary coach terminal works) must:

  (i) describe the temporary coach terminal works;

  (ii) be based on predictive studies and assessments of construction impacts which have regard to the scale, intensity, location and duration of construction works, and impact to Directly Affected Persons;

  (iii) incorporate and respond to the Imposed Conditions (temporary coach terminal works);

(iv) demonstrate how the Imposed Conditions (temporary coach terminal works) will be complied with during the construction of the temporary coach terminal;

(v) incorporate the stakeholder engagement plan, including the complaints management process, in accordance with Condition 5 in this Part B;

(vi) where predictive studies indicate impacts beyond those provided for in the performance criteria, incorporate mitigation measures to achieve the environmental outcomes;

(vii) establish specific mitigation measures and processes for consultation with Directly Affected Persons for temporary coach terminal works under Conditions 5(c), 7(c), and 7(f) in this Part B;

(viii) contain a program and procedures for ongoing monitoring to identify the effectiveness of mitigation measures in achieving the Imposed Conditions (temporary coach terminal works);

(ix) include a process for regular review and if required updating of the Construction Environmental Management Plan, including a process to review and implement additional or different mitigation measures in response to monitoring results;

(c) The Construction Environmental Management Plan (temporary coach terminal works) must be implemented for the duration of construction of the temporary coach terminal.

(d) Temporary coach terminal work is authorised if it is undertaken in accordance with the approved Construction Environmental Management Plan (temporary coach terminal works).

(e) The Construction Environmental Management Plan (temporary coach terminal works) must be available on the Cross River Rail website for the duration of construction of the temporary coach terminal.

(f) The Construction Environmental Management Plan (coach terminal works) may be developed in stages and/or updated. Any major update or additional stage will be submitted to the Coordinator-General 10 business days prior to issuing for use.

Condition 3. Compliance

(a) The proponent must notify the Coordinator-General in writing, within 48 hours after becoming aware of a non-compliance incident (incident) with the Imposed Conditions (temporary coach terminal works)

(b) The notification must include:

(i) a description of the incident, including details of the location, date and time of the Incident;

(ii) the name and contact details of a designated contact person;

(iii) an outline of actions that have been or will be taken to respond to the incident.

(c) Within 14 days following the notification of an Incident, written advice detailing the following information must be provided to the Coordinator-General:

(i) a description of the incident, including details of the location, date and time of the Incident;

(ii) the name and contact details of a designated contact person;

(iii) the circumstances in which the Incident occurred;

(iv) details of any complaint in relation to the incident;

(v) the cause of the incident;

(vi) a description of the environmental effects of the incident;

(vii) the results of any sampling or monitoring performed in relation to the Incident;

(viii) actions taken to mitigate the environmental effects of the incident;

(ix) proposed actions to prevent a recurrence of the Incident, including timing and responsibility for implementation.

(d) The incident report must be made available on the project website and remain available for the duration of the construction phase of the temporary coach terminal.

Condition 4. Reporting

(a) The proponent must prepare a monthly report that summarises compliance and monitoring results for the duration of the temporary coach terminal works.

(b) The Monthly Report must include:

(i) monitoring data required by the Imposed Conditions (temporary coach terminal works) or Construction Environmental Management Plan (temporary coach terminal works) undertaken for the period and, where required, an interpretation of the results;

(ii) details of any incident, including a description of the incident, resulting effects, corrective actions, revised construction practices to prevent a recurrence, responsibility and timing;

(iii) reporting of complaints, including the number of complaints, description of issues, responses and corrective actions.

(iv) an evaluation of compliance in relation to the Construction Environmental Management Plan (temporary coach terminal works);

(v) a summary of any Incidents during the reporting period;

(vi) a summary of any Incidents during the previous reporting period, with details of site remediation activities, corrective actions taken or to be taken and revised practices implemented or to be implemented (as relevant).

(c) The Monthly Report must be provided to the Coordinator-General and made available on the project website within four weeks of the end of the month to which the report relates and continue to be available on the project website for the duration of the construction phase of the temporary coach terminal.

Condition 5. Stakeholder engagement plan

(a) The proponent must develop a stakeholder engagement plan as part of the Construction Environmental Management Plan (temporary coach terminal works).

(b) The stakeholder engagement plan must provide for:

(i) Directly Affected Persons to be consulted prior to commencement of temporary coach terminal works and for the duration of the temporary coach terminal works;

(ii) Directly Affected Persons to be consulted about predicted impacts and possible mitigation measures;

(iii) local communities near temporary coach terminal works to be informed about the nature of construction, including the timing, duration and predicted impacts of the temporary coach terminal works in advance of their commencement;

(iv) information to be provided to public transport, road users, pedestrians and cyclists about the predicted effects of temporary coach terminal works on road, rail and pedestrian and cycle network operations, in advance of their commencement;

(v) specific community consultation plans for identified key stakeholders;

(vi) a process for advance notification to local communities of temporary coach terminal works, including the timing, duration, predicted impacts and mitigation measures, which is available on the project website and through other media.

(c) The stakeholder engagement plan must incorporate a complaints management system developed specifically for the temporary coach terminal works, which is established prior to the commencement of temporary coach terminal works.

(d) The complaints management system must deliver a prompt response to community concerns with relevant information, action where required, and reporting of incidents.

(e) As a minimum, the complaints management system must include the following elements:

(i) a procedure for receiving complaints on a 24 hour, seven days a week basis, during temporary coach terminal works;

(ii) a mechanism for notifying the community of the complaints procedure and how it may be accessed;

(iii) a process for registering and handling complaints received, including a database for tracking of complaints and actions taken in response;

(iv) a procedure for verifying complaints through monitoring and detailed investigation, and escalating and resolving verified complaints;

(v) regular reporting via the monthly environmental report, to the community of complaints and corrective actions, maintaining appropriate confidentiality.

(f) All information regarding complaints must be made available to the Coordinator-General on request.

Condition 6. Hours of work

(a) Construction works for the temporary coach terminal are authorised to be undertaken within the hours of work set out in Table 1.

Table 1 Construction hours

Standard hours	Extended work hours
Monday to Saturday, 6.30am - 6.30pm	Monday to Friday, 6:30pm - 10:00pm

(b) Works carried out because of an emergency that:

(i) is endangering the life or health of a person; or

(ii) is endangering the structural safety of a building; or

(iii) is endangering the operation or safety of community infrastructure that is not a building; or

(iv) is required to prevent environmental harm, may be undertaken outside the hours set out in Table 1.

(c) The following work may be undertaken during Extended Work Hours as set out in Table 1, subject to compliance with specific measures for Extended Work Hours in the Construction Environmental Management Plan (temporary coach terminal works):

(i) Paving, line marking, structural installation;

(ii) Temporary coach terminal works within a road reserve or busway that cannot be undertaken reasonably nor practicably during standard hours due to potential disruptions to peak traffic flows or bus operations;

(iii) Temporary coach terminal works involving the transport, assembly or decommissioning of oversized plant, equipment, components or structures;

(iv) delivery of "in time" materials such as concrete, hazardous materials, large components and machinery;

(v) Temporary coach terminal works that require continuous construction support, such as continuous concrete pours, or other forms of ground support necessary to avoid a failure or construction incident.

Condition 7. Construction noise and vibration

(a) Temporary coach terminal works must aim to achieve the project noise goals for human health and well-being presented in Table 2.

Table 2. Noise goals (internal) for temporary coach terminal works

	Monday – Saturday 6.30am – 6.30pm	Monday – Friday 6.30pm – 10.00pm
Continuous (LAeq adj)(1hr)	AS 2107 Maximum design level	40 dBA LAeq adj (1hr)
Intermittent (LA10 adj)(15min)	AS 2107 Maximum design level + 10 dBA	50 dBA LA10, adj

Notes

1. All goals are internal noise levels for human health and well-being outcomes.

2. Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in the relevant State guideline, such as the

Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2017 (currently under review).

(b) During construction of temporary coach terminal works monitor and report on noise and vibration in accordance with the Construction Environmental Management Plan (temporary coach terminal works).

(c) Temporary coach terminal works predicted to or monitored as generating noise levels more than 20dBA (LA eq 10min, adj) above the relevant goal in Table 2 may occur only in accordance with the mitigation measures developed in consultation with and agreed by Directly Affected Persons that are incorporated in the Mitigation Register.

(d) Temporary coach terminal works must aim to achieve the construction vibration goals in Table 3.

Table 3. Vibration goals (internal) for Temporary Coach Terminal Works

Receiver type	Cosmetic Damage		Human comfort (mm/s PPV)		Sensitive building contents (mms/PPV)
	Continuous vibration (mm/s PPV)	Transient vibration (mm/s PPV)	Day	Night	
Residential	According to BS7385 reduced by 50%[1]	According to BS7385	According to AS2670	0.5[2]	
Commercial	According to BS7385 reduced by 50%[1]	According to BS7385	According to AS2670		0.5[3]
Heritage Structures	2				

Notes:

1. If resonance is present, or if investigation to detect resonance were not able to be undertaken due to a lack of access

2. Residential sleep disturbance

3. Equipment specific vibration criteria are required for highly sensitive equipment (i.e. electron microscopes, MRI systems or similar), as part of future site-specific detailed investigations

(e) Where vibration protection criteria are available for sensitive building contents, predictive modelling must take into account the manufacturer's specifications for tolerance to vibration. To the extent reasonable and practicable, those specifications apply in lieu of the construction vibration goals in Table 3. Where predictive modelling indicates the specified criteria would not be achieved by the temporary coach terminal works, such works may proceed only in accordance with specific mitigation measures agreed with the potentially Directly Affected Persons.

(f) Temporary coach terminal works predicted to or monitored as generating vibration levels more than 2mm/s for continuous vibration and 10mm/s for transient vibration may occur only in accordance with the mitigation measures developed in consultation with and agreed by Directly Affected Persons that are incorporated in the Mitigation Register.

(g) The temporary coach terminal must incorporate dynamic signage and ensure equitable access is provided for visually impaired persons in accordance with relevant Australian Standards and design principles.

Condition 8. Air quality

(a) Construction of the temporary coach terminal works must aim to achieve the goals in Table 4.

Table 4. Air quality goals

Criterion	Air quality indicator	Goal	Averaging Period
Human health	Total Suspended Particulates (TSP)	90 µg/m^3	1 year
	Particulate matter (PM_{10})	50 µg/m^3	24 hours
		25 µg/m^3	1 year
Nuisance	TSP	80 µg/m^3	24 hours
	Deposited dust	120 mg/m^2/day	30 days

(b) During construction monitor and report on air quality in accordance with the Construction Environmental Management Plan (temporary coach terminal works).

Condition 9. Traffic and transport

(a) Construction traffic associated with the temporary coach terminal works must be managed to avoid or minimise adverse impacts on road safety and traffic flow, public transport, freight rail movements, pedestrian and cyclist safety, and property access.

(b) During temporary coach terminal works, workforce car parking will be provided within the worksite where possible, and parking on local streets is to be avoided.

(c) Access for emergency services to temporary coach terminal worksites and adjoining properties must be maintained throughout the construction phase.

(d) Practicable access is maintained to adjacent properties throughout temporary coach terminal works.

(e) Heavy construction vehicles use only designated routes for spoil haulage and deliveries of major plant, equipment and materials, in accordance with the Construction Environmental Management Plan. The designated haulage routes for each worksite must follow major or arterial roads to the extent practicable.

(f) Construction traffic must operate within the requirements of the Construction Environmental Management Plan (temporary coach terminal works).

(g) Prepare a Construction Traffic Management Plan (temporary coach terminal works) that includes:

(i) the proposed access to worksites, with local or minor roads only used where unavoidable to access a temporary coach terminal worksite;

(ii) a process for advance notice to Directly Affected Persons and local communities within the vicinity of the haulage routes and worksite accesses;

(iii) local traffic management measures developed in consultation with Brisbane City Council for key intersections including the reconfiguration of the intersection between Parkland Boulevard and Parkland Crescent to provide better sight distances and improved safety for road users;

(iv) specific traffic management measures developed in consultation with other key stakeholders, including:

(A) Queensland Rail about maintaining access to railway stations; and

(B) the department administering the *Transport Infrastructure Act 1994* and the Brisbane City Council about maintaining operations for bus services along streets affected by the temporary coach terminal works.

(h) Temporary coach terminal works must be designed, planned and implemented to maintain acceptable footpath and cycle paths in areas adjacent to temporary coach terminal worksites in terms of capacity, legibility and pavement condition. The proponent must consult with the Brisbane City Council and Queensland Rail about changes in pedestrian and cycle paths required to facilitate temporary coach terminal works.

Condition 10. Water quality

(a) Discharge of surface water and groundwater from the construction of the temporary coach terminal works must comply with the Brisbane River Estuary environmental values and water quality objectives (Basin no. 143 - mid-estuary) in the Environmental Protection (Water) Policy 2009.

(b) During construction monitor and report on water quality in accordance with the Construction Environmental Management Plan (temporary coach terminal works).

Condition 11. Surface water

(a) Temporary coach terminal works, and worksites, must be designed and implemented to avoid inundation from stormwater due to a 2-year (6hr) ARI rainfall event and flood waters due to a 5-year ARI rainfall event.

(b) Temporary coach terminal works must be designed and implemented to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.

Condition 12. Erosion and sediment control

(a) An erosion and sediment control sub-plan that is consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS51 – Environmental Management must be submitted as part of the Construction Environmental Management Plan (temporary coach terminal works).

Condition 13. Cultural heritage

(a) Temporary coach terminal works that involve excavation, construction or other activities that may cause harm to Aboriginal cultural heritage must not take place without the development and approval of a cultural heritage management plan for the Project in accordance with the *Aboriginal Cultural Heritage Act 2003*.

(b) Temporary coach terminal works that do not have the potential to harm Aboriginal cultural heritage may be carried out without the development and approval of a cultural heritage management plan for the Project, however must be carried out in accordance with the cultural heritage duty of care prescribed under section 23(1) of the *Aboriginal Cultural Heritage Act 2003*.

(c) Temporary coach terminal works that do not constitute Project Works may be carried out for the Project without the development and approval of a cultural heritage management plan for the Project, however must be carried out in accordance with the cultural heritage duty of care prescribed by section 23(1) of the *Aboriginal Cultural Heritage Act 2003*.

Schedule 1. Nominated entities with jurisdiction for conditions

Table A1 lists the organisations/agencies responsible for each of the Coordinator-General's imposed conditions (Appendix 1).

Table A1. Entities with jurisdiction for Coordinator-General imposed conditions

Part	Approval	Condition no.	Entity with jurisdiction
A	General conditions	1	Coordinator-General
B	Construction Environmental Management Plan	2	Coordinator-General
B	Compliance	3	Chief Executive, TMR
B	Reporting	4	Chief Executive, TMR
B	Stakeholder engagement plan	5	Coordinator-General
B	Hours of work	6	Chief Executive, TMR
B	Construction noise and vibration	7	Chief Executive, TMR
B	Air quality	8	Chief Executive, TMR
B	Traffic and transport	9	Chief Executive, TMR
B	Water quality	10	Chief Executive, TMR
B	Surface water	11	Chief Executive, TMR
B	Erosion and sediment control	12	Chief Executive, TMR
B	Cultural heritage	13	Chief Executive, TMR

Schedule 2. Definitions

Definitions

Temporary Coach Terminal Works means all works associated with the design, construction and commissioning of the temporary coach terminal.

Directly Affected Persons means an entity being either the owner or occupant of premises for which predictive modelling or monitoring indicates the temporary coach terminal works impacts would be above the performance criteria in the conditions imposed for the temporary coach terminal works.

Appendix 2. Amended project wide imposed conditions – Cross River Rail Project

Part A. Imposed Conditions (General)

Condition 1. General conditions

(a) The project must be carried out generally in accordance with the Cross River Rail Request for Project Change dated February 2017, including the amended Volume 3 Design Drawings publicly notified in April 2017 and amendments to the Project identified in the Cross River Rail Request for Project Change dated June 2018.

(b) The proponent must notify the Coordinator-General and all nominated entities in Schedule 3 in writing of the commencement of Project Works and the commencement of the commissioning and operational phases of each 'construction site' at least 20 business days prior to the relevant commencement date.

(c) The temporary coach terminal works must be carried out in accordance with the conditions imposed at Appendix 1.

Condition 2. Outline Environmental Management Plan

(a) Two months prior to the commencement of Project Work submit a final Outline Environmental Management Plan to the Coordinator-General for approval.

(b) The Outline Environmental Management Plan must:

- (i) Include the environment outcomes and performance criteria for each environmental element from the draft outline EMP except as amended by these conditions;
- (ii) include possible mitigation measures, monitoring and reporting for each environmental element to achieve the environmental outcomes;
- (iii) include an outline of:
  - (A) the Construction Environmental Management Plan
  - (B) the Commissioning Environmental Management Plan
- (iv) be consistent with the Environmental Design Requirements in Schedule 1
- (v) include the following sub-plans:
  - (A) Community and Stakeholder Engagement Plan
  - (B) Construction Worksite Management Plan
  - (C) Construction Traffic Management Plan (CTMP)
  - (D) Construction Vehicle Management Plan
  - (E) Water Quality Monitoring Plan
  - (F) Erosion and Sediment Control Plan
  - (G) Spoil Placement Management Plan
  - (H) Noise and Vibration Management Plan

(I) Air Quality Management Plan

(J) Settlement Management Plan

(K) Non-Indigenous Cultural Heritage Management Plan

(L) Indigenous Cultural Heritage Management Plan

(vi) Be made available on the proponent's website once approved by the Coordinator-General and for the duration of the construction of the project and for a period of five years from commencement of operation.

(c) Any further amendments to the Coordinator-General approved Outline Environmental Management Plan will be issued to the Coordinator-General 20 business days prior to the commencement of Relevant Project Works.

Part B. Imposed Conditions (Design)

Condition 3. Design

(a) The project must achieve the Environmental Design Requirements in Schedule 1.

Part C. Imposed Conditions (Construction)

Condition 4. Construction Environmental Management Plan

(a) Prior to the commencement of Project Work, a Construction Environmental Management Plan for those works (Relevant Project Work) must be developed by the Proponent and endorsed by the Environmental Monitor as being consistent with the Outline EMP and these imposed conditions.

(b) The endorsed Construction Environmental Management Plan must be submitted to the Coordinator General at least 20 business days prior to the commencement of Relevant Project Works.

(c) The Construction Environmental Management Plan must:

(i) describe the Relevant Project Work;

(ii) be based on predictive studies and assessments of construction impacts which have regard to the scale, intensity, location and duration of construction works, and location of Directly Affected Persons;

(iii) be generally consistent with the Outline EMP and incorporate its environmental outcomes and performance criteria;

(iv) incorporate and respond to the Imposed Conditions (Construction);

(v) demonstrate that the Imposed Conditions (Construction) will be complied with during Relevant Project Work;

(vi) incorporate the community engagement plan, including the complaints management process, in accordance with Condition 9;

(vii) where predictive studies indicate impacts beyond those provided for in the performance criteria, incorporate mitigation measures to achieve the environmental outcomes;

(viii) establish specific mitigation measures and processes for consultation with Directly Affected Persons for Project Works under Conditions 9(c), 11(c), and 11(e);

(ix) contain a program and procedures for ongoing monitoring to identify the effectiveness of mitigation measures in achieving the Imposed Conditions (Construction) and the environmental outcomes in (iii)

(x) include a process for regular review and if required updating of the Construction Environmental Management Plan, including a process to review and implement additional or different mitigation measures in response to monitoring results;

(xi) incorporate the EMP sub-plans required by the Imposed Conditions or as required by the approved Outline EMP.

(d) The Construction Environmental Management Plan must be implemented for the duration of Relevant Project Work.

(e) Relevant Project Work is authorised if it is undertaken in accordance with the Construction Environmental Management Plan.

(f) The Construction Environmental Management Plan must be publicly available on the project website for the duration of the construction phase.

(g) The Construction Environmental Management Plan may be updated.

(i) updates to the Construction Environmental Management Plan that include new or additional Relevant Project Work must be endorsed by the Environmental Monitor as being consistent with condition 2 before Relevant Project Work may proceed.

(h) Updates to the Construction Environmental Management Plan that are limited to new or different mitigation measures for Managed Work may be endorsed by the Environmental Monitor.

Condition 5. Compliance

(a) The proponent must notify the Environmental Monitor and the Coordinator-General in writing, within 48 hours after becoming aware of a Non-Compliance Event.

(b) The notification must include:

(i) a description of the Non-Compliance Event, including details of the location, date and time of the Non-Compliance Event;

(ii) the name and contact details of a designated contact person;

(iii) an outline of actions that have been or will be taken to respond to the Non-Compliance Event.

(c) Within 14 days following the notification of a Non-Compliance Event, written advice detailing the following information must be provided to the Environmental Monitor and the Coordinator-General:

(i) a description of the Non-Compliance Event, including details of the location, date and time of the Non-Compliance Event;

(ii) the name and contact details of a designated contact person;

(iii) the circumstances in which the Non-Compliance Event occurred;

(iv) details of any complaint in relation to the Non-Compliance Event;

(v) the cause of the Non-Compliance Event;

(vi) a description of the environmental effects of the Non-Compliance Event;

(vii) the results of any sampling or monitoring performed in relation to the Non-Compliance Event;

(viii) actions taken to mitigate the environmental effects of the Non-Compliance Event;

(ix) proposed actions to prevent a recurrence of the Non-Compliance Event, including timing and responsibility for implementation.

(d) The Non-Compliance Event report must be made available on the project website and remain available for the duration of the construction phase for the project.

Condition 6. Reporting

(a) The Proponent must prepare a Monthly Report that summarises compliance and monitoring results for the duration of construction works.

(b) The Monthly Report must include:

(i) monitoring data required by the imposed conditions or Construction Environmental Management Plan undertaken for the period and, where required, an interpretation of the results;

(ii) details of any Non-Compliance Event, including a description of the incident, resulting effects, corrective actions, revised construction practices to prevent a recurrence, responsibility and timing;

(iii) reporting of complaints, including the number of complaints, description of issues, responses and corrective actions.

(c) The Monthly Report must be provided to the Coordinator-General and the Environmental Monitor, and made available on the project website within four weeks of the end of the month to which the report relates, and continue to be available on the project website until commissioning is complete.

(d) The Proponent must provide annual reports to the Coordinator-General and the Environmental Monitor (Annual Report) no later than 31 July in any year during the construction phase about compliance with the imposed conditions.

(e) The Annual Report must include:

(i) a compliance evaluation table detailing the relevant imposed condition, whether compliance with the condition was achieved and how compliance was evaluated

(ii) an evaluation of compliance in relation to the CEMP and its sub-plans;

(iii) a summary of any Non-Compliance Events during the reporting period;

(iv) a summary of any Non-Compliance Events during the previous reporting period, with details of site remediation activities, corrective actions taken or to be taken and revised practices implemented or to be implemented (as relevant).

Condition 7. Environmental Monitor

(a) The Proponent must engage an independent, appropriately skilled and experienced entity, approved by the Coordinator-General, as the Environmental Monitor for the duration of construction.

(b) The Proponent must ensure that the Environmental Monitor has reasonable site access and access to all information required to perform its function, including, without limitation:

(i) all approvals;

(ii) the Construction Environmental Management Plan;

(iii) results of all monitoring required under the Imposed Conditions (Construction) including through the Construction Environmental Management Plan;

(iv) all information relating to complaints, including access to the complaints database.

(c) The Environmental Monitor must:

(i) monitor compliance with the imposed conditions during the construction of the project;

(ii) monitor compliance with the Construction Environmental Management Plan and sub-plans;

(iii) maintain a register of mitigation measures agreed between the Proponent and Directly Affected Persons (Mitigation Register);

(iv) review the compliance reports required by Condition 5, and the monthly reports and annual reports required by Condition 6, and provide advice to the Coordinator-General and the Proponent on the contents and adequacy of those reports;

(v) review the results of monitoring, which may be verified by the Environmental Monitor including by independent monitoring;

(vi) provide advice to the Proponent about compliance with the Imposed Conditions for construction, including by providing the results of independent monitoring where required;

(vii) provide advice to the Proponent about issues raised in complaints and the response to complaints, including advice from the Community Relations Monitor;

(viii) endorse the Construction Environmental Management Plan as consistent with the Outline EMP and complying with the Imposed Conditions (Construction);

Condition 8. Community Relations Monitor

(a) The proponent must engage an independent, appropriately skilled and experienced entity, approved by the Coordinator-General, as the Community Relations Monitor for the duration of construction.

(b) The Community Relations Monitor must:

(i) review and provide advice to the Environmental Monitor on the community engagement plan required by Condition 9;

(ii) receive monthly reports from the proponent on complaints;

(iii) attend each meeting between the Proponent and a Directly Affected Person to consult on mitigation measures, including providing input on standard responses for similar impacts;

(iv) provide advice to the Environmental Monitor in relation to complaints, community engagement and consultation on mitigation measures;

(v) be available to members of the community in accordance with Condition 9(f)(vi).

Condition 9. Community engagement plan

(a) The Proponent must develop a community engagement plan as part of the Construction Environmental Management Plan consistent with the Outline EMP's Community and Stakeholder Engagement Plan.

(b) The community engagement plan must be given to the Community Relations Monitor for advice at least 10 business days prior to the Construction Environmental Management Plan being provided to the Environmental Monitor.

(c) The community engagement plan must provide for:

(i) Directly Affected Persons to be consulted prior to commencement of Project Works and ongoing thereafter about Project Works, predicted impacts and mitigation measures;

(ii) Directly Affected Persons to be consulted about possible mitigation measures;

(iii) local communities near Project Works to be informed about the nature of construction, including the timing, duration and predicted impacts of the works in advance of their commencement;

(iv) information to be provided to public transport, road users, pedestrians and cyclists about the predicted effects of Project Works on road, rail and pedestrian and cycle network operations, in advance of their commencement;

(v) specific community consultation plans for identified key stakeholders;

(vi) implementation of an Indigenous employment policy, providing for Indigenous training and employment opportunities;

(vii) a process for advance notification to local communities of Project Works, including the timing, duration, predicted impacts and mitigation measures, which is available on the project website and through other media.

(d) The community engagement plan must incorporate a complaints management system developed specifically for the Project, which is established prior to the commencement of Project Works.

(e) The complaints management system must deliver a prompt response to community concerns with relevant information, action where required, and reporting of incidents.

(f) As a minimum, the complaints management system must include the following elements:

(i) a procedure for receiving complaints on a 24 hour, seven days a week basis, during Project Works;

(ii) a mechanism for notifying the community of the complaints procedure and how it may be accessed;

(iii) a process for registering and handling complaints received, including a database for tracking of complaints and actions taken in response;

(iv) a procedure for verifying complaints through monitoring and detailed investigation, and escalating and resolving verified complaints;

(v) a procedure for complaints to be notified to the Community Relations Monitor, including information about the complaint and its resolution;

(vi) access by the community to the Community Relations Monitor; and

(vii) regular reporting via the monthly environmental report, to the community of complaints and corrective actions, maintaining appropriate confidentiality.

(g) All information regarding complaints, including the information collected in Condition 9(f)(iii) must be made available to the Community Relations Monitor.

Condition 10. Hours of work

(a) Surface works for the Project are authorised to be undertaken within the hours of work set out in Table 1.

Table 1. Construction hours

Worksite	Surface works—standard hours	Extended work hours	Managed Work	Spoil haulage and materials/ equipment delivery
Southern portal	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) 6:30pm - 10:00pm, Monday to Friday	24 hrs, 7 days	24 hours, 7 days
Boggo Road Railway Station	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) Monday to Friday 6:30pm - 10:00pm,	24 hrs, 7 days	Monday to Friday: 6.30am - 7.30am 9.00am - 2.30pm 4.30pm - 6.30pm Saturday 6.30am - 6.30pm
Dutton Park Railway Station (track connection)	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work	n/a	24 hours, 7 days, except for: Monday to Friday: 7:00am - 9:00am 4:30pm - 6:30pm
Woolloongabba Railway Station	Monday to Saturday, 6.30am-6.30pm	Monday to Friday 6:30pm- 10:00pm	24 hrs, 7 days	24 hours, 7 days, except for: Monday to Friday: 7:00am - 9:00am 4:30pm - 6:30pm
Albert Street Railway Station	Monday to Saturday 6.30 am – 6.30 pm,	Monday to Friday 6.30 pm – 10.00 pm	24 hours, 7 days	Monday to Friday: 6.30 am – 10.00 pm

				Saturday 6:30am - 6:30pm
Roma Street Railway Station	Monday to Saturday, 6.30am-6.30pm	Monday to Friday 6:30pm- 10:00pm	24 hrs, 7 days	Monday to Friday 6.30am - 7.30am 9.00am - 4.30pm 6.30pm - 10:00pm Saturday 6.30am - 6.30pm
Northern portal	Monday to Saturday, 6.30am-6.30pm	For approved rail possession—80 hrs continuous work (Other extended work) Monday to Friday 6:30pm - 10:00pm,	24 hrs, 7 days	Monday to Friday: 6.30 am – 10.00 pm Saturday 6:30am - 6:30pm
Exhibition Railway Station	Monday to Saturday, 6.30am-6.30pm		24 hours, 7 days	Monday to Saturday: 6:30am - 6:30pm
Mayne Railway Yard	Monday to Saturday, 6.30am-6.30pm		24 hours, 7 days	24 hours, 7 days

(b) Project Works that are underground, or in a ventilated acoustic enclosure, may be undertaken at any time provided the environmental outcomes are achieved.

(c) Works carried out because of an emergency that:

(i) is endangering the life or health of a person; or

(ii) is endangering the structural safety of a building; or

(iii) is endangering the operation or safety of community infrastructure that is not a building; or

(iv) is required to prevent environmental harm, may be undertaken outside the hours set out in Table 1.

(d) The following work may be undertaken during Extended Work Hours as set out in Table 1. subject to compliance with a specific Construction Environmental Management Plan sub-plan in accordance with Condition 4:

(i) Project Works within rail corridor land;

(ii) Project Works within a road reserve or busway that cannot be undertaken reasonably nor practicably during standard hours due to potential disruptions to peak traffic flows or bus operations;

(iii) Project Works involving the transport, assembly or decommissioning of oversized plant, equipment, components or structures;

(iv) delivery of "in time" materials such as concrete, hazardous materials, large components and machinery;

(v) Project Works that require continuous construction support, such as continuous concrete pours, pipe-jacking or other forms of ground support necessary to avoid a failure or construction incident.

(e) Blasting must not occur on public holidays, and is only authorised to occur during the hours of 7:30am to 4:30pm Monday to Saturday, and not on Sundays or public holidays.

(f) Prior to blasting events, at least 48 hours' notice must be provided to persons who may be adversely affected.

Condition 11. Construction Noise and Vibration

(a) Project Works must aim to achieve the project noise goals for human health and well-being presented in Table 2.

Table 2. Noise goals (internal) for Project Works

	Monday – Saturday 6.30am – 6.30pm	Monday – Friday 6.30pm – 10.00pm (Gabba, CBD only)	Monday – Saturday 6.30pm – 6.30am Sundays, Public Holidays	For Blasting Monday – Saturday 7.30 am – 4:30 pm only
Continuous ($LA_{eq\ adj}$)(1hr)	AS 2107 Maximum design level	40 dBA $LA_{eq\ adj\ (1hr)}$	35 dBA $LA_{eq\ adj\ (1hr)}$	130 dB Linear Peak
Intermittent ($LA_{10\ adj}$)(15min)	AS 2107 Maximum design level + 10 dBA	50 dBA $LA_{10,\ adj}$	42 dBA $LA_{10\ adj}$	

Notes

1. All goals are internal noise levels for human health and well-being outcomes.
2. Where internal noise levels are unable to be measured or monitored, the typical noise reductions presented in Guideline Planning for Noise Control, Ecoaccess, DEHP, January 2016 apply.

(b) During construction monitor and report on noise and vibration in accordance with the Noise and Vibration Management Plan, a sub-plan of the Construction Environmental Management Plan.

(c) Project Works predicted to or monitored as generating noise levels more than 20dBA ($LA_{eq\ 10min,\ adj}$) above the relevant goal in Table 2. are authorised to occur in a locality only:

(i) when advance notification and consultation has been undertaken with Directly Affected Persons or potentially Directly Affected Persons about the particular predicted impacts and the approach to mitigation of such impacts;

(ii) where mitigation measures addressing the particular predicted or measured impacts have been developed on a ‘case by case’ basis in consultation with Directly Affected Persons;

(iii) where the mitigation measures are incorporated in a mitigation register and implemented prior to undertaking the Project Works;

(iv) between the hours 7:00am to 6:00pm Monday to Friday, with a respite period between 12:00noon and 2:00pm each day;

(d) Project Works must aim to achieve the construction vibration goals in Table 3.

Table 3. The construction vibration goals

Receiver type	Cosmetic Damage			Human comfort (mm/s PPV)		Sensitive building contents (mms/PPV)
	Continuous vibration (mm/s PPV)	Transient vibration (mm/s PPV)	Blasting vibration (mm/s PPV)	Day	Night	
Residential	According to BS7385 reduced by 50%[4]	According to BS7385	50[1]	According to AS2670	0.5[2]	
Commercial	According to BS7385 reduced by 50%[4]	According to BS7385	50	According to AS2670	-	0.5[3]
Heritage structures	2	-	10	-	-	

Notes:

1. All residential receivers in the vicinity of the Project blasting sites are regarded as reinforced or framed structures (i.e. BS7385)
2. Residential sleep disturbance
3. Equipment specific vibration criteria are required for highly sensitive equipment (i.e. electron microscopes, MRI systems or similar), as part of future site-specific detailed investigations
4. If resonance is present, or if investigation to detect resonance were not able to be undertaken due to a lack of access

(e) Where vibration protection criteria are available for sensitive building contents, predictive modelling must take into account the manufacturer's specifications for tolerance to vibration. To the extent reasonable and practicable, those specifications apply in lieu of the construction vibration goals in Table 3. Where predictive modelling indicates the specified criteria would not be achieved by the Project Works, such works may proceed only in accordance with specific mitigation measures agreed with the potentially Directly Affected Persons.

(f) Project Works predicted to or monitored as generating vibration levels more than 2mm/s for continuous vibration and 10mm/s for transient vibration may occur only:

(i) between the hours 7:00am to 6:00pm Monday to Friday, with a respite period between 12:00noon and 2:00pm each day; or

(ii) in accordance with the mitigation measures developed in consultation with and agreed by Directly Affected Persons that are incorporated in the Mitigation Register.

Condition 12. Property Damage

(a) Prior to the commencement of Project Works, predictive modelling must be undertaken of potential ground movement that may be caused by the Project

Works. Such predictive modelling must ascertain the potential for damage due to ground movement being caused to property by Project Works.

(b) Where predictive modelling indicates the Project Works would lead to impacts above the vibration goals for cosmetic damage in Table 3. the proponent must prepare and submit a property damage sub-plan, prior to the commencement of such works, as part of the Construction Environmental Management Plan. The property damage sub-plan must set out the procedure for:

(i) advance communication with potentially Directly Affected Persons;

(ii) procedures for building condition surveys both in advance of and following Project Works, including provision for consultation with property owners and occupants;

(iii) monitoring to be undertaken for potential impacts to property; and

(iv) mitigation measures.

(c) Where a post-construction building condition survey identifies that property damage has occurred as a consequence of the Project Works, such damage must be repaired as soon as practicable by the Proponent at no cost to the property owners. Such repairs must be undertaken in consultation with the property owners and occupants and must return the premises at least to the condition existing prior to commencement of Project Works. The Proponent must agree the timing, method and extent of works required with the affected landowner and must gain permission to undertake such reparation works prior to their commencement.

Condition 13. Air quality

(a) Project Works must aim to achieve the goals in Table 4.

Table 4. Air quality criteria and goals

Criterion	Air quality indicator	Goal	Averaging period
Human Health	Total Suspended Particulates (TSP)	90 µg/m^3	1 year
	Particulate matter ((PM_{10})[1]	50 µg/m^3	24 hours
		25 µg/m^3	1 year
Nuisance	TSP[2]	80 µg/m^3	24 hours
	Deposited dust[3]	120 mg/m^2/day	30 days

(b) During construction monitor and report on air quality in accordance with the Air Quality Management Plan, a sub-plan of the Construction Environmental Management Plan.

Condition 14. Traffic and transport

(a) Project construction traffic must be managed to avoid or minimise adverse impacts on road safety and traffic flow, public transport, freight rail movements, pedestrian and cyclist safety, and property access.

(b) During construction workforce car parking must be provided and managed to avoid workforce parking on local streets.

(c) Access for emergency services to project worksites and adjoining properties must be maintained throughout the construction phase.

(d) Practicable access is maintained to adjacent properties throughout the construction phase.

(e) Heavy construction vehicles use only designated routes for spoil haulage and deliveries of major plant, equipment and materials, in accordance with the Construction Environmental Management Plan. The designated haulage routes for each worksite must follow major or arterial roads to the extent practicable and be developed in consultation with the Department of Transport and Main Roads and the Brisbane City Council in preparation of the Construction Environmental Management Plan.

(f) The Outline Environmental Management Plan must be supported by a road safety assessment for the spoil haulage route.

(g) Construction traffic must operate within the requirements of a construction traffic management sub-plan (Construction Traffic Management Plan) incorporated within the Construction Environmental Management Plan.

(h) The Construction Traffic Management Plan must include:

  (i) the proposed access to worksites, with local or minor roads only used where unavoidable to access a project worksite;

  (ii) a process for advance notice to Directly Affected Persons and local communities within the vicinity of the spoil haulage routes and worksite accesses;

  (iii) local traffic management measures developed in consultation with Brisbane City Council for key intersections:

    (A) in Bowen Hills including Bowen Bridge Road, College Road and O'Connell Terrace;

    (B) in the CBD including Albert Street, Charlotte Street, Elizabeth Street and Roma Street;

    (C) at Woolloongabba including Leopard Street, Stanley Street, Vulture Street and Main Street;

    (D) at Dutton Park including Annerley Road, Peter Doherty Street, Joe Baker Street and Boggo Road, as well as Kent Street, Cornwall Street and Ipswich Road.

  (iv) specific traffic management measures developed in consultation with other key stakeholders, including:

    (A) the department administering the *Economic Development Act 2012* with regards traffic management in the Queens Wharf Brisbane priority development area;

    (B) Queensland Rail about maintaining access to railway stations; and

    (C) the department administering the *Transport Infrastructure Act 1994* and the Brisbane City Council about maintaining operations for bus services along streets affected by the Project Works.

(i) Project Works must be designed, planned and implemented to maintain acceptable footpath and cycle paths in areas adjacent to project worksites in terms of capacity, legibility and pavement condition. The proponent must consult with the Brisbane City Council and Queensland Rail about changes in pedestrian and cycle paths required to facilitate Project Works.

Condition 15. Water quality

(a) Discharge of surface water and groundwater from Project Works must comply with the Brisbane River Estuary environmental values and water quality objectives (Basin no. 143 - mid-estuary) in the Environmental Protection (Water) Policy 2009.

(b) During construction monitor and report on water quality in accordance with the Water Quality Management Plan, a sub-plan of the Construction Environmental Management Plan.

Condition 16. Water resources

(a) Prior to the commencement of Project Works involving excavation, the Proponent must undertake predictive modelling of the potential for groundwater drawdown. The predictive modelling must be based on validated monitoring data and must address the likely extent of any drawdown over time, up to the time when such movement reaches equilibrium.

(b) Project Works must be designed, planned and implemented to avoid where practicable and otherwise minimise the inflow of groundwater to the Project Works, including excavations, the underground stations and tunnels, having regard for the predictive modelling.

(c) The Proponent must monitor the inflow of groundwater to the Project Works and compare monitoring data with the predictive modelling. If the rate of groundwater inflow rate exceeds 1L/sec in any worksite, the proponent must revise work methods and devise and implement mitigation measures as soon as practicable.

Condition 17. Surface water

(a) Project Works, and worksites, must be designed and implemented to avoid inundation from stormwater due to a 2 year (6hr) ARI rainfall event and flood waters due to a 5 year ARI rainfall event.

(b) Project works must be designed and implemented to avoid afflux or cause the redirection of uncontrolled surface water flows, including stormwater flows, outside of worksites.

Condition 18. Erosion and sediment control

(a) An erosion and sediment control sub-plan that is consistent with the Guidelines for Best Practice Erosion and Sediment Control (International Erosion Control Association, 2008) and the Department of Transport and Main Roads' Technical Standard MRTS51 – Environmental Management must be submitted as part of the Construction Environmental Management Plan.

Condition 19. Acid sulphate soils

(a) Acid sulphate soils must be managed in accordance with the methods and requirements of the latest edition of the *Queensland Acid Sulphate Soil Technical Manual*.

Condition 20. Landscape and open space

(a) Project Works are designed and implemented to minimise impacts on landscape and open space values.

(b) Project works and worksites in Victoria Park must be designed, planned and implemented to avoid, or minimise the loss of trees and ornamental plantings, and must minimise the area of the park directly impacted during such works.

(c) Worksites in Victoria Park must be enclosed with a visually solid screen and any night lighting including security lighting must be situated to minimise the spill of light beyond the worksite enclosures.

(d) Existing pathways and recreational facilities in Victoria Park must be relocated within the park for the duration of the works, in consultation with the Brisbane City Council. Upon completion of the project works, such pathways and facilities must be re-established in locations in the park in consultation with the Brisbane City Council.

Condition 21. Worksite rehabilitation

(a) Worksites for project infrastructure, such as the surface connections, stations and ancillary buildings must be rehabilitated as soon as practicable upon completion of the works.

(b) All other worksites required to support commissioning activities must be rehabilitated as soon as practicable on completion of commissioning or sooner where possible.

(c) Rehabilitation must address soil erosion and sedimentation, dust nuisance and landscape and visual impact.

(d) Any planting, landscaping and streetscape works undertaken as part of rehabilitation must be undertaken in accordance with landscape and urban design plans prepared in consultation with the Brisbane City Council.

Part D. Imposed Conditions (Commissioning)

Condition 22. Environmental design requirements

(a) The Proponent must conduct such testing and monitoring as is necessary to demonstrate that the Environmental Design Requirements in Schedule 1 have been satisfied.

(b) At the completion of Commissioning, the Proponent must give written notice to the Coordinator-General that the Project has achieved the Environmental Design Requirements in Schedule 1.

Condition 23. Commissioning

(a) Commissioning may be carried out in stages.

(b) Testing for commissioning must be supported by advanced notice to local residents and businesses.

(c) Testing for commissioning must not cause an exceedance of the goals in Table 2, Table 3, Table 4 or Condition 15.

Schedule 1. Environmental Design Requirements

1. Traffic and transport

(d) Emergency access and evacuation for each station and the tunnel is designed in consultation with the Emergency Service Authorities.

(e) Station plazas and forecourts are of a sufficient size and dimension to avoid peak pedestrian flows spilling onto adjacent carriageways. Where the overflow of pedestrians onto carriageways cannot be avoided, local traffic management measures addressing such circumstances must be designed and implemented prior to the commencement of Project operations.

(f) Pedestrian and cycle pathways in the vicinity of stations are designed in accordance with Rail Infrastructure Manager's and TMR's requirements.

(g) The design of driveways and roadworks for the Project avoid conflicts between construction traffic and cyclists and pedestrians.

(h) New footpaths, pedestrian walkways and pedestrian road crossings in the vicinity of stations are designed, in consultation with BCC and emergency services authorities, to allow safe and efficient pedestrian movement during peak periods and, where applicable, major events at the Brisbane Cricket Ground Woolloongabba Station), Lang Park (Roma Street Station) and the RNA Showgrounds (Exhibition Station).

(i) The Project design provides for pedestrian connectivity between the PA Hospital, Boggo Road Busway Station and Park Road Railway Station, and incorporates appropriate crime prevention through environmental design (CPTED) principles and Disability Discrimination Act 1992 (DDA) compliant vertical transport facilities.

2. Air Quality

(a) Ventilation outlets from underground stations are designed and sited so as not to cause an increase in air temperature of more than one degree Celsius, measured as an hourly average, or concentrations of ambient air contaminants that exceed air quality objectives.

(b) The Project is designed so that it does not cause the air quality objectives specified in Table 5 to be exceeded.

(c) The ventilation outlets are designed to avoid discharging directly into an air intake for any other ventilation or air conditioning system that is in place at the time of detailed design and construction of the relevant ventilation outlet.

Table 5. Ambient air quality outcomes

Pollutant	Air Quality Objective	Average Period
Total Suspended Particulates (TSP)	90 µg/m^3	Annual
Particulates as PM10 (<10 µm)	50 µg/m^3	24 hours
	25 µg/m^3	Annual

3. Noise and Vibration

(a) Where practicable, the Project is designed to achieve the following noise criteria for railway surface track airborne noise emissions:

(i) 65 dBA, evaluated as the 24 hour average equivalent continuous A-weighted sound pressure level;

(ii) 87 dBA, evaluated as a Single Event Maximum sound pressure level.

(b) Where practicable, the Project is designed to achieve the goals for ground-borne noise provided in Table 6 and for vibration provided in Table 7.

(c) Ventilation systems, mechanical plant, and electricity feeder stations at or near stations are designed and sited to operate within the noise goals outlined in Table 8.

Table 6. Ground-borne noise design criteria (rail operations)

Receiver	Time of day	Internal noise design criteriod (dBA)
Residential	07:00-22:00	40dBA
	22:00-07:00	35dBA
Schools, educational institutions, places of worship.	When in use	40dBA to 45dBA
Retail areas	When in use	50dBA to 55dBA
General office areas	When in use	45dBA
Private offices and conference rooms	When in use	40dBA
Theatres	When in use	35dBA

Table 7. Ground-borne vibration design criteria (rail operations)

Receiver type	Period	Vibration goal (vibration velocity)
Residential	Day/ night	106dBV (0.2 mm/s)
Commercial and community facilities (including schools and places of worship)	When in use	112dBV (0.4 mm/s)
Industrial	When in use	118dBV (0.8 mm/s)
Sensitive equipment within medical or research facilities	When in use	82dBV (0.013 mm/s)

Table 8. Mechanical plant noise goals (operations)

Receiver	Time of day	Background (b/g) noise creep dBA LA_{90} (1 hour)	Acoustic quality objectives dBA LA_{eq} (1 hour)
Residential (for outdoors)	07:00 - 22:00	b/g + 0	-
	22:00 - 07:00	b/g + 0	50
Residential (for outdoors)	07:00 - 22:00	-	35
	22:00 - 07:00	-	30

Receiver	Time of day	Background (b/g) noise creep dBA LA_{90} (1 hour)	Acoustic quality objectives dBA LA_{eq} (1 hour)
Library and educational institution (for indoors)	When in use	-	35
Commercial and retail activity (for indoors)	When in use	-	45

4. Settlement

(a) Detailed design of the alignment and underground stations will be informed by a detailed ground settlement analysis, based on hydrogeological and geological modelling

(b) The settlement analysis will indicate the predicted horizontal and vertical extent of ground settlement for the Project Works and the time period over which such ground settlement would occur.

5. Hydrology

(a) A hydrogeological model will be developed during detailed design and before construction of relevant sections to determine ground conditions along the tunnel section.

(b) Further borehole investigations, groundwater monitoring and permeability testing at the station locations and along the tunnel alignment to identify and characterise any major transmissive features and better constrain the local hydrogeological model for detailed design.

(c) Review available bore construction records and target aquifers to determine the suitability of monitoring bores installed during the geotechnical investigations for ongoing groundwater monitoring for construction and commissioning. Following this review, additional bores may be proposed to address gaps identified in the groundwater monitoring network.

(d) Identify through surveys and consultation, water bores in the area potentially affected by groundwater drawdown and implement measures to mitigate potential effects on identified bores.

(e) In the event a new 'groundwater feature' (e.g. areas of high groundwater flow/ yield) is identified along the Project alignment, further detailed groundwater monitoring would be undertaken to characterise the feature and identify potential impacts to the environment. Additional management measures would be developed, where required.

(f) Develop and implement design measures and construction methods to minimise groundwater inflows in to the construction area.

(g) The Project design provides for the capture of groundwater seepage, should it enter the underground structures, and the subsequent treatment of such groundwater prior to its release to an approved discharge point.

(h) Where the project design anticipates groundwater entering underground structures, the design provides:

(i) measures to minimise settlement due to project-induced drawdown;

(ii) measures to ensure structural integrity and Project operational safety; and

(iii) measures to minimise the risk of exposing acid sulphate soils to air or the chance for oxidation.

(i) The Project design achieves the water quality objectives stated for the Brisbane River Estuary environmental values and water quality objectives (Basin No. 143 mid-estuary) referred to in the Environmental Protection (Water) Policy 2009 for any water, including groundwater, released from Project infrastructure to surface waters.

(j) The Project design is based on current flooding information to achieve flood immunity to the tunnel infrastructure and underground stations in a 1 in 10,000 year annual exceedance probability (AEP) regional flood event, and a 1 in 100 AEP overland flow event.

(k) The Project design will not cause property damage from flood impacts to third parties for events up to and including the 1 in 100 AEP flood event.

(l) Project Works in Mayne Rail Yard must be designed on the basis of detailed flood modelling.

6. Cultural Heritage

(a) The Project design reflects and minimises the impact on the cultural and historical significance of places where surface works occur, and where reasonable and practicable, avoids or minimises the direct impact on heritage values of such places.

(b) The Project design acknowledges a locality's historical significance or cultural significance to Aboriginal people through input to:

(i) place naming;

(ii) interpretative signage and other landmarks; and

(iii) the themes for public art.

(c) In developing the Project design, the Proponent would provide opportunities for architectural design sympathetic to the cultural heritage landscape and streetscape.

7. Climate change and sustainability

(a) Project ventilation systems are designed to minimise energy consumption while achieving acceptable passenger comfort and air quality outcomes in both the ambient environment and the Project stations and tunnel system.

(b) The Project is designed to be adaptable to conditions that may arise as a result of climate change, including accommodating the predicted 1.0 m sea level rise scenario in 2100 (upper range).

(c) Sustainability initiatives, particularly in relation to energy consumptions and savings throughout the Project lifecycle are incorporated in detailed design and tracked via a Sustainability Tool (e.g. ISCA's rating tool) through to Project implementation.

(d) In design and construction, devise and implement a process for optimising energy efficiency in construction planning and delivery (e.g. component sourcing

and transportation, spoil and materials handling – no double handling, programing to avoid re-work or redundant work).

(e) In operations, energy efficient design that meets the performance criteria of all Project plant and equipment would be included in the design specification.

8. Land use and tenure

(a) Minimise the 'footprint' of the Project during both construction and operations to reduce impacts on existing land uses through design refinement.

(b) The Project design seeks to optimise land use and transport integration with:

- (i) PA Hospital, Boggo Road Busway Station, Park Road Railway Station and Boggo Road Urban Village;
- (ii) Woolloongabba Priority Development Area (PDA);
- (iii) Albert Street;
- (iv) Roma Street; and
- (v) Bowen Hills PDA.

(c) The Project is to be designed in consultation with:

- (i) Rail Infrastructure Manager in relation to use of Railway land required for project worksites; and
- (ii) Proponents for urban development projects at Boggo Road Urban Village, Woolloongabba PDA, Albert Street and Roma Street redevelopment and Royal National Agricultural and Industrial Association of Queensland (RNA) redevelopment.

(d) The Project design minimises the loss of public open space in Victoria Park during construction.

9. Visual amenity and lighting

(a) The Project design seeks to minimise the visual impact of the above-ground infrastructure with regards to its scale, height and bulk. Specific urban design and visual impact studies are required to inform detailed design for:

- (i) the station ventilation outlets and intake structures;
- (ii) the above-ground electricity feeder stations;
- (iii) the portals and transition structures; and
- (iv) noise barriers and other impact mitigation devices or structures.

(b) Where required, noise barriers are designed to reduce the visual impacts to surrounding properties and roadways by:

- (i) incorporating urban design treatments and landscape elements such as massed plantings;
- (ii) using clear or transparent materials to maintain existing expansive views beyond the rail corridor, subject to security and maintenance considerations being evaluated; and
- (iii) avoiding the use of highly reflective materials and materials that support graffiti.

(c) Landscaping, urban design and public art treatments sympathetic to heritage landscape and streetscape values are incorporated into the design of Project Works at stations and thoroughfares accessing stations.

10. Social environment

(a) The design of stations and public spaces developed as part of the Project stations incorporate CPTED principles to maximise commuter safety.

11. Waste

(a) The Project is designed to minimise waste generation and maximise the reuse and recycling of waste materials generated by the Project during its construction and operation.

(b) Opportunities are investigated during the detailed design phase for the use of recycled materials, including for Project infrastructure produced from concrete, road base, asphalt and other construction materials.

(c) During detailed design, the feasibility of re-using material excavated from the Project is investigated.

Schedule 3. Nominated entities with jurisdiction for conditions

Table A1 lists the organisations/agencies responsible for each of the Coordinator-General's imposed conditions (Appendix 2).

Table A1. Entities with jurisdiction for Coordinator-General imposed conditions

Part	Approval	Condition no.	Entity with jurisdiction
A	General conditions	1	Coordinator-General
A	Outline Environmental Management Plan	2	Coordinator-General
B	Design	3	Chief Executive, TMR
C	Construction Environmental Management Plan	4	Chief Executive, TMR
C	Compliance	5	Chief Executive, TMR
C	Reporting	6	Chief Executive, TMR
C	Environmental Monitor	7	Coordinator-General
C	Community Relations Monitor	8	Coordinator-General
C	Community engagement plan	9	Chief Executive, TMR
C	Hours of work	10	Chief Executive, TMR
C	Construction Noise and Vibration	11	Chief Executive, TMR
C	Property Damage	12	Chief Executive, TMR
C	Air Quality	13	Chief Executive, TMR
C	Traffic and Transport	14	Chief Executive, TMR
C	Water quality	15	Chief Executive, TMR
C	Water resources	16	Chief Executive, TMR
C	Surface water	17	Chief Executive, TMR
C	Erosion and sediment control	18	Chief Executive, TMR
C	Acid sulphate soils	19	Chief Executive, TMR
C	Landscape and open space	20	Chief Executive, TMR
C	Worksite rehabilitation	21	Chief Executive, TMR
D	Environmental design requirements	22	Chief Executive, TMR
D	Commissioning	23	Chief Executive, TMR

Schedule 4. Definitions

Directly Affected Persons means an entity being either the owner or occupant of premises for which predictive modelling or monitoring indicates the project impacts would be above the performance criteria in the imposed conditions.

Construction Environmental Management Plan means the Construction Environmental Management Plan referred to in Condition 4.

Outline EMP means the Outline EMP approved by the Coordinator-General in Condition 2.

Managed Work means Project Work for which either the predicted or monitored impacts meet the performance criteria at a Sensitive Place.

Non-Compliance Event means Project Works that do not comply with the Imposed Conditions

Predictive Modelling means the use of appropriate analytical scenario testing, whether or not by numerical measurements, undertaken prior to the commencement of Project Works.

Project Work means any works, including early works, demolition works or site preparation works, for construction of the project. Project Work does not include:

- any works associated with the demolition of buildings and structures on State owned land;
- works involving the relocation or replacement of public utilities when undertaken by a public utility authority or provider;
- the placement and management of spoil at spoil placement locations
- works associated with the temporary Roma Street Coach Terminal.

Sensitive Place means:

- a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel)
- a library, childcare centre, kindergarten, school, university or other educational institution
- a medical centre, surgery or hospital
- a protected area
- a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment
- a work place used as an office or for business or commercial purposes, which is not part of the project activity(ies) and does not include employees accommodation or public roads.

Appendix 3. Coordinator-General's recommendations for the Cross River Rail project

This appendix includes the Coordinator-General's recommendations for the Cross River Rail project.

Recommendation 1. Ecosciences building planning

The proponent should continue to undertake consultation with the key stakeholders to minimise constraints on the planned development of the stage 2 of the Ecosciences Precinct.

Recommendation 2. Greenspace planning

The proponent should liaise with Brisbane City Council to offset the loss of public open space/pocket parks in accordance with Element 6 Nature Conservation of the DOEMP.

Recommendation 3. Silicosis

The proponent should consider the findings from the Coal Workers' Pneumoconiosis Select Committee final report, Black Lung White Lies – Inquiry into the re-identification of Coal Workers' Pneumoconiosis in Queensland. Implement relevant recommendations regarding the potential impacts from silica to underground workers involved in tunnelling construction (silicosis) and include in:

(a) The Hazard and Risk sub-plan and/or

(b) The Air Quality sub-plan

Recommendation 4. Mined tunnelling

Mined tunnelling should be implemented in accordance with the *Work Health and Safety Act – Tunnelling Code of Practice 2011* and the Excavation Work Code of Practice 2017.

Recommendation 5. Myer Centre carpark

The proponent should undertake an assessment taking into consideration the potential impacts on surface pedestrian, traffic and public transport networks of the proposed changes to exit arrangements for the Myer Centre carpark in consultation with Brisbane City Council and Myer Centre management.

Recommendation 6. Freight

The proponent should engage and consult with key stakeholders such as the Western Freight Users Group and the Rail Infrastructure Manager regarding the possession of the rail corridor to reduce potential impacts on rail freight movements during construction in accordance with Element 2 of the DOEMP.

Recommendation 7. Pavement impacts

In consultation with Brisbane City Council, the proponent should develop mitigation measures to address any assessed pavement damage on local roads from project spoil haulage.

Recommendation 8. Noise and Vibration

The proponent should consult with relevant advisory agencies in the development of mitigation measures for predicted and monitored noise and vibration impacts above the goals for the CEMP.

Recommendation 9. Dust impacts - Southern Portal / Boggo Road Railway Station worksites

The proponent should conduct predictive air quality modelling for early construction earthworks prior to the commencement of Project Works. Should exceedance of the goals in Table 4 of the Imposed Conditions be predicted, I recommend that consultation be undertaken with relevant entities including representatives of the PA Hospital, Leukaemia Foundation ESA Village, Ecosciences Precinct and the TRI building in the development of mitigation measures.

The proponent should establish real-time monitoring, with monitoring stations positioned at appropriate locations around the proposed worksites. Should exceedances of the goals in Table 4 be monitored or occur during construction, that are attributable to the project, the proponent should revise their adaptive management approach where necessary.

Acronyms and abbreviations

BCC	Brisbane City Council
BTC	Brisbane Transit Centre
CBD	Central business district
CEMP	construction environmental management plan
CGCR	Coordinator-General's change report
CGER	Coordinator-General's evaluation report
CHMP	cultural heritage management plan
CRRDA	Cross River Rail Delivery Authority
CTMP	Construction traffic management plan
DHPW	Department of Housing and Public Works
DTMR	Department of Transport and Main Roads
dB(A)	adjusted decibels
EIS	environmental impact statement
EP Act	*Environmental Protection Act 1994*
EPP (Air)	Environmental Protection (Air) Policy 2008
GTIA	Guide to Traffic Impact Assessment
km	Kilometres
m	Metres
Mm^3	Million cubic metres
OEMP	Outline Environmental Management Plan
PDA	Priority Development Area
$PM_{2.5}$	particulate matter 2.5 micrometre or less in diameter
PM_{10}	particulate matter 10 micrometres or less in diameter
PPV	peak particle velocity
SDPWO Act	*State Development and Public Works Organisation Act 1971*
SEP	Stakeholder engagement plan
SEQPCNP	South East Queensland principle cycle network plan
SP Act	*Sustainable Planning Act 2009*
TI Act	*Transport Infrastructure Act 1994*
TN128	DTMR Technical Note 128 – *Selection and Design of Cycle Tracks May 2015*
DTMR	Department of Transport and Main Roads
TSP	total suspended particulates

Glossary

2011 EIS	The EIS publicly notified from 30 August 2011 to 21 October 2011
coordinated project	A project declared as a 'coordinated project' under section 26 of the SDPWO Act. Formerly referred to as 'significant project'
Coordinator-General	The corporation sole constituted under section 8A of the SDPWO Act and preserved continued and constituted under section 8 of the SDPWOA Act
2012 CGER	The CGER dated 20 December 2012.
February 2017 project change application	The project change application dated 10 February 2017.
Directly Affected Persons	An entity being either the owner or occupant of premises for which predictive modelling or monitoring indicates the project impacts would be above the performance criteria in the imposed conditions
imposed condition	A condition imposed by the Queensland Coordinator-General under section 54B of the SDPWO Act. The Coordinator-General may nominate an entity that is to have jurisdiction for that condition
June 2017 CGCR	The CGCR dated 9 June 2017.
June 2018 project change application	The project change application dated 28 June 2018.
significant project	A project declared (prior to December 2012) as a 'significant project' under section 26 of the SDPWO Act. Projects declared after 21 December 2012 are referred to as 'coordinated projects'
the project	The project described in the Coordinator-General's Evaluation Report dated 20 December 2012.

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