Cross River Rail Environmental Impact Statement

Request for Project Change 11

Changes to the Project and changes to the Imposed Conditions – Clapham Yard

Response to Submissions Report

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Author: Cross River Rail Delivery Authority

Contents

1. INTRODUCTION 3

1.1 PROCESS FOR EVALUATION OF PROJECT CHANGES 3

1.2 PURPOSE 3

2. CONSULTATION ON THE REQUEST FOR PROJECT CHANGE 3

3. SUBMISSIONS ON THE REQUEST FOR PROJECT CHANGE 4

3.1 SUMMARY OF KEY ISSUES RAISED 4

4. RESPONSE TO ISSUES RAISED 5

4.1 PROPERTY ACCESS 5

4.1.1 Property access - Response 5

4.2 APPROVALS 6

4.2.1 Approvals - Response 6

4.3 RFPC11 CONSULTATION 6

4.3.1 RfPC11 Consultation - Response 6

4.4 DESIGN 6

4.4.1 Ipswich Road – pedestrian overpass to Moorooka Station - Response 7

4.4.2 Future proofing of Clapham Yard design - Response 7

4.4.3 Pedestrian access to Moorooka Station from Fairfield Road - Response 7

4.5 FLOODING 7

4.5.1 Increased potential for flooding - Response 7

4.5.2 Request for assessment of flood impacts greater than a 1% AEP - Response 9

4.6 NOISE AND DUST (CONSTRUCTION) 9

4.6.1 Noise and dust (construction) - Response 9

4.7 NOISE (OPERATIONS) 11

4.7.1 Noise (operations) - Response 11

4.8 LAND 12

4.8.1 Land - Response 12

4.9 VISUAL AMENITY 12

4.9.1 Visual amenity- Response 12

4.10 NATURE CONSERVATION 13

4.10.1 Nature conservation - Response 13

4.11 TRAFFIC (CONSTRUCTION) 13

4.11.1 Traffic - Response 13

5. COORDINATOR-GENERAL REQUESTS FOR INFORMATION 15

6. CONCLUSION 16

ATTACHMENT A - INFORMATION REQUEST – TRAFFIC AND TRAFFIC NOISE 17

ATTACHMENT B - INFORMATION REQUEST – NOISE AND VIBRATION 22

1. Introduction

The Cross River Rail Delivery Authority (the Delivery Authority) established by the *Cross River Rail Delivery Authority Act 2016* (Qld) is the proponent for the Cross River Rail (CRR) Project. The CRR Project is a declared coordinated project for which an Environmental Impact Statement (EIS) was required under the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

The EIS for the CRR Project (2011 EIS) was evaluated by the Coordinator-General who recommended the project proceed, subject to the Imposed Conditions in the evaluation report dated 20 December 2012. Since the 2012 evaluation report, eleven Requests for Project Change (RfPC) have been submitted and ten have been evaluated by the Coordinator-General.

The Evaluated Project is the authorised CRR Project as described in Imposed Condition 1 of the Coordinator-General's project-wide Imposed Conditions.

The Proposed Changes to the Evaluated Project have been identified for Clapham Yard and Moorooka Station as a result of the master planning of Clapham Yard undertaken by the Department of Transport and Main Roads (DTMR), Queensland Rail (QR) and the Delivery Authority and due to the further development of the proposed construction methodology for this facility. These changes were outlined in Request for Project Change 11 (RfPC11) and are being evaluated by the Coordinator-General.

1.1 Process for Evaluation of Project Changes

The process by which the changes to the CRR Project are to be addressed and assessed is established in Part 4, Division 3A of the SDPWO Act.

In April 2021, the Delivery Authority made an application to the Coordinator-General to formally request the evaluation of Proposed Changes to the CRR Project and proposed amendments to the existing Imposed Conditions.

The Coordinator-General determined that public notification of the Proposed Changes was required. The Proposed Changes to the CRR Project were publicly notified on 8 May 2021, until 5pm on 4 June 2021.

1.2 Purpose

The purpose of this document is to provide responses to key matters raised in submissions received by the Coordinator-General about the Proposed Changes. This report covers:

- Summary of submissions received;
- Key matters raised in the submissions; and
- The Proponent's response to key matters raised.

This document also provides a response to requests for information from the Coordinator-General, to assist with the evaluation of the Proposed Changes.

2. Consultation on the Request for Project Change

The public notification period commenced on 8 May 2021 and closed at 5pm on 4 June 2021.

A range of consultation activities were undertaken throughout the consultation period, which aimed to:

- Inform the community and key stakeholders of RfPC11; and
- Communicate the RfPC11 process, including how to provide a submission to the Coordinator-General.

A full description of the consultation undertaken is provided in the RfPC11 Consultation Report which is published separately to this RfPC11 Response to Submissions Report.

3. Submissions on the Request for Project Change

A total of twenty (20) submissions were received by the Coordinator-General during the consultation period. Copies of all submissions, including a breakdown of issues raised, were provided to the Delivery Authority by the Coordinator-General for consideration and response. Of the 20 submissions, eleven (11) were received from private individuals, six (6) from state agencies, one (1) from a local councillor, one (1) from a non-government organisation and one (1) from a local government.

3.1 Summary of Key Issues Raised

Each submission has been analysed and a summary of issues raised is presented in Figure 1 below.

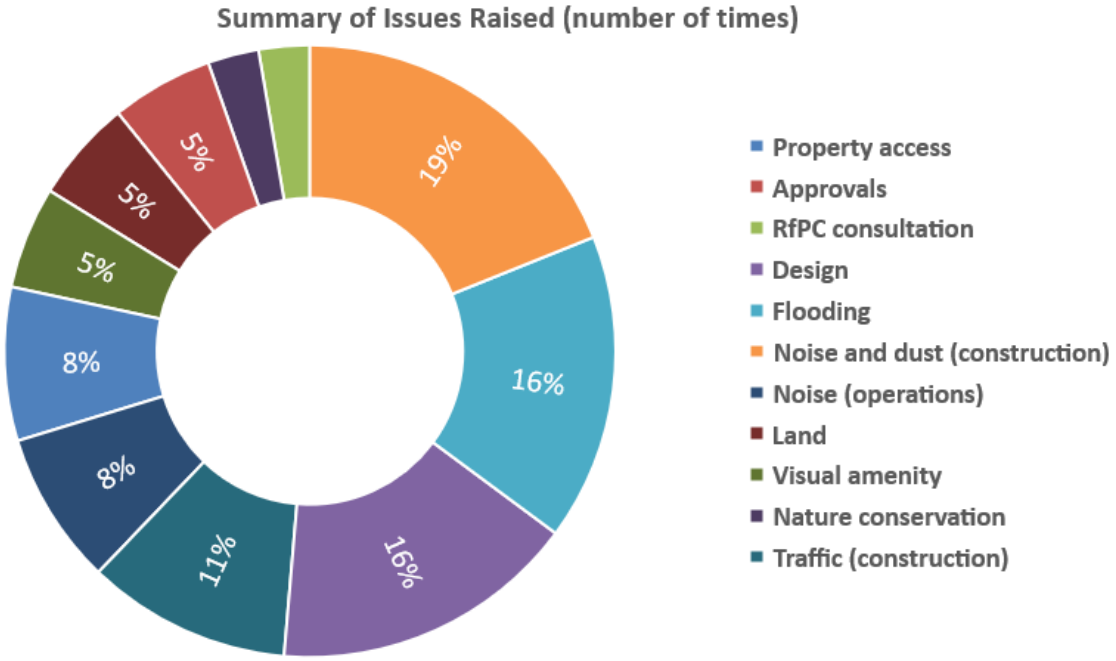


Figure 1: Summary of issues raised in submissions

Further details on issues raised in RfPC11 submissions is provided in Table 1 below.

Issues raised	Summary
Property access	• Maintenance of access to site for emergency services. • Maintenance of access (rail access and road access) to private sector rail facilities.
Approvals	• Concern that fill is being placed at Clapham Yard in advance of completion of RfPC11 evaluation.
RfPC consultation	• Residents in the vicinity of Clapham Yard not directly contacted on a one-on-one basis for consultation.
Design	• Design does not include a pedestrian overpass across Ipswich Road to Moorooka Station. • Design does not accommodate a 4th track through Clapham Yard and 4th platform at Moorooka Station. • No pedestrian access to Moorooka Station from Fairfield Road. • Safe access to Clapham Yard for railway staff not identified in the published plans.
Flooding	• Increased potential for flooding impacts upstream/downstream of Clapham adjacent to Moolabin Creek as a result of raising the stabling yard facility to achieve a level of flood immunity for QR infrastructure. • An assessment of flood events greater than 1% AEP should be conducted to demonstrate built infrastructure does not substantially increase flood risks for extreme events.

Issues raised	Summary
Noise and dust (construction)	• Allowing permanent (several years) of 24/7 haulage and removing the constraint on rail possession work will significantly increase noise and dust impacts on nearby residents. • High levels of sleep disturbance and community annoyance can be expected during construction. • Night time work should be kept to a minimum and there should be no work on a Sunday. • Traffic noise on Ipswich Road will increase. • Nearby residents should have access to independent real-time noise and dust monitoring. • The current mitigation measures for noise and dust unlikely to be sufficient.
Noise (operations)	• Operating timeframes for Clapham Yard in its current state already cause noise impacts which will further increase with the proposed upgrade. • It is not clear whether redeveloped, extended or new existing noise barriers will be installed to mitigate predicted noise impacts during construction and operations. • No noise mitigation appears to be proposed along the Fairfield Road / Chale Street site frontage.
Land	• Potential impacts associated with cadastre boundary corrections at the northern end of Clapham Yard.
Visual amenity	• Proposal does not include visual amenity improvements along the site frontage to Fairfield Road or Chale Street. • Local Government requests opportunity to provide comments on landscape and visual amenity during the design process.
Nature conservation	• Whilst Moolabin Creek through the project worksite is acknowledged as being quite degraded, it is expected that safe fauna movement is maintained or improved along this waterway for aquatic and terrestrial species.
Traffic (construction)	• Traffic will increase on Ipswich Road, Muriel Avenue and Fairfield Road, with resulting increased traffic impacts. • Haulage should not be conducted through the peak hour lock-out periods. • Trucks are not to queue in residential areas. • 24/7 earthworks haulage or materials/equipment delivery approaching from the North (Fairfield Road). For vehicles restricted by the Muriel Avenue rail bridge, local government expects traffic to divert via Ipswich Road, Marshall Road, Balham Road and Granard Road.

Table 1: Summary of issues raised in submissions

4. Response to Issues Raised

This section summarises the Delivery Authority's responses to key issues raised in submissions to the Coordinator-General.

4.1 Property Access

Issues raised in submissions related to property access focussed on:

- Maintenance of access to site for emergency services.
- Maintenance of access (rail access and road access) to private sector rail facilities.

4.1.1 Property access - Response

RfPC11, Volume 3 Technical Reports, Annexure A, Traffic and Transport Report states that access for emergency services vehicles to project worksites and adjoining properties will be maintained

throughout the construction phase. Where necessary, alternative access arrangements are to be provided in consultation with rail operators.

Access for emergency personnel and vehicles is managed through the Emergency Response Plan, which is prepared and implemented for the duration of construction activities.

Access to/from the rail network for private operators is facilitated via existing arrangements with QR and DTMR.

With reference to concerns regarding maintenance of road access to private facilities, as detailed in Volume 1 of RfPC11, haulage routes have been designed to minimise conflict with the majority of private facilities. This includes limiting the use of the Chale Street / Palomar Street / Fairfield Road intersection and maximising the use of the Chale Street / Fairfield Road intersection.

4.2 Approvals

One submitter raised a concern that given spoil material is currently being placed at Clapham Yard, this must be occurring without the necessary approvals.

4.2.1 Approvals - Response

Current haulage and earthworks activities are consistent with the existing Imposed Conditions and the Project as currently evaluated. The current movement of material to and from the Clapham Yard worksite is associated with achieving a cut/fill outcome of the existing landform and removing ground material that is geotechnically unsuitable for establishing a stable structural base for rail network infrastructure. The import/export of material is being conducted consistent with the endorsed Construction Environmental Management Plan (CEMP), including sub-plans and relevant permits under the *Environmental Protection Act 1994*.

4.3 RfPC11 Consultation

One submitter commented that there had been no attempt to directly contact potentially impacted residents to discuss impacts on a one-on-one basis.

4.3.1 RfPC11 Consultation - Response

A full description of the consultation undertaken is provided in the separately published RfPC11 Consultation Report. This report describes the consultation effort undertaken for RfPC11, which included:

- Public display of RfPC11
- Print media and advertising
- Social media promotion
- Website promotion
- Letterbox drop and electronic direct mail
- Community information sessions
- Station handouts at Moorooka Station
- Dedicated project hotline and project email
- Meetings with government, elected representatives and key stakeholders

In addition, consultation has been demonstrated to meet the requirements of the *State Development and Public Works Organisation Act 1971*.

4.4 Design

Issues raised in submissions regarding the design of Moorooka Station and Clapham Yard focussed on:

- Pedestrian overpass across Ipswich Road to Moorooka Station has not been provided.
- Design does not accommodate a 4th track through Clapham Yard and 4th platform at Moorooka Station (future proofing of design).
- No pedestrian access to Moorooka Station from Fairfield Road.

4.4.1 Ipswich Road – pedestrian overpass to Moorooka Station - Response

Providing a dedicated pedestrian overpass bridge across Ipswich Road to Moorooka Station is currently outside of the scope of the Cross River Rail project. Further detailed design and a feasibility analysis to assess the viability and constructability of changing the current design to allow for a potential future pedestrian overpass is being progressed.

4.4.2 Future proofing of Clapham Yard design - Response

DTMR has worked collaboratively with subject matter experts from QR and the Delivery Authority during the development of the requirements for the Clapham Yard stabling facility. QR is also part of the Rail, Integration and Systems Alliance, contributing expertise to ensure the project is designed, delivered and integrated into the network effectively.

The Clapham Yard project aims to achieve the best possible public passenger transport outcomes at a reasonable cost, including enabling effective planning and efficient management for a responsive, attractive, safe, accessible and integrated transport system.

Four platforms are not required at Moorooka Station. The project adds two additional tracks to cater for express services. One is at Moorooka Station and the other is on the outside of the stabling yard (on the opposite side). Express services are not planned to stop at this station.

4.4.3 Pedestrian access to Moorooka Station from Fairfield Road - Response

The joint DTMR / QR / Delivery Authority design process determined that pedestrian access to Moorooka Station from Fairfield Road for passengers is not feasible. The key considerations in this decision were QR employee safety, Clapham Yard security, value for money, and applying the principles of Crime Prevention Through Environmental Design (CPTED). CPTED is a multi-disciplinary approach of crime prevention that uses urban and architectural design to reduce crime.

4.5 Flooding

A number of submitters raised concerns about the increased potential for flooding impacts upstream/downstream of Clapham adjacent to Moolabin Creek as a result of raising the stabling yard facility to achieve a level of flood immunity for QR infrastructure.

The local government stated that an assessment of flood events greater than 1% AEP should be conducted to demonstrate built infrastructure does not substantially increase flood risks for extreme events.

4.5.1 Increased potential for flooding - Response

Detailed flood modelling has been conducted to predict the potential impacts of raising Clapham Yard. This has been based on a conservative final landform profile which includes the bulk earthworks, localised alignment fill, capping, ballast and areas affected by retaining walls.

The proposed filling of Clapham Yard is located outside the area affected by flooding in events equal to or smaller than a 2% AEP (1 in 50) flood event. In any flood event of equal or lesser magnitude to a 2% AEP event, raising of the yard does not change the floodplain dynamics and will not affect any properties during a Brisbane River flood event.

The RfPC11 documentation identified that the detailed flood modelling predicts flood impacts of less than 10mm in a 1% AEP (1 in 100) event. Impacts of plus or minus 10mm are considered equivalent to "no impact" under standard industry practice for flood modelling, as this level of predicted impact is within the tolerance of model accuracy. This means areas within close proximity to the yard will experience increases of less than 10mm, with impacts decreasing with distance from the yard.

Figures 2 and 3 shows the comparative size of the Brisbane River catchment, 1% AEP flood extent and the Clapham Yard filling, clearly demonstrating the limited potential of the works to change the Brisbane River flood dynamics.

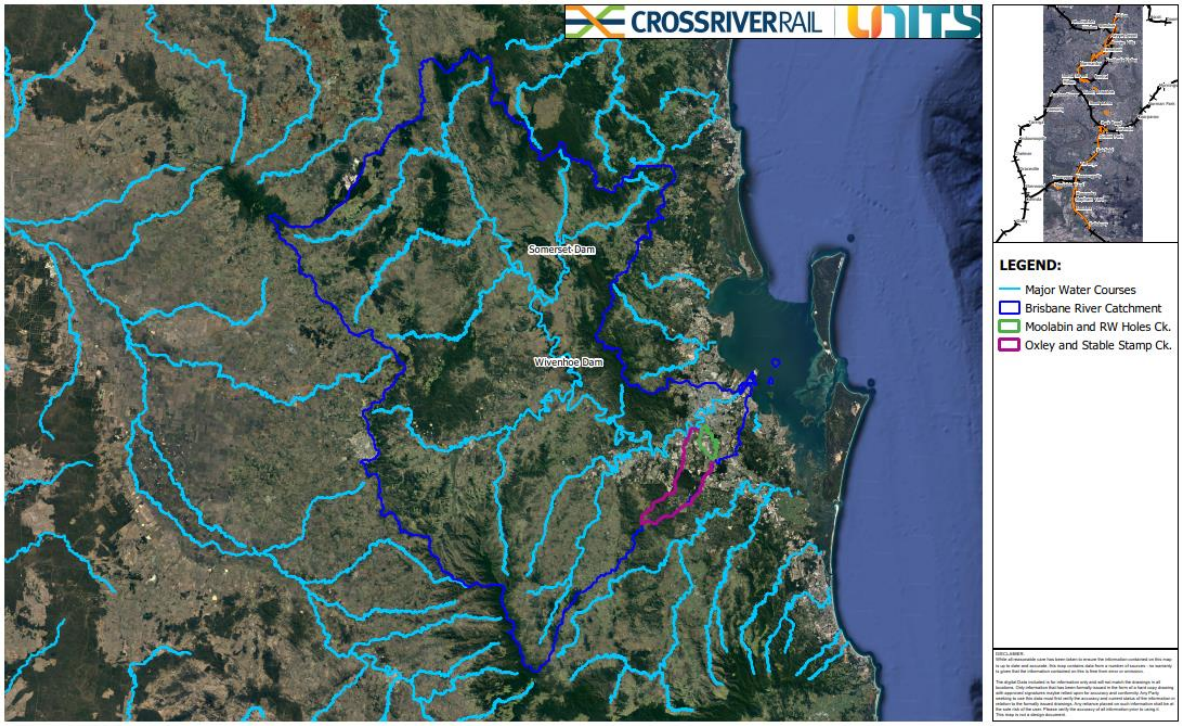


Figure 2: Brisbane River, Moolabin Creek, Rocky Waterholes and Oxley Creek/Stable Swamp Creeks and catchments

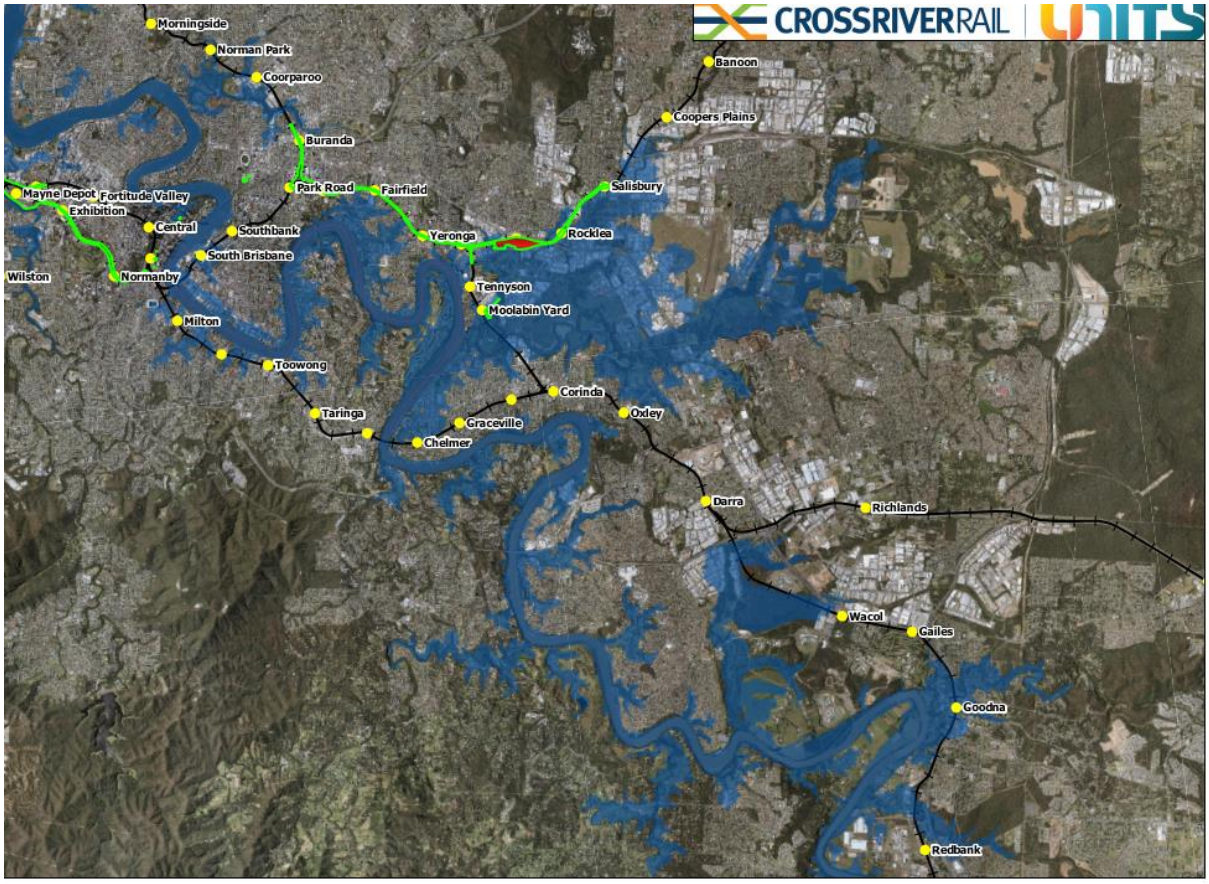


Figure 3: Brisbane River floodplain/inundation area

- *Brisbane River dominant flood mechanism*
- *Local creek flood levels (Moolabin/Rocky Waterholes) significantly lower (2m -3m)*
- *Flooding at Clapham Yard within this area is storage driven with consistent flood levels across a large area (low/no hydraulic grade).*
- *Brisbane River floodwaters at Clapham Yard tend to be slow moving.*

4.5.2 Request for assessment of flood impacts greater than a 1% AEP - Response

The Coordinator-General's Imposed Environmental Design Requirements for Cross River Rail set the following requirements:

- 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 events.
- The Project is designed to be adaptable to conditions that may arise as a result of climate change.

As per Coordinator-General Recommendation 13, Brisbane City Council is being consulted on hydraulic modelling across the project corridor, including for infrastructure proposed at Moolabin Creek.

4.6 Noise and dust (construction)

Submitters have raised concerns about noise and dust impacts from construction works at Clapham Yard, with a number of submitters raising concerns related to the proposal for 24 hours per day, 7 days per week unconstrained use of Clapham Yard for construction activities. Specific matters raised in submissions included:

- Allowing permanent (several years) of 24/7 haulage and unconstrained construction activities and removing the constraint on rail possession work will significantly increase noise and dust impacts on nearby residents.
- High levels of sleep disturbance and community annoyance can be expected during construction.
- Night time work should be kept to a minimum and there should be no work on a Sunday.
- Traffic noise on Ipswich Road will increase.
- Nearby residents should have access to independent real-time noise and dust monitoring.
- The current mitigation measures for noise and dust unlikely to be sufficient.

4.6.1 Noise and dust (construction) - Response

In response to concerns regarding the potential for unconstrained construction activities occurring 24 hours per day, 7 days per week over several years at Clapham Yard, works at this location will not be occurring continuously over a 24 hours per day cycle for the full duration of construction. Works identified as occurring over a 24 hours per day, 7 days per week cycle include:

- Bulk spoil haulage to import sufficient fill material to construct the rollingstock stabling facility at Clapham Yard, which will conclude when sufficient material has been imported to construct a 1% AEP level of flood protection level for stabled rolling stock; and
- Rail possession work at Clapham Yard or other locations along the rail corridor which utilise Clapham Yard as a construction staging facility, with 24/7 work time periods being periodic, varying from weekends (Friday evening to early Monday morning) to longer possessions (from periods of 5 days up to periods of 21 days) which may occur 2 to 3 times per year.

Duration of peak spoil haulage

As identified in Section 2.2.1.3 of the Attachment A Traffic and Transport, Volume 3 Technical Reports, the peak haulage period is expected to be a 14-month duration (just over a year; not several years).

This haulage task is likely to be split into two periods - Period 1 of 10 months for the western side of the yard (September 2021 to June 2022) and Period 2 of 4 months for the eastern side of the yard (December 2022 to March 2023). The overall duration of the first period can be further reduced if haulage activities are authorised for 24/7 operation.

Non-standard work hours – spoil haulage and general earthworks

Noise will be managed under the Environmental Management Framework required by the Coordinator-General's Imposed Conditions, including the Noise and Vibration Management Sub-Plan and the Directly Affected Person (DAP) Engagement Process.

Spoil haulage and general earthworks are proposed to be undertaken during Non-Standard Hours, subject to those works meeting the requirements of Managed Work under the Coordinator General's Imposed Conditions.

Extended rail possessions

A noise impact assessment has been undertaken for the proposed rail possession works at Moorooka Station, which represents the 'worst case' noise impact scenario for rail possession works at Clapham Yard. Utilisation of Clapham Yard as a construction staging area for rail possession works at other locations across the rail corridor is likely to have noise impacts less than the assessed worst-case scenario, as the staging area will be based on the western side of Clapham Yard, a significant distance from potential sensitive receptors east and southeast of Clapham Yard.

As identified in Table 11 of the Attachment B Noise and Vibration (Volume 3 Technical Reports), the noise levels are predicted to be above the noise goals by up to 14.5 dBA during Non-Standard Hours for works within rail corridor. As detailed in section 2.2.8 of Attachment B Noise and Vibration (Volume 3 Technical Reports), this noise impact is based on a worst-case scenario resulting from high impact noise activities which are transient and discrete in nature and is a very conservative representation of noise levels that the closest sensitive places may potentially experience during the extended rail possessions. It is expected that following detailed construction planning closer to the delivery of the works and through the use of mitigation methods such as scheduling of specific work activities, the overall noise impact is likely to be lower.

This noise impact will be managed under the Environmental Management Framework including the Noise and Vibration Management Sub-Plan and DAP Engagement Process.

Community consultation will occur prior to these works commencing to ensure potentially affected people are provided sufficient notice and information. Similar works undertaken during the recent 2021 Easter rail possession at Yeronga did not result in any noise or sleep disturbance complaints from local residents.

Traffic noise

As shown in Table 14 of the Attachment B Noise and Vibration (Volume 3 Technical Reports), the maximum increase in traffic noise as a result of the proposed changes is +2.6 dBA LA10 (1 hour), for vehicle movements during any one-hour period between 12:00am midnight and 6:00am.

This is below the DTMR criteria for a significant change in noise of 3dBA. Accordingly, the assessment indicates that there will be no perceptible increase in traffic noise, including for those hours between 12:00am and 6:00am.

Dust impacts

The nearest sensitive places for the proposed Clapham Yard works have been assessed for dust impacts. As presented in Tables 11 and 12 of the Attachment D Air Quality, Volume 3 Technical Reports, the predicted particulate matter concentration and dust deposition levels at each of these modelled receptors are well within the air quality goals.

It is acknowledged that the July to September period is when Brisbane typically experiences the "Ekka Westerlies". The endorsed CEMP and associated Air Quality Management Sub-plan makes allowances for monitoring predicted meteorological conditions to provide an early warning system to the construction team on upcoming adverse conditions. The management of the construction is adaptative to changes in meteorological conditions, which means that the frequency of dust suppression can be increased to mitigate adverse wind conditions. Similarly, stabilisation of stockpiles and internal haulage roads with temporary binders has and is currently being effectively used on the project to minimise migration of dust-off site.

Real time noise and dust monitoring and reporting

As detailed in the construction environmental monitoring program, the monitoring regime for noise and air quality is dictated by the outcome of the predictive modelling.

Carrying out real time continuous monitoring, at all potential sensitive places regardless of the nature (scale, duration, intensity) of the project works is not reasonable nor practicable.

Real time reporting of dust/noise monitoring has the real potential to include noise/dust sources that are not project generated, leading to potential 'false exceedance' reporting and possible unnecessary community concern.

Management of noise impacts

The Project must comply with the endorsed construction environmental management plan, including the Noise and Vibration and Community Engagement Management Sub-Plans.

The RfPC at Volume 3 details the engagement process for Directly Affected Persons which includes:

1. Additional predictive noise assessment to identify potential affected persons.

2. Notification requirements to affected parties prior to Project Works typically 14 days prior to works commencing when predicted noise levels exceed the Noise Goals + 20dBA.

3. 24-hour construction noise complaint hotline available to residents

Imposed Condition 11(c) provides the framework for Directly Affected People (DAP) engagement and consultation when significant exceedances (Noise Goals + 20 dBA) are predicted. This framework has been successfully implemented since September 2019.

Additional mitigation measures that will be investigated as part of the preparation of the specific construction environmental management plan include, but are not limited to:

- Appropriate use and selection of equipment;
- Avoiding using plant and equipment simultaneously adjacent to sensitive receptors where reasonably practical. The combined noise/vibration levels could be significantly less when sources operate separately;
- Scheduling of activities to avoid noisy activities being undertaken out of hours;
- Restrict the number of nights per week that works are undertaken, or schedule in respite measures, unless it can be adequately demonstrated that the sequencing of works to a shorter timeframe will result in reduced exposure duration to high noise levels; and
- Works notices are publicly available on the Delivery Authority's website (https://crossriverrail.qld.gov.au/construction/work-notices/).

4.7 Noise (operations)

Submitters raised concerns about the potential for increased operational noise resulting from the development of Clapham Yard. In particular, submitters stated that:

- Operating timeframes for Clapham Yard in its current state already cause noise impacts which will further increase with the proposed upgrade.
- It is not clear whether redeveloped, extended or new existing noise barriers will be installed to mitigate predicted noise impacts during construction and operations.
- No noise mitigation appears to be proposed along the Fairfield Road / Chale Street site frontage.

4.7.1 Noise (operations) - Response

As detailed in Section 2.3 of the Attachment B Noise and Vibration Report in Volume 3 Technical Reports, the results of the concept operational noise modelling identified potential exceedances of the operational rail noise criteria at a number of places. In order to ascertain whether noise barriers are required and practicable, additional operational noise modelling has commenced as part of the detailed design phase, in consultation with QR.

In relation to considering the effectiveness of existing noise barriers, the following will be reviewed as part of the detailed design operational noise model:

- Validation of the as built details on the existing 400 m long noise barriers, in particular the height of the existing barriers in relation to the sensitive receivers' dwelling configurations (such as windows height and heaves height);
- Validation monitoring of the stabled and pass-by noise emissions from the rollingstock using Clapham Yard and associated rail tracks; and
- Safety and security consideration adjacent to station platforms and/or pedestrian walkway.

Whilst noise barriers are a useful measure to mitigate noise impact to local residents, they are not always a reasonable or practicable mitigation. This is particularly the case where industry standard noise barriers heights (typically 4 to 6 m high) cannot achieve shielding of impacted residents due to terrain, building geometry or site spacing constraints. Other matters for consideration include the potential loss of amenity to residential properties, including shadowing effects.

As part of the detailed design, the outputs of the operational noise model will be assessed against the QR specifications.

Additional detailed noise modelling results will be provided to QR for review and comment.

The design report will also include recommendations on the feasibility and practicality of noise abatement measures.

Due to the staging of the works and the requirement to maintain the operational QR network, noise barriers on the south-eastern side of the Yard would not be able to commence prior to 2023, when this section of the corridor become available for construction.

The concept operational noise modelling for RfPC 11 assessed that there would not be any exceedances of the operational rail noise criteria at residential properties on the western side of the Clapham Yard (Fairfield Road side). On this basis, noise mitigation measures are currently not proposed along the western boundaries of Clapham Yard.

4.8 Land

One submitter raised concerns regarding potential impacts associated with cadastre boundary corrections at the northern end of Clapham Yard.

4.8.1 Land - Response

The rail corridor boundary shown on the Property Impact Plans are being re-aligned to show the actual extent of the rail corridor in relation to neighbouring properties and assets. Cadastre boundaries are not being amended.

4.9 Visual amenity

Submitters made the following comments regarding visual amenity:

- Proposal does not include visual amenity improvements along the site frontage to Fairfield Road or Chale Street.
- Local Government requests opportunity to provide comments on landscape and visual amenity during the design process.

4.9.1 Visual amenity- Response

A landscape rehabilitation and urban design package is one of the design deliverables that will be generated by the project.

The current streetscape on Fairfield Road is dominated by industrial and commercial properties of varied aged and state of maintenance which are softened in some parts by roadside plantings (from juvenile to more mature species).

As part of the Project works, most of these buildings will be demolished and the new infrastructure to be built in the yard will be lower or equivalent in impact.

Tree planting to soften the visual amenity along Fairfield Road will be investigated in consultation with QR, BCC and George Weston Mill to ascertain road safety and operational constraints. Other

alternatives may include the incorporation of public art on vertical faces such as retaining walls. Where possible the Project Team will minimise clearing of standing vegetation along the Fairfield Road Frontage, allowing existing plantings to continue providing softening of impact of vertical built structures.

The project has an obligation to assess lighting in accordance with AS4282: Control of Obtrusive Effects of Outdoor Lighting, including the management of the effect of light leakage and annoyance on neighbouring communities and residences.

The Local Government has already been provided with the design packages, including the Landscape Rehabilitation and Urban Design packages for review and comments. This includes elements such as (but not limited to) the Moorooka Station and Clapham Yard.

4.10 Nature conservation

One submitter advised that whilst Moolabin Creek through the project worksite is acknowledged as being quite degraded, it is expected that safe fauna movement is maintained or improved along this waterway for aquatic and terrestrial species.

4.10.1 Nature conservation - Response

An ecological assessment undertaken along Moolabin Creek in the vicinity of the proposed works has identified that 90% of the vegetation is exotic in nature with only 10% of native vegetation present.

Some of the exotic vegetation consists of restricted biosecurity matters (Category 3).

Up to 16 restricted matters have been identified including giant rat's tail grass, annual ragweed, ground asparagus fern, Fireweed, Singapore daisy, groundsel bush, Lantana, prickly pear, Chinese celtis, camphor laurel, broadleaved pepper, African tulip tree, Madeira vine, balloon vine, cat's claw creeper and Singapore daisy.

The ecological survey found that that the current poor flora condition of Moolabin Creek is a result of the impact of highly urbanised areas and industrial estates which have modified the nature state of the watercourse.

As part of the works, vegetation clearing will occur to construct the bridge and drainage infrastructure. The footprint of works which is not subject to permanent hardscape (such as scour rock protection) will be revegetated with native species in accordance with the replanting plan that has been developed to support the State's Riverine Protection Permit application.

4.11 Traffic (construction)

A number of submitters raised the following concerns regarding spoil haulage to Clapham Yard:

- Traffic will increase on Ipswich Road, Muriel Avenue and Fairfield Road, with resulting increased traffic impacts.
- Haulage should not be conducted through the peak hour lock-out periods.
- Trucks are not to queue in residential areas.
- Local government does not support 24/7 earthworks haulage or materials/equipment delivery approaching from the North (Fairfield Road). For vehicles restricted by the Muriel Avenue rail bridge, local government expects traffic to divert via Ipswich Road, Marshall Road, Balham Road and Granard Road.

4.11.1 Traffic - Response

The highest levels of construction traffic are anticipated during the period when bulk earthworks are undertaken.

During the morning peaks (6.30 am to 9.30 am – Monday to Friday) and afternoon peaks (2.30 pm to 6.30 pm – Monday to Friday) the project is predicted to add a peak of 12 vehicles per hour to existing peak traffic.

Traffic data for Fairfield Road indicates that an average of 2,300 vehicles / hour use Fairfield Road in the AM peaks and 2,500 vehicles per hour use Fairfield Road in the PM Peak.

Fairfield Road, whilst not a major arterial, carries in excess of 20,000-25,000 vehicles per day. Ipswich Road is a major arterial and carries in excess of 50,000 vehicles per day (52,299 - July to December 2014 data).

The addition of construction traffic will therefore result in an increase of traffic volumes during peak of less than 1%.

The Delivery Authority is aware that the Rocklea underpass can be subject to congestion, however the predicted additional load from construction traffic is unlikely to affect traffic in the area, given peak traffic volumes provides less than a 1% increase in overall traffic.

As identified in Table 3 of Attachment A Traffic and Transport (Volume 3 Technical Reports), the Proposed Changes will result in a less than 5% increase in demand on the impacted intersections, meeting the desired outcome as outlined in the DTMR Guide to Traffic Impact Assessment (December 2018) without need for further impact assessment.

With reference to the local government's comments, the Project must comply with the current endorsed CEMP, which includes the:

1. Haulage management Plan

2. Construction Traffic management Plan

3. Construction Traffic Management Subplan for the Clapham Yard Works

These plans have developed in Consultation with the relevant road authorities (BCC and DTMR) in accordance with Imposed Condition 14.

The current endorsed the Construction Traffic Management Sub-Plan for the Clapham Yard Works provide for the following Heavy Vehicle Movements:

- The majority of construction traffic and all spoil haulage will approach from north via Ipswich Road.
- Only some construction traffic and material delivery (i.e. steel deliveries) may approach via Fairfield Road.

Potential impacts to local traffic networks associated with haulage or materials/equipment deliveries approaching from the north (Fairfield Road) are addressed and managed through the following:

- Left turn in is limited to vehicles physically able to turn from the slow lane (i.e. 12.5m rigid trucks). This constraint limits the number of vehicles traveling south on Fairfield Road.
- The existing endorsed CTMP also states that construction traffic approaching from north via Fairfield Road is limited to 12.5m rigid trucks.

The low clearance rail bridge at Muriel Avenue (3.80m clearance) is a constraint to the heavy vehicle movements insofar as they relate to oversize plant and equipment deliveries. Southern and western approaches do not need to cross under the bridge while eastern approach vehicles would have to cross under the bridge irrespective of our detour. The section of Fairfield Road north of Memorial Avenue is not permitted for B-doubles, hence all detoured traffic from the northern approach will be limited to semi-trailers.

While the permitted height of a truck and dog trailer combination is up to 4.30m (Heavy Vehicle National Law), this is not the common height for truck and trailer delivering in the metropolitan area (mainly due to a lot of these low clearance restrictions).

The Project however acknowledges that certain heavy vehicle movements will not be able to use the Muriel Avenue (DTMR controlled road) due to size. In such events alternative access for southbound heavy vehicle traffic will be managed as part of the Traffic Guidance Schemes (TGS) via:

- Muriel Avenue Eastbound (State Route 20)
- Beaudesert Road Southbound (13)
- Granard Road Westbound (State Route 2)
- Ipswich Motorway Northbound (State Route A7)
- Sherwood / Yeerongpilly Exit

5. Coordinator-General requests for information

To inform the evaluation of the Proposed Change, the Coordinator-General issued two requests for information. These information requests and responses are provided at Attachments A and B.

The information request topics were as follows:

- Traffic and traffic noise – Attachment A
- Noise and vibration – Attachment B

6. Conclusion

The Delivery Authority has reviewed and responded to each of the matters raised in submissions received in response to RfPC 11.

The assessments have demonstrated that the proposed changes to the CRR Project, carried out in accordance with the existing imposed conditions including the EMF, appropriately balances the delivery of the Project and the achievement of environmental outcomes.

It is requested that the Coordinator-General evaluate the requested changes.

Attachment A - Information Request – Traffic and traffic noise

Heavy vehicle movements and numbers

1. Provide a simple statement about the maximum number of heavy vehicle movements per hour or over a 24/7 period.

Response

The maximum number of heavy vehicle movements per hour over a 24/7 period will be 9 heavy vehicles during the off-peak traffic periods, and as low as 3 heavy vehicles (1 heavy vehicle every 20 minutes) during peak-hour traffic periods.

2. Page 20, volume 1 of the application states there would be "189 movements per day" and the proponent has confirmed there will be a maximum of 8 heavy vehicles per hour over a 24/7 period. It is not clear how these figures have been calculated as 21 movements per hour equals 504 in a 24/7 period or 252 in a 12 hour period. Is it accurate to conclude 21 construction traffic movements per hour are proposed which includes 8 heavy vehicles?

Response

RfPC 11 presented the scenario of 12hrs per day/6 days per week haulage and stated that if 24/7 haulage was to be authorised the overall HV vehicle movements/hour would be reduced.

RfPC 11 however did not present the scenario of 24/7 haulage, given it has a lesser traffic impact.

For the RfPC11 scenario, the peak of 21 vehicle (LV+HVs) movements per hour is not a case of averaging traffic numbers over 12 hour period of assessment, but focuses on the "off-peak" period of 9.30 am to 2.30 pm.

There is a lower peak during "traditional peak hour traffic" because:

- *Contractors will prioritise putting the majority of trucks on the road outside of peak hours (to optimise fleet/haul efficiencies) and*
- *There is a requirement to take account of haul cycle times including where material comes from and goes to; warm up and wind down; loading rates etc, therefore truck movements are not a consistent peak over a 12-hour window of production.*

*Due to factors presented above, the total number of vehicles per day is not 21*12 = 252 vehicles / day but 189 vehicles / day.*

A closer representation is provided in the table below for a 12 hour period:

	AM Peak (3 hrs) (6:30-9:30)	AM Peak (3 hrs) (6:30am-9:30am)	Daytime off-peak (5hrs) (9.30am - 14:30)	Daytime off-peak (5hrs) (9.30am - 14:30)	PM Peak (4 hrs) (14:30-18:30)	PM Peak (4 hrs) (14:30-18:30)	Night Peak (12 hrs) (18:30-6:30)	Night Peak (12 hrs) (18:30-6:30)	
Traffic Type	**Peak Hour - veh/hr**	**Total for Period**	**Peak Hour – veh/hr**	**Total for Period**	**Peak Hour – veh/hr**	**Total for Period**	**Peak Hour**	**Total for Period**	total / day
Data presented in RfPC 11 - on the basis of haulage and materials /equipment deliveries 6.30 am to 6.30 pm									
LV + HVs	12	36	21	105	12	48	Nil	Nil	189
HVs Only	8	24	15	75	8	32	Nil	Nil	131
LVs Only	4	12	6	30	4	16	Nil	Nil	58

Also, the 21 movements / hour is LV and HVs, with LVs contributing 30% of the overall construction traffic.

This means that HVs numbers / hour under a scenario if haulage was for 6 days per week / 12 hours per day would be:

- *8 HVs during the traditional peak hour traffic periods in the morning and afternoon*
- *15 HVs in the middle of the day*

So, over a 12-hour day the peak construction traffic during peak construction would be 21 construction traffic movements per hour which comprises 15 heavy vehicles and 6 light vehicles.

This peak construction traffic would be constrained to the period of the day where non construction traffic is the lowest, typically between 9.30 am to 2.30 pm.

During traditional traffic peak hour periods the estimated amount of construction traffic movements would be reduced and would comprises 4 light vehicles and 8 heavy vehicles per hour.

The heavy vehicles would be a mixture of fill / spoil haulage trucks and other heavy vehicles for equipment and material deliveries (such as concrete, plant deliveries and prefabricated construction elements such as drainage pipes, bridge girders, OHLE mast…).

3. The application states "This RFPC also proposed to change Imposed Condition 10 to ultimately enable 24/7 haulage, which will decrease peak heavy vehicle traffic and allow vehicle movements to be more evenly spread across the day, therefore further reducing residual impacts on effected intersections"

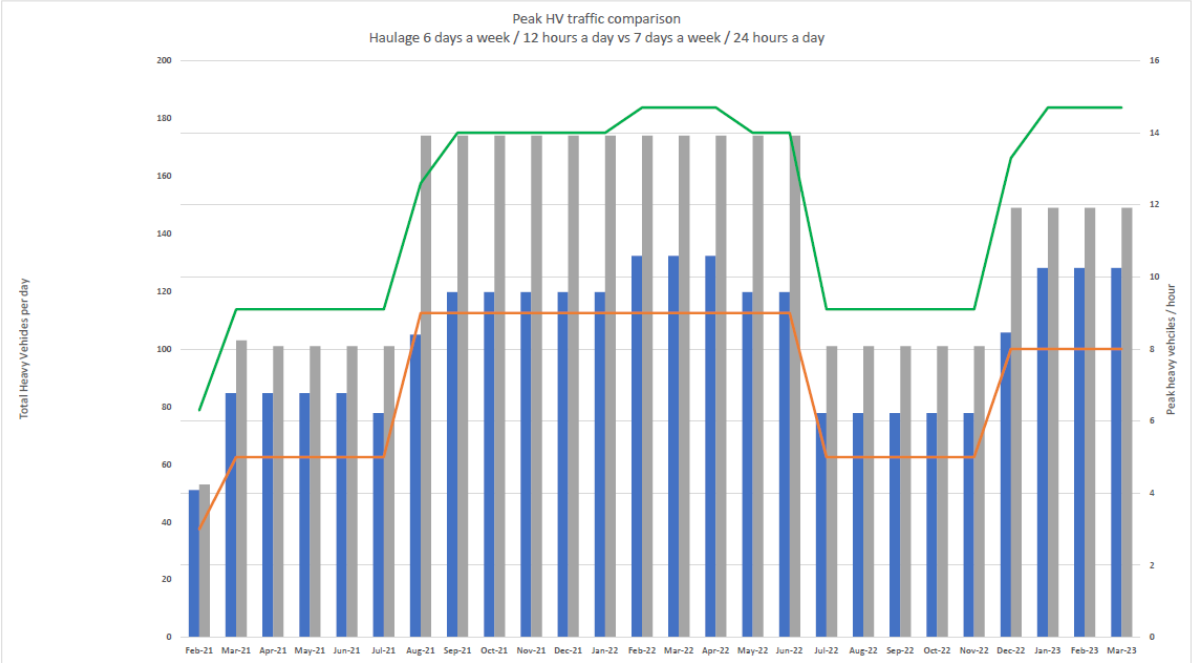
   a. Please provide the relevant figures to support OCG making the following conclusion – *Currently there is a maximum of **XX** heavy vehicles accessing Clapham Yard per hour. With 24/7 haulage proposed by RFPC 11, this will reduce to **XX** heavy vehicles per hour on average as total vehicle movements will be more evenly spread across a longer timeframe".*

Response

*Currently there is a maximum of **15** heavy vehicles accessing Clapham Yard per hour if haulage is allowed to occur 6 days a week / 12 hours a day. With 24/7 haulage proposed by RFPC 11, this will reduce to **9** heavy vehicles per hour (as a maximum) as total vehicle movements will be more evenly spread across a longer timeframe". During the morning and afternoon peak hour traffic periods this will reduce the maximum number of heavy vehicles from **8** heavy vehicles to **3** heavy vehicles (1 HV every 20 minutes)*

	AM Peak (3 hrs) (6:30-9:30)	AM Peak (3 hrs) (6:30am-9:30am)	Daytime off-peak (5hrs) (9.30am - 14:30)	Daytime off-peak (5hrs) (9.30am - 14:30)	PM Peak (4 hrs) (14:30-18:30)	PM Peak (4 hrs) (14:30-18:30)	Night Peak (12 hrs) (18:30-6:30)	Night Peak (12 hrs) (18:30-6:30)	
Traffic Type	**Peak Hour**	**Total for Period**	**Peak Hour**	**Total for Period**	**Peak Hour**	**Total for Period**	**Peak Hour**	**Total for Period**	total / day
Data presented in RfPC 11 - based on haulage and materials /equipment deliveries 6 days a week 6.30 am to 6.30 pm									
HVs Only	8	24	15	75	8	32	Nil	Nil	131
Additional Data - based on haulage and materials / equipment deliveries 24/7									
HVs Only	3	9	9	45	3	12	9	108	174

The proposed Clapham Yard monthly mass haul (HVs) is provided below:



	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
Total HVs / day 12 hours Haulage / 6 days a week	51	85	85	85	85	78	105	120	120	120	120	120	132	132	132	120	120	78	78	78	78	78	106	128	128	128
Total HVs / day 24/7 haulage scenario	53	103	101	101	101	101	174	174	174	174	174	174	174	174	174	174	174	101	101	101	101	101	149	149	149	149
Highest HV peak / hr RPC 11 Scenario	6	9	9	9	9	9	13	14	14	14	14	14	15	15	15	14	14	9	9	9	9	9	13	15	15	15
Highest HV peak / hr 24/7 haulage scenario	3	5	5	5	5	5	9	9	9	9	9	9	9	9	9	9	9	5	5	5	5	5	8	8	8	8

24/7 haulage (change to Imposed Condition 10)

4. 24/7 haulage includes the proposed removal of the current lock-out periods (7:30-9 am and 2:30-4:30 pm). Page 52, Volume 1 states "two delivery embargo windows mid-shift effectively reduces the main window of haulage to….3.5 hours". The application further justifies the removal of these periods by saying that the spread of haulage of 24 hours will reduce the hourly rate.

   a. This is difficult to justify to road users during these peak periods as during these times there would be an increase in heavy vehicles, potentially increasing congestion during these hours.

Response

The increase of heavy vehicles needs to be put in perspective of the current road usage.

Data from BCC indicates that Fairfield Road carries more than 20,000-25,000 vehicles per day.
Ipswich Road, which is a major arterial road, carries more than 50,000 vehicles per day.

BCC's data has been further analysed, with the average number of vehicles on Fairfield Road being:

- *Ca. 2,000 – 2,300 vehicles / hour during the AM peaks*
- *Ca. 2,500 vehicles / hours during the PM peaks*

The addition of 8 HVs / hour to 2,000 vehicles / hour on Fairfield Road equates to a 0.4% increase to existing traffic volumes during traditional peak hour times. As a result, this minimal increase not forecast to worsen congestion on Fairfield Road or Ipswich Road during traditional peak hour traffic.

   b. There are a number of other CRR works occurring on Ipswich Road / Fairfield Road, including the use of buses in place of trains due to Yeronga Station upgrade.

Response

The majority of the planned spoil haulage/material delivery task will not be utilising Fairfield Road north of Clapham Yard.
For project vehicles on Ipswich Road, they already form part of the current project haulage task for spoil haulage south along Ipswich Road and therefore are not increasing heavy vehicle traffic on Ipswich Road.

For spoil material generated from the rail corridor between Fairfield and Yeronga, spoil vehicles travel south along Fairfield Road, directly past Clapham Yard on their way to the highest order road (Ipswich Road). The spoil trucks from this part of the rail corridor cannot currently enter Clapham Yard during the lockout periods despite having to travel past it to access higher order roads.

Whilst the material excavated from these two areas in not sufficient to make up the fill requirements it is a missed opportunity to allow spoil trucks to travel past a site where the material can be beneficially reused.

c. The Woolloongabba worksite allows 24/7 haulage with the exception of lock out periods which have remained in place. The application states that the proponent wants to align with other worksites, but most of the worksites do not operate during these periods, with the exception of Southern Portal worksite.

Response

Fill material for Clapham Yard will not be entirely sourced from the Woolloongabba Site, but is also proposed to be sourced from other Cross River Rail worksites that are not constrained by daytime lockouts. Primary spoil generation sites and haul hours for beneficial reuse at Clapham Yard are provided in the below table:

Worksite	Spoil haulage and materials/equipment delivery
Fairfield, Yeronga, Yeerongpilly, Rocklea and Salisbury stations	Monday to Saturday: 6:30am to 6:30pm (no lockout periods)
Southern Portal	24 hours, 7 days (no lockout periods)
Woolloongabba	24 hours, 7 days, except for: Monday to Friday: 7:00am to 9:00am 4:30pm to 6:30pm
Northern Portal	Monday to Friday: 6:30am to 10:00pm (no lockout periods) Saturday 6:30am to 6:30pm
Mayne Railway Yard	24 hours, 7 days (no lockout periods)

From early 2022, the potential opportunity to beneficially reuse material from the Woolloongabba site will cease, as TBM tunnelling will be at an end. Beneficial reuse of materials sourced from other Cross River Rail sites will continue until sufficient material has been placed to achieve a 1%AEP flood immunity height for the rollingstock stabling area of Clapham Yard.

By supporting the project's opportunity to maximise haulage between August 2021 and early 2022 from the Project's main tunnel and cavern excavation sites, and the ongoing ability to opportunistically reuse material from other Cross River Rail sites will reduce the need to haul larger quantities of fill for an extended period of time in 2022.

Traffic Noise

5. Page 43, Volume 3 states a "maximum of 159 one-way truck movements during peak 1 and 153 for peak 2".

   a. What is the actual maximum number of peak heavy vehicles accessing the site either in a 24/7 period or hourly. This is unclear throughout the application making it difficult to assess.

      Response

      The traffic noise analysis for night-time traffic used the worst case daytime peak data of 21 movements per hour, made up of 15 HVs / hr and 6 LVs/hr, to ensure a very conservative modelling approach was adopted (i.e. will yield worst case traffic noise increase results).

   b. The Traffic Noise Assessment uses "day-time hourly peak movements for daytime operations to assess noise between 12am and 6am" – what number of heavy vehicles is this?

      Response

      The traffic noise assessment used the worst of the worst peak, that is 21 movements per hour, made up of 15 HVs / hr and 6 LVs/hr.

Attachment B - Information Request – Noise and vibration

1. Table 5, page 9 – Scenario 3: the 'Proposed Time of Works' for Moolabin Creek bridges construction is Standard Hours, however the 'Duration of equipment use' is up to 10 hours per night. Please confirm whether Non-Standard Hours works are required for Scenario 3.

   Response:

   This is a typographical error. Non-standard hours are not required for Scenario 3.

2. Please provide an updated estimated delivery schedule for Clapham Yard. If possible please provide a breakdown in table format of the indicative rail possession periods within each Stage (<80 hours or >80 hours), the construction works (i.e. Civil, Signals and Comms, Stations etc) and the anticipated period/duration of the rail possessions.

   Response

   As extended possessions are typically negotiated with and approved by QR between 6 to 12 months in advance, extended possessions will be confirmed once Imposed Condition 10 has been amended to support extended possessions. Extended possessions may vary in length from 5 days up to 21 days and are subject to extensive planning and consultation processes prior to being authorised.

   For shorter possessions <80 hours which include week ends and overnight closures, Unity alliance typically uses existing QR track closures of the Beenleigh, Cleveland, Gold Coast lines, the details of which are publicly available on the QR website. https://www.queenslandrail.com.au/forcustomers/trackclosures/12monthcalendar.

3. It is noted that extended rail possession periods would total 3-4 months over a three-year period. Does this mean extended rail possessions would occur over 3-4 months (i.e. 4 days in August, 10 days in December and January, 14 days in March), or would the days of extended rail possessions be over ~90-120 days (assuming 30 days per month)?

   Response

   The first statement is correct. Extended possessions would occur over discrete periods such as 10 days over the Christmas holidays, not for 120 days continuous.

4. Section 1.2.1, Table 1 – provide explanation as to why the number of Passenger Trains (Single Gauge) have decreased and the number of Freight Trains (Dual Gauge) have increased compared to the previously Evaluated Project (Request for Project Change 4).

   Response:

   The number of passenger trains along the single gauge track is 348 movements applied to both the up and down tracks.

   As such, the number of passenger movements has increased compared to the previously Evaluated Project. The assumptions used as the basis of this calculation of operational movements is based on TMR/QR advice, which has evolved since RfPC4 to inform the Clapham Yard master plan and the changes to the design of Clapham Yard.

   The increased number of Freight Trains along the Dual Gauge line is due to the assumed year on year growth factor applied to the base movements. The growth factor assumed for the purpose of this assessment has increased when compared to the Evaluated Project which results in an increase to number of Freight Trains.

5. Section 2.2.8, Table 10 and Table 11 - Explain why predicted noise levels for Activity Scenarios 1 and 2 are considered in Table 11, when Scenarios 4 and 5 were selected in Table 10.

Response

This is a production error.

To avoid having two Scenario 1 and 2 in RfPC 11 we renamed Scenario 1 and 2 from RfPC 8 as Scenario 4 and 5 respectively. Table 11 was a direct reproduction from RfPC 8 – Volume 3 and the reference to the scenarios was not amended to reflect the changes.

6. Section 2.2.8 - An assessment of the potential noise and vibration impacts during Scenarios 4 and 5 (rail possessions 24/7 works) has not been undertaken for all surrounding sensitive receptors, rather only 1 residential receiver area at Blackburn Street for the proposed upgrade works at the Moorooka Station area has been considered.

   As stated in Volume 3, Request for Project Change 4 (https://eisdocs.dsdip.qld.gov.au/Cross%20River%20Rail/project-change-8/Volume%203%20-%20Technical%20Reports/volume-3-technical-reports.pdf) noise levels were predicted at the worst-affected location or façade at a building or group of similar receivers, being residences along Blackburn Street during upgrade works to Moorooka Station.

   Please provide further discussion on why only Blackburn Street residences were assessed (i.e. are predicted to experience the highest potential for noise impacts during rail possessions).

Response:

Modelling scenarios and associated reporting of worst-case sensitive receivers are done on representative receivers. A construction noise model was however developed for the Ipswich Road residents but not included in Volume 3 - Attachment B. The worst predicted noise emission was 56 dBA (internal) at NSR 14 (1211 Ipswich Road) which is understood to be abandoned, and therefore not a DAP.

The remainder of the predicted noise emissions for extended rail possessions for the Ipswich Road residents ranged from 51 to 55 dBA (internal) and therefore worst case predicted noise levels remain at Blackburn Street as per Table 11.

7. Section 2.3 – Confirm whether the increase in terrain height within Clapham Yard has contributed to an increase in operational train noise levels.

Response

The operational noise assessment for Clapham Yard includes the assessment of operational noise impacts related to stabling activities and through movements on tracks surrounding the stabling yard. The assessment for RfPC11 has incorporated the proposed changes to the design terrain for both stabling and through movements.

8. Section 2.4 says general earthworks may be authorised to proceed through the DAPs engagement process, despite exceedances of the noise goal criteria and therefore not fitting the definition of 'Managed Works' for 24/7 works.

   Condition 11(c) outlines the requirements to be met for Project Works to occur in a locality with predicted or monitored noise levels above 20 dB(A). These requirements restrict Project Works to occur within Standard Hours (7.00am to 6.00pm) only with a 2-hour respite period.

   Provide further clarification on how general earthworks could occur in Non-Standard Hours in instances when the noise goal criteria is predicted to be exceeded.

Response

For works proposed to be undertaken as Managed Works, the DAP engagement process will identify whether places will be occupied when out of hours works are proposed to occur for which noise emissions are predicted to exceed the noise goals. If through engagement the sensitive place is confirmed to be unoccupied, the sensitive place will no longer be a DAP.

For those sensitive places that are occupied, modelling in advance of the proposed activities will determine whether work can proceed as Managed Work under the Imposed conditions.

Three scenarios have been modelled as part of RfPC 11 to ascertain what achievable management measures could be implemented whilst allowing the earthworks to proceed out of hours as Managed Works.

The modelling undertaken for RfPC11 confirmed the earthworks can proceed by reducing the area of active earthworks at night to increase the distance of separation from potential DAPs.