Referral of proposed action

Project title: Cross River Rail

1 Summary of proposed action

1.1 Short description

The Cross River Rail project is a proposed new 10.2 kilometre rail link in Brisbane connecting Dutton Park in the south to Bowen Hills in the north.

The project will include 5.9 kilometres of twin rail tunnels (one track in each direction) under Brisbane's inner city and new underground rail stations at Albert Street and Roma Street (in the Brisbane CBD), Woolloongabba, Boggo Road and a new surface station at the Exhibition showgrounds.

Upgrades and enhancements to parts of the existing rail network will be delivered where these interface with the project and to support Cross River Rail operations.

READING NOTE:
The Cross River Rail project has previously (2010) been referred to the then Department of the Environment, Water, Heritage and Arts under reference number 2010/5427. The project was determined to be 'not a controlled action - if undertaken in a particular manner'.

Further planning and design has been undertaken since the original Cross River Rail concept was referred. This has resulted in a modified project of a smaller scale with reduced potential impacts and enhanced affordability.

This referral has been prepared as a new referral based on key changes to the project resulting from further planning and design. The referral has been prepared as a stand-alone document that can be assessed without having to reference the previous referral.

While the Cross River Rail proponent does not consider the proposed action likely to have a significant impact on a matter protected under the EPBC Act, this referral has also been prepared in light of the CRR 2010 EPBC decision including a number of particular manner conditions that require reassessment.

In this referral, the modified project is described as "Cross River Rail", while the original 2010 concept is described as "2010 Cross River Rail".

A detailed description of the design changes between the 2010 and current Cross River Rail projects is provided in the State Environmental Impact Statement Request for Project Change, available at www.dsd.qld.gov.au/crr. This has not been provided with this referral due to the size of documentation.

The following documents are included as attachments with this referral:

- **Attachment 1** – Coordinator-General's Evaluation Report on the Cross River Rail Environmental Impact Statement.
- **Attachment 2** – Protected Matters Search Tool (PMST) Report.
- **Attachment 3** – Victoria Barracks Noise and Vibration Assessment.
- **Attachment 4** – Victoria Barracks Settlement Assessment.
- **Attachment 5** – Heritage Places List.
- **Attachment 6** – Draft Outline Environmental Management Plan (EMP).

1.2 **Latitude and longitude**

Location Points for Alignment *	Longitude Degrees	Latitude Degrees
1	153.0281937	-27.50151138
2	153.0291143	-27.49990472
3	153.0302848	-27.49843676
4	153.0312825	-27.49691264
5	153.0309673	-27.49513655
6	153.030543	-27.49337106
7	153.0305095	-27.49158156
8	153.0314011	-27.4899799
9	153.0328977	-27.48876677
10	153.0340078	-27.48727633
11	153.0344068	-27.48550954
12	153.0347191	-27.48372555
13	153.0350314	-27.48194157
14	153.035245	-27.48014899
15	153.0349464	-27.47836603
16	153.0342397	-27.47668861
17	153.0327763	-27.47546479
18	153.0309269	-27.47473259
19	153.0292868	-27.47370204
20	153.0253023	-27.46961416
21	153.0238662	-27.46835173
22	153.0220356	-27.46759398
23	153.0200932	-27.46711965
24	153.018532	-27.46597563
25	153.0170147	-27.46478042
26	153.0155549	-27.46353409
27	153.0147717	-27.46188947
28	153.0149683	-27.46011125
29	153.0160966	-27.4586348
30	153.0178802	-27.45782157
31	153.0198925	-27.45764112
32	153.0218518	-27.45724489
33	153.0233953	-27.45610389
34	153.0242183	-27.45446609
35	153.0250474	-27.45283147
36	153.0266691	-27.45179038
37	153.0285775	-27.45118917
38	153.0304708	-27.45055543
39	153.032002	-27.4493831
40	153.0333647	-27.44805662
41	153.0340422	-27.44636422
42	153.0348843	-27.44475833
43	153.0362805	-27.44345987
44	153.0377106	-27.44221473
45	153.0397492	-27.43913916
46	153.0402046	-27.43738367
47	153.0402151	-27.4355818
48	153.0397974	-27.43381768
49	153.039341	-27.43205957
50	153.0395113	-27.43028677
** Due to the complex shape of the alignment, the GIS data supplied as part of this referral provides a more accurate depiction of the alignment.*		

1.3 **Locality and property description**

Cross River Rail is located in Brisbane, within the Federal electorates of Moreton, Griffith and Brisbane and the Queensland State electorates of Yeerongpilly, South Brisbane, Brisbane Central, Mount Coot-tha and Clayfield.

While a reference design alignment has been determined, a broader project 'corridor' has also been adopted to ensure associated activities such as construction worksites are captured, and to provide flexibility to future project refinements. The project corridor, shown in **Figure 1**, is approximately 11 kilometres in length, extending from the suburb of Albion in the north to Fairfield in the south.

Land use within the project corridor reflects the low to high density, mixed-use urban character of inner city Brisbane. This includes residential, commercial, industrial, educational, recreational, cultural, government and open space uses.

Land tenure within the corridor is complicated and varied given the mixed-use character. As a result land is held in a variety of tenure arrangements including freehold, community title, reserve and leasehold tenure, as well as unallocated State land. Parts of the project corridor are controlled by the Queensland Government and Brisbane City Council.

1.4	**Size of the development footprint or work area (hectares)**	The project corridor has been selected in order to ensure flexibility for future project refinement, although the scale and extent of the project is not expected to change significantly. The project corridor within which the infrastructure will be located is approximately 11 kilometres in length. The width of the corridor varies but is generally between 300 and 600 metres wide. The total surface area of the corridor is approximately 350 hectares. Within the project corridor, the infrastructure is generally linear and includes a significant section of underground tunnel infrastructure. The project's tunnel system would comprise twin rail tunnels constructed parallel with each other extending approximately 5.9 kilometres from Dutton Park in the south to the Exhibition rail loop at Spring Hill in the north. A reference design has been prepared and includes a number of key temporary construction sites in order to construct the project, of varying sizes. Construction sites are required at each of the four stations (Boggo Road, Woolloongabba, Albert Street, and Roma Street) and at each of the tunnel portals. Smaller construction worksites are also required for other parts of the project to undertake surface works. The general location of the major construction worksites as well as the construction methods is outlined in **Section 2.1** and would be confirmed during the detailed design phase.
1.5	**Street address of the site**	The location of Cross River Rail does not have a specific street address. The majority of the project is proposed to be built within or adjoining existing rail corridors, at existing stations, or in tunnel beneath the Brisbane River and properties in Brisbane's inner city. The location of potential spoil placement sites is outlined in **Section 2.1** and would also be confirmed during the detailed design phase. The use of spoil placement sites does not form part of this referral, and would be subject to a separate referral and approval process if required.

1.6 **Lot description**

The location of Cross River Rail does not have a specific real property description. The majority of the project is proposed to be built within or adjoining existing rail corridor land, at existing stations, or in tunnel beneath the Brisbane River, beneath road reserves and beneath properties in Brisbane's inner city.

For this referral and the State environmental impact assessment, a range of possible spoil placement sites have been identified. However, the proposed site and approvals process will be confirmed during the detailed design phase prior to construction and do not form part of this referral.

1.7 **Local Government Area and Council contact (if known)**

The project is located within the Brisbane City Council local government area.

The Queensland Sustainable Planning Regulation specifically provides that the Cross River Rail project is development that cannot be made assessable by City Plan, and therefore is exempt from assessment against *Brisbane City Plan 2014*.

1.8 **Time frame**

Construction of Cross River Rail would require approximately 5 years. The table bellows illustrates the indicative phasing of the project (at the time of writing) with a breakdown of key project components. These timeframes are subject to change and funding commitments.

Project timeline	
2016	• Reference design and Business Case – complete • Readiness for Market phase
2017	• State environment impact assessment (request for project change) – underway • EPBC referral (this referral) • Procurement • Detailed design
2019	• Major construction commences
2024	• Major construction complete • Operations commence

1.9	**Alternatives to proposed action**		No
		X	**Yes**, you must also complete section 2.2
1.10	**Alternative time frames etc**		No
		X	**Yes**, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	**State assessment**		No
		X	**Yes**, you must also complete Section 2.5

1.12	**Component of larger action**	**X**	**No**
			Yes, you must also complete Section 2.7
1.13	**Related actions/proposals**	**X**	**No**
			Yes, provide details:
1.14	**Australian Government funding**		No
		X	**Yes**, provide details: In 2010, $20 million was provided towards the detailed feasibility phase of the CRR 2010 project, as part of the "Building Australia" fund. In October 2016, the Australian Government committed $10 million toward further planning of the project.
1.15	**Great Barrier Reef Marine Park**	**X**	**No**
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

2.1 Description of proposed action

Design overview

Cross River Rail would provide a new north-south rail line in Brisbane's inner city that includes a new underground river crossing and inner city train stations. Broadly, the Cross River Rail reference design involves:

- new passenger rail lines constructed underground (as twin rail tunnels), between Dutton Park in the south and Spring Hill in the north;
- four new underground stations at key locations including Boggo Road, Woolloongabba, Albert Street, and Roma Street;
- one new surface station at the Exhibition showgrounds and an upgrade of the existing Dutton Park rail station;
- rail track connections from the portals to the existing northern and southern rail network;
- enhancements and additional track infrastructure on the Exhibition rail line from the northern tunnel portal to Mayne rail yard to allow for train operational needs e.g. passenger, freight and stabling manoeuvres; and
- enhancements and additional track infrastructure through Mayne rail yard to connect the Cross River Rail tracks to the existing northern rail network.

The reference design drawings, including general arrangements, station designs, property impact plans, and construction worksite layouts, are available in full at www.dsd.qld.gov.au/crr under "project change application". The reference design drawings have not provided with this referral due to the volume of documentation.

The reference design has the main underground rail tracks accommodated in twin, seven metre (excavated diameter) tunnels running for a length of approximately 5.9 kilometres from portal to portal. The general tunnel arrangements are illustrated in **Figure 2**. The tunnels would run parallel to each other with a centre to centre separation of approximately 13.37 metres and have varying depths, the deepest point (track level) almost 41 metres below River Level (Brisbane River).

The tunnel system would be equipped with sophisticated emergency, communication and ventilation systems as well as evacuation measures comprising the Fire and Life Safety systems of the tunnel. For safety, cross passages connecting the two tunnels would be provided at a maximum spacing of every 240 metres.

The project includes enhancements to parts of the existing rail network and new surface track connections at each of the portals to connect the tunnel infrastructure to the existing rail network. Parts of the existing Exhibition rail loop would accommodate additional track to support Cross River Rail and North Coast line freight services. Additional rail track infrastructure and enhancements to existing infrastructure through the Mayne rail yard will also be required. These surface works are generally contained within existing rail corridor land.

The Cross River Rail project includes the following infrastructure requirements:

- establishment of worksites and access arrangements to facilitate the construction works
- utility provision and relocation including potable water, sewerage, gas, telecommunications, power, and stormwater
- rail tracks both at the surface and in tunnels
- tunnels, including fire and life safety systems, ventilation systems and lighting and communications systems
- underground stations including provision for access and egress, passenger amenity facilities and safety features
- enhancements to some existing rail stations
- connections to the existing rail network

- ventilation of underground stations, although no noxious emissions are anticipated from the electrically powered rail operations
- provision of power for construction and operations including feeder cables and substations
- provision of telecommunications and data within the operating project.

The exact alignment (including depth) and configuration of the tunnels, connections to the existing network, exact station locations (including station entry points) and design, and any associated changes to existing infrastructure will be confirmed during the detailed design phase. This will take further account of geological conditions, topography, the final location of stations and the requirements to connect to existing surface infrastructure.

Stations

The location of new stations as part of Cross River Rail have been selected to meet strategic land use, transport, economic and city building outcomes. The station locations are generally consistent with the previous 2010 Cross River Rail design.

Dutton Park Station would be upgraded to include a third platform face to provide access to suburban train services.

The new underground Boggo Road station would provide a new rail station in the Boggo Road / Princess Alexandra Hospital precinct. The station would be situated approximately 16 metres (to track level) below surface and located adjacent to, and integrated with, the existing Park Road rail and Boggo Road busway stations. The station will perform a critical role in facilitating interchange between rail services and between the rail network and busway system. The new Boggo Road station would support development of the Boggo Road Urban Village and surrounding precincts.

The new underground Woolloongabba station would be situated approximately 24 metres below surface level and located within the Woolloongabba Priority Development Area (PDA) to support planned urban growth in that location. The station would provide passenger rail access to the Woolloongabba development area, the Brisbane Cricket Ground (The Gabba), and offer interchange opportunities with the Woolloongabba busway station.

The new underground Albert Street station would be situated approximately 32 metres below Albert Street in the heart of the Brisbane CBD. It would be the most centrally located rail station in the Brisbane CBD and provide improved accessibility for passengers to the city centre, particularly to areas currently not well serviced by rail. The station would significantly improve access to existing areas of employment, recreation, parklands, and the Queensland University of Technology (Gardens Point), and would service ongoing development to revitalise the southern and eastern sections of the CBD, including the Queens Wharf Brisbane development project (currently underway). The new station would also catalyse Brisbane City Council's vision for Albert Street as a 'green spine' that reduces the street's road traffic function in favour of pedestrian uses.

The new underground Roma Street station will extend the region's primary transport interchange hub and support the continued development of commercial and mixed-use activities in this quarter of the CBD. The station would be located approximately 31 metres below surface level. Constructing the new station provides the opportunity to redevelop the Brisbane Transit Centre site, in line with Brisbane City Council's vision for a new western 'gateway' to the city at this location.

The new Exhibition station would be at surface level and replace the existing rail station, which currently does not service regular scheduled passenger trains but has limited passenger use during major events such as the annual EKKA Royal Queensland Show. The station is located within the Bowen Hills PDA and would provide new transport accessibility to an area of strong urban growth. The station would be integrated with planned urban development.

Construction

Construction of Cross River Rail would involve major surface and underground works, including approximately 5.9 kilometres of tunnelling, four new underground stations, and associated surface works. Construction methods will be confirmed during the detailed design phase of the project, however for the reference design and associated impact assessment, the following construction methods and options are envisaged:

- Tunnel construction primarily by Tunnel Boring Machines (TBMs), excavated mining by road headers, general excavation using rock breakers and potentially drilling and blasting. TBMs are proposed to be used for the majority of tunnelling, commencing from the Woolloongabba station site and travelling north to the northern portal. A shorter section of tunnelling (also commencing at Woolloongabba and heading south to the southern portal) is proposed to adopt mined tunnelling techniques.
- Mined and / or cut and cover construction techniques would be used near either end of the tunnels.
- Standard tunnel configuration consists of two single track tunnels separated by a central rock pillar with connections at regular intervals by mined cross-passages.
- Open excavation work for some sections of the new railway and station infrastructure, including both open cuttings, shafts and cut and cover work.
- Modifications within or adjacent to the existing rail corridor, including the realignment of existing tracks and the construction of new tracks.

A more detailed overview of the project design and construction methodology is provided in Volume 1 of the State EIS Request for Project Change documentation, available at www.dsd.qld.gov.au/crr. This has not been provided with this referral due to the size of documentation.

The major worksites for tunnelling and station construction are proposed at Boggo Road, Woolloongabba, Albert Street, and Roma Street. The most intensive worksite would be at Woolloongabba where tunnelling operations such as launching of the TBMs and extraction of tunnel spoil are proposed to commence and station construction would also take place. Smaller worksites would be established at the northern and southern portals of the tunnel system and for construction of the remaining surface station at the Exhibition showgrounds.

In general, worksites have been located in order to be situated to:

- be as close to the alignment as possible
- avoid or minimise impacts on sites having environmental or cultural heritage value
- allow good access to existing infrastructure for deliveries, spoil removal, etc
- allow good access to necessary essential services
- ensure sufficient storage capacity and handling ability for tunnel spoil.

The layout of the temporary construction worksites for the reference design are provided in **Figure 3**. These would also be confirmed during the detailed design phase of the project.

Spoil Placement

The project would require the removal of approximately 976,000 cubic meters (m^3) of spoil from the construction of the tunnels and underground stations. This is significantly less than the 2010 Cross River Rail proposal (1.4 million m^3) due to the shorter overall tunnel length of the new design (approximately 4 kilometres shorter).

The 2010 Cross River Rail referral identified a large landfill site at Swanbank near Ipswich as the preferred spoil placement site for spoil. The placement of spoil at Swanbank became a 'particular manner' as part of the 'not a controlled action' decision on that project.

This referral identifies a number of potential sites as options for the placement of spoil. Although multiple spoil placement sites are proposed as options, not all sites would necessarily be used during construction. Contingency has been provided in the event that commercial or environmental reasons require adjustment. This approach is in line with the environmental impact assessment completed by the same proponent (TMR) for the Bus and Train (BaT) project in 2014, which has strong synergies with Cross River Rail in terms of alignment but is no longer being pursued by the Queensland Government (see **Section 2.2**).

Spoil from tunnelling activities would generally consist of clean rock material, mostly of Brisbane Tuff, Neranleigh-Fernvale Formation and Aspley Formation. The spoil being of a high quality and clean, would therefore be suitable for use as fill. Regardless of the location of the spoil placement site(s), if spoil material is found to be contaminated during construction, the movement and disposal of the material would be subject to permitting and disposal requirements under the *Environmental Protection Act 1994* (Qld).

The five potential spoil placement sites are outlined below:

1. Swanbank, Ipswich.

    - An area of long-term land reclamation of exhausted open cut coal mines.
    - The placement of construction spoil from Cross River Rail would be consistent with the previous 2010 Cross River Rail referral particular manner.

2. Brisbane Airport

    - The potential spoil placement site is located on Brisbane Airport Corporation (BAC) land (not parallel runway project) identified for mixed uses and general industry.
    - If this site were to be used, it would be as an initiative of BAC, sourcing material from the Cross River Rail project.

3. Pine Mountain, Mt Gravatt East

    - The potential spoil placement site at Pine Mountain is located on privately owned land at Pine Mountain Road.
    - This site was previously used as a quarry, which is intended to be rehabilitated. The proposed site contains a void approximately 750m long and approximately 75m wide. Its depth is unknown and would be determined by survey. The void is holding water (surface drainage) at present.

4. Larapinta, Paradise Road

    - The potential spoil placement sites at Larapinta are proposed on land owned by Brisbane City Council south of the Logan Motorway and privately owned land north of the Logan Motorway.
    - These sites were previously used for sand extraction from the flood plain for Oxley Creek. At present the sand pits are open water bodies with the potential for over-topping and contributing to the sediment load of Oxley Creek.
    - If used for spoil placement, the sand pits could be rehabilitated consistent with a floodplain landform, and with a greatly reduced or negligible potential to contribute to the sediment load of Oxley Creek.

5. Port of Brisbane

    - The potential spoil placement site at the Port of Brisbane is located on land owned by Brisbane Port Holdings. The site is identified for the Future Port Expansion and is currently subject to ongoing reclamation works under an approved management regime.
    - If this site is used, the Port of Brisbane would seek and obtain relevant approvals for the placement of fill.

These five potential spoil placement sites are based on considerations including the general availability and size of land, retained environmental value, haul route length and the proximity of sensitive receptors.

The engineering detail for spoil placement typically would not be developed before detailed designs were established following tender award. At that time, the contractor would have firm details as to the quantity of spoil, its rate of excavation or production, and how it would be placed at any of the nominated spoil placement sites.

The approval to use spoil sites, including any Commonwealth approvals for placement of spoil, will not be sought as part of this referral. If required, approvals would be sought by the relevant entity prior to construction.

2.2 Alternatives to taking the proposed action

The Queensland Government and Brisbane City Council have undertaken numerous major transport infrastructure investigations and planning studies since 2008 examining possible solutions to capacity constraints facing Brisbane's inner city public transport network.

A consistent conclusion from these studies is that without a significant increase in capacity across the Brisbane River, the public transport system in Brisbane and South East Queensland will not cope with expected demand. A 'do nothing' option would result in widespread traffic congestion, unreliable and overcrowded public transport services, and an undermining of the region's liveability and economic performance.

In 2008, the Inner City Rail Capacity Study was undertaken by the Queensland Government to identify possible solutions to capacity issues in Brisbane's inner city rail network. More than 100 alternative heavy rail capacity enhancements options were identified and assessed.

The Inner City Rail Capacity Study recommended three potential options be further investigated and a more detailed examination resulted in the project known as Cross River Rail. Cross River Rail was progressed to a detailed prefeasibility phase, which included:

- selecting a study corridor
- selecting an alignment and station locations
- developing a Reference Design
- preparing a state environmental impact statement
- preparing a Business Case
- consulting with stakeholders and the community.

As part of the above process, a referral was made to the then Department of the Environment, Water, Heritage and the Arts in 2010 and the 2010 Cross River Rail proposal was determined to be 'not a controlled action if undertaken in a particular manner'.

In 2012, an independent review of the 2010 Cross River Rail proposal was commissioned by the Queensland Government to assess whether the investment was the best option for the task and offered value for money. The Independent Panel Report recommended the 'core' of the full 2010 Cross River Rail solution be delivered and that interim measures to improve capacity be implemented. Many of these short-term measures have since been rolled out and their capacity benefits are close to being exhausted.

In 2013, a revised project was developed known as the Bus and Train (BaT) project. The BaT project was informed by the 2010 Cross River Rail proposal but varied the design to include bus infrastructure within a single, large diameter tunnel. The BaT project was progressed to reference design and included a state environmental impact assessment. It was referred to the then Department of the Environment (reference number 2013/7106) in late 2013 and determined to be 'not a controlled action'. The now revised Cross River Rail project has a similar alignment to the BaT project, with a smaller tunnel diameter.

In summary, since 2008 the Queensland Government has developed two alternative, near 'shovel-ready' projects to address the inner city public transport constraints in Brisbane. Both the 2010 Cross River Rail and BaT projects progressed through the project development phases to include fully developed reference designs, business cases, and environmental impact assessments. The culmination of the development of both of these projects is that the Queensland Government has now made a commitment to pursue a new project that will deliver an inner city rail solution to revitalise and transform the rail network.

The Cross River Rail project described in this referral reflects significant planning and detailed investigations that have preceded it. The results of considerable impact assessment work on both previous projects has informed the development of this referral and a Request for Project Change as part of the state EIS process.

In relation to EPBC activities, the following summarises previous steps undertaken in relation to the Cross River Rail and BaT projects:

- 2010 - Cross River Rail project referred to the then Department of the Environment, Water, Heritage and Arts (reference number 2010/5427).

- 2010 – Cross River Rail determined to be 'not a controlled action if undertaken in a particular manner'.

- 2013 - BaT project referred to the then Department of the Environment (reference number 2013/7106)

- 2014 – BaT project determined to be 'not a controlled action'.

Based on these previous decisions, and the smaller scale of the Cross River Rail project design the subject of this referral, the potential for impacts is considered to be further reduced.

2.3 Alternative locations, time frames or activities that form part of the referred action

The Cross River Rail project is proposed to be delivered according to the location, timeframes and activities as identified in relevant parts of this referral (refer **Sections 1.8** and **2.1**).

The key element of the project for which alternatives may be considered include the method and location of spoil removal for the construction of the tunnel and underground stations and transport of spoil to spoil placement sites, as discussed in **Section 2.1**.

Spoil Placement

The previous 2010 Cross River Rail EPBC referral identified a landfill facility at Swanbank, near Ipswich as the preferred location for construction spoil (clean). As described in **Section 2.1**, in line with more recent planning and environmental assessment, this referral proposes an alternative approach to selecting a single preferred site, instead identifying a number of potential spoil placement sites as options:

1. Swanbank
2. Brisbane Airport
3. Pine Mountain (Mt Gravatt East),
4. Larapinta
5. Port of Brisbane.

Not all sites would necessarily be used during construction. Contingency is provided in the event that commercial reasons require adjustment. The location of spoil placement will be confirmed during the detailed design phase. The use of the spoil sites, including any Commonwealth approvals for placement of spoil, are not part of this referral. If required, approvals would be sought by the relevant entity prior to construction.

While road transport of construction spoil is most likely, other options could potentially be considered during detail design, including transport by rail. If the properties of the spoil material are suitable, potential re-use of spoil in construction of Cross River Rail would assist in reducing the total spoil haulage task.

2.4 Context, planning framework and state/local government requirements

Cross River Rail seeks to address a number of common strategic challenges and themes reflected in policy and strategies produced by all three levels of government. In general, these common themes include:

- Economic growth and productivity
- Population growth and change
- Consumer (passenger) expectation
- Environment and climate change
- Liveability
- Rapidly changing technology

The relevant strategic planning context and frameworks, including their relationship to the Cross River Rail project, are described in the following sections.

Commonwealth

Cross River Rail will provide key infrastructure that supports the nationally significant economic growth area of Brisbane and South East Queensland.

The Australian Government has a strong interest in ensuring urban transport systems as a whole allow for productive national outcomes and that systems are planned in conjunction with land use plans. Cross River Rail works toward the achievement of this outcome. The project will be a key step in providing an efficient public transport system in Brisbane to support the region's economic growth aspirations, boost productivity, improve liveability and relieve pressure on the wider transport network.

Cross River Rail aligns with a number of key Commonwealth initiatives, policies and plans. In particular, the Australian Infrastructure Plan (2016) prepared by Infrastructure Australia (IA) which sets out the infrastructure challenges and opportunities facing Australia over the coming 15 years and solutions needed to maintain productivity growth, lifestyle aspirations and competitive cities.

Alongside the Australian Infrastructure Plan (2016) is IA's Infrastructure Priority List that includes potential infrastructure solutions for investment over a 15 year period. The Infrastructure Priority List identifies Cross River Rail as a High Priority initiative and a 5 year timeframe in which the problem that Cross River Rail is seeking to address is likely to have a material impact on national productivity.

State

The Queensland Government has four overarching objectives for the community, underpinned by a commitment to integrity, accountability and consultation. The Cross River Rail project seeks outcomes that are closely aligned with these objectives, as below.

Queensland Government objective for the community	Objectives aligned to the project
Creating jobs and a diversified **economy**	• Increasing workforce participation • Stimulating economic growth and innovation • Delivering new infrastructure and investment
Delivering quality **frontline services**	• Supporting disadvantaged Queenslanders
Protecting the **environment**	• Conserving nature and heritage • Enabling responsible development
Building safe, caring and connected **communities**	• Providing an integrated and reliable transport network • Encouraging safer and inclusive communities • Building regions

State Infrastructure Plan

The Queensland Government's State Infrastructure Plan (SIP), released in March 2016 outlines a new strategic direction for planning, investment and delivery of infrastructure in Queensland.

The SIP comprises a Strategy and a Program. The Strategy sets out the vision to guide infrastructure investment in Queensland and identifies the state's infrastructure challenges and objectives and how best to address these. The Program outlines how the SIP will be implemented, including immediate and longer term projects. Potential future projects are identified by region through a 1-4 year forward program (projects in planning, procurement, construction or underway) and a series of future project opportunities over a 15 year timeframe.

The SIP was informed by Infrastructure Australia's Infrastructure Audit and aligns with Australian Infrastructure Plan and Infrastructure Priority List.

The SIP acknowledges Cross River Rail's inclusion on the Infrastructure Australia Priority List as a high priority initiative. This reflects Cross River Rail having been flagged in the Queensland Government's 2015 submission of nominated projects as the state's highest priority. A number of opportunities in the SIP have strong links to Cross River Rail, including:

Future opportunities (transport) – short-term

- Opportunity 1 – focus on innovative infrastructure solutions to relieve capacity constraints in the core inner city rail network to meet expected passenger demands in SEQ.
- Opportunity 3 – investigate optimisation / upgrades to key passenger interchanges across the transport network to improve reliability and efficiency and deliver better passenger outcomes.
- Opportunity 11 – improve safety and efficiency on the existing rail and bus network by implementing network upgrades such as European Train Control System (ETCS) Level 2.

Future opportunities (transport) – medium/long-term

- Opportunity 24 – encourage patronage growth on the SEQ passenger transport network during off peak times to fully utilise existing infrastructure.
- Opportunity 27 – improve passenger and freight movements between Brisbane and Gold and Sunshine coasts by increasing capacity and efficiency on roads and public transport services as well as extending rail linkages.

The Queensland Government has a range of other plans and strategies in place that support the need for, and outcomes of the Cross River Rail project. In general, Cross River Rail is a key feature of most strategic transport planning for the South East Queensland region.

ShapingSEQ (draft SEQ Regional Plan)
ShapingSEQ was released in October 2016 in response to updated population forecasts that indicate SEQ may need to accommodate six million people by 2040's.

The regional plan review is shaped by the Queensland Government's commitment to deliver an ongoing planning reform agenda.

ShapingSEQ provides a framework for managing the challenges associated with continued high levels of growth while capitalising on the region's potential, to retain the prosperity and liveability associated with the region now and in future. It also describes future infrastructure challenges at a regional level.

The outcomes sought by the Cross River Rail project align closely with the strategic growth management and land use aims of ShapingSEQ .

Connecting SEQ 2031
Connecting SEQ 2031 is a long-term transport plan to develop a sustainable transport system in SEQ. The document reinforces the SEQ Regional Plan's planning framework and adopts an integrated approach that considers land use planning and the various modes of transport.

The plan outlines six priorities for action: creating compact and connected communities, changing travel behaviour, improving transport system efficiency and safety, supporting economic vitality, protecting environmental quality and health and delivering an integrated transport network.

Connecting SEQ 2031 also has a strong focus on rail as the backbone of the future transport network due to its ability to efficiently move large numbers of people. The transport investment strategy developed as part of Connecting SEQ 2031 places Cross River Rail as central to achieving a transformation of the south-east's regional rail and public transport system.

<u>Local government</u>
Brisbane Vision 2031
Brisbane City Council's long-term community plan for the city, Brisbane Vision 2013 details the aspirations for the city's future and outlines ideas for achieving the vision. Cross River Rail supports the vision, by creating an accessible and connected city, by improving accessibility through increased cross river capacity

for public transport, providing relief for the major bottlenecks in the rail and busway system and providing safe and efficient movement of people to and from the inner city.

Brisbane City Plan 2014
The City Plan is a planning scheme under the Sustainable Planning Act 2009 that regulates proposed development in the city. It includes a number of neighbourhood plans relevant to the project such as the City Centre Neighbourhood Plan and Dutton Park-Fairfield Neighbourhood Plan.

The key strategic outcome relating to the city's transport network, supported by Cross River Rail, is that transport networks provide efficient and reliable travel options for:

- workers to access jobs
- residents and visitors to access services
- business and industry to operate effectively and productively.

Part of the City Plan's strategic intent is for significant levels of new growth in Brisbane to be built on the principles of transit oriented development and leveraged off public transport such as Cross River Rail.

Brisbane City Centre Master Plan 2014
The City Centre Master Plan outlines a five-year implementation plan that identifies priority projects that will facilitate investment in Brisbane's city centre. A key element of the strategy behind the master plan is to ensure planning and development within the city centre provides an attractive market for investment and ensures the city centre remains a competitive location on the local and world stages.

The transport strategy 'where people connect' states that public transport will be the best way to commute to the city centre and that investment will be made in high capacity and high frequency transit to keep the city growing strong. Brisbane will boast an extensive inter-modal network, seamlessly integrated with the urban environment.

The Cross River Rail project directly supports the strategy by improving transport capacity, accessibility and directly supports inter-modal transport with transfer opportunities at the proposed Dutton Park and Roma Street stations. The Master Plan identified 'going underground' (for example, Cross River Rail) as being vital to ensuring that the journey to our city centre is a convenient, comfortable and hassle-free experience from start to finish.

Brisbane Long Term Infrastructure Plan 2012 – 2031
The Brisbane Long Term Infrastructure Plan 2012-2031 is intended to guide the prioritisation and alignment of Brisbane's infrastructure as the city grows, and to provide a reference for other levels of government and the private sector.

The Cross River Rail project supports the objectives for transport infrastructure in the long-term infrastructure plan to "Grow the economy" and "Build the community". Cross River Rail is identified as proposed major public transport projects in the infrastructure plan. Short-term improvements in modern rail signalling systems, and high quality real-time passenger information may be necessary to manage the growth in public transport demand in the interim depending on preferred projects and construction timeframes.

Brisbane Economic Development Plan 2012 – 2031
The Brisbane Economic Development Plan 2012 – 2031 indicates that significant capacity building will be required across all sectors to meet the growth opportunities ahead, including expanding transport infrastructure and improving public transport services, particularly in serving commercial and industrial precincts.

The Cross River Rail project supports the economic development plan as it will provide better public transport connections between the areas where people will live and the places where they will work, and will also bring businesses closer together. The project will provide relief for the major bottlenecks in the public transport system.

Legislation and Approvals

Project approvals that will be required will depend on a number of factors, including physical location, site characteristics and construction methodology.

Commonwealth, Queensland and local government legislation that may be relevant to the project, including related permits and approvals, have been identified in the State environmental assessment.

Relevant instruments for assessment of the project include both local and state planning instruments, as well as the Commonwealth interests reflected in the EPBC Act.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

Commonwealth

The 2010 Cross River Rail project was referred to the then Department of the Environment, Water, Heritage and Arts in 2010. The project referral reference number is 2010/5427.

In July 2010, the project was determined to be 'not a controlled action if undertaken in a particular manner'. The particular manner stated that Swanbank should be the used for spoil placement as recommended in the referral, and that the tunnel could be no closer than 200 metres to any building identified on Commonwealth Land and /or as Commonwealth Heritage place.

The original decision was subsequently amended to take into consideration the fact that Commonwealth Land would include places leased by the Commonwealth, and would therefore be difficult to comply with. A reconsidered decision was notified in August 2010 with the new particular manner specifying the buildings which the tunnel alignment could not be closer than 200 metres to, namely:

- Victoria Barracks at 83-129 Petrie Terrace, Brisbane. (Heritage Place)
- Brisbane General Post Office (GPO) at 261 Queen St, Brisbane. (Heritage Place)
- Naval Offices at 3 Edward Street, Brisbane. (Heritage Place)
- Commonwealth Law Courts at 119 North Quay, Brisbane.

The buffer of 200 metres imposed between the 2010 Cross River Rail project and Commonwealth buildings was a nominal distance based broadly on the nearest Commonwealth site of interest at the time being around 200 metres. It was not based on a technical requirement to avoid disturbance at a particular Commonwealth site. The Bus and Train (BaT) project, deemed 'not a controlled action', was located in much closer proximity to some of the above land sites than the 2010 Cross River Rail alignment and had a much larger tunnel configuration (15 metre diameter) and consequently a greater potential for impact. The technical assessment supporting the BaT referral (2013/7106) showed there was no likelihood of potential for impacts.

State

In March 2010, following an application by the proponent, Cross River Rail was declared a 'significant project', for which an environmental impact statement is required, by the Queensland Coordinator-General under section 26(1)(a) of the *State Development and Public Works Organisation (SDPWO) Act 1971*.

Cross River Rail subsequently completed a full environmental impact assessment including the following:

- July 2011 – completion of the Environmental Impact Statement (EIS).
- August to October 2011 – public consultation and stakeholder review and consideration of submissions for assessment by the Coordinator-General
- July 2012 – completion of a Supplementary EIS addressing key issues raised in submissions for agency review and comment.
- December 2012 – completion of the Coordinator-General's report evaluating the environmental effects of the project and identifying conditions and recommendations on subsequent approvals.

A copy of the Coordinator-General's approval report evaluating the project and conditions of approval is provided at **Attachment 1**. Due to the volume of documentation, copies of the completed EIS and technical assessments underpinning this state approval are not included with this referral, however all documentation is available at www.dsd.qld.gov.au/crr.

Under the state impact assessment process, an application for evaluation of environmental effects of proposed changes to a project can be prepared and submitted for consideration by the Queensland Coordinator-General. A Request for Project Change has been completed and was publicly notified by the Coordinator-General on 25 February 2017. The Request for Project Change report and associated technical documents are available in full at www.dsd.qld.gov.au/crr. This has not been provided with this referral due to the size of documentation.

The State assessment contact officer is Mr Matthew Grant, Coordinated Project Delivery, Office of the Coordinator-General, Queensland Government, phone: 07-3452 7473 and email: matthew.grant@coordinatorgeneral.qld.gov.au.

2.6 Public consultation (including with Indigenous stakeholders)

Extensive public consultation was undertaken for both Cross River Rail (in 2010 and 2011) and the BaT project (in 2013 and 2014). Each project underwent several rounds of public engagement to ensure the community and key stakeholders were well informed about the projects and had regular opportunities to provide input to the development of the designs, impact assessment and proposed mitigation measures for potential short-term construction impacts or long-term operational impacts.

Community and stakeholder feedback informed the development of both project's reference designs and environmental impact assessments. Community involvement assisted in the identification of local conditions, community values, places of interest and travel patterns. Additionally, community input assisted in developing mitigation measures to overcome construction and operational impacts.

Overall, there is general community support for an inner city solution to public transport capacity constraints, with many people recognising the need to improve public transport capacity and frequency.

Engagement with Indigenous stakeholders has occurred on a number of occasions since Cross River Rail was publicly released in 2010. Details of these engagement processes and outcomes are included in the Cross River Rail and BaT project environmental impact statements, available online. Assessment of potential impacts on Indigenous cultural heritage were undertaken in accordance with the Duty of Care Guidelines outlined in the Queensland *Aboriginal Cultural Heritage Act 2003* (ACH Act).

In accordance with the ACH Act, the Turrbal People and Jagera People are Aboriginal Parties for the Cross River Rail corridor. Continued consultation with these groups will be important for determining potential impacts on Aboriginal cultural heritage as a result of changes to the project. This will be undertaken as part of the project's ongoing consultation programme and the requirements as part of the Request for Project Change.

In taking the current Cross River Rail project forward, the proponent would undertake regular engagement with the community and stakeholders throughout the upcoming phases of the project. This would include engagement with a broad and diverse range of stakeholders involving the community, local businesses and residents within the study corridor, Indigenous stakeholders, directly impacted property owners, public transport users, local government, state government, commonwealth government, interest groups and industry. This would allow interested parties the opportunity to be well informed about the changes to the project, to have input into its further development and to ensure that all concerns are addressed.

As part of the state EIS process, under the SDPWO Act 1971, the Request for Project Change report was made available for formal community consultation (25 February to 21 April 2017). Further information on this process can be found at www.coordinatorgeneral.qld.gov.au.

Throughout the project, information will be available on the project website (www.crossriverrail.qld.gov.au) and the project team will be available to answer queries through a Freecall number (1800 010 875).

2.7 A staged development or component of a larger project

The Cross River Rail project is an independent ('stand-alone') project. It is not a staged development, nor is it part of a larger action.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

An assessment of the likelihood of impacts on matters of national environmental significance (MNES) has been undertaken based on the results of the EPBC Act Protected Matters Search Tool (PMST) Report together with extensive environmental and technical investigations for the environmental assessment of both the Cross River Rail and BaT projects.

Potential impacts on MNES associated with the construction and operation of the Cross River Rail project as referred here were determined using a mix of desktop assessment, technical investigations and previous environmental assessment that included field methodologies. A PMST Report was generated on 29 November, 2016 based on the project alignment (as a single linear line) and a 1 kilometre buffer. The PMST Report is included at **Attachment 2**.

3.1 (a) World Heritage Properties

Description

The following properties in Queensland are listed on the World Heritage List, being:

- Fraser Island;
- the Great Barrier Reef;
- Australian Fossil Mammal Site (Riversleigh), located in north-west Queensland;
- the Wet Tropics of Queensland, located between Townsville and Cooktown on north-east cost of Queensland;
- Gondwana Rainforests of Australia, including the Focal Peak Group, Main Range Group and Shield Volcano Group, located near the border of Queensland and New South Wales.

Nature and extent of likely impact

None of the five World Heritage properties places are located within or near to the project corridor for Cross River Rail. No direct or indirect impacts on the World Heritage values of these properties are anticipated from the project.

3.1 (b) National Heritage Places

Description

The following three National Heritage Places are located in South East Queensland:

- Fraser Island;
- Glass House Mountains National Landscape; and
- Gondwana Rainforest of Australia, including the Focal Peak Group, Main Range Group and Shield Volcano Group.

Nature and extent of likely impact

None of the National Heritage Places are located within or near to the project corridor for Cross River Rail. No direct or indirect impacts on the National Heritage values of these places are anticipated from the project.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

Cross River Rail is proposed to pass under the Brisbane River approximately 20 kilometres upstream (following the river course) of the Moreton Bay Ramsar site.

The Moreton Bay Ramsar site covers an area of 113,314 ha and is situated in and around Moreton Bay, east of Brisbane. The wetlands broadly follow the coastline, spanning an area from the northern tip of Bribie Island to south to the southern tip of South Stradbroke Island. They include all of Moreton Island and parts of North and South Stradbroke Islands, Bribie Island and the Southern Bay Islands.

Nature and extent of likely impact

Cross River Rail will be a tunnel system built in bedrock deep beneath the Brisbane River with proven construction methods and environmental mitigation measures. Tunnel construction works will have no likely impact on the flows or water quality of the Brisbane River.

Works on an existing rail bridge that spans Enoggera / Breakfast Creek, which connects to the Brisbane River, will occur from the bridge itself and not from within the waterway. This will avoid direct impacts to the creek system.

A number of potential spoil placement sites are within the Brisbane River catchment that connects to the Moreton Bay Ramsar site, however approval for the placement of spoil will be subject to a separate referral process if required.

Overall, no likely direct or indirect impacts on the Moreton Bay Ramsar site are anticipated from the Cross River Rail project.

3.1 (d) Listed threatened species and ecological communities

Description

<u>Ecological communities</u>

The Protected Matters Search Tool (PMST) Report identified the potential occurrence of one critically endangered Ecological Community within the project corridor area, namely Lowland Rainforest of Subtropical Australia. Distribution maps (**Figure 4**) for this Ecological Community indicate broad coverage over an area along the coastal zone roughly from Newcastle in New South Wales to Gladstone in Queensland. The most concentrated areas of "likely to occur" areas are around Nambucca Heads (New South Wales) and in northern NSW.

The PMST Report identifies the Lowland Rainforest of Subtropical Australia ecological community as "likely to occur" within the area, however the distribution map does not indicate likely presence around Brisbane where the project is located.

Surface components of the project will be in a highly urbanised environment and predominantly within existing rail corridors or rail corridor land with limited habitat value.

<u>Threatened species</u>

The PMST Report identified that there were 57 listed threatened species as potentially in, or in proximity (1 kilometre) to the project alignment. These included:

- Five species identified as being "critically endangered", being four birds and one plant;
- Sixteen species identified as being "endangered", being seven birds, three mammals, three plants, and three reptiles;
- Thirty six species identified as being "vulnerable", being thirteen birds, one fish, six mammals, nine plants, six reptiles, and one shark.

A detailed listing of the threatened species identified along with their status under the EPBC Act and type of presence is included in the PMST Report at **Attachment 2**.

With the majority of the infrastructure to be located underground, the scale and intensity of the project on surface land is limited. In addition, surface components of the project will be in a highly urbanised environment and predominantly within existing rail corridors or rail corridor land with limited habitat value.

In the north, project works are proposed within the Mayne rail yards. The rail yards are bounded to the north by Enoggera Creek / Breakfast Creek. Works are also proposed on the existing rail bridge that crosses Enoggera Creek / Breakfast Creek and in a small section of rail corridor land north of this bridge. The works involving the existing bridge would be undertaken from the bridge itself and not from within the waterway.

The value of Enoggera Creek / Breakfast Creek as a wildlife corridor has been reduced due to significant urbanisation surrounding the Creek and the disjointed nature of the riparian vegetation. However it does support a regionally significant mangrove community along its banks. The mangrove fringe is known to provide habitat for flying foxes and a roost is located in the area.

Regular field monitoring of flying fox roost sites is undertaken by the Queensland Department of Environment and Heritage Protection (DEHP). Between early 2012 and late 2014, DEHP undertook 22 monitoring exercises at the Enoggera Creek / Breakfast Creek roost site of relevance to the project. A further field assessment was commissioned for the Cross River Rail project by the Department of Transport and Main Roads in July 2016 to provide a more updated understanding of the roost site.

None of the DEHP field visits to date have indicated the presence of the Grey-headed Flying-fox (*Pteropus poliocephalus*), listed as vulnerable under the EPBC Act. The field assessment undertaken in July 2016 found that no Grey-headed Flying-foxes could be located in the area (or other adjacent suitable habitat along the creek) and that there was no evidence of a large roost (noise, smell).

While it is possible that a small number of Grey-headed Flying-foxes could occasionally use the roost, the Cross River Rail reference design alignment avoids direct impacts to the areas of Enoggera Creek / Breakfast Creek and its fringing mangroves. Any flying-foxes present would be unlikely to be directly impacted as a result of the project. Notwithstanding these findings, works within Mayne rail yard in vicinity of the creek will be subject to a range of established approval processes for works within rail corridor land and environmental mitigation measures outlined in the Request for Project Change.

Nature and extent of likely impact

As part of the Cross River Rail (2011) and Bus and Train project (2014) EIS processes extensive desktop assessment has been undertaken as well as flora and fauna assessments to verify the presence / absence of listed threatened species or ecological communities.

The assessments have shown that overall, the majority of the potential nature conservation impacts which could occur as a result of the project are anticipated to be minimal and manageable due to the urban nature of the project corridor and the large portion of the alignment situated underground. A significant portion of the project is proposed to be built in tunnel beneath existing urban areas and the Brisbane River. Surface components of the project would primarily be built within or adjoining existing rail corridors or in highly urbanised areas.

Due to the highly urbanised nature of the project corridor, much of the area is of low natural habitat value and integrity. The flora and fauna is predominantly common and widespread species of the Brisbane metropolitan area. Such species are generally urban specialists or disturbance tolerant species.

No significant impacts are likely on listed threatened species and ecological communities as a result of the project's construction or operation. The majority of areas which have some ecological value and / or habitat values have been avoided through environmental input into the project's location and design or due to their location being in the tunnelled section of the alignment.

The project works proposed within the Mayne rail yard and across the existing rail bridge spanning Enoggera Creek / Breakfast Creek will avoid direct impacts (such as in-river works) to the creek system. As such, it is unlikely to be impacted as a result of the project. A range of established approval processes and mitigation measures for works within rail corridor land and at Mayne rail yards will be followed, as outlined in the State EIS.

While the location of spoil placement is yet to be confirmed and subject to separate environmental assessment and approvals, transport between the worksites and the placement sites will be via established transport corridors, whether by road or rail. There is little if any potential to impact on the habitat of any listed threatened species or ecological communities as a result of transporting spoil.

3.1 (e) Listed migratory species

Description
The PMST Report identified that there were 36 listed migratory species as potentially located within, or in proximity (1 kilometre) to the project including:

- Twelve migratory marine birds;
- Thirteen migratory marine species;
- Six migratory terrestrial species; and
- Five migratory wetland species.

A detailed listing of the migratory species identified along with their status under the EPBC Act and type of presence is provided in the PMST Report at **Attachment 2**.

Nature and extent of likely impact

No significant impacts are likely on listed migratory species as a result of the project's construction or operation. The majority of the project is proposed to be built in tunnel beneath existing urban areas and the Brisbane River. Surface components of the project will primarily be built within or adjoining existing rail corridors.

Spoil transport between the worksites and the placement sites will be via established transport corridors, whether by road or rail. There is little if any potential to impact on the habitat of any listed migratory species.

3.1 (f) Commonwealth marine area

Description
The Cross River Rail project is not located close to any Commonwealth marine areas.

Nature and extent of likely impact

No direct or indirect impact on Commonwealth marine areas is likely as a result of construction or operation of the Cross River Rail project.

3.1 (g) Commonwealth land

Description

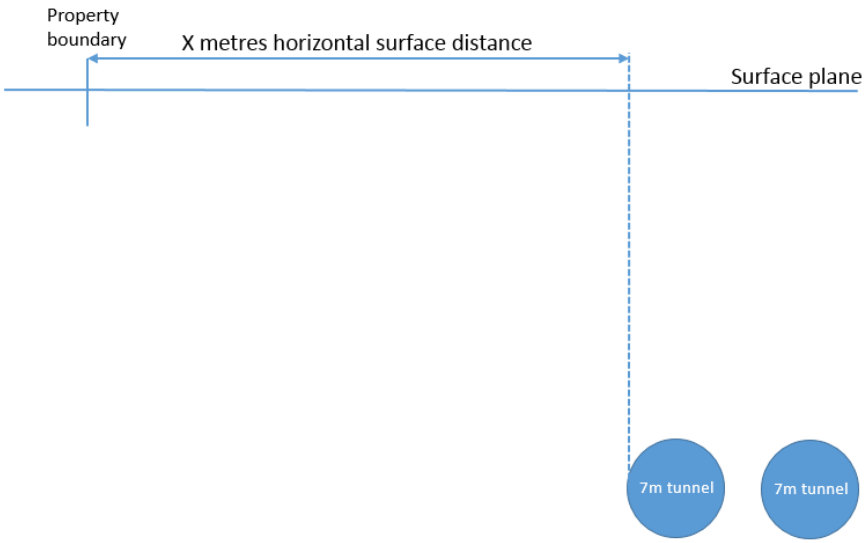
There are four properties located within the project corridor that are owned by the Commonwealth, as shown in **Figure 5**. These include:

- Victoria Barracks at 83-129 Petrie Terrace, Brisbane. (Heritage Place)
- Brisbane General Post Office (GPO) at 261 Queen St, Brisbane. (Heritage Place)
- Naval Offices at 3 Edward Street, Brisbane. (Heritage Place)
- Commonwealth Law Courts at 119 North Quay, Brisbane.

The project corridor also contains a number of commercial properties leased by the Commonwealth, including Australia Post and offices of Commonwealth Government departments.

The alignment of the project tunnel, while subject to refinement during the detailed design phase, is located approximately 290 metres from the Brisbane GPO, approximately 220 metres from the Naval Offices, approximately 125 metres from the Commonwealth Law Courts and approximately 10 metres from Victoria Barracks. **These distances represent the closest direct horizontal surface distance between the closest project tunnel and the edge of the property boundary, as illustrated below.** Being the direct surface distance, it therefore does not account of the underground nature of the infrastructure, which increases the actual distance (being the slant distance). The Cross River Rail project infrastructure would be deep underground at all these locations.

An assessment has been undertaken to determine the likelihood and scale of effects from noise and vibration during both construction and operation, and the potential for settlement during construction, on relevant properties owned by the Commonwealth. This has included quantitative predictive modelling where necessary.



<u>Commonwealth Heritage Places</u>
The Commonwealth Heritage List includes natural, Indigenous and historic heritage places owned or controlled by the Australian Government. There are three places on the Commonwealth Heritage List located in the study corridor, namely Victoria Barracks, Brisbane GPO and the Naval Offices.

Victoria Barracks
Victoria Barracks occupies a site of about 2.7 ha to the west of the Brisbane CBD. The site is bounded to the north by Secombe Street, to the east by Countess Street, to the southeast by the railway connecting to the Merivale Bridge and to Ipswich, to the southwest by the "The Barracks" development and to the northwest and west by Petrie Terrace.

The Barracks is historically important for its long association with Queensland and Australia's defence. The Barracks were built in 1864 to house a British Imperial Garrison and became the administrative headquarters for the Queensland defence forces in 1885. After Federation, the Barracks became the administrative headquarters for the Army in Queensland and since 1992, has been occupied by elements of the three defence services. Victoria Barracks has strong associations with generations of military personnel and continues to be used as a social, recreational and resource base for former servicemen and women.

Victoria Barracks is also listed on the Register of the National Estate and Brisbane City Council Heritage Register.

Brisbane GPO
The Brisbane GPO complex is located in Queen Street, although the complex also has frontage onto Elizabeth Street to the rear. The complex was established in 1872 and is important as a prominent historic public building complex in central Brisbane, a key meeting place and civic focus for Brisbane residents since 1872.

The complex is a dominant feature along two of Brisbane's key historic streets, Queen and Elizabeth Streets, and forms a key aspect of one of Brisbane's most important historic conservation precincts, combining with the early Twentieth Century Shrine of Remembrance and Anzac Square to form a prominent and central public space. This precinct is listed in the Register of the National Estate as the Anzac Square and GPO Precinct (RNE database number 8337). The GPO is also listed on the Register of National Estate and the Brisbane City Council Heritage Register.

Naval Offices
The Brisbane Naval Offices is located at the corner of Edward Street and Alice Streets in Brisbane City, consisting of a two-storey building in the Federation Free style of architecture. The building was constructed in 1901 and is significant for its association with the defences of colonial Queensland and the Commonwealth of Australia. The building is associated with the Queensland Marine Defence Force.

The Naval Offices are an important element of the historic character of the Brisbane riverfront, especially the Lower Edward Street Precinct, which includes the Smellie and Company Warehouse and former Port Office, and which is an historic area in the Register of the National Estate (RNE database number 8422). This area contains several important views to and from the river, influenced by the historic character of the buildings, although these are interrupted somewhat by multi-story construction.

The Naval Offices are also listed on the Register of National Estate, Queensland Heritage Register and the Brisbane City Council Heritage Register.

Nature and extent of likely impact

The project will not be undertaken on Commonwealth land. Noise and vibration impact assessment has determined the potential impacts of the project's construction and operation. The potential for settlement at relevant sites (Victoria Barracks) has also been assessed.

Potential impacts on Commonwealth land are not expected to be significant and the project is not expected to impact on the use or heritage values of these properties.

A detailed Cultural Heritage Management Plan (CHMP) for the construction phase of the project will be developed, providing instructions on obligations and duty of care regimes required to protect cultural heritage values within the project corridor. This would outline guide values for vibration, monitoring measures and recommended actions if the limits are close to being exceeded.

Monitoring requirements would also be identified in the CHMP to monitor subsidence and other construction related effects on heritage places. This may include measurement of horizontal and vertical ground movement, vibration levels and visual inspections to identify new cracking. Building condition surveys would also be undertaken of any places directly or indirectly affected by the project works prior to any works commencing.

Victoria Barracks

The reference design has the nearest tunnel located approximately 25 metres (horizontal surface distance) from the nearest structure in the Victoria Barracks site with the tunnel proposed to be at a depth of 25 metres (to the top of the tunnel). The construction of Cross River Rail at this location would be limited to the short period during which the tunnel boring machines (TBM) would pass by the site. The TBM 'pass by' period for each tunnel is estimated to be up to approximately one week.

The technical investigations indicate that construction related airborne and ground borne noise for the buildings located at Victoria Barracks is predicted to be below the construction noise goals for office uses.

Similarly, no ground-borne vibration impacts are anticipated with vibration levels predicted to be 0.1 to 0.3mm/s, well below the 2mm/s goal for heritage structures. Potential vibration impacts during construction are therefore expected to be within accepted guide values for heritage places and other buildings and manageable through the implementation of construction management measures and ongoing consultation. The technical assessment of potential impacts, including predicted levels, is provided in **Attachment 3**.

Predicted settlement effects from tunnel construction on Victoria Barracks are expected to be 'negligible' and would result in no or negligible impact on structures within the grounds of the barracks. The technical assessment of potential settlement impacts, including predicted surface settlement estimates, is provided in **Attachment 4**.

Overall, the project is not expected to impact on the Victoria Barracks site or the heritage buildings located on this site. Notwithstanding the assessment, monitoring is proposed at Victoria Barracks during construction given its significance as a heritage listed place. Monitoring at other locations constructed prior to the works near Victoria Barracks may also yield insight into possible issues.

Commonwealth Law Courts

The reference design has the nearest tunnel located approximately 125 metres (horizontal surface distance) from the Commonwealth Law Courts at a depth of 24 metres (to the top of the tunnel). The construction of Cross River Rail in this area would generally be limited to the short period during which the tunnel boring machines (TBM) would pass beneath the CBD from Albert Street toward Roma Street station.

It is not anticipated that there would be any adverse effect on the normal operations on the law courts during the period when the TBM would pass by the site. Mitigation measures during construction would be implemented if more detailed predictive modelling and actual construction monitoring reveals such measures are required.

The previously proposed Bus and Train (BaT) project alignment was around 65 metres closer to the Commonwealth Law Courts. The BaT project comprised a larger TBM diameter (15 metres) with consequential greater potential for impact, however it also did not result in a likely impact on the law courts complex during the TBM pass by or during the operational phase.

The separation distance between the Cross River Rail project and the law courts complex, combined with the short duration of the TBM passing by, result in an assessment of no effect on either internal noise levels or vibration to noticeable levels.

For the operational phase of the project, the limiting factor is regenerated noise, rather than vibration. As the estimated regenerated noise is so low, it is not anticipated that there would be any effect or impact as a consequence of vibration from train operations at the law courts.

There will be no effect on Commonwealth interests in the law courts complex as a consequence of operation of the Cross River Rail project.

Naval Offices

The Naval Offices are located approximately 220 metres north of the project alignment. On the basis of the assessment outlined above for the law courts and the greater distance, there is not anticipated to be any effect on Commonwealth interests in the Naval Offices site as a consequence of construction or operation of the project.

GPO

The Brisbane GPO is located approximately 290 metres north of the project alignment. On the basis of the assessment outlined above for the law courts and the greater distance, there is not anticipated to be any effect on Commonwealth interests in the Brisbane GPO site as a consequence of construction or operation of the project.

3.1 (h) The Great Barrier Reef Marine Park

Description

The Cross River Rail project is not located near the Great Barrier Reef Marine Park.

Nature and extent of likely impact

No direct or indirect impact on the Great Barrier Reef Marine Park is likely as a result of construction or operation of the Cross River Rail project.

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

The Cross River Rail project is a transport infrastructure project

Nature and extent of likely impact

Cross River Rail is a transport infrastructure project. This trigger is not relevant.

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	**Is the proposed action a nuclear action?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (b)	**Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (c)	**Is the proposed action to be taken in a Commonwealth marine area?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))		

3.2 (d)	**Is the proposed action to be taken on Commonwealth land?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))		

3.2 (e)	**Is the proposed action to be taken in the Great Barrier Reef Marine Park?**	**X**	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))		

3.3 Other important features of the environment

3.3 (a) Flora and fauna

The project is proposed in an area that has been heavily modified over many years. Flora and fauna in the project corridor is typical of inner urban Brisbane. The project corridor (including where the project is underground) includes a number of modified open space areas including the City Botanic Gardens, the Roma Street Parklands, Victoria Park and the banks of the Brisbane River.

With much of the infrastructure to be located within a tunnel underground, the scale and intensity of the project on surface land is limited. Further to this, surface components of the project will be predominantly within existing rail corridors or rail corridor land of limited natural value.

Impacts on matters of national environmental significance related to flora and fauna in the study corridor are not likely. Flora and fauna assessments have previously been undertaken as part of the State EIS and the Request for Project Change, and mitigation measures identified to minimise or avoid any identified potential impacts.

3.3 (b) Hydrology, including water flows

The Brisbane River is the major waterway featured within the project corridor. Tunnelling would occur beneath the bedrock level of the Brisbane River and no adverse impacts are expected on the Brisbane River due to project works. Detailed geotechnical investigations have been completed to identify risks associated tunnel construction beneath the Brisbane River and inform development of the project design. This included more than 40 geotechnical drilling tests in the Brisbane River and more than 100 throughout the study corridor. Further geotechnical investigations may be undertaken as part of the detailed design phase and prior to construction.

Track upgrade works may occur along existing rail alignments within the Enoggera Creek / Breakfast Creek catchment. Local flows may also occur in overland flow paths in some areas of the study corridor. The original waterways in the CBD were moved into lined drains many years ago. No impacts to Commonwealth environmental values are expected.

Potential impacts on these catchments would be appropriately managed through the implementation of environmental management measures during construction and operation of the project.

3.3 (c) Soil and Vegetation characteristics

Cross River Rail will be traversing an area that has been heavily modified by intense urban development. Consequently, vegetation characteristics are generally typical of an inner city urban environment. A number of trees (e.g. significant landscape trees and streetscape trees) in the study corridor are valued for amenity and/or cultural reasons. Potential impacts of the Cross River Rail project on these trees, including the effects of groundwater drawdown from tunnelling activities, have been assessed as part of the State EIS and the Request for Project Change.

A number of modified major open spaces are located in the study corridor, including the City Botanic Gardens, the Roma Street Parklands, Victoria Park and the banks of the Brisbane River and Enoggera Creek / Breakfast Creek. Vegetation disturbance is likely to be of small scale involving minor clearing of vegetation for establishing construction sites. These impacts have been assessed in the State EIS and Request for Project Change and appropriate mitigation measures identified to ensure rehabilitation of vegetation characteristics.

3.3 (d) Outstanding natural features

Apart from the Brisbane River and Kangaroo Point Cliffs, there are no outstanding natural features in the study corridor.

3.3 (e) Remnant native vegetation

The biophysical environment of the study corridor has been heavily modified over many years. No sites identified as containing significant areas of remnant native vegetation have been identified as likely to occur in the project corridor.

Parts of the Mayne rail yards area are mapped as Significant Native Vegetation under the Brisbane City Council Natural Assets Local Law 2003 (NALL). However due to the industrial nature of this site this does not reflect the actual vegetation present on site. Notwithstanding this, works associated with the construction of the proposed Exhibition station (at the location of the current station) may require disturbing/removal of some vegetation which is protected under NALL. In general, the habitat value of this area is low due to the limited extent of vegetation, its structural simplicity and isolation from other habitat areas. Management processes will be put in place to mitigate the impacts and ensure rehabilitation where required.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The Cross River Rail project is proposed to pass through a range of topographical land forms and elements, noting the majority of the infrastructure will be underground.

At the southern end, the project commences within rail corridor land in the suburb of Dutton Park. As the project heads north (underground) the topography experiences minor undulation through the suburb of Woolloongabba before gradually rising to a maximum of about 30 metres above sea level at the crest of the cliffs at Kangaroo Point. From the cliffs there is a fall to the Brisbane River, the lowest topographical point along the alignment.

On the north side of the Brisbane River there is a slight rise through the City Botanic Gardens to the CBD. A low-lying flood plain occupies much of the CBD along the lower (southern) end of Albert Street. Continuing

north the topography remains relatively level through the CBD, while to the east of the alignment there is a steep rise to Spring Hill, the highest point in the corridor. Roughly tracking the rail corridor north of Roma Street station, the alignment surfaces in rail corridor land near Victoria Park. From here, the landform along the alignment is relatively flat toward and including to the floodplain of Enoggera Creek at Herston and Bowen Hills.

3.3 (g) Current state of the environment

The study corridor is highly urbanised and the natural environment of the study corridor has been heavily modified over many years.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

Commonwealth Heritage Places

There are three heritage places on the Commonwealth Heritage List located in the study corridor, namely Victoria Barracks, GPO and the Naval Offices - See Section 3.1(g).

Under the current reference design for the Cross River Rail project, the tunnel alignment there is a very low likelihood for construction works to impact directly or indirectly on the Commonwealth Heritage Places or their heritage values.

Other significant heritage places

There are 91 other significant historic heritage places intersected the project corridor. These include places nominated for the National Heritage List, places on the Queensland Heritage Register, the Brisbane City Plan 2014 Heritage Register, and the Australian National Shipwreck Database. A full list of the significant historic heritage places intersected by the project corridor is provided in **Attachment 5** including maps of the location of the places relative to the corridor.

A project of the scale of Cross River Rail has the potential to impact on built heritage, archaeological and heritage landscape values. Direct and indirect impacts may include demolition, relocation, ground disturbance activities, and vibration. An assessment of the potential direct and indirect impacts on these non-Commonwealth historic heritage places has been completed as part of the State EIS and the Request for Project Change. The State EIS and the Request for Project Change provides management strategies to minimise harm and manage impacts to historical heritage values during the planning, design, construction and operation of the project.

The EIS process included:

- undertaking an historical heritage risk assessment to identify and describe the known and potential historical heritage values within the study corridor;
- Identifying and describing the potential direct and indirect impacts on the historical heritage values arising from the construction and operation of the project. This includes consideration of the integrity of historic heritage landscapes;
- Providing general and site specific management strategies, tasks and performance measures to manage any negative impacts, including avoidance and mitigation measures for consideration during the design, implementation and long term operation of the project;
- Identifying opportunities to interpret and enhance the historic heritage values of places impacted by the project; and
- Assessment conducted by appropriately qualified cultural heritage practitioner/s.

3.3 (i) Indigenous heritage values

A search of the Aboriginal and Torres Strait Islander Cultural Heritage Register and Database indicates that there are four recorded Aboriginal cultural heritage sites within the study corridor. Previous consultation with the Turrbal People, one of the Aboriginal Parties for the project area, indicated York's Hollow (Victoria Park) to be of particular cultural heritage significance. The views of the Turrbal People have been important in determining sites of Aboriginal cultural heritage significance and their management requirements within the study corridor. An assessment of the potential direct and indirect impacts on Aboriginal cultural heritage values has been completed for the previous Cross River Rail project and the Bus and Train (BaT) projects.

Cultural Heritage Management Plans will be developed with the Aboriginal Parties for the project to ensure appropriate management actions are in place to minimise harm to Indigenous heritage values.

The Commonwealth Native Title Act 1993 recognises and protects native title. It establishes how dealings in land, water and natural resources that may affect native title should occur so that they are valid. In accordance with the Native Title (Queensland) Act 1993, there were two native title claims within the study corridor. These claims were made by the Turrbal People and the Yugara/Yugarapul People over broader areas covering Brisbane. A federal court determination on 16 March 2015 found that, in respect to these claims, Native Title did not exist. This determination is subject to appeal. A native title assessment will be conducted and consultation with the relevant claimants will be undertaken, if required.

3.3 (j) Other important or unique values of the environment

Apart from those already discussed, there are no other important or unique values of the environment located within or in close proximity to the project corridor such as national parks, conservation reserves or wetlands of national significance.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

The project corridor has a roughly north-south alignment that takes in the CBD and CBD fringe locations including Woolloongabba, Dutton Park, Spring Hill and Bowen Hills.

Land tenure within the project corridor is complicated given the high density, mixed-use character. As a result land is held in a variety of tenure arrangements including freehold, community title, reserve or leasehold tenure, as well as unallocated state land. Large areas of the study corridor are also controlled by the Queensland Government and Brisbane City Council.

3.3 (l) Existing land / marine uses of area

The built environment within the project corridor is dominated by urban development. Brisbane, as the capital of Queensland and its business and administration centre, has been extensively developed for commercial, institutional, cultural, educational, religious, recreational and residential uses.

The southern suburb of Dutton Park contains a mix of residential, health, knowledge, commercial and light industrial uses. In particular, the area includes Princess Alexandra Hospital, Translational Research Institute and Boggo Road Urban Village while much of the residential precincts are dominated by pre-1946 timber and tin character housing, many within a Demolition Control Precinct under the *Brisbane City Plan 2014*.

The suburb of Woolloongabba, about one kilometre south of the Brisbane CBD, contains a mix of small scale retail, commercial, industrial and residential uses. Residential dwellings range from character housing to modern medium-scale residential towers. Woolloongabba contains the 'The Gabba' stadium and the Mater Hospital complex. The State Government owns a large site housing Go Print and the Land Centre.

The Brisbane CBD is characteristic of a city centre, accommodating high density, mixed use development including buildings with deep foundations and basements. The location of building basements, together with the use of such buildings has been considered in developing the project design and impact assessment. The Queen's Wharf Brisbane development project in the southern part of the CBD is a major redevelopment project to revitalise this part of the CBD for commercial and recreational activities. This project commenced demolition and construction activities in early 2017.

The Roma Street area contains the region's primary transport hub and the busiest interchange location between the busway and rail networks, namely Roma Street station. It also acts as a major arrival gateway for tourists. Land uses included a mix of commercial, residential and community uses. Brisbane City Council through its City Centre Master Plan 2014 has identified the Brisbane Transit Centre for redevelopment and revitalisation.

Further north along the project corridor, Spring Hill was one of the first parts of Brisbane to be settled, around the 1820s, and contains some of the city's oldest buildings. Parts of the area have undergone substantial redevelopment for commercial, institutional and residential uses. Much of the suburb of Bowen Hills has recently been undergoing urban regeneration, transitioning from industrial and commercial uses to mixed use residential and commercial land uses.

The Mayne rail yards in Bowen Hills is South East Queensland's primary rail stabling and maintenance facility supporting overall network operations. The site has been in use since the early 1900s. Bowen Hills also contains the Royal Exhibition Showgrounds, a significant community event space.

3.3 (m) Any proposed land/marine uses of area

The Queensland Government and Brisbane City Council together provide frameworks for managing population growth and development in the region.

The *Brisbane City Plan 2014* is a planning scheme under the *Sustainable Planning Act 2009* that regulates proposed development in the city. It includes a number of neighbourhood plans relevant to the project such as the draft City Centre Neighbourhood Plan and Dutton Park-Fairfield Neighbourhood Plan. Key objectives for the City Centre included in the draft City Centre Neighbourhood Plan, and supported by the Cross River Rail project include accommodating growth and economic development, responding to the urban context and activating the ground plane.

The Brisbane City Centre Master Plan 2014 provides a vision for development of Brisbane's city centre. A high quality public transport system is recognised as a key enabler to this vision. The master plan includes transport strategies to service the busiest parts of the city centre and identifies the need to improve public transport provision to and within the inner city. Cross River Rail is consistent with, and will be a major contributor to, achieving the vision outlined in the City Centre Master Plan.

Two key areas in the project corridor are currently designated Priority Development Areas (PDA). These PDA's, located in Bowen Hills and Woolloongabba, have close integration opportunities with the Cross River Rail project. The Cross River Rail Delivery Authority Bill 2016 also proposes the establishment of a Cross River Rail PDA, the extent of which and relationship with existing PDA's is yet to be determined (at the time of writing).

The existing Woolloongabba PDA covers an area of 10.25 hectares, located approximately 2 km south of the Brisbane CBD. The PDA will comprise mixed-use development focused on a key strategic public transport hub (including the Cross River Rail Woolloongabba station).

The existing Bowen Hills PDA covers an area of 108 hectares including the Royal Exhibition Showgrounds. The area is planned to develop into a diverse urban centre comprising a mix of residential and commercial development integrated with transport and community infrastructure. The new Exhibition station proposed as part of Cross River Rail sits within this PDA.

4 Environmental outcomes

As outlined in this referral, the Cross River Rail project does not propose to alter the existing environmental values or outcomes for matters of national environmental significance as a result of construction and operation of the project.

As part of the Request for Project Change to the State EIS, a Draft Outline Environmental Management (EMP) has been prepared outlining the proposed approach to environmental management for the design, construction and commissioning of Cross River Rail. It provides a framework for environmental management during project implementation by informing the preparation of detailed environmental management plans for the construction and commissioning of the project. It establishes the project approach to environmental management by:

- establishing the environmental design requirements for the Project;
- establishing the **environmental outcomes** and performance criteria for the project;
- identifying mitigation measures to achieve the environmental outcomes and performance criteria, recognising that other alternative mitigation measures may also be available; and
- establishing a monitoring and reporting regime to verify achievement of the environmental outcomes.

The Draft Outline EMP defines the environmental outcomes to be achieved during design, construction, and commissioning together with related performance criteria and possible mitigation measures, monitoring and reporting requirements, and complaints and corrective actions requirements. The Draft Outline EMP is provided at **Attachment 6**.

5 Measures to avoid or reduce impacts

Cross River Rail will be located in a highly urbanised inner city area and predominantly constructed underground at varying depths. Where surface works are involved, these will mostly be located within existing rail corridors or rail corridor land. In general, the assessment of potential impacts of the project on matters protected by the EPBC Act, as described in Section 3.3, has concluded that impacts on matters of national environmental significance are not likely. This is principally due to the subterranean design of the project and relatively limited scale and intensity of works proposed in surface locations and their location being primarily within existing rail corridor land and existing urban development locations.

The project's design has been informed by a number of detailed investigations undertaken during development of the state EIS. The EIS and related Request for Project Change considered the full range of environmental factors and potential impacts of the project during its construction and operational phases. Based on this impact assessment, potential mitigation measures have been developed covering design, construction and operation. Detailed assessments and investigations undertaken to inform project design and the EIS processes include:

- Transport and traffic assessment and modelling
- Land use and planning assessment
- Climate change and sustainability assessment
- Topographical, geologic, geomorphological and soils assessment
- Terrestrial and aquatic flora/fauna desktop assessment and field surveys
- Groundwater and surface water modelling and assessment
- Flooding impact assessment
- Air quality assessments
- Social impact assessment
- Soils and contaminated land desktop assessments

- Noise and vibration modelling
- Indigenous and non-Indigenous cultural heritage desktop assessment
- Landscape and visual amenity assessment
- Economic analysis
- Hazard and risk assessment

Additional assessments and investigations will be undertaken as part of the detailed design phase of the project.

The Draft Outline EMP prepared as part of the Request for Project Change process consolidates the possible mitigation measures identified through the impact assessment that may be implemented to avoid, reduce, manage or offset relevant impacts of the project during its design, construction and commissioning phases. The Draft Outline EMP includes environmental outcomes and mitigation measures relating to, amongst other things, erosion and sediment control, species management and nature conservation, noise and vibration monitoring and management of contaminated land. The Draft Outline EMP is provided at **Attachment 6**.

6 Conclusion on the likelihood of significant impacts

6.1 Do you THINK your proposed action is a controlled action?

X	No, complete section 5.2
	Yes, complete section 5.3

6.2 Proposed action IS NOT a controlled action.

The action to be undertaken is in a highly developed inner city urban area, without significant environmental values and is located mostly deep below ground level. Where surface works are involved, these are expected to be mostly located within existing rail corridors, rail corridor land and some urban development sites.

The assessment of potential impacts of the revised Cross River Rail project on matters protected by the EPBC Act has determined the project is not likely to have impacts on matters of national environmental significance. This is principally due to the subterranean design of the project, relatively limited scale and intensity of works proposed in surface locations and the urban characteristics of the project location.

Cross River Rail will not be adjacent to or downstream from any World Heritage Area, any Commonwealth marine environment or the Great Barrier Reef Marine Park and will not directly or indirectly impact on these values. The Project is not a large coal mining or CSG project.

The project will be constructed primarily in a tunnel underneath the Brisbane River approximately 20 kilometres upstream of the Moreton Bay Ramsar site. Construction works for the project are not likely to have an impact on the water quality of the Brisbane River or the ecological character of the Moreton Bay Ramsar site.

Potential impacts of the project on listed threatened species and ecological communities or listed migratory species are not likely to be significant and can be appropriately managed through the implementation of relevant environmental management measures.

Potential impacts on heritage values in the study corridor, including those identified on the Commonwealth Heritage List are not expected to be significant and can be managed through the appropriate design and construction methods and implementation of environmental management measures.

Potential impacts on Commonwealth land are not likely and can be avoided where possible through advanced construction techniques and where necessary managed through the implementation of relevant environmental management measures.

The Cross River Rail project has previously been referred to the Commonwealth Government for consideration under the EPBC Act. The proposed action was considered not to be a controlled action if undertaken in a particular manner.

Cross River Rail also previously completed a full environmental impact assessment under the Queensland *State Development and Public Works Organisation Act 1971* to assess the environmental, social and economic impacts of the project's construction and operation and mitigation measures to manage or avoid potential impacts. The Queensland Coordinator-General completed a report evaluating the environmental effects of the project and identifying conditions and recommendations on subsequent approvals, the final stage in the state environmental impact assessment process. A Request for Project Change to assess the impacts of proposed recent changes to the project is underway through the state EIS process. Cross River Rail will be managed in accordance with an EMP that builds upon the Draft Outline EMP in **Attachment 6**.

6.3 Proposed action IS a controlled action

	Matters likely to be impacted
n/a	World Heritage values (sections 12 and 15A)
n/a	National Heritage places (sections 15B and 15C)
n/a	Wetlands of international importance (sections 16 and 17B)
n/a	Listed threatened species and communities (sections 18 and 18A)
n/a	Listed migratory species (sections 20 and 20A)
n/a	Protection of the environment from nuclear actions (sections 21 and 22A)
n/a	Commonwealth marine environment (sections 23 and 24A)
n/a	Great Barrier Reef Marine Park (sections 24B and 24C)
n/a	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
n/a	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
n/a	Protection of the environment from Commonwealth actions (section 28)
n/a	Commonwealth Heritage places overseas (sections 27B and 27C)

7 Environmental record of the responsible party

		Yes	No
7.1	**Does the party taking the action have a satisfactory record of responsible environmental management?** **Provide details** The Department of Transport and Main Roads (TMR), currently representing the State of Queensland as the project Proponent, is highly experienced in the planning, delivery and operation of major transport infrastructure projects. TMR's core role is the planning, building and maintaining of Queensland's road, rail, freight and maritime infrastructure. In 2015-16, TMR administered an operating budget of $5.482 billion and a capital budget of $2.696 billion. TMR has an excellent track record in coordinating environmental assessments and delivering environmentally sensitive transport solutions, evidenced through recent major infrastructure projects such as the Ipswich Motorway Upgrade, Eastern Busway, Northern Busway, and Springfield and Moreton Bay Rail projects. Further information about TMR's achievements, performance and outlook is available at www.tmr.qld.gov.au.	X	
7.2	**Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?** **If yes, provide details**		X
7.3	**If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?** **If yes, provide details of environmental policy and planning framework** TMR's environmental objective is environmental management to support environmental conservation. TMR is committed to meeting this objective and operates under the guiding principles of its Environmental Policy and Environmental Management System. The policy outlines how TMR will management impacts on natural, human and cultural environments by: • Meeting the statutory obligations of all relevant environmental and heritage legislation as a minimum standard • Considering the effects on stakeholders and long-term relationships when carrying out statutory obligations, and seeking feedback on our performance • Acting as a good government agency and adopting a proactive approach to environmental and heritage management • Improving awareness of environmental and heritage management processes, standards and responsibilities among Main Roads' employees and contractors • Ensuring the approach to the management of environmental and heritage impacts embrace the hierarchy of "avoid, minimise and mitigate" in a financially feasible manner. TMR undertakes works in accordance with their internal Environmental Processes Manual, available to view on TMR website at https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Environmental-processes-manual. Further information about the Proponent's environmental management is available at http://www.tmr.qld.gov.au/Community-and-environment/Environmental-management.	x	

7.4 Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act? X

Provide name of proposal and EPBC reference number (if known)

The Department of Transport and Main Roads has referred the following actions in the 12 months to February 2017:

Reference Number	Title of referral	Date
2016/7802	Department of Transport and Main Roads/Transport - Land/Warrego Highway between Chinchilla and Miles/Western Australia/Warrego Highway Upgrade Program, Dalby to Miles overtaking lanes, Qld	2 Nov 16
2016/7774	Department of Transport and Main Roads/Transport - Land/10.2km south of Ingham and 100 km north of Townsville/Queensland/Dual bridge replacement crossing, Cattle & Frances Creek, sth of Ingham, Qld	7 Sep 16
2016/7690	Department of Transport and Main Roads/Transport - Land/Bruce Highway, Townsville/Queensland/Townsville Northern Access Intersections upgrade, Bruce Highway, Townsville, Qld	14 April 16
2016/7683	Department of Transport and Main Roads/Transport - Land/ Approximately 17km south-east of Brisbane CBD/Queensland/Logan Enhancement Project, Qld	01 April 16

8 Information sources and attachments

(For the information provided above)

8.1 References

Australian Heritage Database, Victoria Barracks, 83 - 129 Petrie Tce, Petrie Terrace, QLD, Australia, Place ID: 105226, (www.environment.gov.au/heritage/publications/australian-heritage-database).

Brisbane City Council, 2014. City Plan 2014
(www.brisbane.qld.gov.au)

Brisbane City Council, 2006. Brisbane City Centre Master Plan 2014
(www.brisbane.qld.gov.au/planning-building/planning-guidelines-tools/brisbane-city-centre-master-plan-2014)

Brisbane Vision 2013.
(www.brisbane.qld.gov.au/documents/about%20council/Brisbane%20Vision%202031/Brisbane_Vision_2031_full_document.pdf)

Brisbane Economic Development Plan 2012 - 2031
(www.brisbane.qld.gov.au/downloads/about_council/governance_strategy/economic_development_plan_2012-2031_full.pdf)

Bus and Train (BaT) Project Environmental Impact Statement 2014.
(www.coordinatorgeneral.qld.gov.au/assessments-and-approvals/underground-bus-and-train-project.html)

Cross River Rail – Independent Panel Review
(available at www.tmr.qld.gov.au)

Cross River Rail – Environmental Impact Statement
(www.coordinatorgeneral.qld.gov.au/assessments-and-approvals/cross-river-rail-project.html)

Cross River Rail EPBC Referral 2010.
(http://epbcnotices.environment.gov.au/publicnoticesreferrals/)

Department of Environment EPBC Act Protected Matters Search Tool
(www.environment.gov.au/erin/ert/index.html), viewed 29 November 2016

Cross River Rail Request for Project Change
(www.dsd.qld.gov.au/ccr)

State Infrastructure Plan (2016)
(www.dilgp.qld.gov.au/infrastructure/state-infrastructure-plan.html)

Shaping SEQ (2016)
(http://www.dilgp.qld.gov.au/noindex/shapingseq/draft-south-east-queensland-regional-plan.pdf)

Underground Bus and Train Project EPBC Referral 2014.
(http://epbcnotices.environment.gov.au/publicnoticesreferrals/)

8.2 Reliability and date of information

Information provided in Section 3 was obtained from the Department of the Environment Protected Matters Search Tool, used on 29 November 2016 (www.environment.gov.au). The resultant report is included at **Attachment 2**.

The limitations and assumptions of the supporting technical assessments are outlined in the relevant attachments and in the State EIS and the Request for Project Change available at www.dsd.qld.gov.au/crr.

8.3 Attachments

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	Figure 1 – Project Study Corridor
	GIS file delineating the boundary of the referral area (section 1)		Attachment 7 – GIS boundary file
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	Figure 4 – Lowland Rainforest Map Figure 5 – Commonwealth sites Attachment 2 – Protected Matters Search Tool (PMST) Report Attachment 5 – Heritage list and maps
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)	✓	Attachment 1 – CRR EIS Evaluation Report
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		Attachment 1 – CRR EIS Evaluation Report Attachment 6 – Cross River Rail Draft Outline Environmental Management Plan
	copies of any flora and fauna investigations and surveys (section 3)	n/a	
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Attachment 3 – Victoria Barracks Noise and Vibration Assessment Attachment 4 –Victoria Barracks Settlement Analysis
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)	✓	Attachment 1 – CRR EIS Evaluation Report

9 Contacts, signatures and declarations

NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (s 489, EPBC Act).

Under the EPBC Act a referral can only be made by:

- the person proposing to take the action (which can include a person acting on their behalf); or
- a Commonwealth, state or territory government, or agency that is aware of a proposal by a person to take an action, and that has administrative responsibilities relating to the action[1].

Project title:

9.1 Person proposing to take action

This is the individual, government agency or company that will be principally responsible for, or who will carry out, the proposed action.

If the proposed action will be taken under a contract or other arrangement, this is:

- the person for whose benefit the action will be taken; or
- the person who procured the contract or other arrangement and who will have principal control and responsibility for the taking of the proposed action.

If the proposed action requires a permit under the Great Barrier Reef Marine Park Act[2], this is the person requiring the grant of a GBRMP permission.

The Minister may also request relevant additional information from this person.

If further assessment and approval for the action is required, any approval which may be granted will be issued to the person proposing to take the action. This person will be responsible for complying with any conditions attached to the approval.

If the Minister decides that further assessment and approval is required, the Minister must designate a person as a proponent of the action. The proponent is responsible for meeting the requirements of the EPBC Act during the assessment process. The proponent will generally be the person proposing to take the action[3].

1. Name and Title:	Mr Neil Scales – Director-General
2. Organisation:	The Department of Transport and Main Roads
3. EPBC Referral Number (if known):	Not known
4: ACN / ABN	ABN 39 407 690 291
5. Postal address	GPO Box 1549 Brisbane Qld 4001
6. Telephone:	07 - 3066 7316
7. Email:	neil.z.scales@tmr.qld.gov.au
8. Name of proposed proponent (if not the same person at item 1 above and if applicable):	
9. ACN/ABN of proposed proponent (if not the same person named at item 1 above):	

COMPLETE THIS SECTION ONLY IF YOU QUALIFY FOR EXEMPTION FROM THE

[1] *If the proposed action is to be taken by a Commonwealth, state or territory government or agency, section 8.1 of this form should be completed. However, if the government or agency is aware of, and has administrative responsibilities relating to, a proposed action that is to be taken by another person which has not otherwise been referred, please contact the Referrals Gateway (1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

[2] *If your referred action, or a component of it, is to be taken in the Great Barrier Reef Marine Park the Minister is required to provide a copy of your referral to the Great Barrier Reef Marine Park Authority (GBRMPA) (see section 73A,* EPBC Act*). For information about how the GBRMPA may use your information, see http://www.gbrmpa.gov.au/privacy/privacy_notice_for_permits.*

FEE(S) THAT WOULD OTHERWISE BE PAYABLE

I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

□ an individual; OR

□ a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR

✓ not applicable.

If you are small business entity you must provide the Date/Income Year that you became a small business entity:

Note: You must advise the Department within 10 business days if you cease to be a small business entity. Failure to notify the Secretary of this is an offence punishable on conviction by a fine (regulation 5.23B(3) *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth)).

COMPLETE THIS SECTION ONLY IF YOU WOULD LIKE TO APPLY FOR A WAIVER

I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made:

✓ not applicable.

Declaration

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.
I agree to be the proponent for this action.
I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature Neil Scally Date 6th June 2017.

9.2 Person preparing the referral information (if different from 8.1)

Individual or organisation who has prepared the information contained in this referral form.

Name	Gavin Nicholls
Title	Project Director, Cross River Rail
Organisation	Department of Infrastructure, Local Government and Planning
ACN / ABN (if applicable)	ABN 25 166 523 889
Postal address	GPO Box 15009 City East Qld 4002
Telephone	07 – 3035 0140
Email	gavin.nicholls@dilgp.qld.gov.au
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature  Date 6/6/17

REFERRAL CHECKLIST

HAVE YOU:

- ✓ Completed all required sections of the referral form?
- ✓ Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- ✓ Provided a map showing the location and approximate boundaries of the project area?
- ✓ Provided a map/plan showing the location of the action in relation to any matters of NES?
- ✓ Provided a digital file (preferably ArcGIS shapefile, refer to guidelines at Attachment A) delineating the boundaries of the referral area?
- ✓ Provided complete contact details and signed the form?
- ✓ Provided copies of any documents referenced in the referral form?
- ✓ Ensured that all attachments are less than three megabytes (3mb)?
- ✓ Sent the referral to the Department (electronic and hard copy preferred)?

Geographic Information System (GIS) data supply guidelines

If the area is less than 5 hectares, provide the location as a point layer. If the area greater than 5 hectares, please provide as a polygon layer. If the proposed action is linear (eg. a road or pipline) please provide a polyline layer.

GIS data needs to be provided to the Department in the following manner:

- Point, Line or Polygon data types: ESRI file geodatabase feature class (preferred) or as an ESRI shapefile (.shp) zipped and attached with appropriate title
- Raster data types: Raw satellite imagery should be supplied in the vendor specific format.
- Projection as GDA94 coordinate system.

Processed products should be provided as follows:

- For data, uncompressed or lossless compressed formats is required - GeoTIFF or Imagine IMG is the first preference, then JPEG2000 lossless and other simple binary+header formats (ERS, ENVI or BIL).
- For natural/false/pseudo colour RGB imagery:
    - If the imagery is already mosaiced and is ready for display then lossy compression is suitable (JPEG2000 lossy/ECW/MrSID). Prefer 10% compression, up to 20% is acceptable.
    - If the imagery requires any sort of processing prior to display (i.e. mosaicing/colour balancing/etc) then an uncompressed or lossless compressed format is required.

Metadata or 'information about data' will be produced for all spatial data and will be compliant with ANZLIC Metadata Profile. (http://www.anzlic.org.au/policies_guidelines#guidelines).

The Department's preferred method is using ANZMet Lite, however the Department's Service Provider may use any compliant system to generate metadata.

All data will be provide under a Creative Commons license (http://creativecommons.org/licenses/by/3.0/au/)