Cross River Rail Environmental Impact Statement

Request for Project Change 7
Design refinements and condition changes

Response to Pre-lodgement Information Request

Date: ***May 2020***

Author: ***Cross River Rail Delivery Authority***

CROSSRIVERRAIL

Queensland Government

Table of Contents

1. Introduction

The Cross River Rail Delivery Authority (the Delivery Authority) established by the *Cross River Rail Delivery Authority Act 2016* (Qld) and is considered the proponent for the Cross River Rail (CRR) Project. The CRR Project is a declared coordinated project for which an Environmental Impact Statement (EIS) was required under the *State Development and Public Works Organisation Act 1971* (SDPWO Act). The EIS for the CRR Project (2011 EIS) was evaluated by the Coordinator-General, who recommended the project proceed, subject to the Imposed Conditions in the evaluation report dated 20 December 2012. Since the 2012 evaluation report, six Requests for Project Change (RfPC) have been submitted and changes evaluated by the Coordinator-General.

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

In parallel with the commencement of construction of the Project, refinements to detailed design and construction delivery methods have been undertaken for the Project. This report provides supporting information to assist in the assessment of the Request for Project Change (RfPC) seven application resulting from refinements identified through the detailed design process.

1.1 Purpose

The purpose of this document is to provide a response to pre-lodgement information requested by the Office of Coordinator-General (OCG) received by the Proponent 15 May 2020. This response includes:

- Mapping of changed project footprint against approved project footprint and associated land requirement; and
- Detailed description of proposed construction works including work type, duration and location of works.

2. Project Footprint

The CRR Project is a 10.2 km north-south rail line connecting Dutton Park to Bowen Hills with 5.9 km of tunnel under the Brisbane River and Central Business District (CBD). The CRR Project also includes new underground stations at Boggo Road, Woolloongabba, Albert Street, and Roma Street, with upgrades to the existing surface Exhibition Railway Station and stations between Fairfield to Salisbury.

2.1 Footprint Changes

A series of maps have been produced showing the previously approved project footprint and the proposed changed project footprint highlighting areas of change. These maps are provided in Appendix 1 Project Footprint Maps.

2.2 Additional Land

Approximate area of the additional land requested as part of this RfPC is described below:

- Permanent Volumetric Requirement - 0.27 hectares;
- Permanent Standard Requirement - 0.38 hectares; and
- Temporary Construction Area - 4.62 hectares.

2.3 Surface Requirement – 109 Elizabeth Street

Although the current project plans indicate a requirement for 109 Elizabeth Street, the project plans have been updated to confirm the requirement for the land as part of the northern station entrance works. This is not a change to the land requirement for 109 Elizabeth Street, but the plan in sheet 16

more accurately reflects the State's need to resume the land for construction purposes (cut and cover) and for protection of the permanent CRR infrastructure.

2.4 Surrounding Land Use

The surrounding land use of the proposed new land acquisition are consistent with those identified in RfPC-4. This includes changes to the temporary construction areas in RNA, Victoria Park and F2S stations. However, there is additional land within the existing Queensland Rail (QR) rail corridor which is required for overhead lines and signal upgrade works at Albion, Bowen Hills, Cleveland line, Tennyson and the southern end of the project near Salisbury station.

Surrounding land uses for the overhead lines and signal upgrade works within the QR corridor are provided in Table 1.

Table 1 Surrounding Land Use

Project location	Surrounding land use
North of Albion Station	Residential and Commercial/Retail
Bowen Hills	Industrial
Cleveland line	Residential, Community, Education, Office Space and Commercial/Retail
Tennyson	Community and Industrial
South of Salisbury station	Residential and Industrial

3. Construction Works

The following section details the proposed construction works relating to the Evaluated Project's design.

3.1 Stormwater Outlets

Construction of four stormwater outlets are proposed on the banks of Breakfast Creek along the western boundary of Mayne Rail Yard. Two of the four outlets are new while the remaining two are an extension/replacement of the existing stormwater outlets. The current drainage system in Mayne Rail Yard is considered inadequate to support future upgrades to the yard as part of the CRR Project. Future developments at Mayne Rail Yard are likely to increase the impervious area of the site, resulting in increased stormwater run-off. These works will have a temporary construction impact on additional land to allow for constructability of stormwater outlet structures. These works will be assessed and delivered under the Prescribed Tidal Works approval under the *Planning Act 2016*.

The proposed development includes the following associated structures:

- Reinforced concrete headwall;
- Reinforced concrete pipe (RCP):
    - 2 x 1650mm for the outlet to the north-west of Mayne Rail Yard
    - 1 x 1350mm for the outlet to the north of the Ferny Grove overpass
    - 2 x 1650mm for the outlet to the south of the Ferny Grove overpass
    - Size and number of pipes are still to be finalised for the outlet to the south-west of Mayne Rail Yard; and
- Rock scour protection with a geofabric underlay.

Works to be carried out at each outlet include -

- Clearing of vegetation for temporary work platform;

- A temporary work platform is to be constructed to allow personnel and equipment access; and
- Installation of temporary erosion and sediment control measures including but not limited to a tidal bund and silt curtain.

Works at each drainage outlet are programmed to occur over a duration of approximately two (2) months.

Location of all stormwater outlets are provided in Sheet 2 of the Appendix 1 Project Footprint Maps.

3.2 Overhead Lines and Signal Upgrades

Overhead lines and signal upgrades will be required within the QR corridor at the following locations -

- Albion;
- Bowen Hills;
- Cleveland line;
- Tennyson; and
- South of Salisbury station.

These works include -

- Installation of new rail infrastructure such as overhead wiring mast structures, signal posts, buried cable routes, relocation of existing infrastructure and removal of redundant equipment; and
- Use of construction equipment such as excavators, front-end loaders, mobile cranes as well as specialised rail equipment utilised for working within the rail corridor.

Overhead lines and signal upgrades works are planned to occur during QR approved weekend track possessions. The weekend possessions, where possible, are aligned with the existing QR possession dates. Works to prepare for the weekend possessions will happen during weekdays (Monday to Friday) within the rail corridor. These works will be delivered under the Construction Environmental Management Plan endorsed by the Environmental Monitor.

The locations of overhead lines and signal upgrades works are provided in Sheets 2, 3, 6, 9 and 11 of the Appendix 1 Project Footprint Maps.

3.3 Railway Corridor Widening

The scope of works for Lanham Street area is consistent with the works identified in RfPC-4. This includes widening of rail corridor to fit the third line. Further development of the preliminary design for these works and associated construction methodology to undertake the rock cutting have triggered a change in the land impact requirements in this area from a temporary construction requirements to permanent volumetric requirements. These works include installation of soil nails and rock bolts and are detailed in typical sections presented in Figure 1.

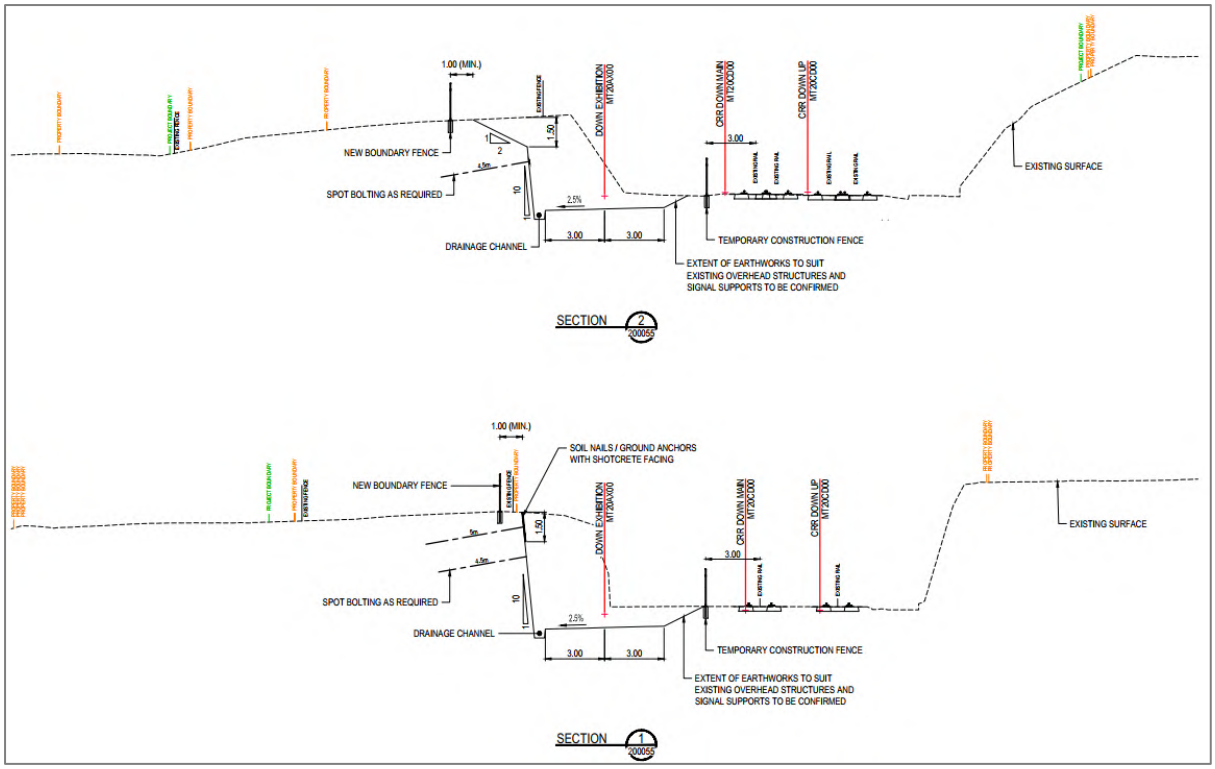


Figure 1: Typical Sections – Enabling Works Near Lanham Street Compound

These works are estimated to be completed within 2-3 months and are scheduled to be undertaken in the second half of 2020.

Location of the rail corridor widening at Lanham Street compound is provided in Sheets 2 of the Appendix 1 Project Footprint Maps.

3.4 Normanby Rail Holding Road

The proposed works associated with the Normanby Permanent Holding Road required for the CRR System includes increased length of holding track from 543m in length to 950m. This additional length is required to accommodate a comparison train of 950m in length for permanent track. In order to accommodate the holding road, additional works within Victoria Park are required, including an upgrade of the current rail corridor access and a section of the rail maintenance access road. Further design refinements have also identified the requirement to install volumetric subsurface soil nails which will form part of the retaining wall structure and the installation of a stormwater retention bund adjacent to the current Brisbane City Council (BCC) compound.

3.4.1 Retaining Wall

The retaining wall to the north of Land Bridge will be constructed along approximately a 200m long section of the corridor, commencing approximately 65m south of the BCC maintenance yard and extending south along the boundary to approximately 60m north of the Land Bridge. The height of the retaining wall will vary from 2.4m to 3.4m depending on the grade of the existing embankment. This retaining wall will be located wholly within the QR rail corridor, but in order to stabilise the slope, soil nails will be inserted in three rows, spaced every 1.50m to 1.75m along the length of the retaining wall (Figure 2 and Figure 3). These soil nails form underground anchors which are used to stabilise retaining wall which is a near vertical structure. With a subsurface intrusion of between 4m and 6m, these nails will extend into Victoria Park, and beneath some of the trees that line the boundary.

These works encroach the existing state heritage listed Victoria Park and will be undertaken under a Heritage Exemption Certificate which has been approved by the Department of Environment and Science (DES).

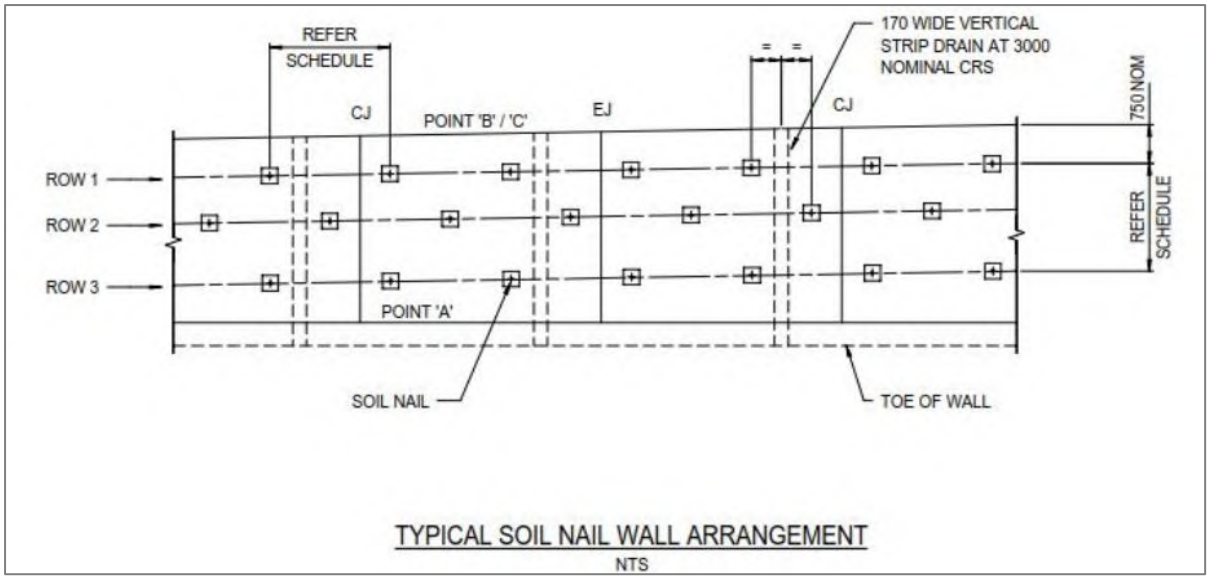


Figure 2: Typical Soil Nail Wall Arrangement (North of Land Bridge)

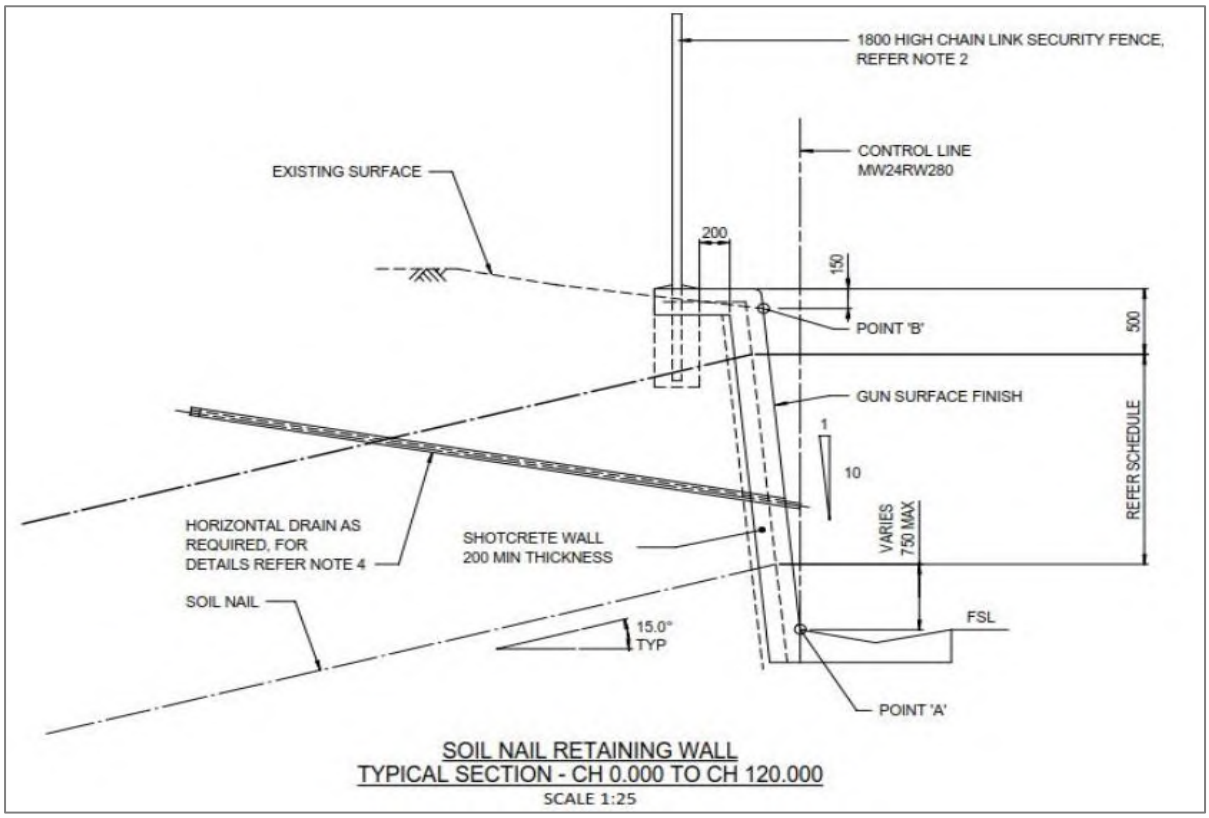


Figure 3: Soil Nail Typical Detail (North of Land Bridge)

The retaining wall to the south of Land Bridge will be constructed along approximately a 240m long section of the corridor, starting near the tennis courts within the park and goes south towards the footbridge behind Brisbane Girls Grammar School. This retaining wall has two types of reinforcing elements - soil nails and fixing pins (Figure 4 and Figure 5 respectively).

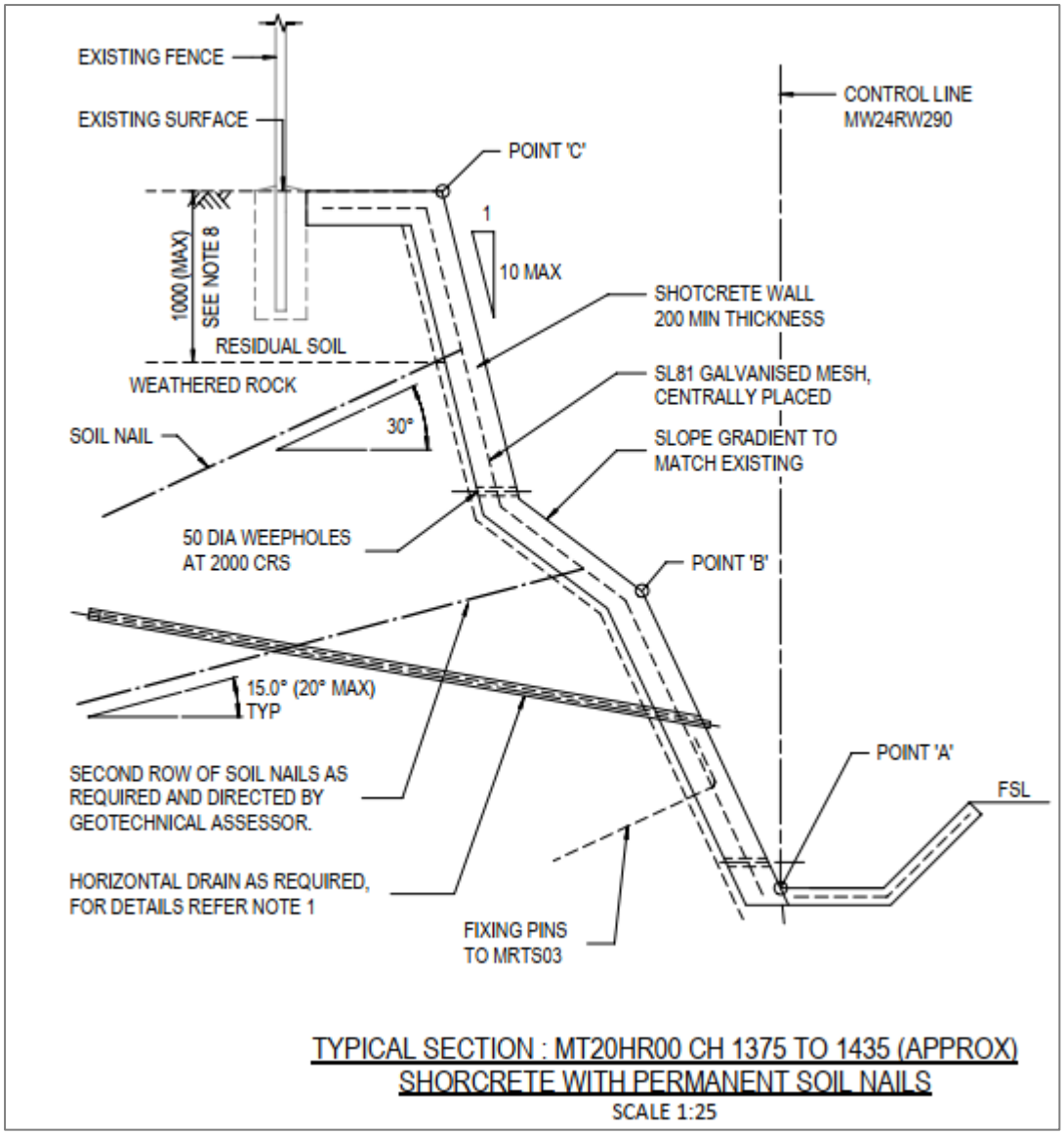


Figure 4: Soil Nail Typical Detail (South of Land Bridge)

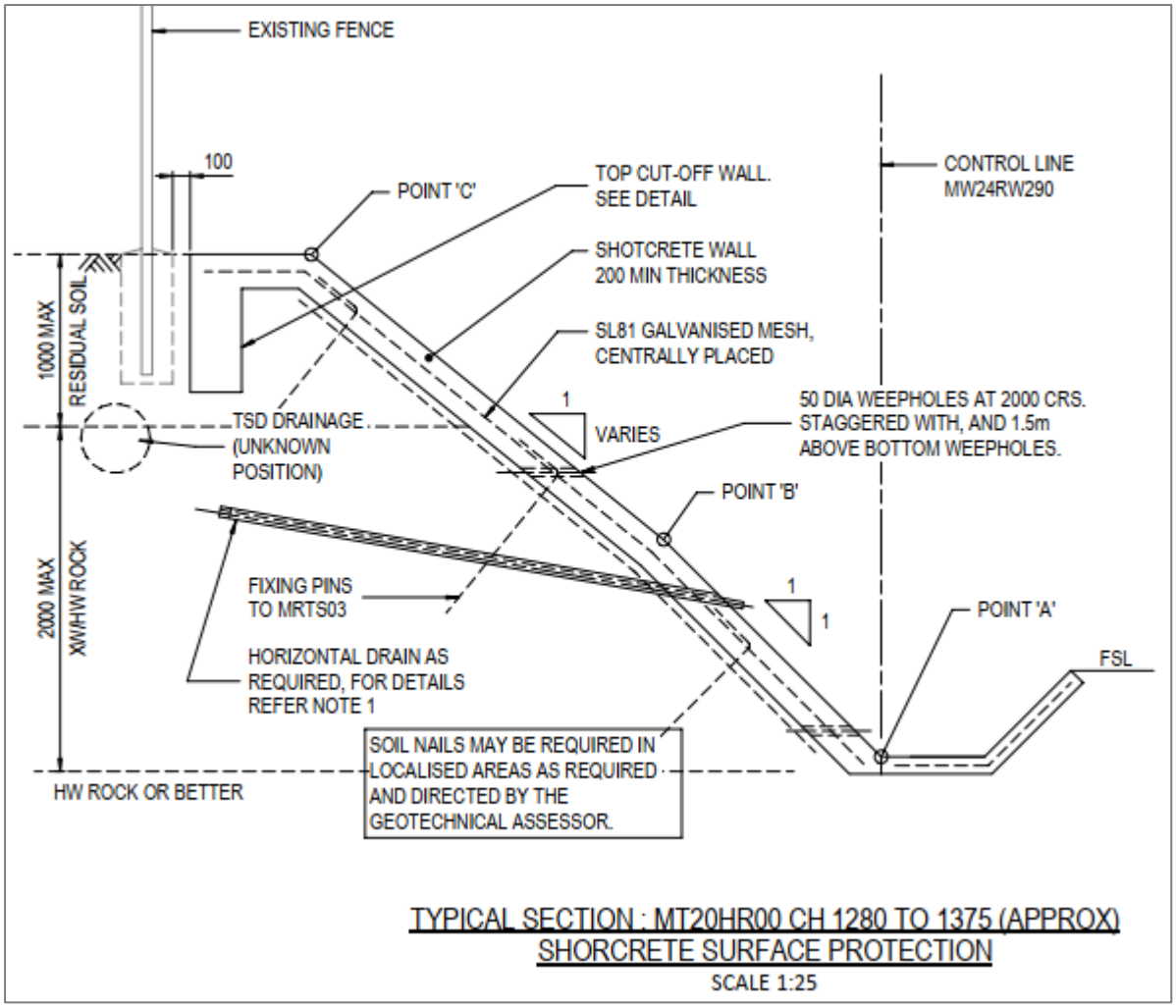


Figure 5: Fixing Pins Typical Detail (South of Land Bridge)

The retaining wall to the south of land bridge is located outside Victoria Park and within road reserve.

The overall retaining wall works are estimated to take 6 to 7 months and are proposed to commence in June 2020.

Location of retaining walls is provided in Sheet 4 of the Appendix 1 Project Footprint Maps.

3.4.2 Stormwater Management

The proposed stormwater management works are required along the Normanby holding road and the QR fence line. This includes new drainage to provide appropriate surface water capture for the new infrastructure within the QR corridor. It also includes stormwater bund upstream of rail corridor boundary to capture run-off coming from the Victoria Park and connecting it to the existing stormwater drain in QR corridor through a spillway. These works will have a temporary construction impact on additional land to allow for constructability of stormwater bund. These works will be assessed and delivered under the Heritage Exemption Certificate approved by DES. Detailed layout of the stormwater bund and associated spillway is provided in Figure 6 and Figure 7.

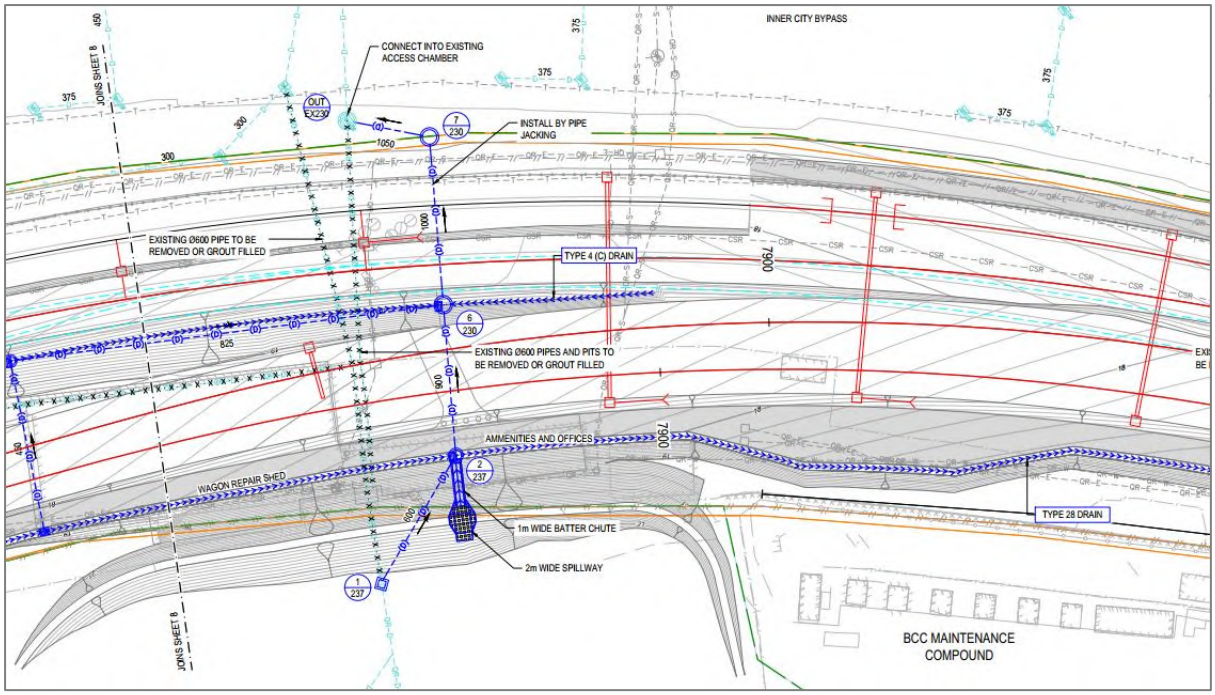


Figure 6: Stormwater Bund - General Layout

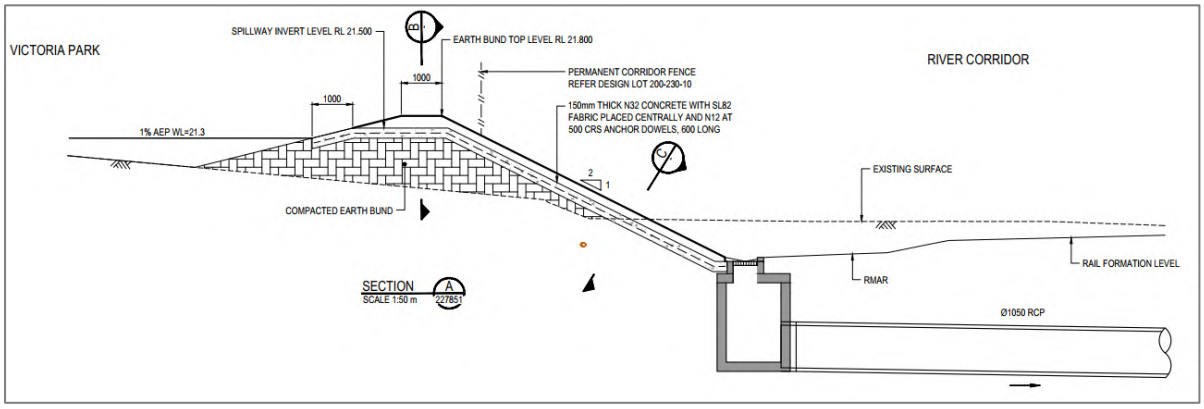


Figure 7: Stormwater Bund – Spillway

These works are estimated to take approximately 2-3 weeks and are proposed to commence in late 2023.

Location of stormwater bund is provided in Sheet 4 of the Appendix 1 Project Footprint Maps.

3.5 Construction Access Road and Ancillary Works

3.5.1 Victoria Park Access

Victoria Park access entails the upgrade and operation of the existing access track including left in and left out driveway on Gregory Terrace and the construction and operation of a new Section of shared user path including an upgraded SUP crossing point. These works are consistent with the approved project. Detailed layout of the Victoria Park access is provided in Figure 8.

These works are within the state heritage listed Victoria Park and will be undertaken under the Heritage Exemption Certificate approved by the Department of Environment and Science (DES).

Location of Victoria Park access and Shared User Path is provided in Sheet 3 of the Appendix 1 Project Footprint Maps.

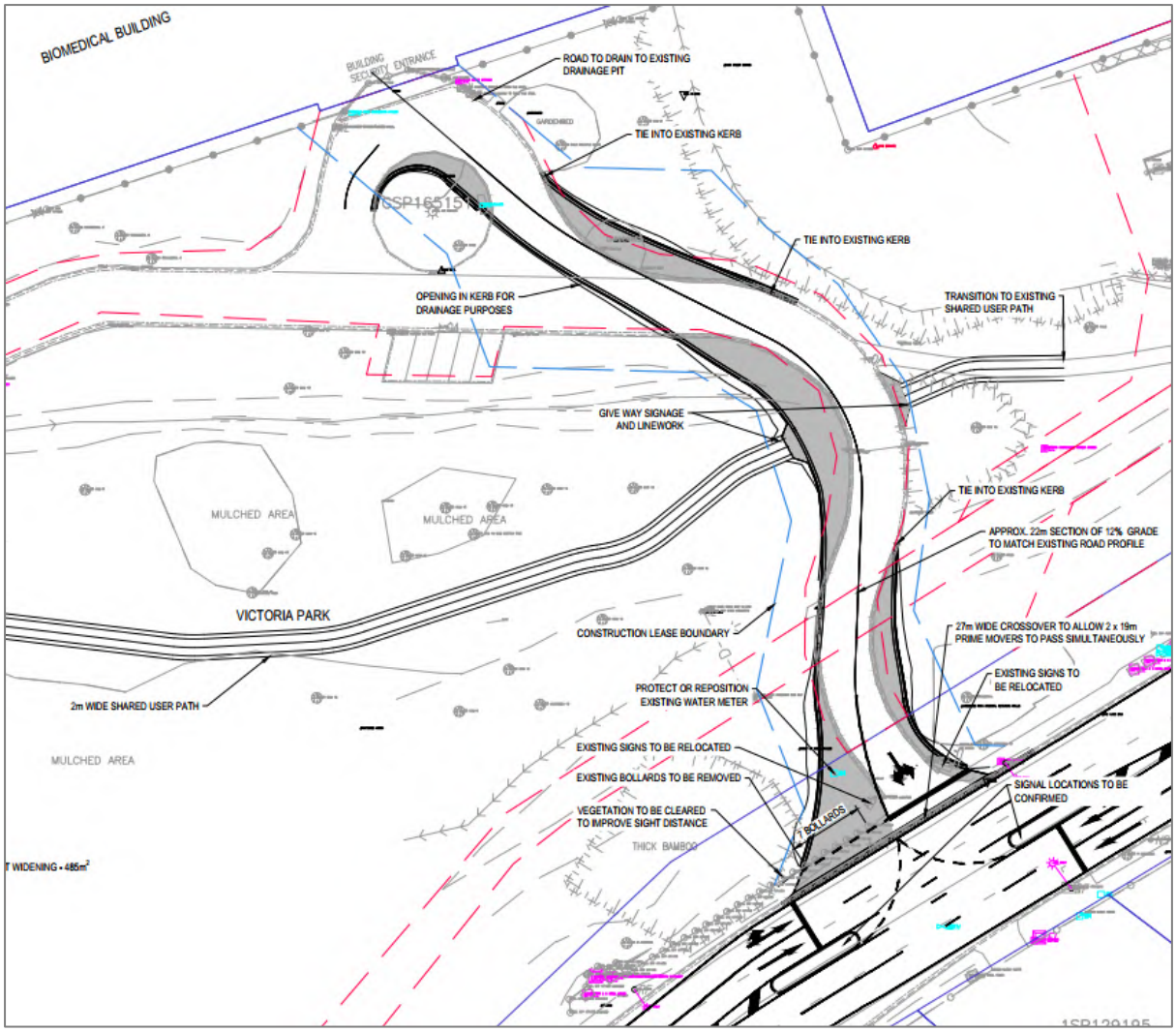


Figure 8: Victoria Park Access – General Layout

3.5.2 Signalisation of Gregory Terrace

Signalisation works entails the implementation and operation of a signalised intersection on Gregory Terrace as all-way access point to Normanby and the Northern areas. The existing Gregory Terrace / Victoria Park access road intersection will be temporarily upgraded to a signalised intersection, to enable safe access to the rail corridor for construction vehicles. These works will have a temporary construction impact on additional land on Gregory Terrace to allow for constructability of signalised intersection. Detailed intersection layout for signalisation works is provided in Figure 9. Some activities associated with these works are required to be completed during Non-Standard Working Hours due to the restrictions from BCC on contraflow road closures on Gregory Terrace during Standard Working Hours. Where practicable and reasonable construction activities have been scheduled during Standard Working Hours to reduce the level and duration of impacts to nearby Sensitive Places.

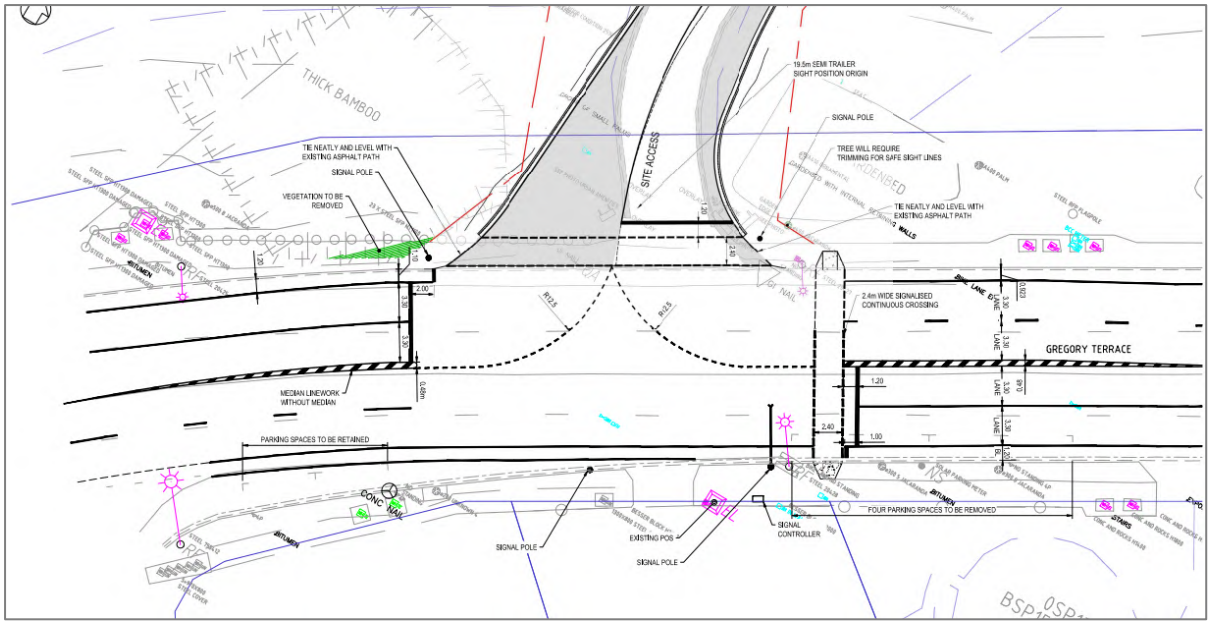


Figure 9: Gregory Terrace Signalisation – General Layout

This work is expected to take approximately three (3) months to complete and is proposed to commence in June 2020.

Location of Gregory Terrace Signalisation works is provided in Sheet 3 of the Appendix 1 Project Footprint Maps.

3.6 Enabling Track Works

Enabling track works refers to activities that are required to prepare an area for upcoming works.

An example of this is the Yeronga Station Dual Gauge track works. Before the track works can occur -

- new overhead wiring structures will be installed;
- minor drainage pipes and other services will be relocated, and
- minor civil works will be completed.

The enabling track works can be completed over a series of approved possessions to suit the construction staging.

These works will be undertaken across the rail corridor within the Cross River Rail project footprint.

4. Conclusion

The majority of additional land nominated in RfPC-7 is associated with the temporary construction footprint required for the construction of the Breakfast Creek stormwater outlets, Victoria Park soil nail retaining wall, drainage works and stormwater bund as well as the stations in the Southern area.

The nominated land at 109 Elizabeth Street is not an additional land requirement but an update to the property drawings to better reflect the northern station entrance requirement. This land is consistent with the previously approved project. The land within Victoria Park required for the Shared User Path realignment is also consistent with the land assessed in RfPC-1 but now reflects the final location which has been agreed by the Brisbane City Council. RfPC-7 Volume 2 drawing set now accurately reflects this final location. The nominated surrounding land use types identified in RfPC-7 at Albion, Bowen Hills, Cleveland line, Tennyson and the southern end of the project are consistent with the previously assessed project and are in line with the current QR activities occurring within the rail corridor.

While RfPC-7 has requested additional temporary land to support the Mayne Yard stormwater outlets, the impacts associated with the construction of these structures will be assessed and conditioned through the Operational Work for Prescribed Tidal Works approval process under the *Planning Act 2016* prior to the works commencing.

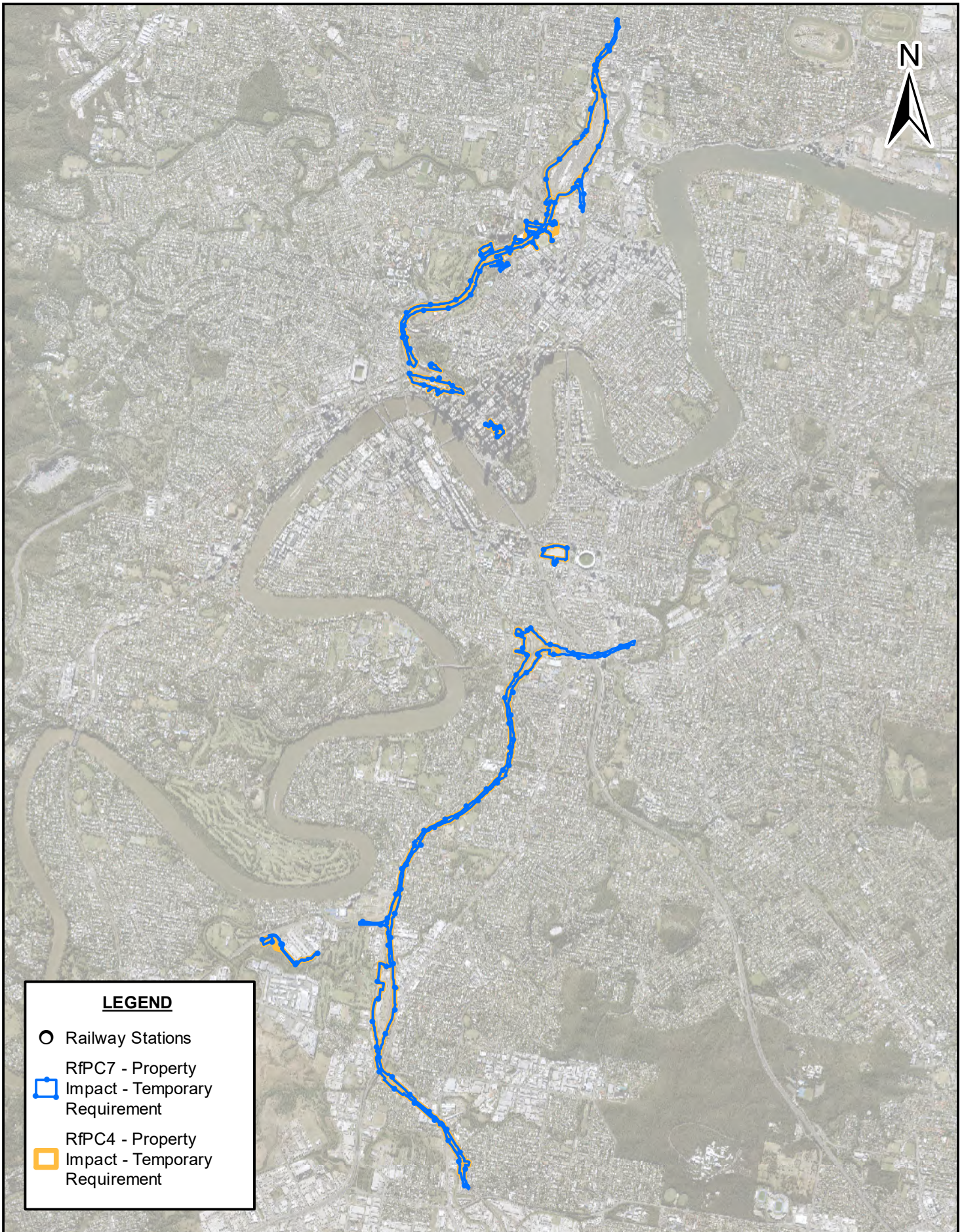
All overhead lines and signal upgrade works are located within the existing rail corridor and are planned to occur during QR approved possessions. As these works are consistent with the current QR operations and rail possessions, the RfPC-7 scope of works will therefore not add any further impact to these areas.

The railway corridor widening near Lanham Street remains consistent with the approved project footprint and impact. However, with further refined construction methodology developed to undertake the rock cutting works, this now triggers a land requirement changing from a temporary construction requirement to a permanent volumetric requirement.

Impacts associated with the retaining wall along Victoria Park is assessed through the Heritage Exemption Certificate which has been approved by the Department of Environment and Science.

To reduce impacts to the nearby sensitive receptors, a large proportion of the construction activities associated with the signalisation works on Gregory Terrace have been programmed during Standard Working Hours. However, due to road closure restrictions some of these construction activities are required to be completed during Non-Standard Working Hours. These impacts will be managed via an approved Construction Environmental Management Plan (CEMP). The nominated enabling track works within the rail corridor are consistent with the current QR activities occurring within rail corridor.

Appendix 1 Project Footprint Maps

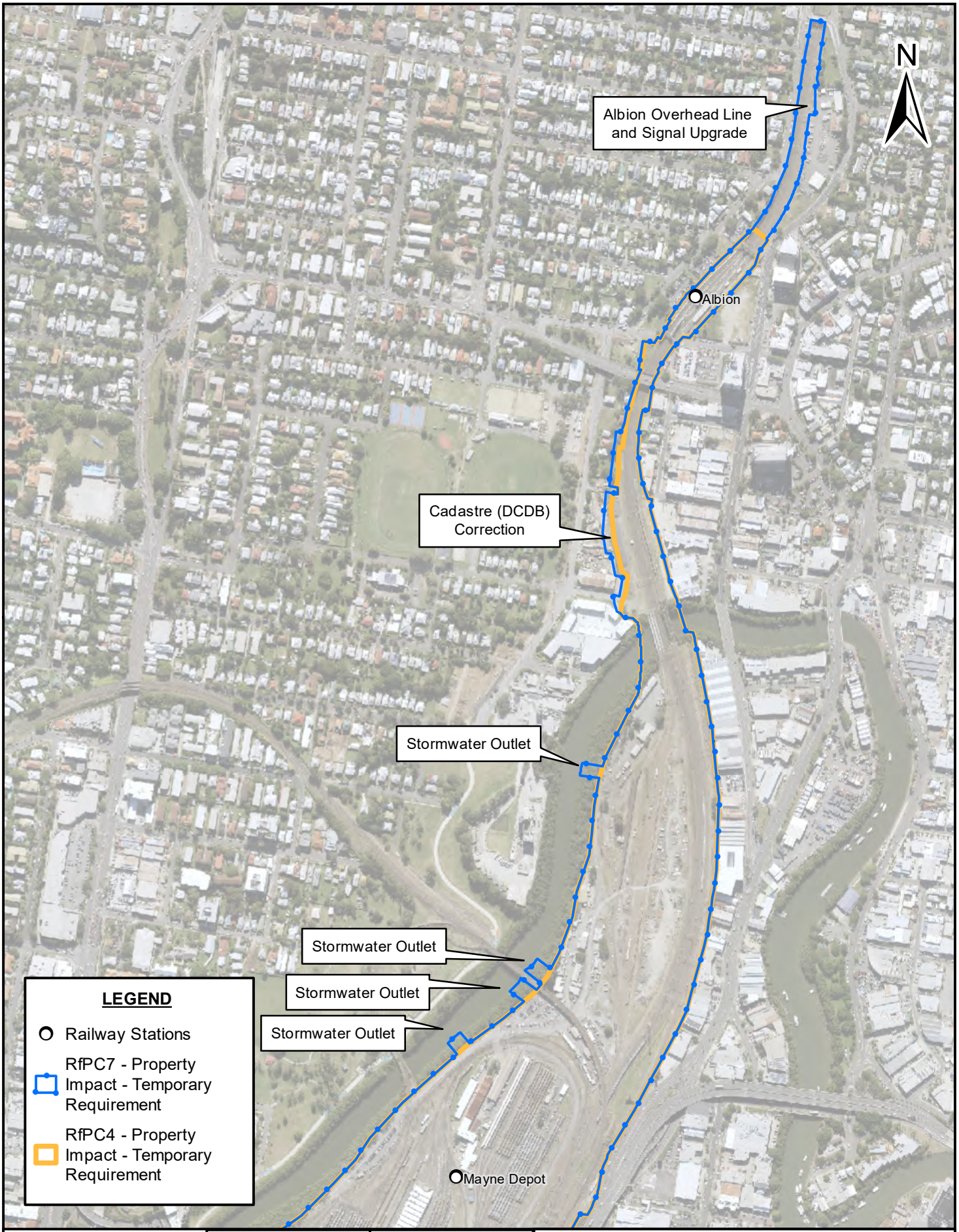


MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 1 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a | A4 | REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020

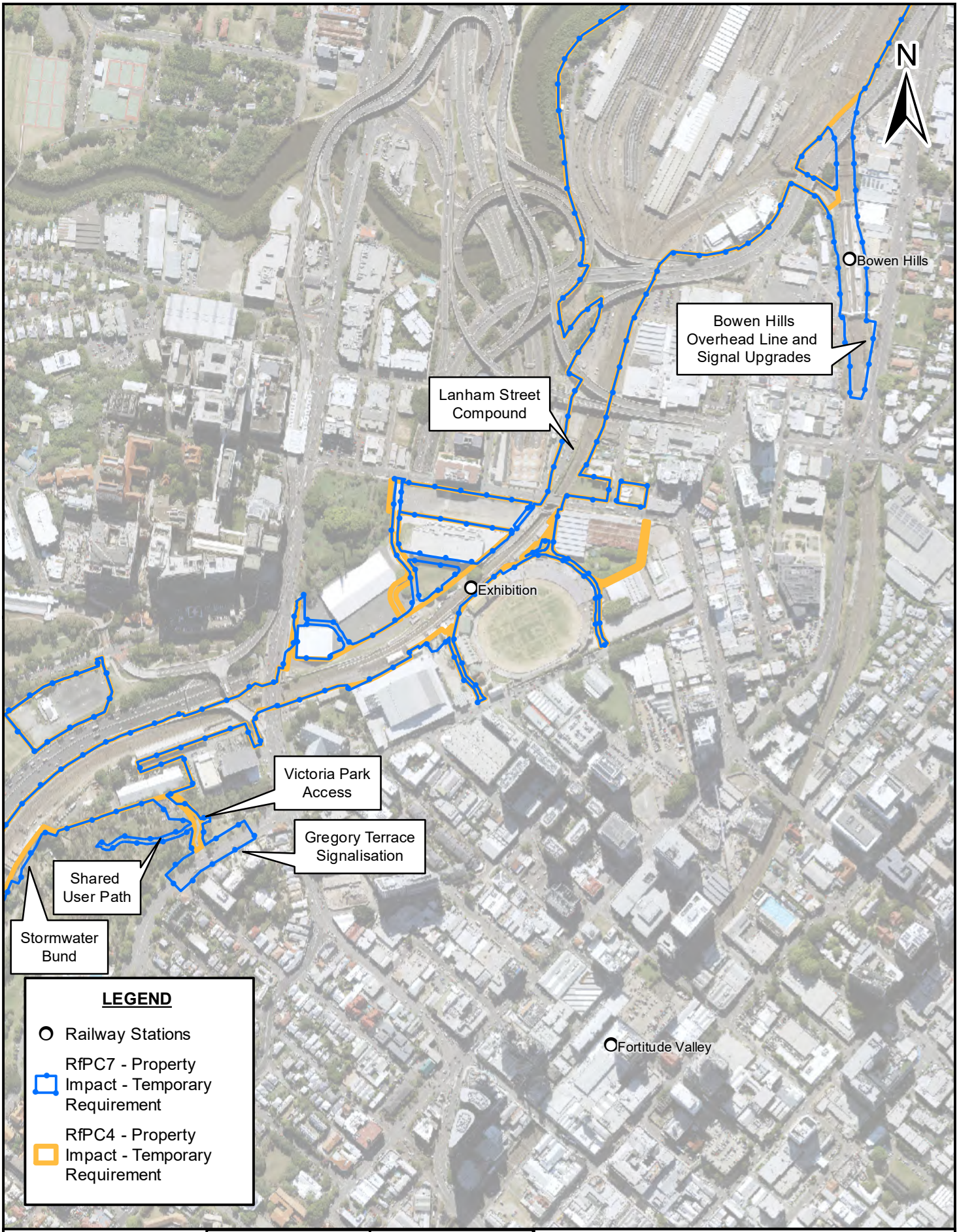


MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 2 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a · A4 · REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020



MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	
DRAWN BY	
CHECKED BY	
APPROVED BY	
SCALE	NOT TO SCALE
DATE	19/05/2020

CROSSRIVERRAIL

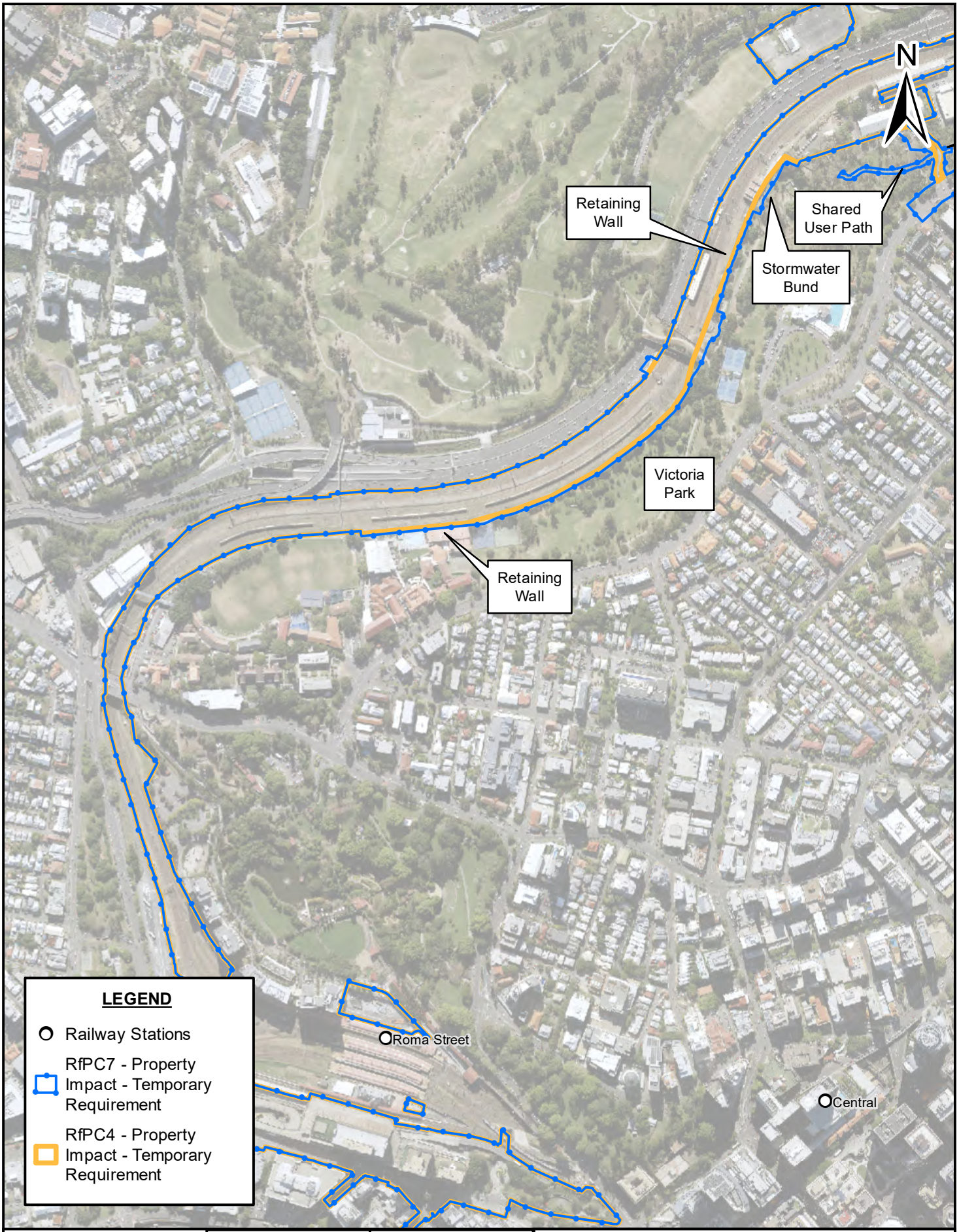
TITLE

TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON

Sheet 3 of 12

DRAWING / FIGURE NO	A4	REV NO
n/a		0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020

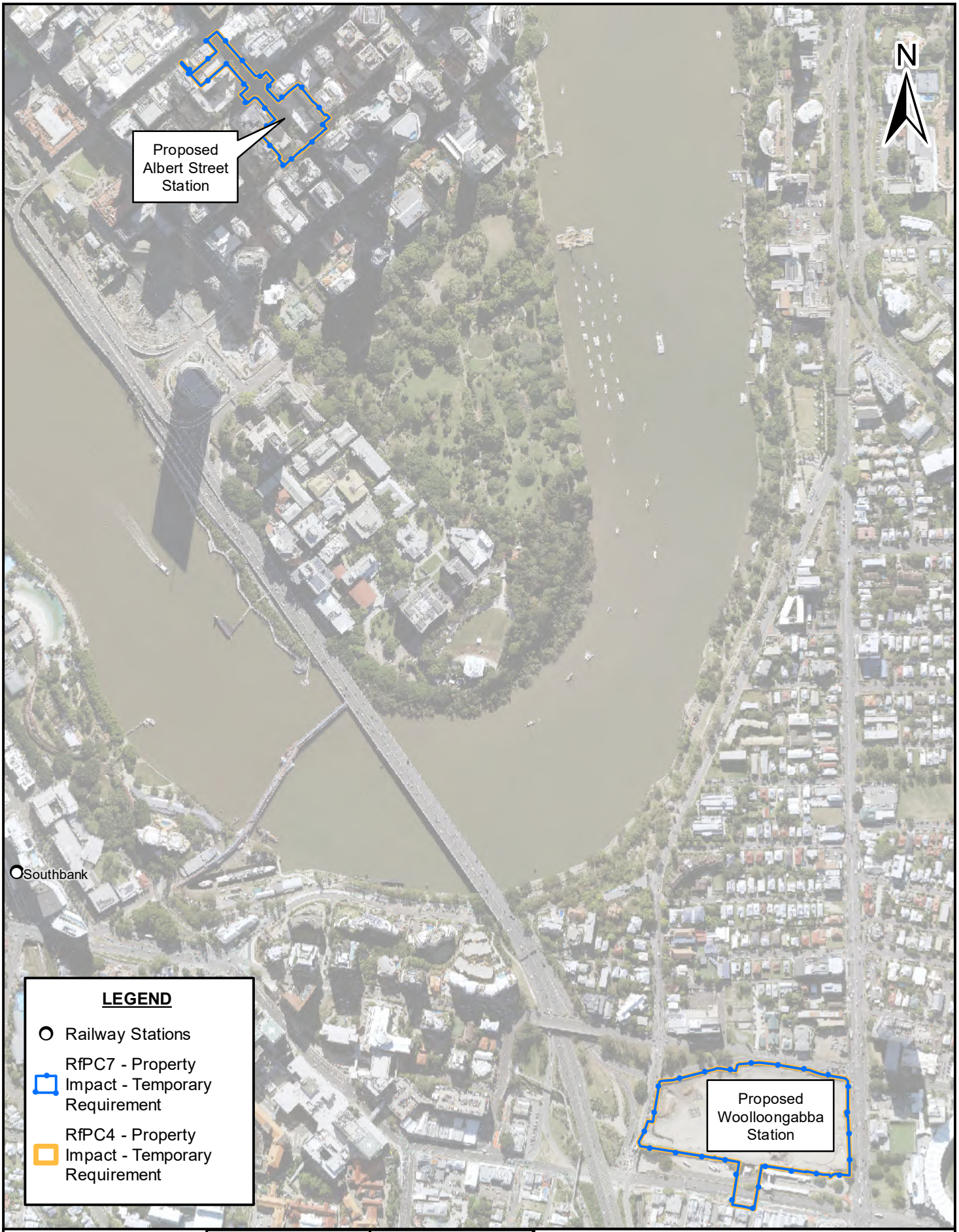


MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 4 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a · A4 · REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020



MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

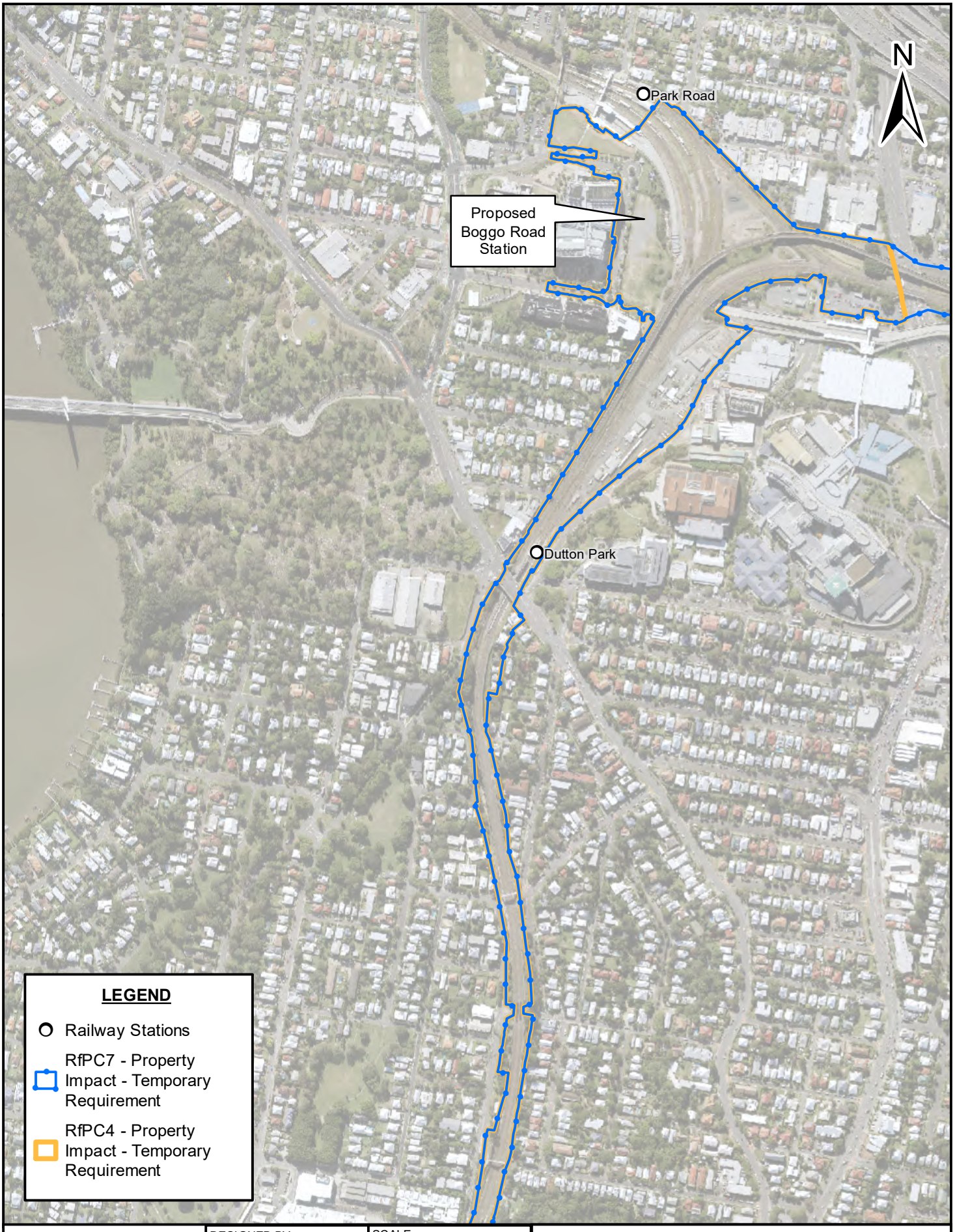
DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 5 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a · A4 · REV NO 0

MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 6 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a | A4 | REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020



MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 7 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a | A4 | REV NO 0

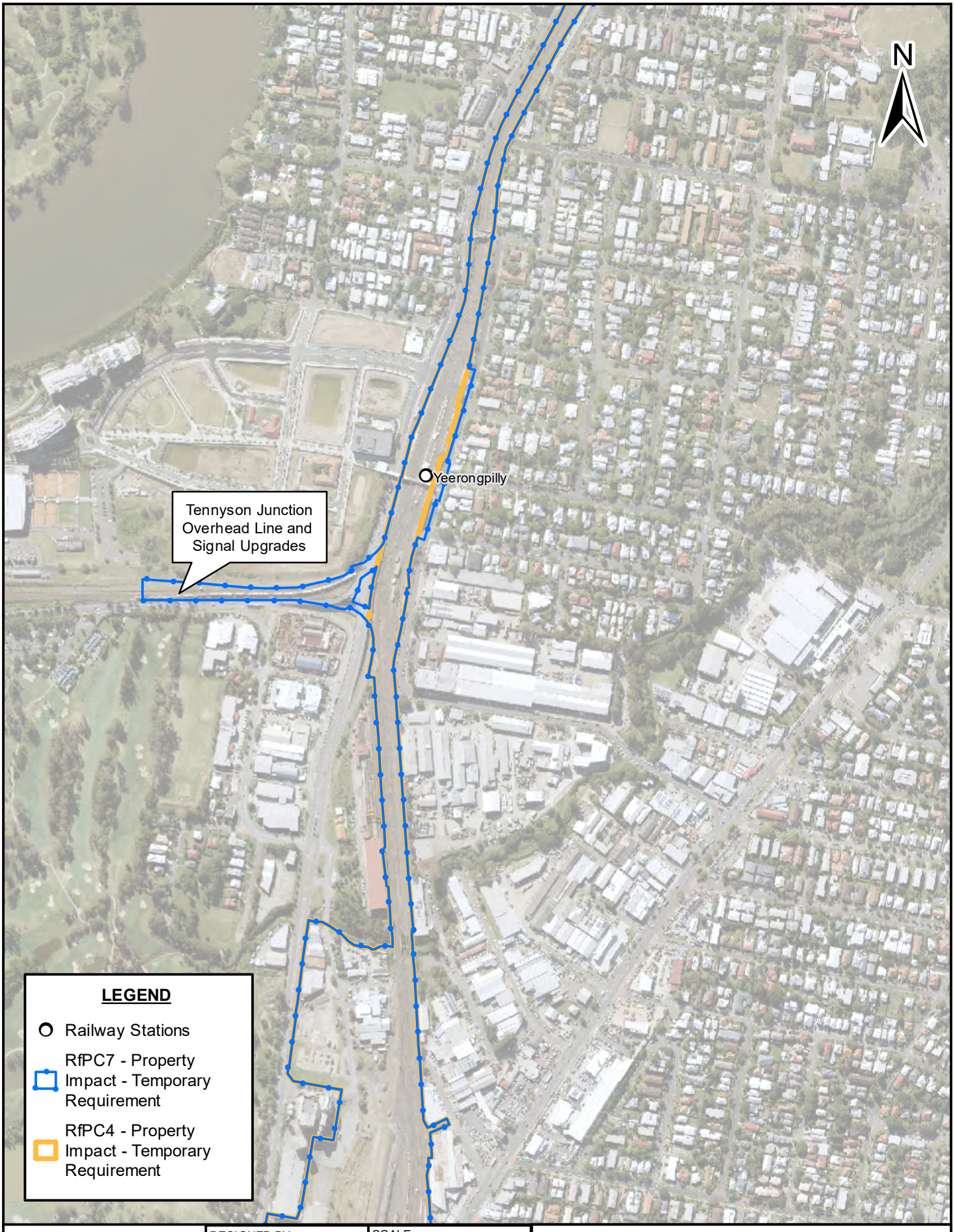
Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020

MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 8 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a | A4 | REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020

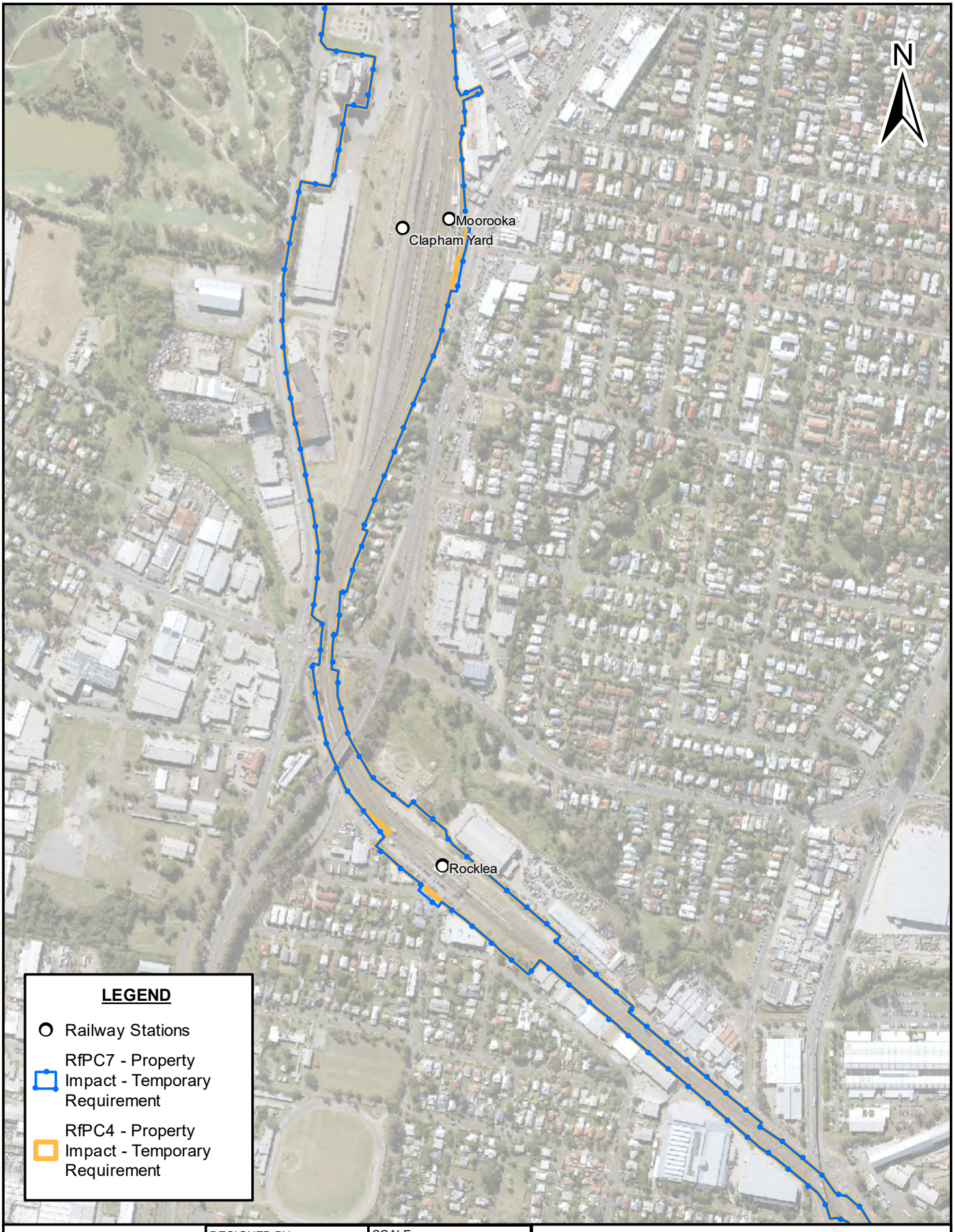


MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 9 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a · A4 · REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020

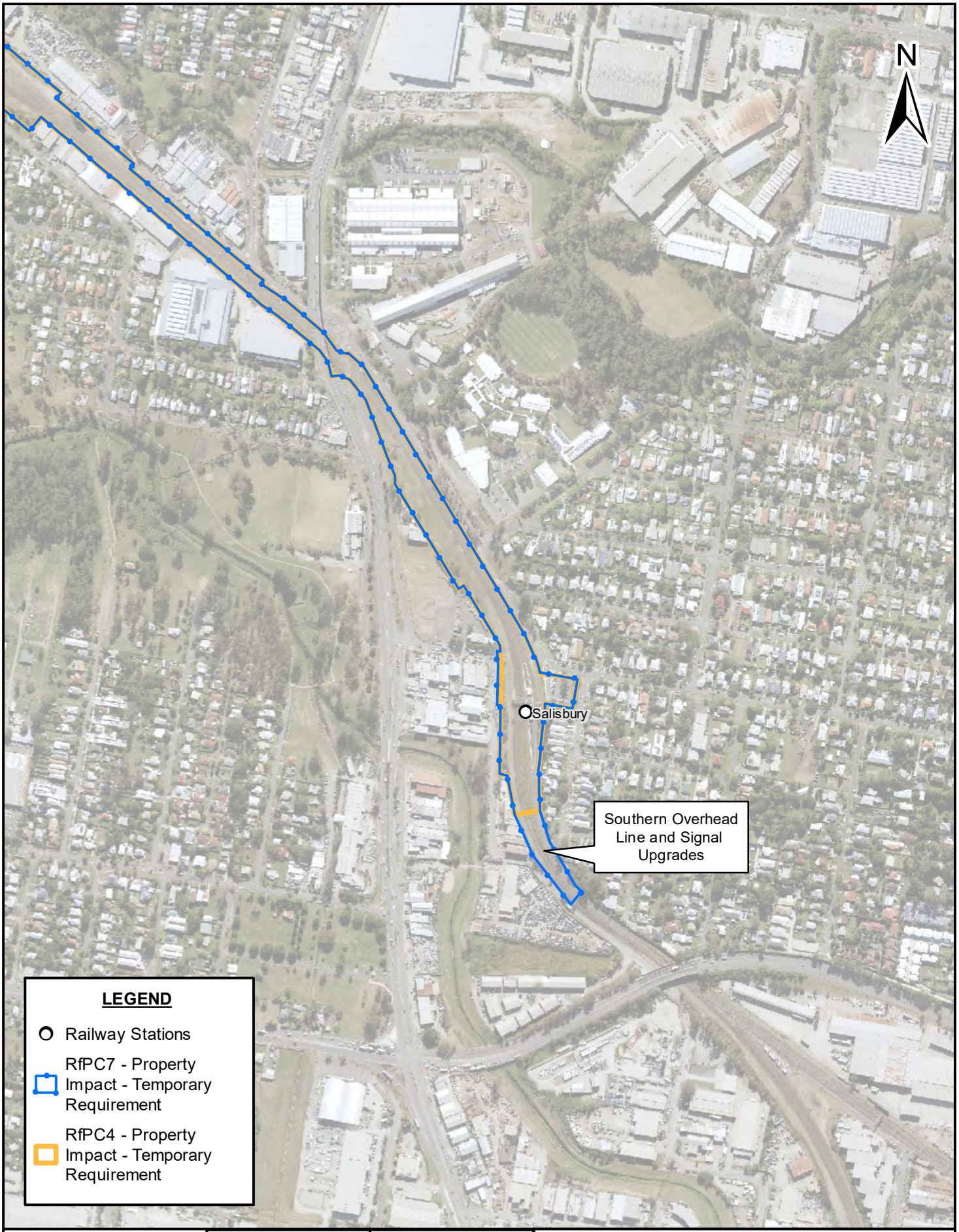


MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 10 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a | A4 | REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020

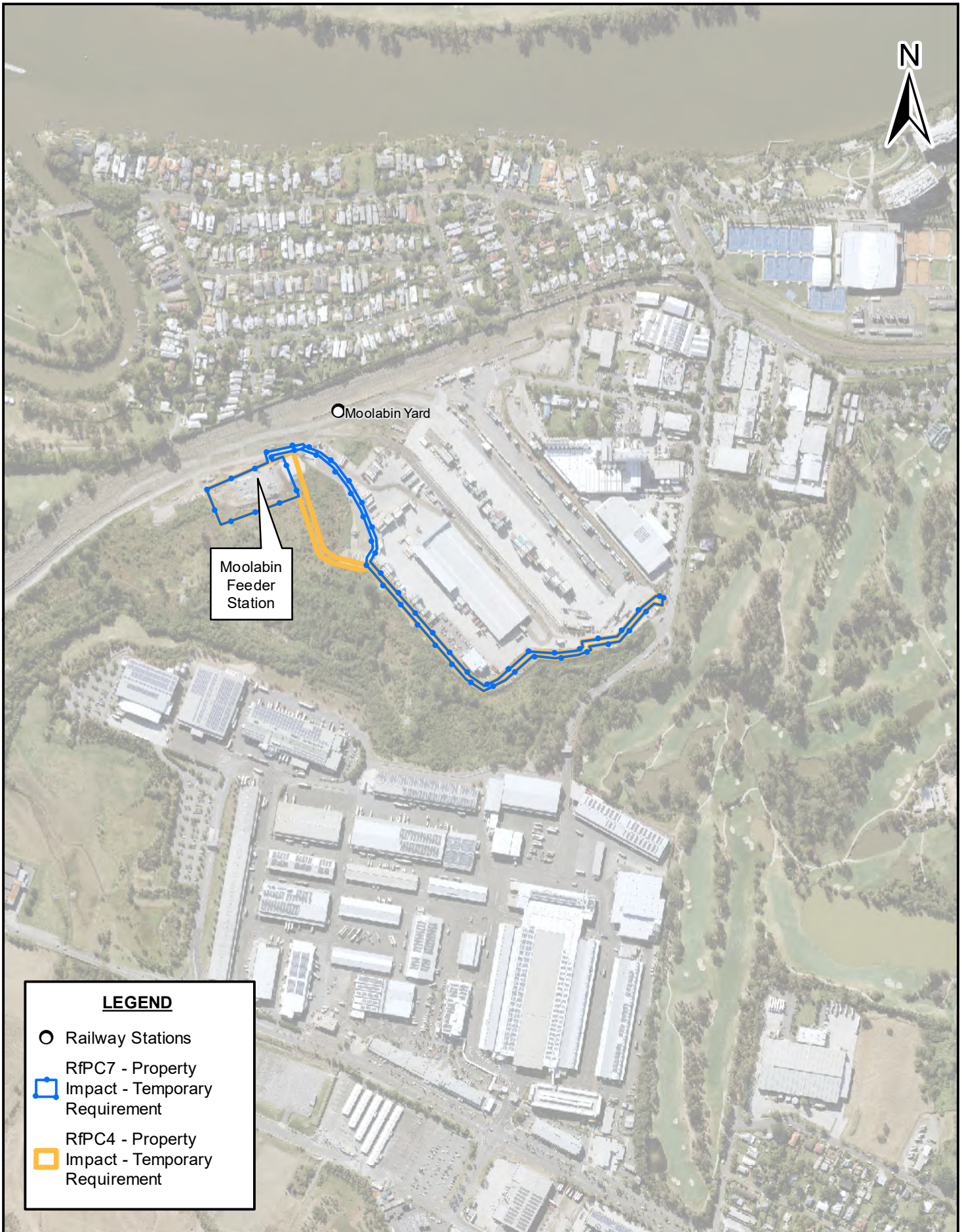


MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 11 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a | A4 | REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020



MAP NOTES

1. Photography supplied by DNRME. Dated October 2019

DESIGNED BY	SCALE NOT TO SCALE	TITLE **TEMPORARY REQUIREMENT RfPC4 to RfPC7 COMPARISON** Sheet 12 of 12
DRAWN BY	DATE 19/05/2020	
CHECKED BY	CROSSRIVERRAIL	
APPROVED BY		DRAWING / FIGURE NO n/a · A4 · REV NO 0

Document Path: Q:\.....\04_GIS\Projects\Job-073_RfPC7DataCleansingAndAnalysis\MXD Date Printed: 29/05/2020