NSW GOVERNMENT

sydney METRO

City & Southwest

SYDENHAM TO BANKSTOWN

SUBMISSIONS REPORT

> September 2018

NSW GOVERNMENT

This page has been left blank intentionally

Contents

Table index

Figure index

Appendices

Executive summary

Overview

The NSW Government has committed to building a significant piece of transport infrastructure by constructing Sydney Metro, a new standalone rail network providing 66 kilometres of metro rail line and 31 metro stations. Sydney Metro is Australia's biggest public transport project.

The NSW Government is currently delivering two stages of Sydney Metro – Sydney Metro Northwest (between Rouse Hill and Chatswood), and Sydney Metro City & Southwest (between Chatswood and Bankstown). The Sydney Metro Northwest project is currently under construction and will be operational in 2019.

Sydney Metro City & Southwest will extend Sydney Metro beyond Chatswood to Bankstown. Sydney Metro City & Southwest comprises two core components – the Chatswood to Sydenham project, and the Sydenham to Bankstown upgrade ('the preferred project' for the purposes of this report).

Sydney Metro City & Southwest (including the preferred project) is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney – a level of service never before seen in Sydney. Sydney's new metro railway has a target capacity of about 40,000 customers per hour. This is a major increase on Sydney's current suburban system, which can reliably carry 24,000 people an hour per line.

Sydney Metro, together with signalling and infrastructure upgrades across the existing Sydney rail network, will increase the capacity of train services entering the Sydney CBD – from about 120 an hour today to up to some 200 services an hour beyond 2024. This is an increase of up to 60 per cent capacity across the network.

The preferred project

Sydney Metro City & Southwest (including the project) was declared to be critical State significant infrastructure in December 2015 due to its importance to the State, and is subject to approval by the Minister for Planning.

An Environmental Impact Statement was prepared to support Sydney Metro's (formerly Transport for NSW) application for approval of the project in accordance with the requirements of Division 5.2 (formerly Part 5.1) of the *Environmental Planning and Assessment Act 1979*.

The Environmental Impact Statement was placed on public exhibition between 13 September 2017 and 8 November 2017.

Based on community and stakeholder feedback received during the public exhibition of the Environmental Impact Statement, and to respond to industry feedback as part of the procurement process about constructability and cost, Sydney Metro revised the project to significantly minimise heritage, vegetation, construction noise and traffic impacts. The revised project would consequently reduce disruptions to the community during the construction of the project while providing a more efficient use of public monies that would still deliver a world class metro (the preferred project).

A Submissions and Preferred Infrastructure Report was prepared and displayed for public and stakeholder information and comment. That report included a response to issues raised in submissions during exhibition of the Environmental Impact Statement and a Preferred Infrastructure Report which described the preferred project.

The preferred project involves upgrading 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13 kilometre long section of the Sydney Trains T3 Bankstown Line, between west of Sydenham Station and west of Bankstown Station, to improve accessibility for customers and meet the standards required for metro operations.

Further information on the preferred project is provided in Chapters 1 and 2 of this report, and a description of the preferred project for which approval is sought is provided in Appendix B.

Preferred project need and benefits

Sydney is experiencing sustained population and economic growth. The need for the preferred project, as part of Sydney Metro as a whole, is driven by the challenges being experienced in responding to this growth, including the existing and future capacity of Sydney's transport system, and is consistent with the same strategic objectives and outcomes of the exhibited project.

The Sydney Metro network will substantially increase rail network capacity by introducing new high-capacity rail connections between the Sydney CBD and other key economic centres in Sydney. It will cater for expected increased demand for rail services, and accommodate an extra 100,000 customers per hour across the Sydney CBD rail lines.

The preferred project would address one of Sydney's biggest rail bottlenecks, delivering benefits across Sydney's rail network. The T3 Bankstown Line effectively slows down the Sydney Trains network because of the way it merges with other railway lines close to the city. Additionally parts of the T3 Bankstown Line are over 120 years old with existing infrastructure in varying conditions. Currently, a key challenge for this line is customer accessibility, with five of the stations not having lifts.

The preferred project would have the following benefits:

- all stations fully accessible, with lifts and level access between trains and platforms
- faster, more frequent and direct access to key employment centres providing more job opportunities
- better access to education, with fast, more frequent and direct connections
- no timetable required – customers can just turn up and go
- direct access to new stations, including Waterloo, Martin Place, Pitt Street, Barangaroo, and Victoria Cross (at North Sydney)
- increased train frequency in morning and evening peak services – a train at least every four minutes
- improved interchange with light rail, pedestrian and cycling networks, and provision of taxi, kiss and ride and bike parking facilities at all stations
- fast, safe and reliable – a new generation of 21st century metro trains.

Consultation on the Submissions and Preferred Infrastructure Report

The Submissions and Preferred Infrastructure Report was placed on public exhibition and submissions on the preferred project were invited by the Department of Planning and Environment from 20 June 2018 to 18 July 2018.

During the display period, interested stakeholders and members of the community were able to review the Submissions and Preferred Infrastructure Report online or at display locations, participate in consultation and engagement activities, and make a written submission to the Department of Planning and Environment on the preferred project for consideration in its assessment of the preferred project.

Consultation activities included stakeholder briefings, four community information sessions, visiting nearby properties and handing out community information during the morning and afternoon peaks at stations between Marrickville and Bankstown.

Community information used to support consultation included a newsletter also translated into seven languages other than English, station handouts, email alerts, website updates, a document summarising key aspects of the Submissions and Preferred Infrastructure Report, a media release, advertisements in nine papers including languages other than English and information boards.

Further information on consultation undertaken is provided in Chapter 3 of this report.

Overview of submissions

The Department of Planning and Environment received 401 submissions during the Submissions and Preferred Infrastructure Report display period. Of these submissions, 11 were from government agencies and other key stakeholders. The remaining 390 submissions were received from members of the local community, interest/community groups, and businesses.

Of the key issues raised in the community submissions regarding the preferred project, the top three most frequently raised issues were:

- stakeholder and community consultation, including the adequacy of the consultation period
- project description – design features, including issues regarding the station designs and the loss of the active transport corridor
- construction traffic, transport and access, including issues regarding the impacts during weekend and final rail possessions and station closures.

Key issues raised by government agencies and key stakeholders included:

- removal of the active transport corridor
- hydrology, flooding and stormwater management
- the need for ongoing consultation with regards to station designs.

Issues that had been raised previously and addressed in the Submissions and Preferred Infrastructure Report were not addressed again in this report.

Further information on submissions, including issues raised, and responses by Sydney Metro, is provided in Chapters 4 to 7 of this report.

Findings

In response to issues raised specific to the preferred project some of the mitigation measures presented in the Submissions and Preferred Infrastructure Report have been updated and some additional mitigation measures have been added. As a result of some of the submissions, clarifications were also provided around the following issues:

- connections to the city once Sydney Metro is operational
- the scope of the preferred project as it applies to the temporary transport arrangements (also revised in the preferred project description)
- investigations regarding the provision of active transport connections.

Submissions specific to the preferred project have not required changes to the preferred project from that described in the Submissions and Preferred Infrastructure Report and in Appendix B of this report.

Appendix C of this report provides the revised management and mitigation measures that would be implemented during construction and operation to manage potential impacts of the preferred project.

With the implementation of the proposed management and mitigation measures, potential environmental impacts of the preferred project are considered manageable.

Next steps

The Department of Planning and Environment will, on behalf of the Minister for Planning, review the Environmental Impact Statement and submissions received, the Submissions and Preferred Infrastructure Report and submissions received, and this Submissions Report.

Once the Department of Planning and Environment has completed its assessment, a draft assessment report will be prepared for the Secretary of the Department of Planning and Environment, which may include recommended conditions of approval.

The assessment report will then be provided to the Minister for Planning for consideration. The Minister for Planning may then approve the project, with any conditions considered appropriate.

The Minister for Planning's determination, including any conditions of approval and the Secretary's report, will be published on the Department of Planning and Environment's website immediately after determination, together with a copy of this report.

1. Introduction

1.1 Background

Sydney Metro was identified in *Sydney's Rail Future* as an integral component of the *NSW Long Term Transport Master Plan*, forming part of the plan to transform and modernise Sydney's rail network so it can grow with the city's population and meet the future needs of customers. In early 2018, the *Future Transport Strategy 2056* was released as an update to the *NSW Long Term Transport Master Plan* and *Sydney's Rail Future*. The project is identified as a committed initiative in the *Future Transport Strategy 2056.*

Sydney Metro is a new, standalone rail network providing 66 kilometres of metro rail line and 31 metro stations. The NSW Government is currently delivering the first two stages of Sydney Metro, shown in Figure 1.1, which consist of Sydney Metro Northwest (between Rouse Hill and Chatswood) and Sydney Metro City & Southwest (between Chatswood and Bankstown). Early planning for Sydney Metro West is also underway.

Sydney Metro City & Southwest will extend the Sydney Metro system beyond Chatswood to Bankstown, delivering about 30 kilometres of additional metro rail, a new crossing beneath Sydney Harbour, new railway stations in the lower North Shore and Sydney central business district (CBD), and the upgrade of existing stations between Sydenham and Bankstown. Sydney Metro City & Southwest comprises two core components (shown in Figure 1.1), being:

- Chatswood to Sydenham
- Sydenham to Bankstown upgrade (the subject of the current application for approval).

The Minister for Planning approved the Chatswood to Sydenham component in January 2017 and construction has commenced. This component includes 15.5 kilometres of new underground rail line and seven new stations between Chatswood and Sydenham.

To further progress implementation of the *Future Transport Strategy 2056* and Sydney Metro City & Southwest, Sydney Metro (formerly Transport for NSW) ('the Proponent') is seeking approval to construct and operate the Sydenham to Bankstown upgrade component of Sydney Metro City & Southwest ('the project').

The project involves upgrading 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13 kilometre long section of the Sydney Trains T3 Bankstown Line, between west of Sydenham Station and west of Bankstown Station. The project would improve accessibility for customers and meet the standards required for metro operations. The project would enable Sydney Metro to operate beyond Sydenham, to Bankstown.

A key element of the project is upgrading stations along the corridor from Marrickville to Bankstown, to allow better access for more people, by providing level platforms and lifts at all stations. These upgrades aim to provide a better, more convenient, and safer experience for public transport customers.

sydney METRO | city & southwest

Sydney Metro network

FIGURE 1.1

1.2 The assessment and approval process

In December 2015, Sydney Metro City & Southwest (including the project) was declared to be critical State significant infrastructure by the NSW Minister for Planning under *State Environmental Planning Policy (State and Regional Development) 2011*. As critical State significant infrastructure, the project is permissible without development consent, and is subject to assessment and approval by the Minister for Planning under Division 5.2 (formerly Part 5.1) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

An Environmental Impact Statement was prepared to support Sydney Metro's application for approval of the project in accordance with the requirements of Division 5.2 of the EP&A Act.

The Environmental Impact Statement was placed on public exhibition by the Department of Planning and Environment for a period of eight weeks, commencing on 13 September 2017 and concluding on 8 November 2017, as described in Section 1.2 (The assessment and approval process) of the Submissions and Preferred Infrastructure Report.

Based on community and stakeholder feedback received during the public exhibition of the Environmental Impact Statement, Sydney Metro revised the project to significantly minimise heritage, vegetation, construction noise and traffic impacts, while delivering a world class metro (the preferred project).

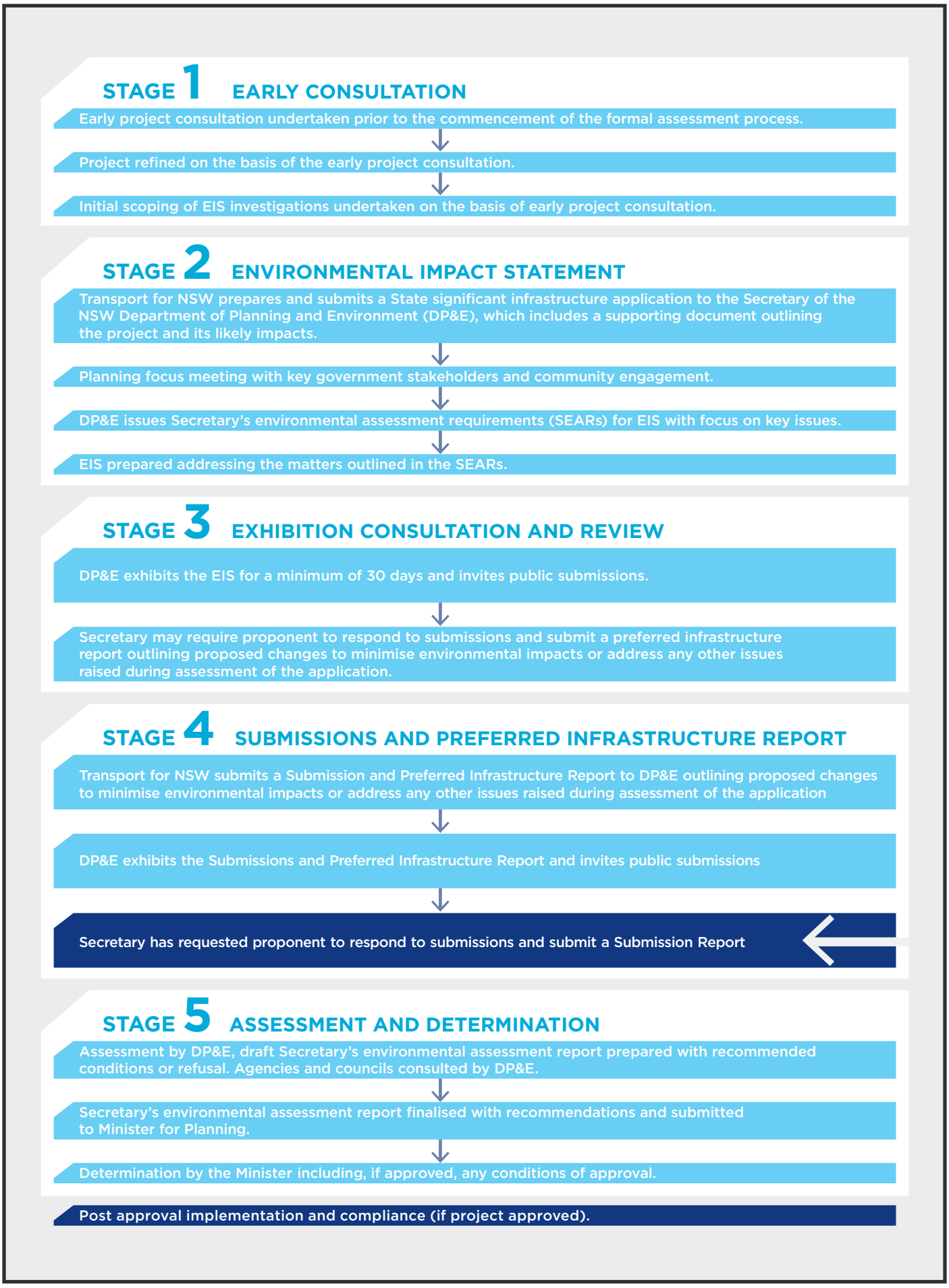
A Submissions and Preferred Infrastructure Report was prepared and displayed for public and stakeholder consultation. This report included a preferred infrastructure report outlining proposed changes to the State significant infrastructure, to minimise its environmental impact, to address issues raised in those submissions received, and to respond to industry feedback as part of the procurement process, about constructability and cost. In accordance with the requirements for State significant infrastructure under Division 5.2 (formerly Part 5.1) and, more specifically, section 5.17(6) (formerly section 115Z(6)) of the EP&A Act, the Submissions and Preferred Infrastructure Report also presented a response to issues raised in submissions received by the Planning Secretary during the exhibition of the Environmental Impact Statement.

Following the lodgement of the Submissions and Preferred Infrastructure Report to the Planning Secretary, and in accordance with the provisions of section 5.17(7) of the EP&A Act, the Submissions and Preferred Infrastructure Report was on public exhibition. This was displayed for a period of four weeks commencing on 20 June 2018 and concluding on 18 July 2018, as described in Section 3.2.1 of this report.

During this exhibition period, interested stakeholders and members of the community were able to review project information online or at display locations, participate in consultation and engagement activities and make a written submission to the Department of Planning and Environment for consideration in its assessment of the project.

Since the exhibition of the Submissions and Preferred Infrastructure Report, Sydney Metro transitioned to a statutory authority. Sydney Metro is now an operating agency owned by the NSW Government and is part of the NSW Transport cluster. Sydney Metro is now the Proponent for the Sydney Metro City & Southwest Sydenham to Bankstown project and relevant references to Transport for NSW have been updated to refer to Sydney Metro.

An overview of the assessment process for the project is shown in Figure 1.2.



sydney METRO | city & southwest

The assessment and approval process for critical State significant infrastructure

FIGURE 1.2

1.3 Purpose and structure of this report

This Submissions Report presents responses to issues raised in submissions received during the exhibition of the Submissions and Preferred Infrastructure Report.

This report presents a discussion of issues associated with the preferred project and the Submissions and Preferred Infrastructure Report only. Submissions which relate to the Environmental Impact Statement and issues that have been raised previously and addressed in the Submissions and Preferred Infrastructure Report have not been addressed in this report.

This report is structured as summarised below.

Main document

- an introduction to the report (Chapter 1)
- a description of the preferred project including justification and clarifications (Chapter 2)
- a description and of the stakeholder and community consultation undertaken for the Submissions and Preferred Infrastructure Report (Chapter 3)
- an analysis of the submissions received during exhibition of the Submissions and Preferred Infrastructure Report, including number, types of submitter and key issues raised (Chapter 4)
- responses to the issues raised in community, key stakeholder, and government agency submissions received during exhibition of the Submissions and Preferred Infrastructure Report (Chapters 5 to 7)
- synthesis of findings of the Submissions Report (Chapter 8)
- a reference list, acronyms and glossary (Chapter 9).

Appendices

- issue categories and where to find responses to issues raised in submissions (Appendix A)
- a description of the preferred project (Appendix B)
- compilation of revised mitigation measures for the preferred project (Appendix C).

This page has been intentionally left blank

2. Overview of the preferred project

This section provides an overview of the preferred project as described in the Submissions and Preferred Infrastructure Report. This includes an overview of the key features and the project need and benefits. This section also provides clarifications regarding information presented in the Submissions and Preferred Infrastructure Report.

2.1 Overview of the preferred project as described by the Submissions and Preferred Infrastructure Report

2.1.1 Location

The preferred project is a section of Sydney Metro as a whole, and one of two components of Sydney Metro City & Southwest. The location of the preferred project is shown in Figure 2.1. The key elements of the preferred project are located mainly within the existing rail corridor, from about 800 metres west of Sydenham Station in Marrickville, to about one kilometre west of Bankstown Station in Bankstown. The project is located in the Inner West and Canterbury-Bankstown local government areas.

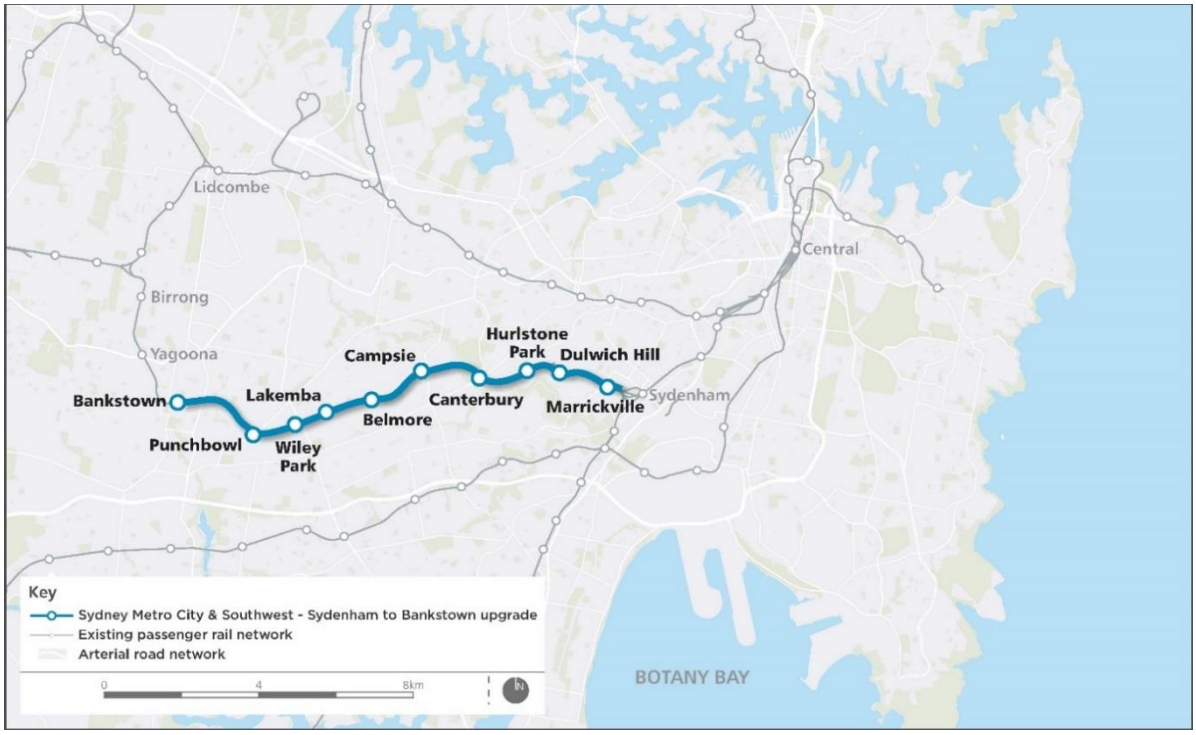


Figure 2.1 Location of the project

2.2 Key features of the preferred project

The key features of the preferred project, which are shown in Figure 2.2, include works to upgrade access at all stations from Marrickville to Bankstown (inclusive) and works to convert stations and the rail line to Sydney Metro standards.

2.2.1 Station works

The preferred project includes upgrading the 10 stations from Marrickville to Bankstown as required. The works at each station generally include:

- works to platforms including re-levelling and the provision of emergency access ramps
- new lifts to access the station and station platforms, where required
- refurbishment/repurposing of station buildings on platforms or at station entrances
- renewing/revitalising station interiors and exteriors
- provision of additional station facilities as required.

Works to integrate with other modes of transport and improve travel paths would also be undertaken in some areas adjoining the stations. This would include the provision of accessible parking, cyclist facilities, and kiss and ride facilities at locations where these currently do not exist.

In addition to the station upgrades, works to meet the standards required for metro services would include:

- installation of platform screen doors and a fixed or mechanical solution to ensure that the gap between the platform and the train is minimal
- provision of operational facilities, such as station services buildings.

2.2.2 Track and rail system facilities

Upgrading the track and rail systems to enable operation of metro services would include:

- track works where required along the rail corridor
- new or replacement turn back facilities and track crossovers
- installing Sydney Metro rail systems and adjusting existing Sydney Trains rail systems
- overhead wiring adjustments.

2.2.3 Other project elements

Other works proposed to support Sydney Metro operations would include:

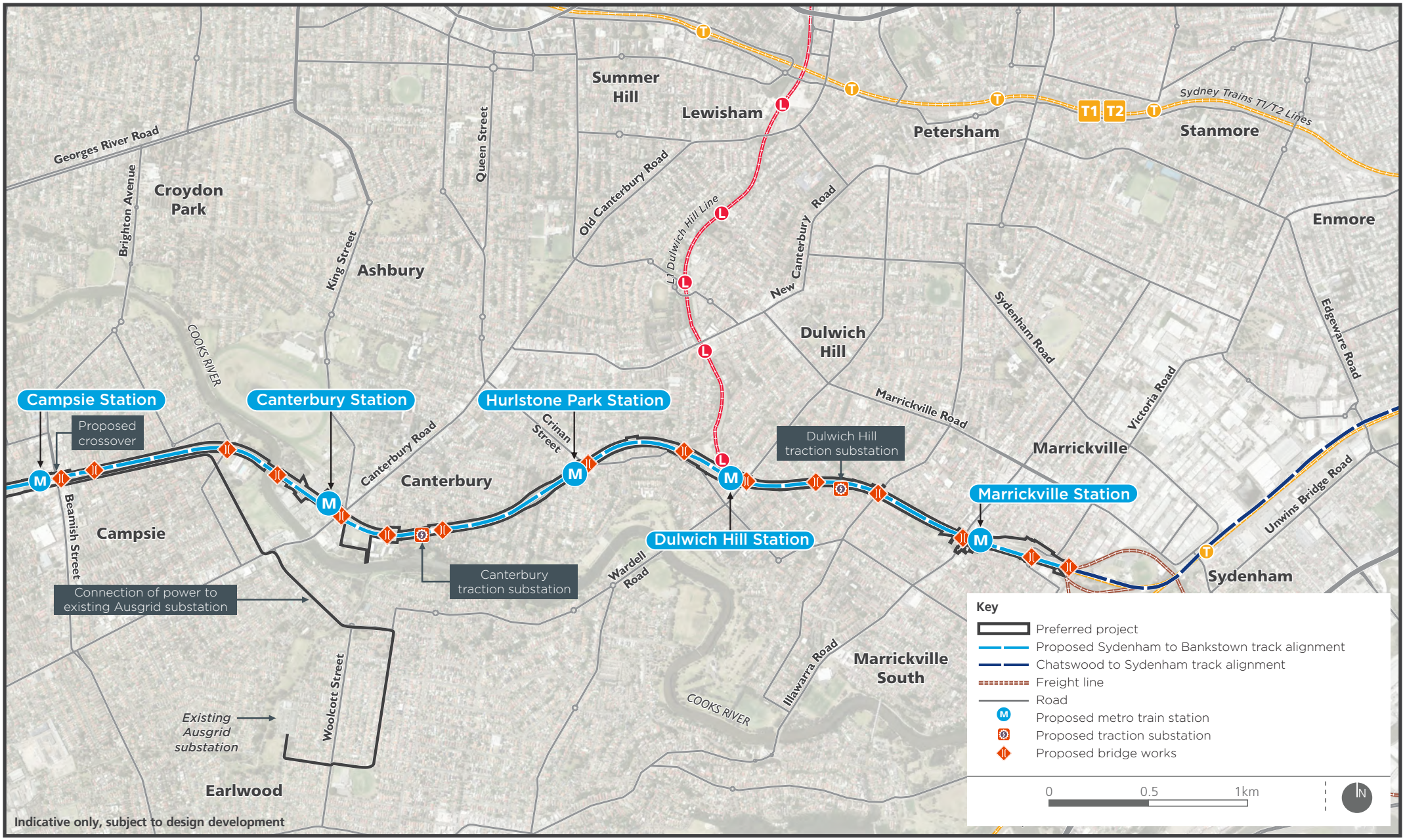
- existing bridge and underpass upgrades along the rail corridor
- installation of security measures, including fencing, where required
- installation of noise barriers where required
- augmenting the existing power supply, including new traction substations and provision of new feeder cables
- utility and rail system protection and relocation works.

2.2.4 Temporary works during construction

During construction, the preferred project would also involve:

- provision of temporary facilities to support construction, including construction compounds and work sites
- implementation of alternative transport arrangements for rail customers during possession periods and/or station closures, guided by the Temporary Transport Strategy.

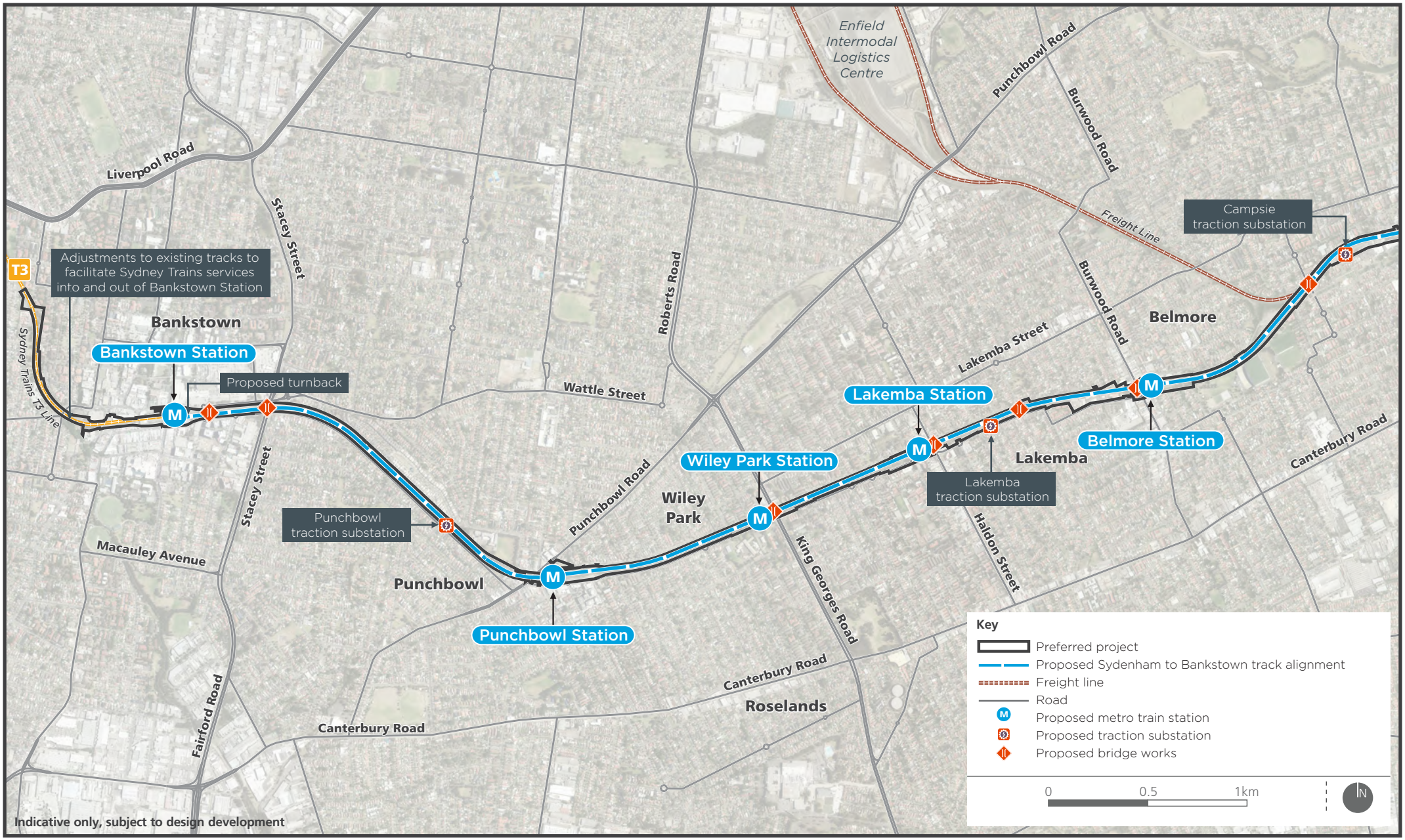
Further information on the key features of the preferred project is provided in the preferred project description in Appendix B.



sydney METRO | city & southwest

Overview of the preferred project - map 1

FIGURE 2.2



sydney METRO | city & southwest

Overview of the preferred project - map 2

FIGURE 2.2

2.3 Operation of the preferred project

The preferred project would operate in conjunction with Sydney Metro Northwest and the Sydney Metro City & Southwest Chatswood to Sydenham component, which extends from Chatswood Station to Sydenham Station.

Sydney Metro Northwest will be operational between Tallawong and Chatswood stations in 2019. Sydney Metro City & Southwest would be fully operational by 2024.

Once the preferred project is operational, Sydney Trains services would no longer operate between Sydenham and Bankstown stations. Metro trains would run between Sydenham and Bankstown stations in each direction, at least every four minutes in peak periods, with at least 15 trains per hour. Customers would be able to interchange with Sydney Trains services at Sydenham and Bankstown stations. Sydney Trains services to Liverpool and Lidcombe stations from Bankstown Station would not be affected.

Further information on how the preferred project would operate is provided in the preferred project description in Appendix B.

2.4 Construction of the preferred project

Construction of the preferred project would commence once all necessary approvals are obtained (anticipated to be in 2018/2019). Upgraded stations would be progressively delivered from 2019 until 2022, with the main station upgrade works estimated to occur over a period of about one year for each station. Works to upgrade other infrastructure would also occur during this period to improve the reliability of services.

The T3 Bankstown Line and freight tracks operated by ARTC (between Marrickville and west of Campsie) would remain operational for the majority of the construction period. However, to ensure the station and infrastructure upgrade works are completed as efficiently and safely as possible, and to accommodate works that cannot be undertaken when trains are operating, it would be necessary to undertake some work during rail possession periods, when trains are not operating. It is anticipated that these rail possession periods would comprise the routine weekend maintenance possessions scheduled by Sydney Trains and ARTC, some additional weekend possessions, and a longer possession period during the Christmas holiday periods when patronage is reduced. Individual stations may also be closed for up to two months.

A final, longer possession of about three to six months would also be required. This would involve full closure of the line to enable it to be converted to metro operations. This final possession period is to enable works that can only be completed once Sydney Trains services are not operating. It would include works such as the installation of new signalling, communication systems, and platform screen doors.

During each possession period and station closure, a temporary transport management plan would be implemented to provide alternative transport arrangements and ensure that customers can continue to reach their destinations.

Further information on how the preferred project would be constructed is provided in the preferred project description in Appendix B.

2.5 Summary of preferred project need and benefits

2.5.1 Summary of preferred project need

The preferred project forms a key part of Sydney Metro, which is Australia's largest public transport project. A new standalone railway, this 21st century network will deliver 31 metro stations and 66 kilometres of new metro rail for Australia's biggest city – revolutionising the way Sydney travels.

Sydney is experiencing sustained population and economic growth. The need for the preferred project, as part of Sydney Metro as a whole, is driven by the challenges being experienced in responding to this growth, including the existing and future capacity of Sydney's transport system.

The rail network is heavily congested, with customers on most rail lines often experiencing significant crowding on trains and station platforms during the morning and evening peaks.

Sydney's current suburban system can reliably carry 24,000 people an hour per line. As population and employment continue to grow, rail is forecast to experience the highest growth in travel demand, with about 100,000 additional trips expected on Sydney's rail network during the morning peak by 2036. This will place additional pressure on the rail network.

It is forecast that without further investment, Sydney's rail network will reach capacity in the Sydney CBD and on critical suburban rail lines by the mid to late 2020s. Sydney Metro (including the preferred project) will have a long-term target capacity of about 40,000 customers per hour in each direction, similar to other metro systems worldwide. Sydney Metro, together with signalling and infrastructure upgrades across the existing Sydney rail network, will increase the capacity of train services entering the Sydney CBD – from about 120 an hour today, to up to 200 services beyond 2024. This is an increase in capacity of up to 60 per cent across the network to meet demand.

Over the next 15 years, NSW will require infrastructure to support 40 per cent more train trips, 30 per cent more car trips and 31 per cent more households. Sydney Metro, including the preferred project, is identified as a key infrastructure project as part of the NSW Government's infrastructure investment program.

Sydney Metro will transform Sydney, cutting travel times, reducing congestion and delivering economic and social benefits for generations to come. It will boost economic activity by more than $5 billion a year, supporting major jobs and business growth along its route with better connectivity and land development opportunities, and greatly improving business logistics, especially for knowledge-based businesses.

The current T3 Bankstown Line effectively slows down the Sydney Trains network because of the way it merges with other railway lines closer to the city, including the T2 Inner West & Leppington Line, and the T8 Airport & South Line. With at least 15 trains an hour in the peak when services start in 2024, the conversion of the T3 Bankstown Line to metro operations would address one of Sydney's biggest rail bottlenecks, delivering benefits across Sydney's rail network. These benefits would further increase when the number of trains increases to 20 per hour as part of the ultimate operations.

Parts of the T3 Bankstown Line are over 120 years old with existing infrastructure in varying conditions. Currently, a key challenge for this line is customer accessibility, with five of the stations not having lifts. In addition, a number of these stations have larger than desirable gaps between the platforms and trains, which makes access difficult for some customers, particularly the disabled, elderly, and those travelling with young children, prams or luggage.

Without the preferred project, the benefits of Sydney Metro City & Southwest would not be fully realised. The bottleneck created by the T3 Bankstown Line would remain. There would not be sufficient rail capacity to provide for Sydney's growth.

2.5.2 Summary of preferred project benefits

The preferred project would have the following benefits:

- all stations would be fully accessible, with lifts and level access between trains and platforms
- faster, more frequent and direct access to key employment centres providing more job opportunities
- better access to education, with fast, more frequent and direct connections

- no timetable required – customers can just turn up and go
- new and direct access to major CBD stations, including Martin Place, Pitt Street and Barangaroo, and Victoria Cross at North Sydney
- increased train frequency in AM and PM peak services – a train at least every four minutes
- improved interchange with light rail, pedestrian and cycling networks, and provision of taxi, kiss and ride and bike parking facilities at key stations
- fast, safe and reliable services – a new generation of 21st century metro trains.

2.6 Preferred project description clarifications

Since the Submissions and Preferred Infrastructure Report was placed on public exhibition, the design of the preferred project has continued to develop, with a view to minimising environmental impacts and/or provide clarification in respect of impacts identified. The purpose of this section is to:

- clarify some of the information presented in the Submissions and Preferred Infrastructure Report with respect to the potential impacts of the preferred project
- report on ongoing design development and refinement of the design as a result of the above.

The following clarifications are provided in this section:

- connections to the city once Sydney Metro is operational (Section 2.6.1)
- scope of the preferred project as it applies to the temporary transport arrangements (Section 2.6.2)
- investigations regarding the provision of active transport connections (Section 2.6.3).

2.6.1 Connections to the city

Sydney Metro would deliver direct access to the city via new metro stations at Martin Place, Pitt Street and Barangaroo, better connecting customers to Sydney's employment, financial and retail districts. There would be no need to interchange at Sydenham or Central to access the new metro stations in the city or the key centres of Redfern/Waterloo, North Sydney, Chatswood and Macquarie Park/North Ryde.

As shown on Figure 2.3, customers on the T3 Bankstown Line would be able to continue to access the City Circle stations by interchanging to Sydney Trains services at either Sydenham Station or Central Station. Alternatively, customers could access the City Circle stations by walking from the new metro stations with Martin Place and Pitt Street metro stations being about 350 metres away from St James and Museum stations and the Pitt Street metro station about 130 metres from Town Hall Station. This is within the normal walking catchment of these stations.

Customers travelling between Bankstown and Sydenham to Erskineville, St Peters and Redfern stations could interchange at Sydenham Station.

As noted above, the introduction of Sydney Metro would mean that some customers would need to change services to access the CBD, and may need to change their travel arrangements to use the new Sydney Metro stations, or walk to existing Sydney Trains stations. However, the integration of Sydney Metro services with Sydney Trains services at a number of stations (at Sydenham, Central and Martin Place) would allow for quick transfers between services. The Sydney Metro CBD stations have been designed and located to minimise the time taken to transfer between services. For example, the construction of Central Walk at Central Station (as part of the Sydney Metro City & Southwest Chatswood to Sydenham project) would provide a link between Sydney Metro services and other public transport services at Central Station (Sydney Trains, light rail and bus services). In some cases, as a result of the increased speeds and frequency of metro services, these trips (including transfers) would be of a similar or shorter duration.

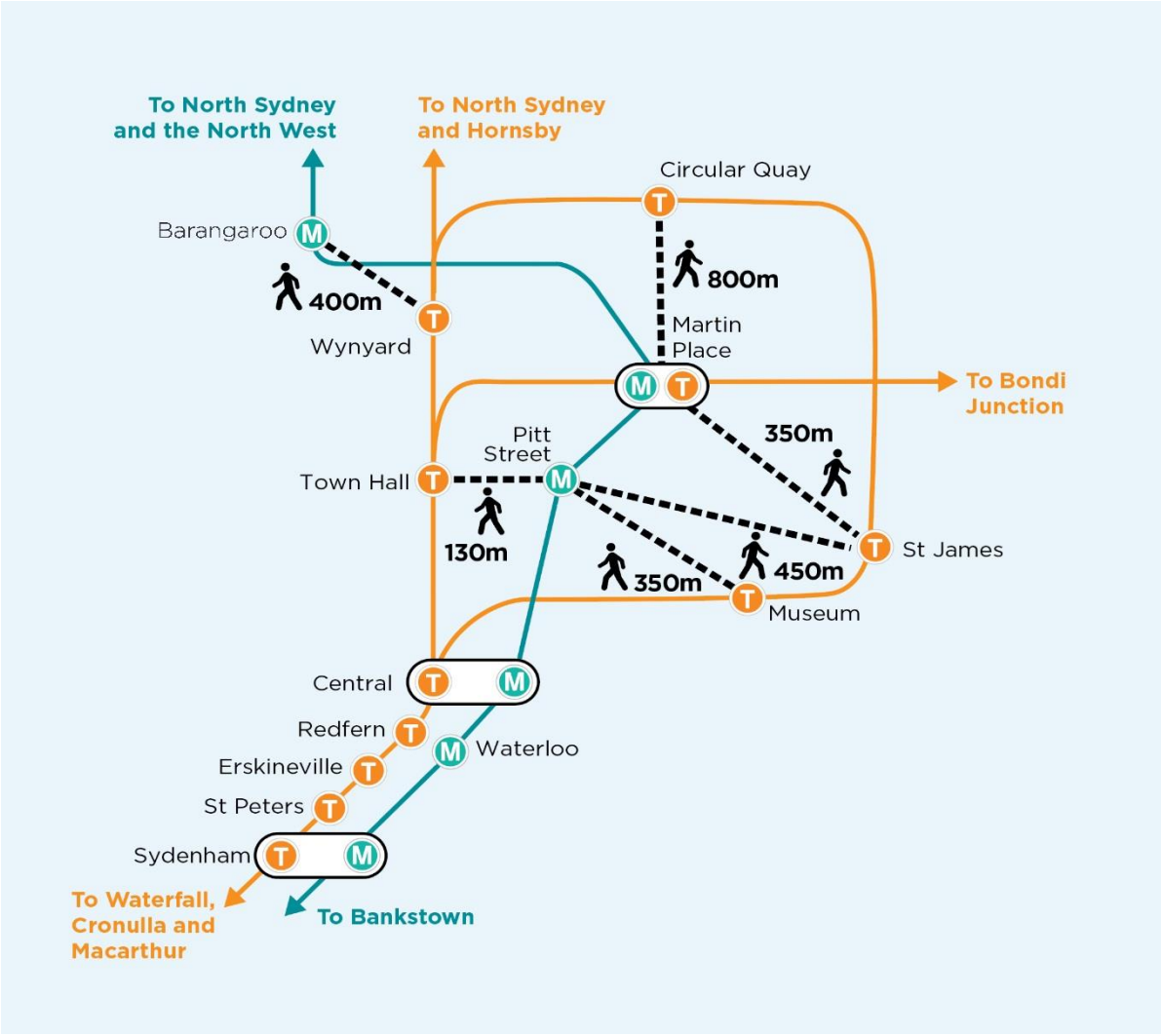


Figure 2.3 CBD walking catchment connections

2.6.2 Preferred project temporary transport arrangements

As described in the preferred project description (Appendix B of this report), the preferred project includes the operation of any alternative transport arrangements during possession of the T3 Bankstown Line, as outlined in a temporary transport plan. The preferred project also includes construction of any additional infrastructure within the vicinity of the project area to support these alternative transport arrangements, such as the provision of bus stops, bus priority measures, line marking, signage and kerb adjustments. Should construction of additional infrastructure beyond the vicinity of the project area be required to support the alternative transport arrangements, the need for additional assessment and approval would be considered by the proponent.

2.6.3 Active transport connections

During the Environmental Impact Statement exhibition, significant community feedback was received regarding the need to retain heritage buildings at stations as well as the need for a reduction in rail possession periods, a reduction in construction impacts and vegetation removal.

In response to this feedback, a number of changes were made to the project including refining the project scope to minimise impacts to the local community and customers.

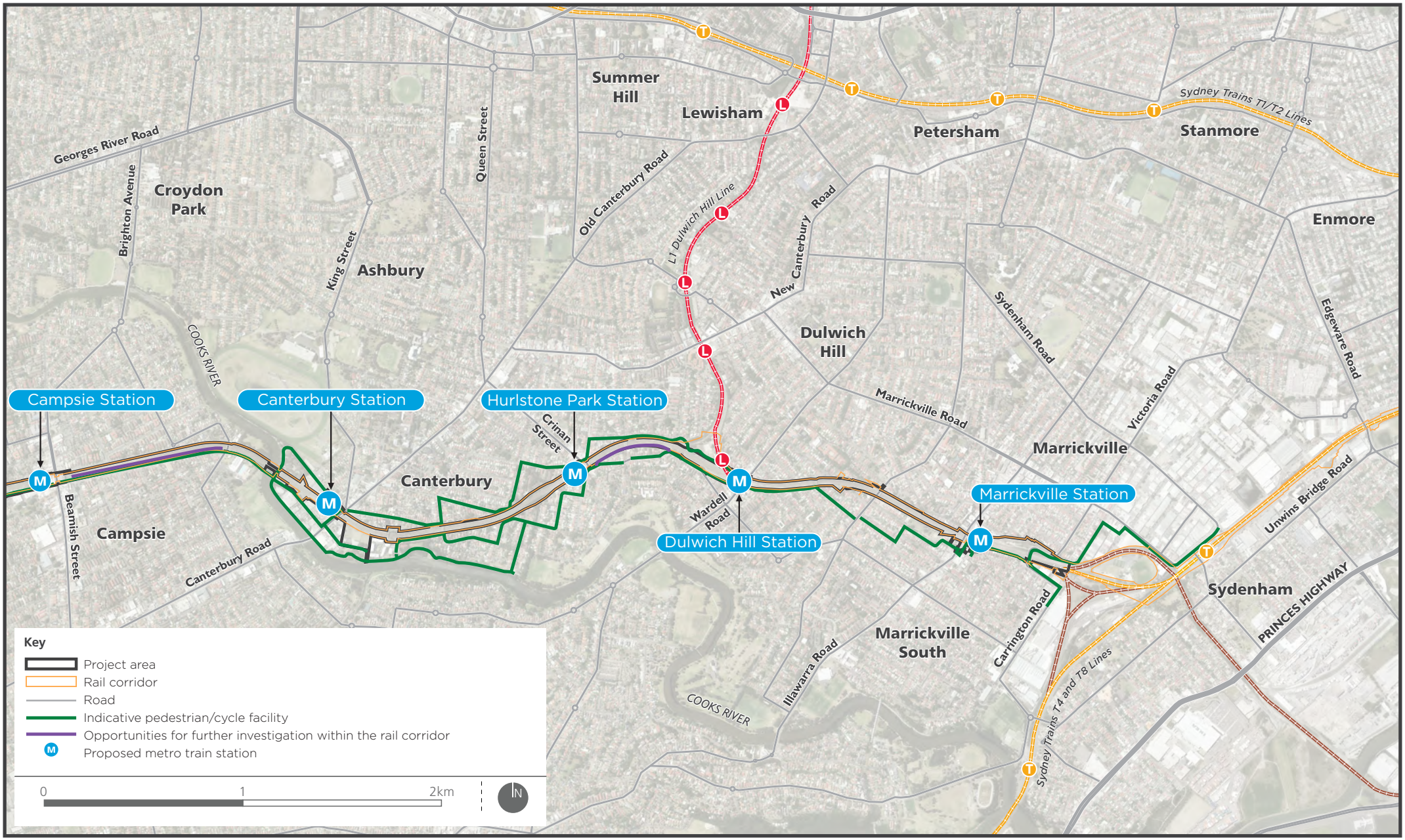
Refining the project to reduce construction impacts meant the corridor could no longer be widened or changed to accommodate shared facilities on existing rail land.

Notwithstanding this, Sydney Metro made the commitment in the Submissions and Preferred Infrastructure Report that it would work with the Department of Planning and Environment and local councils to determine how active transport connections could be delivered outside of the rail corridor and ensure it aligns with future planning.

As part of this commitment, together with Sydney Metro's stated commitment to the development of a Walking and Cycling Strategy to encourage active transport to the stations, Sydney Metro has continued investigations into opportunities to improve the east-west pedestrian and cyclist facilities between Sydenham and Bankstown.

These investigations have identified some parts of the rail corridor that could potentially support these facilities which, together with other out of corridor areas, are shown indicatively in Figure 2.4.

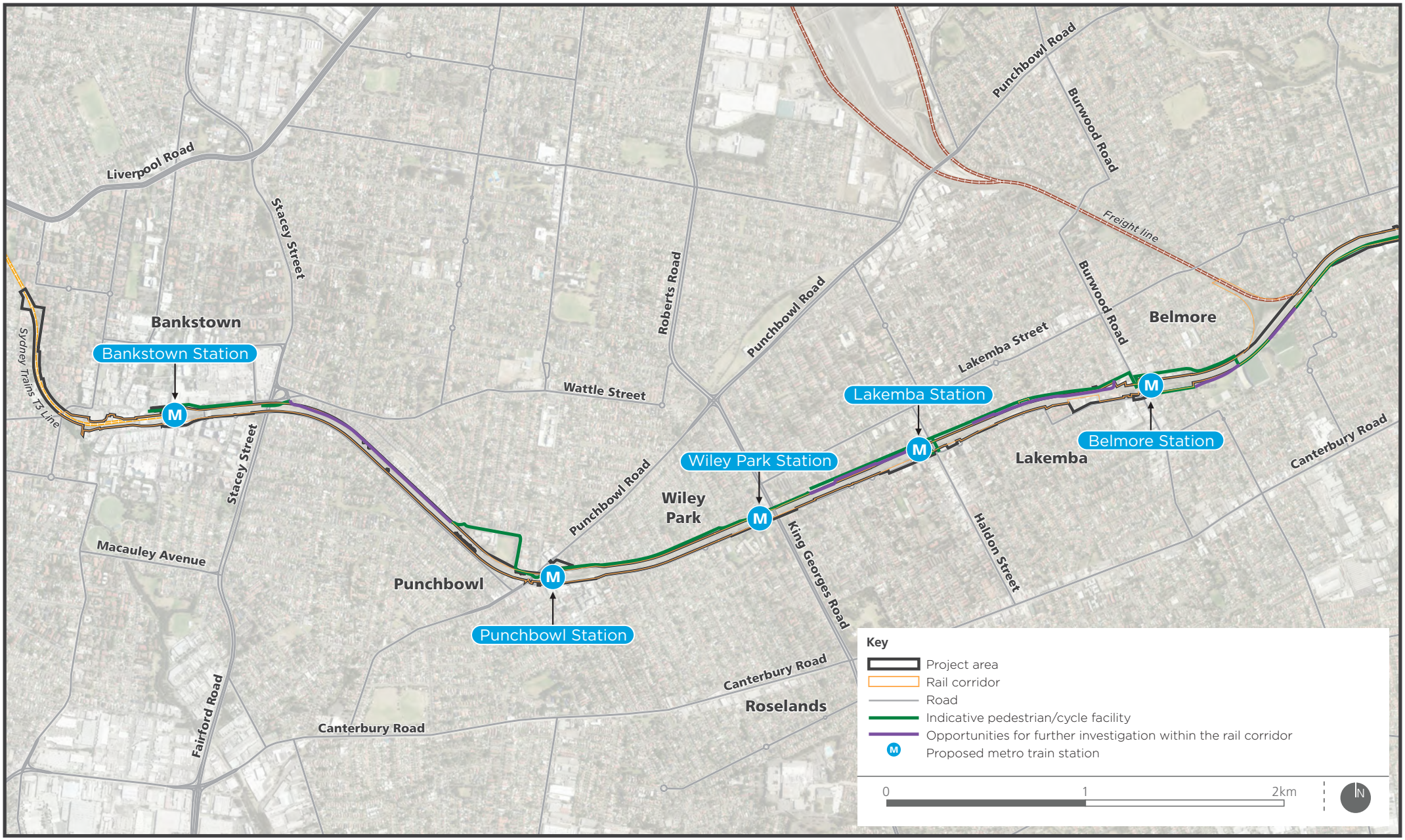
Sydney Metro would continue to work with councils and other key stakeholders in a coordinated approach, as part of the future planning for the corridor, to assist in refining the identification and safeguarding of potential opportunities for future pedestrian and cyclist connections.



sydney METRO | city & southwest

Indicative location for potential active transport connections - map 1

FIGURE 2.4



sydney METRO | city & southwest

Indicative location for potential active transport connections - map 2

FIGURE 2.4

This page has been left blank intentionally

3. Stakeholder and community consultation

This section describes the community and stakeholder consultation undertaken during and following the exhibition period of the Submissions and Preferred Infrastructure Report, and the future consultation proposed.

3.1 Overview

Sydney Metro is implementing a comprehensive community and stakeholder consultation program for Sydney Metro, to engage proactively with local communities and key stakeholders. Stakeholder and community consultation for Sydney Metro is an ongoing process that commenced with the release of *Sydney's Rail Future* in 2012.

For the Sydney Metro City & Southwest project, Sydney Metro has been consulting with the community and key stakeholders since June 2014. Feedback from the consultation activities has played an important role in informing and scoping the design of the preferred project.

Sydney Metro's approach to consultation is described in Chapter 3 (Stakeholder and community consultation) of the Submissions and Preferred Infrastructure Report. Consultation activities undertaken prior to exhibition of the Submissions and Preferred Infrastructure Report are described in Section 3.2 (Consultation associated with public exhibition) of the Environmental Impact Statement) and Section 3.4 (Consultation during preparation of this report) of the Submissions and Preferred Infrastructure Report. Ongoing consultation was outlined in Section 3.5 (Future consultation and engagement activities) of the Submissions and Preferred Infrastructure Report.

3.2 Consultation associated with public exhibition of the Submissions and Preferred Infrastructure Report

3.2.1 Submissions and Preferred Infrastructure Report exhibition

The Submissions and Preferred Infrastructure Report was placed on public exhibition by the Department of Planning and Environment for a period of 28 days, from 20 June 2018 to 18 July 2018.

The Submissions and Preferred Infrastructure Report and accompanying technical papers were made available on the Department of Planning and Environment's website (www.majorprojects.planning.nsw.gov.au) and on the Sydney Metro project website (www.sydneymetro.info).

Hard copies of the Submissions and Preferred Infrastructure Report were available at the following locations:

- Inner West Council Customer Service Centre: 2–14 Fisher Street, Petersham
- Inner West Council Libraries:
  - Marrickville Library: Corner Marrickville and Petersham Roads, St Peters
  - Sydenham Library: Unwins Bridge Road, Sydenham
  - Emanuel Tsardoulias Community Library: 362-372 New Canterbury Road, Dulwich Hill
- City of Canterbury-Bankstown Customer Service Centres:
  - Bankstown: Upper Ground Floor Bankstown Civic Tower, 66-72 Rickard Road (Corner of Jacob Street)
  - Campsie: 137 Beamish Street

- City of Canterbury-Bankstown Libraries:
  - Campsie: 14-28 Amy Street
  - Lakemba: 62 The Boulevarde
  - Bankstown: 80 Rickard Road.

Copies of the Submissions and Preferred Infrastructure Report were also available at the community information sessions (described in the following section).

3.2.2 Consultation activities

The following consultation activities were undertaken to support exhibition of the Submissions and Preferred Infrastructure Report:

- stakeholder briefings
- four community information sessions
- visiting nearby properties
- handing out community information during the morning and afternoon peaks at stations between Marrickville and Bankstown.

Further information on these methods and activities is provided below.

These activities were promoted and supported by the consultation materials described in Section 3.2.3.

Community contact and information points

Table 3.1 outlines the community contact and information points for the project.

Table 3.1 Community contact and information points

Activity	Detail
Community information line (toll free)	1800 171 386
Community email address	sydneymetro@transport.nsw.gov.au
Website	http://www.sydneymetro.info/
Postal address	Sydney Metro City & Southwest PO Box K659, Haymarket, NSW 1240

Community information sessions

Four community information sessions were held at four different locations.

Members of the community were invited to attend these sessions to view preferred project information materials (described in Section 3.2.3), review the Submissions and Preferred Infrastructure Report and ask questions of the project team on hand. Visitors were not required to make a booking and were able to drop in anytime within the advertised periods.

Table 3.2 lists the locations, dates and number of attendees at the sessions. As shown in the table, a total of 283 people attended the four sessions. People were made aware of the sessions through the following materials/tools (described further in Section 3.2.3):

- project newsletter (including newsletters translated into seven languages other than English)
- station handouts
- website updates
- emails alerts
- the Submissions and Preferred Infrastructure Report overview document.

Representatives from the Department of Planning and Environment attended all sessions.

Table 3.2 Community information sessions

Suburb	Dates	Location	Attendees
Bankstown	Saturday 23 June, 10am-2pm	Bankstown Arts Centre	72
Hurlstone Park	Tuesday 26 June, 3pm-7pm	Canterbury-Hurlstone Park RSL	86
Marrickville	Saturday, 30 June 2018 10am-2pm	Marrickville Town Hall	92
Belmore	Wednesday 4 July, 3pm-7pm	Canterbury League Club	33
Total attendees			**283**

Stakeholder briefings

Key stakeholders (including local government, NSW and Australian Government agencies, peak bodies, and industry associations) were briefed via emails, meetings, presentations and/or phone calls. The briefings were designed to ensure stakeholders were informed of the project (including the Submissions and Preferred Infrastructure Report) and to encourage them to make a submission.

Table 3.3 lists the key stakeholders who were contacted about the project between 6 June 2018 and 18 July 2018.

Table 3.3 Key stakeholders contacted

Agency/group type	Stakeholders contacted
NSW Government	Sydney Coordination Office, Roads and Maritime Services, Transport for NSW Divisions, Sydney Trains, NSW Trains
Local Government	Inner West Council City of Canterbury Bankstown Council
Other agencies	Australian Rail Track Corporation (ARTC) Greater Sydney Commission
Peak bodies	Engineers Australia Warren Centre for Advanced Engineering
Industry associations	Marrickville Chamber of Commerce NSW Property Council Infrastructure Partnerships Australia Sydney Business Chamber Western Sydney Business Chamber
Community and interest groups	Committee for Sydney
Major landowners/ employers	Australian Turf Club

Station handouts

A total of 15,325 project flyers (described in Section 3.2.3) were distributed to customers at each station between Marrickville and Bankstown between 12 and 22 June 2018.

During this period, 38 station handout activities were carried out during peak times, between 7:30am and 9:30am and 4:30pm and 6:30pm.

Door knocks

A total of 40 properties in the vicinity of the project area were door knocked on 6 June 2018 prior to the exhibition period commencing. Door knocks were conducted to inform businesses surrounding the stations within the project area of the refined scope of the project and reduced impacts.

Place Managers

The Sydney Metro Place Managers play a vital role in maintaining close and ongoing contact with local communities and stakeholders during the design and delivery of Sydney Metro.

Place Managers build relationships and act as a feedback mechanism to help ensure community and stakeholder aspirations are consistently considered in the planning process. Their role is to be a direct point of contact between affected members of the community and the project team.

During the exhibition period of the Submissions and Preferred Infrastructure Report, the Place Managers engaged with local communities (including residents, tenants, and businesses) by phone, email, newsletter, station handouts or doorknocks, to:

- ensure that they were aware of the Submissions and Preferred Infrastructure Report
- invite them to community information sessions
- ensure that they had the information needed to make a submission.

3.2.3 Consultation materials

The following consultation materials were developed to support exhibition of the Submissions and Preferred Infrastructure Report and the consultation activities described in Section 3.2.2:

- a media release
- newspaper advertisements
- email alerts to the project mailing list
- newsletters
- station handouts
- project website updates
- information boards
- Submissions and Preferred Infrastructure Report overview document.

Media releases

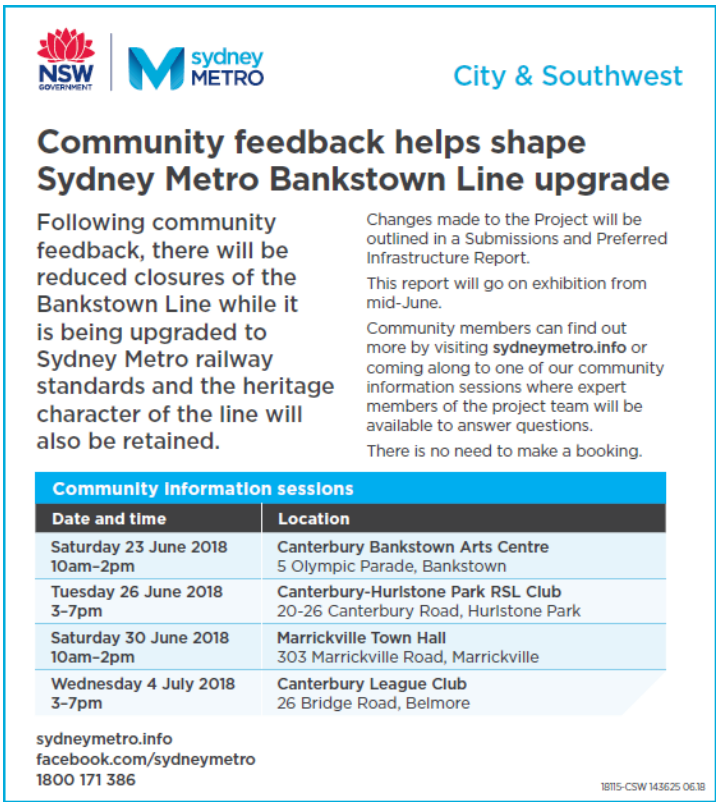
A media release relating to the Submissions and Preferred Infrastructure Report was issued on 6 June 2018 and was titled “Reduced closures, heritage retained in metro upgrade of Bankstown line”. The project was mentioned in the media 31 times (including on the radio, TV, print and online) concentrated around the main release on 6 June 2018.

Newspaper advertisements

Advertisements placed by Sydney Metro during the exhibition period are listed in Table 3.4. An example advertisement is provided in Figure 3.1.

Table 3.4 Newspaper advertisements

4	Publication
Wednesday 13 June 2018	Bankstown Canterbury Torch
Wednesday 13 June 2018	Inner Western Suburbs Courier
Friday 15 June 2018	Korean Community Magazine
Friday 15 June 2018	Sydney Korean Herald
Tuesday 19 June 2018	An Nahar (Arabic)
Tuesday 19 June 2018	Chieu Duong (Vietnamese)
Tuesday 19 June 2018	Neos Kosmos (Greek)
Wednesday 20 June 2018	Australian Chinese Daily
Wednesday 20 June 2018	Future (Almestaqbal) (Arabic)



NSW GOVERNMENT | sydney METRO

City & Southwest

Community feedback helps shape Sydney Metro Bankstown Line upgrade

Following community feedback, there will be reduced closures of the Bankstown Line while it is being upgraded to Sydney Metro railway standards and the heritage character of the line will also be retained.

Changes made to the Project will be outlined in a Submissions and Preferred Infrastructure Report.

This report will go on exhibition from mid-June.

Community members can find out more by visiting **sydneymetro.info** or coming along to one of our community information sessions where expert members of the project team will be available to answer questions.

There is no need to make a booking.

Community information sessions

Date and time	Location
Saturday 23 June 2018 10am–2pm	**Canterbury Bankstown Arts Centre** 5 Olympic Parade, Bankstown
Tuesday 26 June 2018 3–7pm	**Canterbury-Hurlstone Park RSL Club** 20-26 Canterbury Road, Hurlstone Park
Saturday 30 June 2018 10am–2pm	**Marrickville Town Hall** 303 Marrickville Road, Marrickville
Wednesday 4 July 2018 3–7pm	**Canterbury League Club** 26 Bridge Road, Belmore

sydneymetro.info
facebook.com/sydneymetro
1800 171 386

18115-CSW 143625 06.18

Figure 3.1 Newspaper advertisement

Email alerts to the project mailing list

On 7 June 2018, an email alert titled ‘Community feedback helps shape Sydney Metro Bankstown Line upgrade’ was sent to over 6,000 community members registered on the Sydney Metro City & Southwest project database. The email advised of the Submissions and Preferred Infrastructure Report exhibition dates and encouraged recipients to visit the project website for more information.

Newsletter

A Sydney Metro City & Southwest project newsletter, titled ‘Community feedback helps shape Sydney Metro Bankstown Line Upgrade’, was prepared and issued over the week of 12 June 2018. The newsletter was to 82,000 properties as part of a letterbox drop around the project area. It was also made available at community information sessions, and via the project website. The newsletter provides information on Sydney Metro; key features of the preferred project; heritage considerations; the Submissions and Preferred Infrastructure Report exhibition; how people can have their say; and where to find out more information.

To cater for the main non-English language groups around the project area, the newsletter was translated into seven languages – Greek, Arabic, Chinese, Hindi, Korean, Bengali, and Vietnamese. Translated versions of the newsletter were provided on the project website and available at community information sessions.

Project website updates

Information about the Submissions and Preferred Infrastructure Report exhibition and associated consultation activities was made available on the project website (http://www.sydneymetro.info). There were 192,548 website hits during the exhibition period.

Display materials

A range of display materials were prepared and made available at the community information sessions and events. These included:

- information boards providing information on the preferred project, key features, potential impacts, proposed work at each station, and how to make a submission (a photo showing the display boards is provided as Figure 3.2)
- the Submissions and Preferred Infrastructure Report
- newsletters, including copies translated into seven languages other than English
- the Submissions and Preferred Infrastructure Report overview document.

Figure 3.2 Information boards

Submissions and Preferred Infrastructure Report overview document

An A4 size full colour summary of the Submissions and Preferred Infrastructure Report, prepared to support the public exhibition, was made available in June 2018. The overview document included:

- information on the preferred project and Sydney Metro overall
- a summary of the Submissions and Preferred Infrastructure Report
- a series of plans and artist's impressions for each station, to provide an indication of the scope and scale of the proposed upgrade works and key features.

The overview document was also available at the community information sessions to review and/or take home. A digital copy was made available on the project website.

3.3 Future consultation and engagement activities

3.3.1 Submissions Report

The Department of Planning and Environment will receive this Submissions Report and make it available on their website. Government agencies, project stakeholders and the community will be able to review the report online. The Department of Planning and Environment will review submissions and the report as part of their assessment of the preferred project.

Sydney Metro will send individual letters out to those who made a submission on the Submissions and Preferred Infrastructure Report.

Sydney Metro will notify the community about the Submissions Report being lodged and where it can be viewed by:

- a social media post
- emails and letters to community members and stakeholders including those who provided submissions on the Submissions and Preferred Infrastructure Report
- updates on the Sydney Metro website.

3.3.2 Project approval

If project approval is provided by the Department of Planning and Environment, the conditions of approval would be placed on to the Department's website.

Communication tools used to assist the community in their understanding of the preferred project may include:

- media releases
- newsletters distributed to the community
- updates on the Sydney Metro website
- email alerts.

3.3.3 Ongoing consultation and engagement activities

Sydney Metro will continue to work with stakeholders and the community to ensure they are informed about the preferred project and have opportunities to provide feedback to the project team.

A list of the proposed activities and timing is provided in Table 3.5.

Table 3.5 Ongoing consultation and engagement activities

Activity	Timing	Design	Construction	Operation
Awareness and marketing campaign to engage future customers	Ongoing	●	●	●
Community event stalls/community information displays	Ongoing	●	●	
Community information centre at Campsie	Ongoing	●	●	
Community and business forums	As required		●	
Overarching Community Communication Strategy for Sydney Metro City & Southwest	Existing	●	●	
Community Communication Strategy for preferred project	Prior to construction	●	●	
Translated materials	Ongoing	●	●	●
Construction complaints management system	Existing		●	
Construction notifications	Seven days prior to construction starting		●	
Door knocks	As required	●	●	
Email updates	At relevant milestones	●	●	●
Enquiries and complaints information line	Ongoing	●	●	●
Fact sheets	As required	●	●	●
Government stakeholder engagement	As required	●	●	●
Local business engagement	As required	●	●	●
Media releases	At relevant milestones	●	●	●
Newsletter	At relevant milestones	●	●	●
Newspaper advertising	At relevant milestones	●	●	●
Operation communications plan	Prior to operation			●
Place Managers	Ongoing	●	●	
Project briefings and presentations	Relevant milestones	●	●	
Project overview document	Relevant milestones	●	●	
Site signage	Prior to construction		●	
Social media updates	Ongoing	●	●	●
Stakeholder meetings	As required	●	●	●
Website, animations and online forums	Ongoing	●	●	●

The existing community contact and information tools (listed in Table 3.1) would remain in place throughout the duration of the preferred project. Translated materials and content will continue to be provided on the Sydney Metro website. All publications provide information on translation services available through the Translating and Interpreting Service (TIS National) and where appropriate, Sydney Metro will take translators to face-to-face meetings with stakeholders.

3.3.4 Consultation and complaints handling during construction

The Construction Environmental Management Framework for the preferred project (provided in Appendix D of the Environmental Impact Statement) sets out the environmental, stakeholder, and community management requirements for construction. It provides a linking document between the planning approval documentation and the construction environmental management plan to be developed by the construction contractor/s.

The Construction Environmental Management Framework requires the construction contractor/s to develop a Community Communications Strategy for construction, and defines what needs to be included and implemented as part of the strategy. A complaints handling procedure is another requirement of the framework. The Sydney Metro Construction Complaints Management System will be used to record, manage and where required, escalate and mediate complaints. Further information is provided in the Construction Environmental Management Framework.

This page has been left blank intentionally

4. Analysis of submissions received during display of the Submissions and Preferred Infrastructure Report

This section provides a summary of the submissions received during exhibition of the Submissions and Preferred Infrastructure Report, including a breakdown of the types of submitters, the number of submissions received, and the key issues raised in submissions.

4.1 Submissions received

During the display period of the Submissions and Preferred Infrastructure Report, submissions were invited from the community and other stakeholders. The receipt of submissions was coordinated and managed by the Department of Planning and Environment. Submissions were received and registered by the Department, and uploaded onto the Department's website. Submissions were accepted by electronic online submission or post, and were forwarded to Sydney Metro for review and consideration.

A total of 401 submissions were received from 400 submitters (one submitter provided two submissions) and registered by the Department of Planning and Environment. An approximate breakdown of submissions by type of submitter is provided in Table 4.1.

Each submission received by the Department of Planning and Environment was assigned a unique submission number. For all submissions, letters were sent to each submission author (where contact details were provided) to advise the author of their number and the availability of this report.

Table 4.1 Breakdown of submissions received

Submitter type	Number of submissions received
Community submissions	
Community members	363 (of which 268 were form letters)
Businesses	10 (of which three were form letters)
Community and interest groups	14
Members of Parliament/political parties	3
Sub-total	**390**
Government agencies and key stakeholders	
NSW Government departments/agencies	6
Councils	3
Other key stakeholders	2
Sub-total	**11**
Total submissions	**401**

4.1.1 Community submissions

A total of 390 submissions were received from members of the community. As shown in Table 4.1 community submissions included those from:

- individual community members/residents
- local community and other interest groups, including:
  - Six Streets Resident Group
  - Restore Inner West
  - Save T3 Bankstown Line
  - Close Street Liveability
  - Hurlstone Park Association
  - Sydenham to Bankstown Alliance
  - Canterbury City Community Centre
  - Locals for Metro Southwest
  - Bankstown City FC
  - Canterbury Racecourse Action
  - Save Dully Incorp
  - Marrickville Residents Action
  - Battler
  - KOAS.

These submissions included three form letters which were received from a total of 268 individuals and three businesses. Where relevant to the preferred project, responses to the issues raised in the form letter are also provided as part of the responses to community submissions in Chapter 5 of this report.

For community submissions, a breakdown of the submitters location (where provided) is summarised in Table 4.2.

Table 4.2 Submitter locations for community submissions

Location [1]	Number of submitters from that location[2]
Marrickville	11
Dulwich Hill	9
Hurlstone Park	40
Canterbury	12
Campsie	7
Belmore	15
Wiley Park	2
Lakemba	9
Punchbowl	4
Bankstown	5
Earlwood	5
Outside of the project area	267
No location given	3
Total	**389**

Note 1: This refers to the address of the submitter (where an address is provided). A summary of the number of submissions that raised location specific issues is provided in Table 4.4.

Note 2: One submitter included two identical submissions. The location of this submitter has only been counted once.

The 267 submissions received from outside the project area included submitters from suburbs west of Bankstown. This included 43 submitters located along the T3 train line between Carramar and Yagoona, 89 from Berala and 49 from Regents Park.

4.1.2 Submissions received from government agencies and key stakeholders

A total of 11 submissions were received from government agencies (including local councils) and other key stakeholders during exhibition of the Submissions and Preferred Infrastructure Report. Submissions raised a range of issues relevant to their respective areas of interest and responsibility, and provided a number of recommendations, including recommendations for suggested conditions of approval for the preferred project. Submissions were received from the following agencies:

- NSW Government departments/agencies:
  - Department of Primary Industries – Land and Water
  - NSW Environment Protection Authority
  - NSW Office of Environment and Heritage
  - Fire and Rescue NSW
  - Heritage Council of NSW
- Utility providers:
  - Sydney Water
- Councils:
  - Inner West Council
  - Canterbury-Bankstown Council
  - Liverpool City Council.

For the purposes of this report, key stakeholders are defined as peak bodies and large employers. Submissions were received from the following key stakeholders:

- National Trust of Australia
- Western Sydney University.

4.2 Analysis of submissions

4.2.1 Submissions not related to the preferred project

Appendix A presents the main issue categories and the relevant sections of this report that address issues raised in submissions received during exhibition of the Submissions and Preferred Infrastructure Report.

Submissions which relate to the Environmental Impact Statement and issues that have been raised previously and addressed in the Submissions and Preferred Infrastructure Report, have not been addressed again in this report. For any issues that have been previously addressed, references to the relevant sections of the Submissions and Preferred Infrastructure Report have instead been provided, to direct the reader to where these issues were addressed previously.

Submissions addressed in this report comprise issues relating to the preferred project only, as it was described in the Submissions and Preferred Infrastructure Report, or issues that were not raised previously.

4.2.2 Issue categorisation

The analysis of submissions involved identifying the issues raised and coding the issues into key issues (e.g. non-Aboriginal heritage) and sub-issue categories (e.g. impacts to heritage listed stations). A total of 20 key issue and 44 sub-issue categories were identified and coded during the initial submission review process. The key issue and sub-issue categories used for coding are provided in Table A.1 in Appendix A.

4.2.3 Review of community submissions

An assessment of each community submission received during exhibition of the Submissions and Preferred Infrastructure Report was undertaken, with each submission individually reviewed to understand the issues raised. The analysis involved identifying the issues raised, and coding them into key issues and sub-issues, as described in Section 4.2.2.

The issues raised were then summarised and grouped according to the key issue and sub-issue categories, and responses to the issues raised in relation to the preferred project are provided in Chapter 5 of this report according to these categories. Where relevant, input to the responses was sought from the technical specialists who assisted with preparation of the Submissions and Preferred Infrastructure Report.

Each issue identified in Chapter 5 is presented as a summary of the issues raised by individual submissions. This means that, while the exact wording of a particular submission may not be present in the summary of the issue, the intent of each individual issue raised has been captured. A response has been provided to each grouped issue summary.

Table A.1 in Appendix A identifies the sub-issues raised by individual community submissions, according to the submission number, and provides a reference to where a response to the key issue and sub-issue is provided in Chapter 5 of this report and the Submissions and Preferred Infrastructure Report.

4.2.4 Review of agency and key stakeholder submissions

Each government agency/key stakeholder submission was reviewed, and the issues raised were categorised according to the main issue categories identified (as described in Section 4.2.2). Summaries of the key issues raised in each submission in relation to the preferred project, and responses to the issues raised, are provided in Chapters 6 and 7 of this report.

4.2.5 Support/object to the project

In addition to key issues raised, the majority of submissions (community and key stakeholder) also expressed either their support or objection to Sydney Metro as a whole, or the preferred project outlined in the Submissions and Preferred Infrastructure Report. The breakdown of support/objections received are as follows:

- 32 submissions supported Sydney Metro and 340 submissions objected to Sydney Metro
- 61 submissions supported the preferred project and eight submissions objected to the preferred project
- 17 submissions provided comment on Sydney Metro and/or the preferred project.

It should be noted that some submissions objected to parts of the project (Sydney Metro and/or the preferred project) and supported parts of the project.

4.3 Summary of issues raised relating to the preferred project

4.3.1 Key issues raised in community submissions

Form letters

As described in Section 4.1.1 three form letters were received from a total of 271 submitters comprising 268 individuals and three businesses. The following issues relating to the preferred project were raised in these form letters:

- Non-Aboriginal heritage – impacts to heritage listed stations
- Design development and place making - place making and future design considerations
- Construction impacts
- Project need and justification
- Operational noise and vibration – impact mitigation
- Active transport corridor
- Consultation during display of the Submissions and Preferred Infrastructure Report
- Impacts on trees.

Unique community submissions

A breakdown of the key issues raised in unique community submissions is provided in Table 4.3 by key issue category. Since most submissions raised more than one issue or raised the same issue more than once, the number of issues identified is greater than the total number of submissions received. Key issues were raised a total of 94 times in the unique community submissions.

The top three most frequently raised key issues relating to the preferred project/Submissions and Preferred Infrastructure Report, in the community submissions are:

- Stakeholder and community consultation
- Project description – design features and operation
- Construction traffic, transport and access.

A breakdown of the sub-issues raised within these key issues is shown in Figure 4.1 to Figure 4.3.

Table 4.3 Key issues raised in community submissions relating to the preferred project/Submissions and Preferred Infrastructure Report

Key issue category	Number of times key issue was raised	Percentage (%) of total key issues relating to SPIR
Assessment and approvals	16	7.5
Stakeholder and community consultation	36	16.8
Project need and justification	20	9.3
Alternatives and options	3	1.4
Design development and place making	5	2.3
Project description - design features and operation	34	15.9
Project description - construction	15	7.0
Construction traffic, transport and access	24	11.2
Operational traffic, transport and access	7	3.3
Construction noise and vibration	11	5.1
Operational noise and vibration	3	1.4

Key issue category	Number of times key issue was raised	Percentage (%) of total key issues relating to SPIR
Non-Aboriginal heritage	16	7.5
Land use and property	2	0.9
Visual impacts (including trees)	6	2.8
Hydrology, flooding and water quality	2	0.9
Biodiversity	2	0.9
Sustainability and climate change	3	1.4
Cumulative impacts	5	2.3
Issues beyond the scope of the SPIR	4	1.9
Total issues relating to the SPIR	**214**	**100**
Issues not specific to the preferred project	444	

Figure 4.1 Stakeholder and community consultation

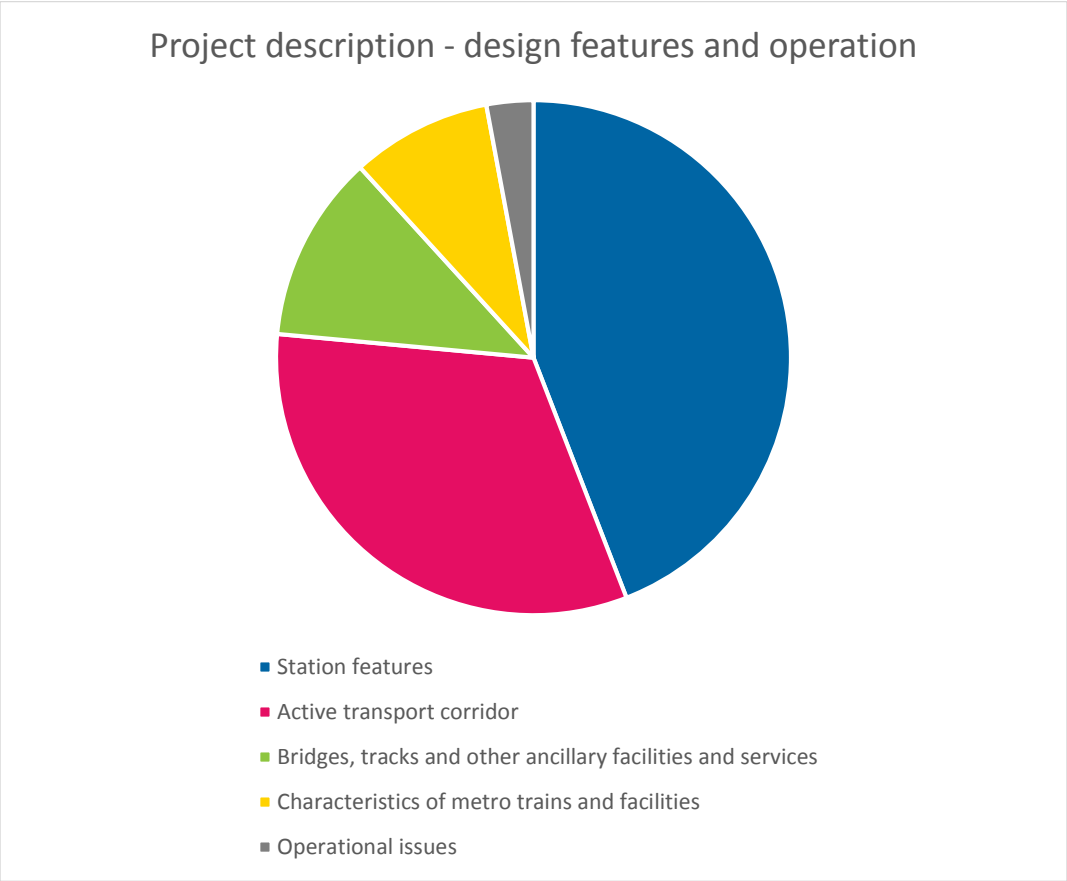


Figure 4.2 Project description - design features and operation

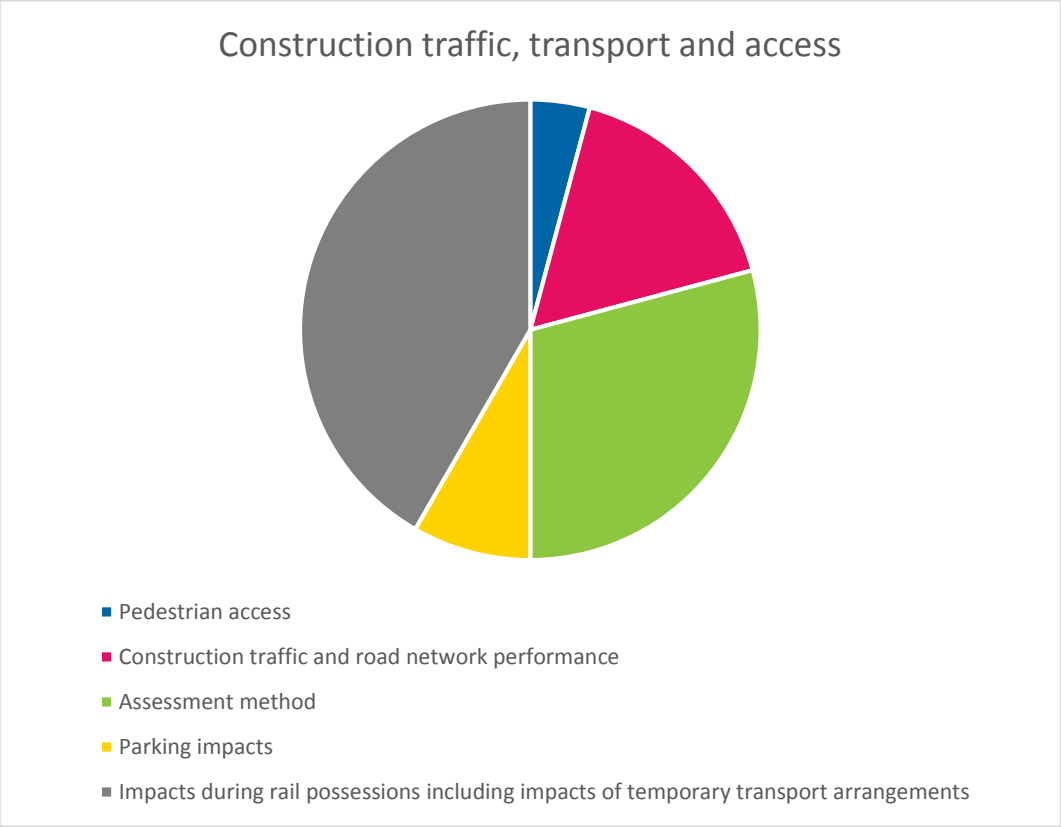


Figure 4.3 Construction traffic, transport and access

4.3.2 Location based issues summary

A breakdown of issues raised by location is provided in Table 4.4. This table shows a breakdown of the number of issues raised that could be attributed to a specific location or station. The number of issues raised relating to more than one location or the region as a whole, and non-location specific issues are also shown. The location specific issues have been grouped according to the suburbs in which the proposed station upgrades and other works would be located.

The number of submissions received by community members from each location is provided in Table 4.4.

Table 4.4 Number of issues raised by location relating to the preferred project

Location	Number of issues raised relevant to location	Percentage (%) of total number of issues raised
Issues raised relevant to specific locations		
Marrickville	12	3.9
Dulwich Hill	10	3.2
Hurlstone Park	100	32.4
Canterbury	7	2.3
Campsie	2	0.6
Belmore	1	0.3
Wiley Park	1	0.3
Lakemba	0	0.0
Punchbowl	2	0.6
Bankstown	1	0.3
Other specific locations outside the project area	5	1.6
Non-location specific issues	168	54.4
Total	309	100

4.3.3 Key issues raised in agency and key stakeholder submissions

Key issues of concern to government agencies and key stakeholders included:

- removal of the active transport corridor
- hydrology and flooding and stormwater management
- the need for ongoing consultation with regards to station designs.

5. Responses to the issues raised in community submissions

This section provides responses to issues raised in submissions from the community relating to the preferred project, including community members, local businesses, and community/interest groups. Unless otherwise noted, all mitigation measures *referenced in this section refer to the revised mitigation measures provided in Appendix C of this report.*

5.1 Assessment and approvals

This section provides responses to issues raised in relation to the assessment and approval process and the Proponent.

5.1.1 Assessment and approval process

Summary of issues raised

Assessment process

One submission raised concerns with the use of private consultants for the environmental assessment reports and associated technical investigations, and the related costs.

Another submission suggested that any assessment should be postponed until inquiries including the ICAC inquiry (Dasher) and inquiry into the Sydney Light Rail project have been completed and any recommendations should be followed.

Sydney Metro as a statutory authority

A number of submissions raised concerns about the powers and aims of Sydney Metro as a statutory authority, following the Transport Administration Amendment Bill (Sydney Metro) Bill 2018, including:

- the land acquisition powers of Sydney Metro
- a view that there is a perceived conflict of interest between the Department of Transport and Mass Transit Railway (MTR)
- concerns that Sydney Metro will not remain in public hands
- concern that Sydney Metro will be sold and run by a foreign company, who would also have exclusive property rights at metro stations
- the planning and delivery roles Sydney Metro and UrbanGrowth NSW will have for infrastructure and residential/commercial developments along the Sydenham to Bankstown urban renewal corridor as a state significant precinct.

Response

Use of consultants

The Submissions and Preferred Infrastructure Report presented a balanced, merit-based environmental impact assessment in accordance with the EP&A Act, the Secretary's environmental assessment requirements and applicable NSW assessment policies and guidelines. Where specialist expertise was needed to fulfil these requirements, consultants were engaged.

The engagement of consultants to undertake the environmental assessment of the Sydney Metro Sydenham to Bankstown project was undertaken via a competitive tender process, which included assessment against the tender evaluation criteria in accordance with NSW Government procurement processes. The engagement of specialist consultants to prepare project documents relates to the available resources and skills within the relevant government department. The use of consultants resulted in the preparation of technically robust assessments by qualified professionals and specialists, ensuring an objective assessment of the project's impacts.

Assessment to be postponed

The inquiry by the Independent Commission Against Corruption (Operation Dasha) is an investigation into whether certain officials in the former Canterbury City Council dishonestly and/or partially exercised their functions in relation to certain planning proposals in the Canterbury City Council local area, and is unrelated to the project.

The parliamentary inquiry into the CBD and South East Light Rail Project submissions were closed in early July and hearings will be undertaken in August and October 2018. This timing allows any learnings to be incorporated into the preferred project's conditions of approval and subsequent procurement, detailed design and construction phases, if relevant.

Sydney Metro as a statutory authority

Since the exhibition of the Submissions and Preferred Infrastructure Report, Sydney Metro became a statutory authority. Sydney Metro is now an operating agency owned by the NSW Government and is part of the NSW Transport cluster, operating in a similar way to Sydney Trains. Sydney Metro is now the Proponent for the Sydney Metro City & Southwest Sydenham to Bankstown project and relevant references to Transport for NSW have been updated to refer to Sydney Metro.

At this stage, no land or property is anticipated to be permanently acquired as part of the preferred project described in the Submissions and Preferred Infrastructure Report. Some areas of land would be temporarily leased or occupied during construction of the preferred project. Any acquisition, such as a temporary acquisition of a construction lease, would be undertaken in accordance with the provisions of the *Transport Administration Act 1988* (NSW).

As an operating agency owned by the NSW Government, Sydney Metro cannot be sold to a private company. At this stage, no contractor has been engaged to operate the Sydney Metro network. It is Sydney Metro's intention to engage a contractor to operate and maintain the Sydney Metro network, including the stations, trains and railway line, with ownership of the infrastructure remaining with the NSW Government. All Sydney Metro contracts would follow the NSW Government Procurement Policy Framework.

The Department of Planning and Environment has identified a revised approach to the *Sydenham to Bankstown Urban Renewal Corridor Strategy*. The Department of Planning and Environment will develop the principle based, high level strategy for the corridor in collaboration with local councils. Councils will then undertake a review of their local environmental plan in accordance with this framework. Sydney Metro would work with the Department of Planning and Environment and local councils, as key stakeholders, once a program for the development of this revised strategy has been provided.

The Sydenham to Bankstown urban renewal corridor has not been identified as a State significant precinct.

5.1.2 Adequacy of the Submissions and Preferred Infrastructure Report

Summary of issues raised

Concerns were raised about the adequacy of the Submissions and Preferred Infrastructure Report, and the information presented, including:

- not enough detail is provided about the preferred project
- difficulty accessing the documentation online
- some construction and congestion issues have been discussed however issues like overcrowding, reduced seating and changing trains and longer commute times were not adequately addressed
- the responses provided mostly repeated those of the exhibited project
- it was not acknowledged that many submitters raised multiple concerns
- the response to concerns about privatisation and other development was inadequate.

Response

Not enough detail

The level of detail presented in the Submissions and Preferred Infrastructure Report was consistent with assessments and submissions reports completed for other similar projects and provides a description of the preferred project, an assessment of its potential impacts, and the identification of mitigation measures to avoid or minimise those potential impacts. Additionally preparation of the report took into consideration the Draft Environmental Impact Assessment Guidance Series June 2017 document Responding to Submissions, prepared by the Department of Planning and Environment. Where relevant potential impacts of the preferred project, were assessed in the Submissions and Preferred Infrastructure Report in accordance with the requirements of the Secretary's environmental assessment requirements.

The Submissions and Preferred Infrastructure Report included the following chapters which described the preferred project, assessed the potential differences in impacts resulting from the preferred project, and identified revisions to mitigation measures that would minimise or avoid potential impacts of the preferred project:

- Chapter 8 - an introduction to the preferred project including justification and overview
- Chapters 9 to 10 - a description of the preferred project compared to the exhibited project
- Chapter 11 - a summary of the environmental risk rating for the preferred project compared to the risk rating provided in the State Significant Infrastructure Application Report, which was prepared to inform the Secretary's environmental assessment requirements
- Chapters 12 to 15 - an environmental screening and impact assessment for the preferred project
- Chapter 16 - revised mitigation measures for the preferred project.

Drawings were prepared for the preferred project and were provided in Chapter 9 (Preferred project – operational features) of the Submissions and Preferred Infrastructure Report.

Additional detailed drawings were provided with the project description for the preferred project, which was detailed in Appendix B (Preferred project description) of the Submissions and Preferred Infrastructure Report.

The Submissions and Preferred Infrastructure Report was supported by the following specialist assessments, which were prepared based on field studies, surveys, modelling, and analysis, in addition to desktop research:

- Appendix D - Traffic, transport and access assessment
- Appendix E - Noise and vibration assessment
- Appendix F - Non-Aboriginal heritage assessment
- Appendix G - Landscape and visual impact assessment
- Appendix H - Utilities Management Framework
- Appendix I - Archaeological Assessment and Research Design Report
- Appendix J - Aboriginal Cultural Heritage Assessment Report.

The specialist assessments were prepared in accordance with relevant guidelines and the Secretary's environmental assessment requirements, where relevant to the preferred project.

Detailed responses to manage the identified potential impacts would be further considered during the detailed design phase in accordance with the mitigation measures (measures are provided in Appendix C of this report) and any conditions of approval for the preferred project.

Size and access to the preferred project documentation

All state significant projects and project documents, including those related to Sydney Metro and the preferred project, are provided on the NSW Government Planning and Environment major project assessments webpage (http://majorprojects.planning.nsw.gov.au). This webpage includes a search function. Documents available on the NSW Government Planning and Environment major project assessments webpage are provided in both small and large file size to ensure they are of a size which enables them to be readily downloaded. Additionally, during the exhibition period a hard copy of the Submissions and Preferred Infrastructure Report was made available at a number of locations as described in Section 3.2.1 of this report. Information regarding the preferred project was also provided at a number of consultation activities as per those discussed in Section 3.2.2 of this report.

Information on the preferred project is also available on the Sydney Metro website (https://www.sydneymetro).

Assessment of impacts

Sydney Metro has revised the exhibited project to address issues raised in submissions and to respond to industry feedback during the procurement process regarding constructability and cost. The preferred project would significantly reduce and minimise potential impacts of the exhibited project (particularly in respect of construction, heritage and vegetation) while still delivering a world class metro.

The assessments provided for the exhibited project in the Environmental Impact Statement and updated for the preferred project in the Submissions and Preferred Infrastructure Report were purposely conservative to take into consideration the fact that the design is a reference design, and is not fully resolved.

Further assessment was undertaken to assess impacts associated with the preferred project (where they differ to the exhibited project) and was summarised in the following chapters in the Submissions and Preferred Infrastructure Report:

- Chapter 12 - Station upgrades environmental screening and assessment

- Chapter 13 - Track and rail systems facility upgrades environmental screening and assessment
- Chapter 14 - Other infrastructure elements environmental screening and assessment
- Chapter 15 - Construction environmental screening and assessment.

The Submissions and Preferred Infrastructure Report acknowledged that, although the preferred project would benefit the community during operation, there would be impacts during construction.

To manage potential impacts, the Submissions and Preferred Infrastructure Report identified a range of management and mitigation measures that would be implemented during construction and operation of the preferred project. This was detailed in Chapter 16 (Revised mitigation measures and performance outcomes) of the Submissions and Preferred Infrastructure Report. Detailed responses to manage the identified potential impacts would be further considered during the detailed design phase in accordance with the mitigation measures and any conditions of approval for the preferred project.

Further information and clarification in response to issues raised about project features, operation and construction of the preferred project is provided in Section 5.6 and Section 5.7 of this report. Further information and clarification in response to issues raised about the potential impacts of the preferred project is provided in Sections 5.8 to 5.18 of this report.

Detailed information regarding train capacity, seating, connections and commute times was provided in Section 5.6 (Project description – design features) and Section 5.7 (Project description – operation) of the Submissions and Preferred Infrastructure Report. Given the preferred project did not change these aspects of the project, as exhibited, the information provided in the Environmental Impact Statement remains relevant. Further clarification regarding train connections is also provided in Section 2.5 of this report. The project has been designed to accommodate predicted demand for the metro and capacity at stations.

Section 4.2.3 of this report explains how the issues raised in community submissions have been analysed. Table A.1 in Appendix A of this report identifies the issue or multiple issues raised according to the submission number, and provides a reference to where a response is provided.

5.2 Stakeholder and community consultation

This section provides responses to issues raised in relation to consultation with the community and other stakeholders, associated with the Submissions and Preferred Infrastructure Report.

5.2.1 Consultation during the display of the Submissions and Preferred Infrastructure Report

Summary of issues raised

Concerns were raised about the adequacy of consultation undertaken during the display of the Submissions and Preferred Infrastructure Report, including:

Adequacy of consultation undertaken

- the public engagement process was inadequate and failed to prioritise the input of communities along the line
- residents were not consulted about their travel needs
- communities west of Bankstown were not consulted adequately, including Lidcombe, Berala and Regents Park
- advertisements were only in English

- there were no information sessions at any of the nine stations that will lose their direct trains to the city
- information sessions are not consultation and present pre-defined options
- the timeframes for the information sessions were limited and this, as well as previous experience at these sessions, resulted in people not turning up
- consultation events at Marrickville and Bankstown were under attended and there were no venues west of Belmore
- responses to concerns about consultation were inadequate
- concerned that community input into station precinct and open space planning is given such a low priority
- Sydney Metro staff and consultants at information sessions did not adequately respond to concerns
- the ethnic diversity of residents and other community members required a careful communication process and an effort to actually engage on an ongoing basis with a significant number of ethnic groups
- concerned that the community have not been provided with information on the real impacts of the project but rather promotional brochures
- notice regarding community information sessions was too short.

Adequacy of information provided

- inconsistent information was provided at an information session regarding potential time savings for train journeys
- artists impressions in consultation materials were not realistic
- consultation information provided was incorrect in many cases
- information materials were inadequate
- limited multilingual communications were provided and information was biased
- advertising of the preferred project was poor.

Submissions process including selection of stakeholders

- Hurlstone Park Association should have been consulted
- there appears to be a political bias in the selection of stakeholders
- the submissions process did not adequately screen for conflicts of interest
- analysis of submissions was simplistic and supportive comments were given preference
- the analysis process was biased and lumped together 324 individuals as a form letter even when individual issues were raised in some
- the Submissions and Preferred Infrastructure Report didn't acknowledge lack of community support or highlight community concerns regarding project benefit.

Exhibition length

- the time provided to respond to submissions was too short
- the preferred project is a totally new project and should therefore have been subject to a new exhibition period.

Response

Adequacy of consultation undertaken

Consultation undertaken during exhibition of the Submissions and Preferred Infrastructure Report is described in Section 3.2 of this report. As described in that section, a comprehensive range of consultation activities were undertaken, and a range of materials were made available.

The Submissions and Preferred Infrastructure Report was placed on public exhibition by the Department of Planning and Environment for a period of four weeks, from 20 June 2018 to 18 July 2018.

The Submissions and Preferred Infrastructure Report and associated specialists assessments were made available on the Department of Planning and Environment's website (www.majorprojects.planning.nsw.gov.au) and on the Sydney Metro project website (www.sydneymetro.info). Hard copies of the Submissions and Preferred Infrastructure Report were available at ten locations.

The following consultation activities were undertaken to support the exhibition:

- stakeholder briefings
- four community information sessions
- visiting nearby properties.

The following consultation materials were developed to support exhibition and the above consultation activities:

- a media release
- newspaper advertisements
- email alerts to the project mailing list
- newsletters
- station handouts
- project website updates
- information boards
- the Submissions and Preferred Infrastructure Report overview document.

To cater for the main non-English language groups around the project area, the newsletter was translated into seven languages – Greek, Arabic, Chinese, Hindi, Korean, Bengali, and Vietnamese. Translated versions of the newsletter were provided on the project website and at community information sessions. Additionally newspaper advertisements were placed in a number of local language newspapers.

Further information on these activities and materials is provided in Section 3.2 of this report.

As described in Section 3.2.2 of this report, four community information sessions were held at four locations (Bankstown, Hurlstone Park, Marrickville and Belmore). A total of 283 people attended the four information sessions.

People were made aware of the sessions by the following materials/tools (described in Section 3.2.3 of this report):

- project newsletter (including newsletters translated into seven languages other than English)
- station handouts
- website updates

- email alerts
- the Submissions and Preferred Infrastructure Report overview document.

An email alert was sent to more than 6,000 community members registered on the Sydney Metro City & Southwest project database. The email advised of the exhibition dates and encouraged recipients to visit the project website for more information.

A newsletter about the Submissions and Preferred Infrastructure Report and where to find further information was sent to a total of 82,000 properties and 44,000 of these were in and around the Bankstown area. Suburbs west of Bankstown included in the delivery were parts of Sefton, Regents Park, Bass Hill and Yagoona.

Sydney Metro advertised community information session times and dates in the Canterbury - Bankstown Torch and Inner Western Suburbs Courier, in addition to Arabic, Vietnamese, Chinese, Korean and Greek publications.

The Canterbury – Bankstown Torch has a large distribution catchment in and around Canterbury and Bankstown including several areas to the west of Bankstown such as Bass Hill, Birrong, Sefton, Chester Hill, Condell Park, Georges Hall, Villawood and Yagoona.

Project team staff from various technical disciplines (e.g. design, environmental impact assessment professionals, and technical specialists including noise and vibration) attended each community information session to clarify the information presented in the Submissions and Preferred Infrastructure Report, and to listen to and consider suggestions or concerns that members of the community had in relation to the project.

Members of the community and other stakeholders also had the opportunity to be involved in the assessment and approval process by providing formal submissions during the exhibition period. Sydney Metro has considered and provided a response to the issues raised in submissions regarding the preferred project in this report. The Department of Planning and Environment will consider the submissions and the responses summarised in this report as part of the decision whether to recommend approval of the preferred project and, if recommended for approved, the development of appropriate conditions of approval.

Sydney Metro is committed to continuous improvement and has welcomed feedback on how to improve communication with the community. Feedback can continue to be made via phone by calling 1800 171 386 or email syneymetro@transport.nsw.gov.au. Every effort has been and would continue to be made to accommodate suggestions.

Adequacy of information provided

The consultation materials prepared for the public exhibition (including the newsletters and the Submissions and Preferred Infrastructure Project Report Overview) provided a summary of the key features of Sydney Metro, the preferred project and the findings of the Submissions and Preferred Infrastructure Report.

The information that was distributed to the community (summarised above and described in Section 3.2 of this report) was written in ‘plain English’ and edited for readability. The specialist assessments that supported the Submissions and Preferred Infrastructure Report were longer and more technical, but were also available for review by those people and government agencies who may be familiar with particular technical disciplines and/or those who wanted to know more detailed information about the assessments completed.

One of the aims of the community consultation program was to make key staff available throughout the exhibition period and particularly at community information sessions. This was to assist in explaining technical details of the proposal or the assessments undertaken to the community. The project contact number (1800 171 386) and email (sydneymetro@transport.nsw.gov.au) were promoted on all communication materials to encourage the public to seek further clarification and information where needed.

Further information about consultation undertaken during project exhibition, including a full list of the activities undertaken and the tools implemented, is provided in Section 3.2 of this report.

Services to Central from Dulwich Hill are currently every 9-12 minutes in the AM peak and every 15 minutes in the off peak. Following changes to the Sydney Trains timetable, off peak services on the T3 Bankstown Line now generally run every 15 minutes. Once operational, services would be every four minutes in the peak and every 10 minutes in the off peak. When compared to the current Sydney Trains timetable, customers between Canterbury and Dulwich Hill could expect to save up to four minutes in travel time to Central and customers at Campsie and Belmore could expect to save up to five minutes in travel time to Central.

The calculation provided for Hurlstone Park was based on the previous Sydney Trains timetable. This time has been updated on the Sydney Metro website to reflect the current timetable.

It is also noted that the artist's impressions provided in Appendix B (Preferred project description) of the Submissions and Preferred Infrastructure Report were prepared to support the assessment and provide an indication of what the design of the stations could look like.

Submissions process including selection of stakeholders

Key stakeholders were directly engaged with during the development of the exhibited and preferred project, including Hurlstone Park Association during community design workshops held prior to exhibition of the Environmental Impact Statement. All members of the community and other stakeholders had the opportunity to be involved in the assessment and approval process by providing formal submissions during the exhibition period of both the Environmental Impact Statement and Submissions and Preferred Infrastructure Report.

As described in Section 4.1 of this report, submissions on the preferred project were received and registered by the Department of Planning and Environment. Sydney Metro is not responsible for receipt and registration of submissions. When providing a submission, there is no requirement to disclose conflicts of interest beyond disclosure of political donations and gifts. This allows everyone to make a submission regardless of race, religion, background, or employment history.

Following exhibition of both the Environmental Impact Statement and the Submissions and Preferred Infrastructure Report, the Department of Planning and Environment undertook an initial categorisation of submissions based on whether the submission had explicitly stated objection or support up front. Support or object to the preferred project is provided in Section 4.2.5 of this report.

Submissions were categorised and responded to by issues raised within the submission. Issues raised were categorised into a number of key issue and sub-issues, as described in Section 4.2 of this report. Categorisation focussed on issues only and did not preferentially prioritise supportive comments. Submissions with exactly the same content were classified as form letters and responded to collectively. Additional issues raised within form letters were responded to individually.

Sydney Metro has considered and provided a response to the issues raised in submissions about the preferred project. The Department of Planning and Environment will consider the submissions and the responses summarised in this report as part of the decision to recommend approval of the preferred project and, if approval is recommended, the development of any conditions of approval.

Exhibition period length

The minimum public exhibition period for State significant infrastructure is 28 days, as per Schedule 1 of the EP&A Act. The Environmental Impact Statement was placed on public exhibition for a period of 57 days to allow additional time for community feedback.

To address a number of issues raised in submissions during the public exhibition period, Sydney Metro developed a design solution that enables the retention of existing station entrances, heritage buildings and concourses, but enables upgrades that provide accessible stations.

The preferred project described in the Submissions and Preferred Infrastructure Report addressing submissions received, was prepared in accordance with the requirements for State significant infrastructure under Division 5.2 (formerly Part 5.1) and, more specifically, section 5.17 (6) (formerly section 115Z(6)) of the EP&A Act. Section 5.17(6) of the EP&A Act specifies that:

'The Secretary may require the proponent to submit to the Secretary:

a) a response to the issues raised in those submissions, and

b) a preferred infrastructure report that outlines any proposed changes to the State significant infrastructure to minimise its environmental impact or to deal with any other issue raised during the assessment of the application concerned.'

In addition, section 5.17(7) states:

'If the Planning Secretary considers that significant changes are proposed to the nature of the State significant infrastructure, the Planning Secretary may make the preferred infrastructure report available to the public.'

Following consultation with the Department of Planning and Environment, it was agreed that the Submissions and Preferred Infrastructure Report should not only be made available to the public, but that the Submissions and Preferred Infrastructure Report should also be placed on public exhibition to provide the opportunity for comment on the preferred project. It is noted that there is no statutory requirement to place a preferred infrastructure report on exhibition or guidance on the required timeframe and process. Accordingly, a 28 day period was adopted to provide the opportunity for comment on the changes to the project (the preferred project).

Sydney Metro would continue to engage closely with stakeholders and affected properties, owners, and occupiers, through all stages of design, planning, and construction.

5.2.2 Future consultation and engagement

Summary of issues raised

The following issues were raised regarding future consultation:

- Vicinity Centres, responsible for retail management of Bankstown Central shopping centre, would like an opportunity to participate in future stages of the preparation of the Integrated Town Centre Masterplan (Bankstown)
- the independent inquiry being explored by the Canterbury-Bankstown Council regarding project impacts should be supported by the government
- concern that specific station designs have not been confirmed and the Interchange Access Plans and Station Design and Precinct Plans should be placed on exhibition to allow community feedback.

Response

Stakeholder involvement in Bankstown master plan

Sydney Metro has committed to ongoing consultation with stakeholders in mitigation measure LU2 (refer to Appendix C of this report):

'Sydney Metro would work with the Department of Planning and Environment, Greater Sydney Commission, Canterbury-Bankstown Council and other key stakeholders to plan for the strategic transformation of the Bankstown CBD, including an investigation into the long-term development and viability of an underground station configuration.'

Sydney Metro would continue to engage closely with stakeholders, through all stages of design, planning, and construction.

Independent inquiry

Sydney Metro has no influence over government support or in relation to activities being undertaken by Canterbury-Bankstown Council.

Station designs

The drawings presented in the Environmental Impact Statement for the exhibited project and the drawings presented in the Submissions and Preferred Infrastructure Report for the preferred project were developed to enable the community to understand the concept design and its interface with the surrounding area. Detailed designs would be the responsibility of the contractor subject to project approval.

The detailed design of the stations would be further informed by the preparation of Station Design and Precinct Plans for each station, as committed to through mitigation measure LV3, and the preparation of Interchange Access Plans. These plans would be prepared and implemented in consultation with the Department of Planning and Environment, local councils, the Chamber of Commerce and the local community.

5.3 Project need and justification

This section provides responses to issues raised about the need and justification for the preferred project.

5.3.1 Support/objection

Summary of issues raised

A number of submissions expressed their support for the preferred project, and/or Sydney Metro as a whole. Comments made regarding Sydney Metro as a whole are noted however, as described in Section 4.2.5 of this report, submissions which support, object or comment on Sydney Metro as a whole (so do not specifically relate to the preferred project) were addressed in the Submissions and Preferred Infrastructure Report and are not addressed again in this report.

Comments made in support of the preferred project included:

- the amendments made to the project are supported, including the proposed possession periods and station closures
- changes made reflecting the previous community consultation are supported, such as reduced closures and maintaining the character of the stations
- it has been noted that there have been genuine and substantial concessions, particularly in the abandonment of plans for major station realignments.

A large number of the submissions expressed their objection to the preferred project and/or Sydney Metro as a whole. These comments were addressed in the Submissions and Preferred Infrastructure Report. Specific comments made in objection to the preferred project included:

- the NSW Government has given little thought to the needs of the local community at Bankstown
- the preferred project still falls short of community expectations in many areas
- the preferred project is substandard when compared to the stations being delivered as part of Sydney Metro North West project
- the current plans are objected to and are still flawed for several reasons
- the preferred project has, on balance, more negative than positive impacts for local communities and the whole transport network in Sydney.

Response

Reponses to issues raised in relation to the need and justification for the preferred project are provided in Section 5.3.2 of this report.

Responses to issues relating to the impacts of the preferred project are provided in Sections 5.8 to 5.18 of this report.

5.3.2 Need for the project

Summary of issues raised

A number of submissions questioned the justification, costs and scope of the preferred project. Comments made and concerns raised included:

Justification of the preferred project

- concern the justification for the project is inadequate
- concern the preferred project does not adequately address the technical questions raised by rail experts/former Rail Corp executives that the removal of heavy rail will not free up capacity on the network
- the justification for the project has been contradicted by *Sydney's Rail Future 2012*
- the Labor Party opposes the Sydenham to Bankstown project and the extension to Liverpool, with the NSW Labor Leader Luke Foley announcing in April that a future Labor Government would not proceed with the Sydenham to Bankstown project.

Costs and business case

- concerns about potential cost over spends
- concerns about the transparency of the business case, specifically:
  - it is unclear how changes to the project have impacted the previous business case
  - request for details of the business case for the preferred project and any information that has been provided to NSW Treasury
  - there is not a cost analysis or business case to justify costs outweighing benefits of the project
- concerned about cost blow outs and legal proceeding related to the light rail project will be similar for this project, concern regarding the revised scope of the preferred project will shift costs on to Council in the future such as upgrades to bridges and underpasses.

Changes to the project

- concern the preferred project is not a new metro line but just an upgrade to an existing line which is viewed as a substandard effort and a lost opportunity
- the preferred project does not provide social infrastructure and investment
- concern that impacts identified as essential in the Environmental Impact Statement can now be removed in the preferred project, creating a problem of trust with the community.

Response

Justification of the preferred project

The need and justification for the metro conversion was described in Section 5.1 (Need for the project) of the Environmental Impact Statement. This was updated for the preferred project in Section 5.3.2 (Need for the project) and Section 17.7 (Preferred project justification) of the Submissions and Preferred Infrastructure Report.

The conversion of the T3 Bankstown Line to metro operations would address one of Sydney's biggest rail bottlenecks, delivering benefits across Sydney's rail network. Sydney Metro (including the preferred project), together with signalling and infrastructure upgrades across the existing Sydney rail network, will increase the capacity of train services entering the Sydney CBD, from about 120 services an hour today, up to 200 services beyond 2024. This would be an increase of up to 60 per cent across the network to meet demand.

Converting the T3 Bankstown Line to metro would deliver improved efficiency and reliability along the route. With at least 15 trains an hour in the peak when services start in 2024, the project would initially have the capacity to move around 23,000 people per hour in each direction in peak periods. When required to meet increased demand, capacity could cater for around 40,000 people per hour in each direction when the number of trains increases to 20 per hour as part of ultimate operations.

The NSW Government has committed to building a significant piece of transport infrastructure by constructing Sydney Metro, the new standalone rail network was identified in *Sydney's Rail Future*, providing 66 kilometres of metro rail line and 31 metro stations. The project supports this strategy in enabling the provision of necessary public transport infrastructure to respond to the identified challenges and future demands.

The position of the Labor Party is noted.

Costs and business case

The preferred project would be delivered within the approved budget for Sydney Metro City & Southwest. The delivery of metro infrastructure will be undertaken by Sydney Metro and not funded by local councils.

Changes to the project

Sydney Metro has developed a design solution that enables the retention of existing station entrances, heritage buildings and concourses, but enables upgrades that provide accessible stations. This addresses a number of issues raised in submissions during the public exhibition period for the Environmental Impact Statement and responds to industry feedback during the procurement process. The preferred project focusses on the retention of existing infrastructure, station entrances, heritage buildings and the delivery of enhancements in the areas surrounding the stations. Place making in the design development process would reflect the retention and upgrade of existing places, while delivering a world class metro service.

The preferred project represents a substantial investment of public monies in order to improve the social asset that is the rail network. It would improve the experience and accessibility of customers on the T3 Bankstown Line and reduce congestion, delivering economic and social benefits for generations to come.

The preferred project would achieve the strategic objectives and outcomes identified for the exhibited project but in a manner that minimises the disruption to the community during construction. The preferred project would continue to achieve the operational outcomes identified for the exhibited project and would be consistent with the proposed operations on the remainder of the Sydney Metro network. The proposed station upgrades would provide fully accessible stations and ensure that outcomes for customers would not be compromised. The station design for the preferred project responds to the existing urban fabric and local character of the stations.

5.3.3 Benefits of the project and the broader metro network

Summary of issues raised

A number of submissions raised concerns about the potential benefits of the preferred project, including:

- the impacts of rail possessions on local residents (noise, dust, sleep disturbance, disrupted journeys, amenity) outweigh the benefits of the project despite the reduction in number of possessions
- the preferred project presents a downgraded solution, inferior to Northwest Metro, with none of the original benefits such as the active transport corridor, while retaining negative impacts such as vegetation clearance, and now the need for gap fillers.

Response

The business case summary document included a review of the benefits of constructing the project as part of the wider Sydney Metro City & Southwest project. These benefits for wider Sydney, such as increasing rail capacity and access to a range of key destinations were outlined in Section 5.3 (Project benefits) of the Environmental Impact Statement.

In addition, benefits for local communities from the preferred project were outlined in Section 7.11.1 (Strategic context – inequity in metro delivery and planning) of the Submissions and Preferred Infrastructure Report. These benefits include:

- heritage buildings and structures would be retained and a number repurposed
- reduction in vegetation clearance and tree removal
- improved accessibility at stations and the associated interchanges
- improved travel times along the T3 Bankstown Line corridor into the CBD and beyond, including to Macquarie Park and North Sydney
- improved access due to improved travel times and the increase number of services to support planned urban renewal opportunities.

As discussed in Section 7.11.1 (Strategic context – inequity in metro delivery and planning) of the Submissions and Preferred Infrastructure Report, a simple monetary comparison between the capital expenditure on Sydney Metro Northwest and Sydney Metro City & Southwest does not provide a full understanding of the projects and gives an incorrect impression. Sydney Metro Northwest is largely a 'greenfield' project, requiring significant land acquisition and establishment of basic rail and supporting ancillary infrastructure. The Sydney Metro City & Southwest Sydenham to Bankstown upgrade is a 'brownfield' project, involving upgrading and converting an existing rail line and corridor, where the basic rail and supporting infrastructure is already established and forms part of the existing urban fabric.

The impacts of rail possessions on local residents would be managed through the implementation of the mitigation measures, including TC1, NVC16, SO1 and AQ1 (refer to Appendix C).

Section 2.6.3 clarifies Sydney Metro's position on active transport connections and future proposals to improve cycling and pedestrian facilities throughout the preferred project area.

The impacts of vegetation clearance have been significantly reduced as part of the development of the preferred project compared to the impacts identified for the exhibited project.

Sydney Metro has developed a design solution that involves re-levelling of station platforms and the use of gap fillers to achieve the accessibility requirements of the metro network while minimising disruptions on the community during construction. This design solution would avoid the need to demolish heritage listed station platforms and associated heritage station buildings as well as the need to realign rail tracks to support a straightened platform. This would avoid the construction impacts associated with bridge replacement works and significant embankment and excavation works, which would require longer rail possession periods.

5.3.4 Further development concerns and links to project justification

Summary of issues raised

A number of submissions raised concerns regarding future development around stations and how this is associated with the preferred project, including:

- concern there will be impacts to historic unlisted properties around stations due to development from both the formation of Sydney Metro and acquisition powers, and future control by a private corporation and the urban renewal corridor
- concern that much of the opposition to Sydney Metro stems from concern over associated rezoning and development rather than the project.

Response

At this stage, no land or property would be permanently acquired as part of the preferred project described in the Submissions and Preferred Infrastructure Report. Some areas of land would be temporarily leased or occupied during construction of the preferred project.

Since the exhibition of the Submissions and Preferred Infrastructure Report, Sydney Metro is now an operating agency owned by the NSW Government and is part of the NSW Transport cluster, operating in a similar way to Sydney Trains.

As an operating agency owned by the NSW Government, Sydney Metro statutory authority cannot be sold to a private company. The Sydney Metro network, including the stations, trains and railway line, would be operated and maintained by a private operator, with ownership of the infrastructure remaining with the NSW Government.

The Department of Planning and Environment has identified a revised approach to the *Sydenham to Bankstown Urban Renewal Corridor Strategy*. The Department of Planning and Environment will develop the principle based, high level strategy for the corridor in collaboration with councils.

Councils will then undertake a review of their local environmental plan in accordance with this framework. Sydney Metro would work with the Department of Planning and Environment and local councils, as key stakeholders, once a program for the development of this revised strategy has been provided.

5.4 Project alternatives and options

This section provides responses to issues raised in relation to the alternatives and options to the preferred project.

5.4.1 Alternatives to the preferred project

Summary of issues raised

A number of concerns and requests have been raised regarding alternatives to the preferred project and its design, including:

- concerns that the suggestion by Canterbury-Bankstown Council for the project to be underground, or the underground options to be future proofed, have been ignored
- requests for the provision of additional retail and commercial spaces at station entrances and above the new concourses, to make new stations places to socialise and shop
- concern that the exhibited project may be re-instated as the construction footprint remains the same.

Response

The suggestion by Canterbury-Bankstown Council for the project to be underground or future proofed was addressed in Section 7.11.2 (Alternatives to the project - Undergrounding the alignment and Bankstown Station) of the Submissions and Preferred Infrastructure Report. Refer to Section 7.10.17 of this report for further detail regarding the response provided on this issue in the Submissions and Preferred Infrastructure Report.

To address a number of issues raised in submissions during the public exhibition period, Sydney Metro has developed a design solution that enables the retention of existing station entrances, heritage buildings and concourses, but enables upgrades that provide accessible stations. The detailed design process will involve preparing Station Design and Precinct Plans for each station, in accordance with new mitigation measure LV3 (refer to Appendix C of this report). The precinct plans will be prepared in consultation with relevant stakeholders, including the relevant local councils.

In addition, the Department of Planning and Environment has identified a revised approach to the *Sydenham to Bankstown Urban Renewal Corridor Strategy*. The Department of Planning and Environment will develop the principle based, high level strategy for the corridor in collaboration with local councils. Councils will then undertake a review of their local environmental plan in accordance with this framework. Sydney Metro would work with the Department of Planning and Environment and local councils, as key stakeholders, once a program for the development of this revised strategy has been provided.

The construction footprint was reduced for the preferred project compared to that shown for the exhibited project in the Environmental Impact Statement. Sydney Metro will seek approval for the project scope detailed in Appendix B (Preferred project description) of this report, under the provision of Division 5.2 (formerly Part 5.1) of the EP&A Act. This will require assessment by the Department of Planning and Environment and determination by the Minster for Planning.

Should improvements to the design or construction be made following approval of the preferred project, the proposed change(s) would be reviewed against the Environmental Impact Statement, Submissions and Preferred Infrastructure Report, this report and the conditions of approval. Sydney Metro can apply to the NSW Minister for Planning for any modifications required for the project. Any modification requests would be lodged with Department of Planning and Environment for assessment. The modification request would be appropriately notified and/or exhibited in accordance with the EP&A Act and Regulation.

5.5 Design development and place making

This section provides responses to issues raised in relation to key design considerations and how these formed part of the design process.

5.5.1 Heritage considerations

Summary of issues raised

One submission requested the heritage railway buildings at Hurlstone Park Station be restored and that the design considers surrounding heritage areas and also stop vandals and trespassers.

Response

Through the design of the preferred project, significant work has been undertaken to reduce the heritage impacts of the project. The Sydney Metro Heritage Working Group, which includes representatives from Sydney Trains and the NSW Heritage Division (as delegates of the NSW Heritage Council), reviewed the designs and provided input to the option selection process.

The Hurlstone Park Railway Station Group is listed on the Canterbury Local Environmental Plan 2012 and RailCorp's Section 170 heritage register. As a result, work was undertaken to reduce the potential heritage impacts at the station as far as possible, and Sydney Metro has developed a design solution that has allowed all heritage buildings and structures to be retained and repurposed, including those at Hurlstone Park Station.

Heritage in and surrounding stations would continue to be a key consideration in the detailed design process, which would seek to:

- recognise and demonstrate the heritage significance of each phase of rail transport development along the line
- retain and conserve, wherever possible, elements of heritage significance, so that functional relationships can be understood and interpreted
- remove intrusive station elements that detract from the core heritage values
- adaptively reuse the retained and conserved heritage buildings for station and related functions
- deliver a functionally viable line, stations, and precincts, while enhancing the legibility of key heritage values.

The preferred project would take into consideration the principles outlined in *Around the Tracks – urban design for heavy and light rail*. Heritage and local identity are key considerations in the Around the Tracks urban design guideline.

The preferred project includes the installation of security fencing along the rail corridor. The operational management plan to be developed for the preferred project would include procedures to handle graffiti within the corridor and in areas adjacent to the corridor.

5.5.2 Place making and future design considerations

Summary of issues raised

Some submissions raised concerns and requests about how the design for the project considered place making including:

- requests for consultation on place making and that the Hurlstone Park Association should be one of the stakeholders consulted in the development of the integrated urban and place making outcome for Hurlstone Park Station
- concerns regarding the lack of consultation on place making with communities and that the Submissions and Preferred Infrastructure Report provides little detail about station design.

Response

The preferred project would involve the retention of existing infrastructure along the rail corridor, therefore maintaining the existing identity and character at individual stations. As such, the impact of the preferred project on place making has been reduced in comparison to the assessment of the exhibited project provided in the Environmental Impact Statement.

Where upgrade works are proposed the urban and natural fabric surrounding each station has been assessed and used to inform design development, and has taken into account the existing urban context and infrastructure (including built form and public domain conditions, landscape elements, and existing and proposed services and initiatives).

A design panel has already been established for Sydney Metro (the Sydney Metro City & Southwest Design Review Panel), the purpose of which is to review the design at appropriate stages.

The detailed design of each station would be informed by the document *Around the Tracks: urban design for heavy and light rail* (Transport for NSW, 2016). This guideline recognises the role of stations as important infrastructure for local communities and the transport system as a whole. Design principle 5 (Maximise the amenity of the public domain) requires the design to:

> *'Design public spaces to be activated as much as possible with diverse uses that appeal to a broad range of users including those from different demographic groups, with varying accessibility needs and at different times of the day and night,' and*
>
> *'Use urban design enhancements (e.g. creative engineering solutions, landscape designs and art) to add interest and character to a project. Unique features contribute to creating a memorable sense of place and enhance the sense of community ownership.'*

The detailed design of the stations would be further informed by the preparation of Station Design and Precinct Plans for each station, as committed to through new mitigation measure LV3 (refer to Appendix C of this report). These plans would build on the design principles and the level of detail used to assess the preferred project that provided the understanding of potential impacts of the preferred project. The next level of detailed design would aim to ensure that the final form of the stations and facilities are sympathetic to, and complement, local character taking into consideration urban design context, sustainable design and maintenance and community safety, amenity and privacy, amongst other drivers that were part of the assessment of the preferred project. These plans would be part of the detailed design and would be prepared and implemented in consultation with the Department of Planning and Environment, local councils, the Chamber of Commerce and the local community.

5.6 Project description – design features and operation

This section provides responses to issues raised in relation to the features of the project, including the features of metro trains, the design of stations, and other proposed infrastructure.

5.6.1 Characteristics of metro trains and facilities

Summary of issues raised

Some submissions raised concerns about the characteristics of metro trains including:

- concern regarding the platform gap fillers including their safety and the impacts they will have on train running times
- visually impaired passengers should be given an opportunity to test embarking and disembarking metro carriages prior to 2024.

Response

The preferred project involves the provision of accessibility improvements beyond those currently provided at stations to meet relevant accessibility requirements of the *Disability Discrimination Act 1992* and Disability Standards for Accessible Public Transport 2002. This would include the relevelling of platforms and provision of gap fillers at each carriage doorway location that has a gap between the train and platform to provide safe, level access to trains, and improving accessibility around the stations.

In response to submissions raising issues around the loss of heritage items, the preferred project responds directly to those submissions by retaining the heritage platforms and station buildings. This would necessitate the use of gap fillers as a safety and accessibility measure to close the gap that results from the curvature of the retained platforms.

Gap fillers would assist with train access for wheelchairs, prams, passengers with suitcases and the elderly and visually impaired. Gap fillers are safely used on metro projects around the world, including by visually impaired passengers and would be designed to achieve accessibility standards. The proposed platform re-levelling and gap fillers would provide level access and close the gap from the station platform to train carriage. The gap fillers would be individualised to suit the particular requirements at each of the carriage doorways at which they will be deployed. Gap fillers would operate independently of each other and should there be an operational issue with one of them, the platform screen door at that location would remain closed and customers would be directed to other serviceable screen doors for access to the train. The screen door would remain closed until such time as the mechanical issue is resolved and the gap filler can be operated safely. The predicted travel times for the preferred project include the use of gap fillers.

Prior to operation of the project, all elements of the project including accessibility features would be subject to rigorous testing and commissioning.

5.6.2 Station features

Summary of issues raised

A number of submissions raised concerns and queries relating to stations and station features, including:

Station buildings and branding

- the retention of the existing train station buildings is opposed in lieu of constructing new modern stations

- concern with the preferred project not providing more accessible, all weathered concourses, new entrances or new station buildings/facilities
- suggestions for the design of Hurlstone Park Station including:
  - restoring the heritage buildings and using appropriate colour schemes
  - retention of original stair case railings
  - removing orange signage
  - lift design to: prevent glare from the sun; maintain privacy to surrounding homes; in keeping with the proposed heritage conservation areas
- upgrades to stations are inadequate as Bankstown Station will be a major interchange and will be ill equipped for the increase in commuter movement
- more gentle ramps for bicycles and wheelchair users are requested
- concerns that lifts have a capacity limit
- a dedicated link with the Dulwich Hill Light Rail stop should be provided.

Station entrances

- additional station entrances should be provided in the following locations:
  - Charles Street, Canterbury Station
  - Ewart Lane, Dulwich Hill Station
  - a third entrance at Campsie Station and an underground connection to Anglo Road via Anzac Square.

Platforms and gap fillers

- concerns regarding the curvature of the existing platform alignment posing a problem for passengers embarking and disembarking
- use of gap fillers on platforms to save costs will create maintenance and safety issues
- concerns that the platforms are no longer being straightened and how long this design can last.

Other issues

- concerned that the building contractor will not agree to some of the changes, especially station design
- concerned regarding the location of kiss and ride and disabled car park at Hurlstone Park Station.

Response

Station buildings and branding

The approach to heritage elements at all stations has been to retain existing significant items and/or elements, with particular focus given to those items listed on the State Heritage Register. Sydney Metro has developed a design solution for the preferred project that enables the retention of existing heritage buildings and platforms.

The design of the preferred project would be guided by the document *Around the Tracks: urban design for heavy and light rail* (Transport for NSW, 2016). The ideas and suggestions provided in submissions would continue to be considered during the detailed design process, taking into account accessibility and operational requirements.

The detailed design process involves preparing Station Design and Precinct Plans for each station in accordance with mitigation measure LV3 (refer to Appendix C of this report). These plans would present an integrated urban and place making outcome for each station, and would:

- be prepared in consultation with relevant stakeholders including the relevant local council
- be reviewed by the Design Review Panel
- identify specific design objectives and principles based on the local context and heritage, place making values, the urban design context, and maximising the amenity of public spaces and permeability around station entrances
- identify opportunities for public art
- be informed by a Heritage Interpretation Plan
- provide evidence of consultation with the community, local councils, and agencies in the preparation of the plans, and how feedback has been addressed.

The branding of metro services has been undertaken in accordance with the existing branding of other public transport services in Sydney. The orange 'T' signs at the existing stations form part of the Transport for NSW wayfinding approach and are used to identify Sydney Trains stations. Once Sydney Train services are no longer operating on this line, these signs would be removed and light blue 'M' signage would be installed to identify Sydney Metro stations. The differentiation of Sydney Metro from Sydney Trains services would allow commuters to readily identify the different services and operating arrangements.

The preferred project would deliver accessible stations and safe and efficient connections. This would include new lifts to access the stations that do not currently have lift access, increasing lift capacity for station users needing improved access.

Existing weather protection features would be retained as part of the preferred project. No additional weather protection is proposed outside of the station entry areas.

Bankstown Station – The cross-corridor link and associated station entrances have been designed in line with all relevant standards, and have been sized to ensure capacity at the station meets the future demand. The design for the proposed upgrade of Bankstown Station has and would continue to take into account the station's role as a major regional interchange, providing connections between Sydney Trains services, Sydney Metro services, and the large number of bus routes that terminate at the station. The Station Design and Precinct Plan for Bankstown Station, as required by mitigation measure LV3 (refer to Appendix C of this report), would be prepared in consultation with Council. The plan would aim to present an integrated urban and place making outcome for the station, identify specific design objectives and principles based on the local context, and maximise the amenity of the station.

Dulwich Hill Station – a direct connection between the light rail stop and the metro station would be provided. The preferred project would include a new elevated station concourse with new stairs and lifts which would connect the station platform to the Dulwich Hill Light Rail stop. Access from the concourse to the light rail stop would be available via the existing lift to the light rail stop, rather than from the bottom of the hill.

Sydney Metro is committed to providing the best possible services for customers and would continue to monitor patronage and train loading data and identify and implement further improvements across the network.

Station entrances

The preferred project retains the existing station entrance locations and supporting infrastructure. New station entrances at Canterbury Station, Dulwich Hill Station or Campsie Station do not form part of the preferred project.

A future Charles Street entrance at Canterbury Station is currently safeguarded in the design. The development of this entrance would be considered in the future in line with future development. Access to Charles Street would be provided west of the station on the southern side of the corridor, or via Canterbury Road.

Platforms and gap fillers

Straight platforms were initially proposed at all stations except Dulwich Hill as part of the exhibited project. Sydney Metro has now developed a design solution that involves re-levelling platforms at all stations rather than straightening them. This would avoid the need to demolish existing heritage platforms and minimise impacts resulting from the demolition of station buildings and other heritage station infrastructure.

The preferred project proposes the installation of gap fillers in order to reduce the gap between platforms and trains. Gap fillers are routinely used on metro projects around the world. Should there be an operational issue with a gap filler, the platform screen door would remain closed and customers would be directed to other serviceable screen doors for access to the train. The screen door would remain closed until such time as the mechanical issue is resolved and the gap filler can be operated safely.

Other issues

As described in Section 9.2 (Station works) of the Submissions and Preferred Infrastructure Report, the existing accessible parking spaces on Floss Street and Duntroon Street on the northern side of the rail corridor would be retained. The location of the proposed accessible parking on Duntroon Street on the southern side of the station has been moved north, closer to the station entrance, compared to the exhibited project. Sydney Metro would develop an Interchange Access Plan for each station to inform the final design of transport and access facilities and services, including footpaths, cycleways, passenger facilities, parking, traffic and road changes, and integration of public domain and transport initiatives around and at each station. The location of accessible parking and other kerbside facilities at Hurlstone Park Station would be confirmed during detailed design, as part of the Interchange Access Plan for the station.

Sydney Metro would continue to develop the design to a greater level of detail in conjunction with the appointed design contractor. Sydney Metro would challenge the contractor to develop innovative solutions to detailed design and construction to achieve improved outcomes. The design would continue to be guided by the document *Around the Tracks: urban design for heavy and light rail* and feedback from stakeholders.

5.6.3 Bridges, tracks and other ancillary facilities and services

Summary of issues raised

A number of concerns were raised regarding the proposed works to bridges, underpasses, track and other ancillary facilities including:

- there has been no adequate explanation as to why 23 bridges and underpasses no longer need to be demolished or renovated
- upgrades to infrastructure are inadequate
- safety issues will arise from the reduction in bridge and underpass works

- underpasses, bridges, track and walkways will be left in varying degrees of disrepair which may result in maintenance delays in future
- clarification required regarding what sections of track will now need replacing given existing tracks will be retained.

Response

Bridges

The exhibited project outlined in the Environmental Impact Statement included significant works to existing bridges, to be undertaken upfront and earlier than the asset lifecycle requirement in order to utilise the proposed extended track possessions. Following consultation and feedback from industry during the procurement process, the duration of track possessions has been significantly revised for the preferred project to reduce inconvenience to the community. In addition, the retention of the exiting rail track and corridor infrastructure would avoid direct impacts on existing bridges. As a result, the scope of works to bridges has been revised. The intention would be to implement a phased upgrade of the existing bridge structures where required in a similar manner to the way Sydney Trains and Roads and Maritime approach the upgrade of their bridges. Despite this, there would still be work undertaken to the bridges to ensure ongoing safety is maintained and not compromised.

The preferred project includes the provision of a number of safety measures to existing bridges, including enhanced protection to existing bridge piers, installation of anti-throw screens, vertical protection screens, vehicle collision barriers. These bridges are listed in Table 1.11 of Appendix B of this report. General maintenance would also be undertaken and would include initial detailed bridge inspections by the contractor to determine the scope of maintenance activities required.

Safety is a fundamental consideration in the design of all elements of Sydney Metro. Safety in Design principles would be adopted (along with other measures) as an integral component of the detailed design of stations and surrounds. Where safety issues are apparent or remain unresolved, safety reviews, including road safety audits to consider the interactions between all road users, would be undertaken.

Tracks

The preferred project would use the existing Sydney Trains tracks. In some locations, there may be a need to upgrade/replace the existing track because of its condition. This would involve activities such as replacing the rails, sleepers, fastenings and ballast.

Changes to the track alignment would be undertaken in the following locations:

- around Bankstown Station to facilitate the separation of the metro tracks from the Sydney Trains network
- west of Sydenham Station to connect to the Chatswood to Sydenham project
- at the location of the new turnbacks and crossovers:
  - new crossover on the eastern side of Campsie Station
  - replacement of the existing track crossover to the east of Bankstown Station with a new Sydney Metro turnback
  - a reconfigured rail junction and turnback to the west of Bankstown Station for Sydney Trains services

The turnback and crossover facilities would involve the installation of new rails, sleepers, fastenings, and ballast, and new switches at crossover locations.

5.6.4 Operational issues

Summary of issues raised

Clarification was requested on the proposed permanent closure of Hurlstone Park Station.

Response

Hurlstone Park Station is not proposed for permanent closure.

A temporary closure of up to two months may occur at Hurlstone Park Station to enable the construction of the station upgrade to be completed.

5.6.5 Active transport corridor

Summary of issues raised

A number of submissions objected to the loss of the active transport corridor in the preferred project, which was considered one of the benefits of the exhibited project. Specific concerns included:

- there is no mention of cycling investment or bicycles, and there should be bike lanes along the railways corridor, connections to workplaces and schools and dedicated road traffic lanes for bicycles
- the dropping of the active transport corridor is indicative of the lack of prioritisation of pedestrians and cyclists in recent major infrastructure projects, leading to lack of support from these groups that would normally support large public transport projects
- Sydney Metro should incorporate consideration of pedestrian movements across urban villages along the corridor, not just in the immediate vicinity of the stations.

Response

See Section 2.6.3 of this report which clarifies Sydney Metro's position on active transport connections and future proposals to improve cycling and pedestrian facilities throughout the preferred project area.

A number of changes were made to the project including refining the project scope to minimise impacts to the local community and customers. This included refining the project to reduce construction impacts which has meant the corridor could no longer be widened or changed to accommodate shared facilities on existing rail land.

Sydney Metro would continue to work with councils and other key stakeholders in a coordinated approach, as part of the future planning for the corridor, to assist in refining the identification and safeguarding of potential opportunities for future pedestrian and cyclist connections.

5.7 Project description – construction

5.7.1 Construction impacts

Summary of issues raised

A number of submissions raised concerns regarding the construction impacts of the preferred project including:

- some works including bridge protection works are already underway
- clarification is requested as to which station platforms need to be levelled as there is concern about raising the platform height in relation to heritage buildings which could result in rain water flowing back or pooling on to stations

- a staged approach to construction is recommended and further detail about the construction programme should be provided as 1 to 2 years is not enough information
- concerns regarding construction of the metro due to the gas leak in the city on 7th July 2018 from the construction work of the Light Rail.

Response

No construction work for the preferred project has commenced. Any construction works currently ongoing near the project area are not connected with the project and would relate to other development or maintenance work approved separately.

Platform re-levelling/resurfacing would be required at all ten stations within the project area. The drainage design for each platform would account for station buildings and drainage of surface water to minimise pooling of water on platforms.

Sydney Metro is committed to ensuring that learnings from other stages of Sydney Metro and other major projects inform the design and construction of this preferred project. The approach to environmental management described in Section 17.4 of the Submissions and Preferred Infrastructure Report has taken into account Sydney Metro's experience on other metro projects. This includes the various management strategies and frameworks (such as the Construction Environmental Management Framework, the Construction Noise and Vibration Strategy, and the Utilities Management Framework) which have been developed/updated to take into account previous experience.

5.7.2 Construction program and possessions

Summary of issues raised

A number of submissions raised concerns regarding the duration of the construction works including:

- concerns that construction would take longer than advertised even with the reduction in construction works for the preferred project
- clarification is requested on the difference between the closures stated in the Environmental Impact Statement and the Submissions and Preferred Infrastructure Report
- clarification regarding the additional weekend possessions required
- the new category of individual station closures for two months
- a staged approach to construction is recommended and further detail about the construction programme should be provided as 1 to 2 years is not enough information.

Additionally, one submission requested that the installation of lifts at Punchbowl Station be completed before commencement of works for Sydney Metro.

Response

Construction of the preferred project would commence once all necessary approvals are obtained (anticipated to be in 2018/2019). Upgraded stations would be progressively delivered from 2019 until 2022 (see Figure 5-1), with the main station upgrade works estimated to take about one year for each station. The works would be spread across the entire project construction period (depending on the extent of works required). Works to upgrade other infrastructure would also occur during this period to improve the reliability of services.

Station works would potentially be staggered throughout the overall construction period so that not all station works would be undertaken at once. This would mean that most stations would be open to customers for the majority of the construction period. Individual stations may also be closed for up to 2 months to complete the station works. Up to three stations may be closed at any one time. The program would be further developed during detailed design and the community would be kept informed. Mitigation measure TC10 commits to Sydney Metro undertaking an extensive community awareness and information campaign before changes to public transport services are implemented (refer to Appendix C of this report).

Temporary rail replacement buses would be provided during these periods in accordance with the alternative transport arrangements described in Section 2.11 of the preferred project description provided in Appendix B in this report.

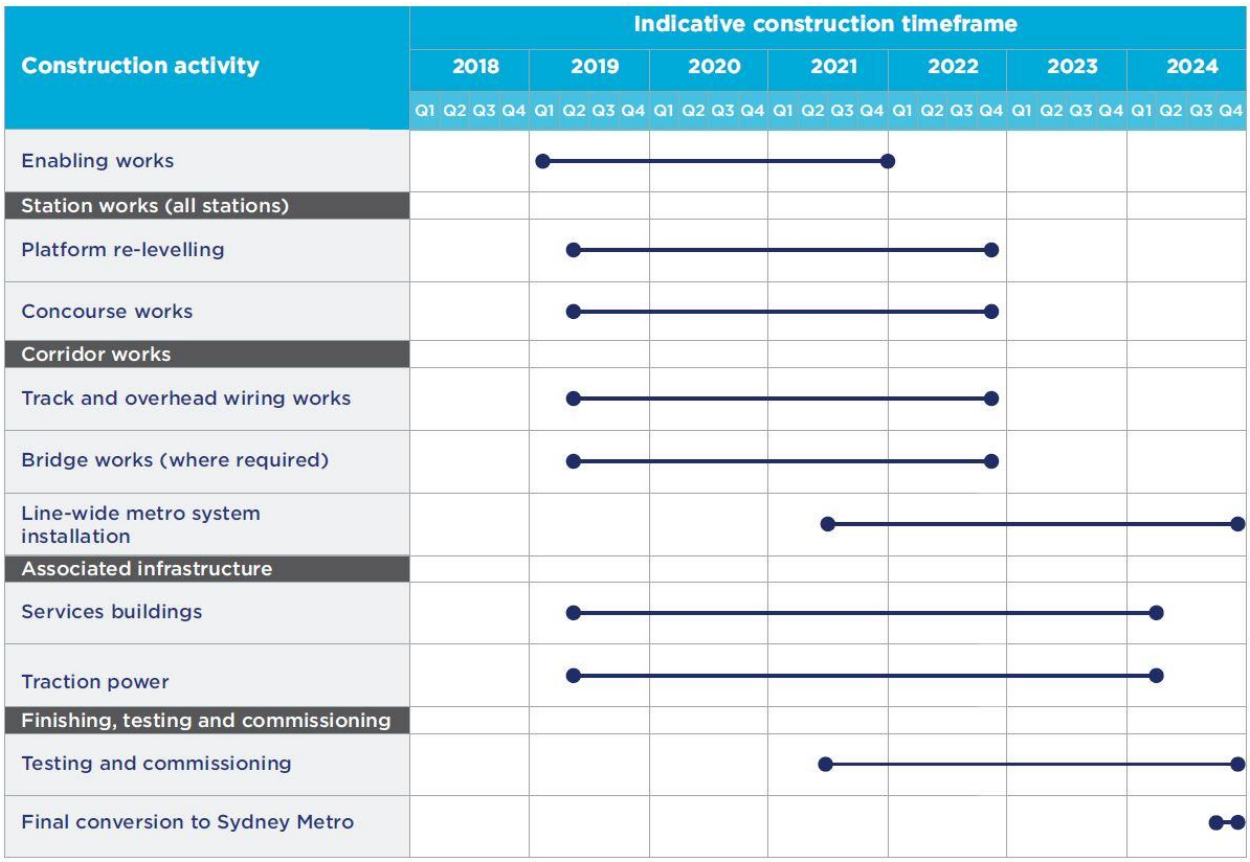


Figure 5-1 Indicative construction program for the preferred project

Sydney Trains services would continue to operate to each station throughout the construction period (excluding during possessions or any other closure periods).

Some construction works would need to be undertaken during rail possession periods when trains are not operating, to ensure that works are carried out as efficiently as possible and that worker safety would be maintained. This would include possessions of both the Sydney Trains tracks, and the freight tracks located between Marrickville and west of Campsie stations. Works that may need to be undertaken during possession periods include:

- station works and activities on stations which cannot be undertaken during operation of the network
- track and corridor works
- bridge works.

This indicative possession program would be reviewed during detailed design in line with construction planning to ensure the available possessions are sufficient to complete the works. The schedule of possessions would be reviewed to reduce the overall impacts to the community as far as possible.

During each possession period when the rail lines are closed, alternative transport arrangements would be implemented to ensure that rail customers can continue to reach their destinations. A description of the proposed temporary transport arrangements that would be implemented during these periods is provided in Section 5.7.3 of this report.

Outside the possessions described below (for both Sydney Trains and freight lines) services would operate in parallel within construction works not located close to the operational tracks.

Standard weekend possessions

Sydney Trains currently schedules routine maintenance possessions on four weekends each calendar year. Subject to detailed construction planning, these scheduled maintenance possessions would also be used to complete the preferred project works.

Additional weekend possessions

Up to an additional eight weekend possessions would be required each year to complete the preferred project works. Works to be undertaken during standard and additional weekend possessions would include installation of communications services routes, bridge works, fencing and station works that need to be undertaken from or interfacing with the rail track.

School holiday possessions

This would involve up to a two week possession of the T3 Bankstown Line (either in full or part) during the Christmas school holiday periods. Opportunities to minimise the number or duration of school holiday possessions would be further investigated during detailed design and following appointment of the construction contractor.

The assessment assumes the use of a full line possession during the Christmas school holiday periods. This would be in addition to the standard and additional weekend possessions outlined above. It is proposed to undertake possessions during the Christmas school holiday periods because there is:

- lower patronage on the Sydney Trains network generally and this would reduce inconvenience for school children and parents
- less traffic on the surrounding road network, which would assist the efficient operation of rail replacement bus services
- increased availability of buses and drivers for rail replacement bus services
- increased rail capacity available on other lines to accommodate customers who would normally travel on the T3 Bankstown Line.

The differences between the construction program for the exhibited project presented in the Environmental Impact Statement and the preferred project was shown in Section 10.3 (Construction program and timing) of the Submissions and Preferred Infrastructure Report.

The proposed lifts at Punchbowl Station would be installed as part of the Sydney Metro works. The proposed station works would be completed prior to metro operations commencing.

5.7.3 Alternative transport arrangements during construction

Summary of issues raised

A concern was raised that the revised temporary transport strategy would result in over 53 weeks of inconvenience to Marrickville residents and further information is needed on the efforts to minimise disruption to commuters and impacts to local businesses.

A submission suggested that the former Inner West line is used during construction as an alternative to replacement buses.

Response

Details of the Temporary Transport Strategy

Section 2.11 of the preferred project description, provided in Appendix B of this report, provides options for alternative public transport arrangements during possessions and describes how impact to rail users between Lidcombe and Sydenham would be minimised.

The Temporary Transport Strategy is an overarching strategic document. It describes the process for planning and delivering the integrated, multi-modal temporary transport response that would operate during possession period shutdowns on the T3 Bankstown Line, and provides guidance for the development of temporary transport plans.

The aim of the strategy is to minimise disruption to passengers and provide alternate transport arrangements to reach destinations. This will be achieved for each possession period through development of a temporary transport plan. The plan would define the initiatives that would be implemented to assist customers affected by closures of the rail line, and the measures to minimise potential impacts associated with proposed alternative arrangements. Further detail on the plan is provided in Appendix B (Preferred project description) of this report.

The temporary transport plans would be developed in consultation with the community and key stakeholders (including the Sydney Coordination Office, Roads and Maritime Services, Sydney Trains, local councils, emergency services, and bus operators). Each successive plan developed would take into account previous experience so that continual improvements are offered to customers over the duration of the network upgrades.

Possession periods would be well advertised and managed in accordance with strict controls set out in the temporary transport plans. Mitigation measure TC1 commits to developing the temporary transport plans in consultation with key stakeholders (refer to Appendix C of this report). Mitigation measure TC10 commits Sydney Metro to undertake an extensive community awareness and information campaign prior to changes in the public transport system implemented during possession periods. This would include a range of consultation activities such as information provision at stations and web and transport 'app' based information programs.

Impact to businesses

In conjunction with the business management plan, and in accordance with mitigation measure BI2 (refer to Appendix C of this report), a Small Business Owners Support Program. This program has been developed, and would be implemented to provide assistance to small business owners in close proximity to construction sites. The assistance provided would involve working with small business owners to identify ways of minimising the impacts of construction by providing, for example, wayfinding signage, maintaining visibility where practicable, and facilitating access and deliveries at critical times. The program would be administered by a retail advisory/support panel established by Sydney Metro, and would involve further consultation with business owners prior to, and during construction.

Suggestions/requests regarding alternative public transport services and rail replacement bus routes and arrangements

As part of the development of the temporary transport plans, Sydney Metro would consider the opportunity to alter existing public transport services to offset the loss of trains along the T3 Bankstown Line. This would be undertaken in consultation with Sydney Trains, Sydney Buses, Sydney Coordination Office and Transdev Sydney (the operators of Sydney Light Rail).

Sydney Metro will investigate how best to alter Sydney Trains rail services to minimise disruption to customers and maximise connectivity, including the former Inner West services.

5.8 Construction traffic, transport and access

This section provides responses to issues raised in relation to the potential traffic, transport and access impacts of the project during construction.

5.8.1 Assessment method

Summary of issues raised

Concerns were raised regarding the assessment methodology used for the traffic, transport and access assessment including:

- traffic count locations are outside of the project area so project impacts cannot be understood
- no traffic data was utilised to determine that the standard weekend possessions can occur without significant disruption
- impacts from possessions or construction traffic don't consider population growth
- intersection traffic modelling is based on 2016 to 2017 data and disagreement that a level of service E to F is considered acceptable
- transport arrangements should be planned prior to work commencing and not rely on monitoring during closures
- the Submissions and Preferred Infrastructure Report provides insufficient guidance on how commuters will be offered alternative transport during rail shutdown
- the assessment does not consider the temporary transport plan amendment to bus passengers to the T2 Inner West and Leppington Line together with the original Environmental Impact Statement proposal of taking passengers to the T8 Airport and South Line.

Response

Count locations

An extensive traffic data collection program was undertaken for the traffic, transport and access impact assessment undertaken as part of the Environmental Impact Statement (where relevant to the preferred project) and the Submissions and Preferred Infrastructure Report (Appendix D of the Submissions and Preferred Infrastructure Report). This included traffic surveys of 91 intersections. These surveys were supplemented with additional count data from long-term count sites surrounding the project area which were used to provide information on the way in which traffic volumes vary throughout the year in and around the project area. The use of these long-term sites allowed Sydney Metro to confirm the traffic profile over several years and demonstrate trends in traffic volumes over time.

Assessment conclusions

The road network performance assessment undertaken as part of the Submissions and Preferred Infrastructure Report indicated that several locations within the preferred project area exhibited deteriorating levels of service as a result of natural growth in background traffic volumes, prior to construction commencing. There are many occasions unrelated to the preferred project where temporary works occur on the road network which reduce the capacity, or result in traffic diversions, including repairs to road surfaces or bridge structures, underground service installation and maintenance. During these events, it is inevitable that there would be increased delays. Whilst the effects are mitigated they do not constrain the ability for people to continue their normal tasks.

The assessment concluded that a number of intersections across the preferred project area were likely to experience additional delays as a result of increases in construction traffic. However, in the majority of cases, the levels of service and degree of saturation would remain acceptable, in the context of the existing intersection, and predicted growth impacts at these intersections. Where impacts were not considered acceptable impacts were remodelled using mitigation options to identify whether the impacts could be reduced. It was determined that these mitigation options would reduce the level of congestion predicted.

The potential impacts during standard weekend possessions were addressed in Section 2.6 (Temporary Transport Strategy) of Appendix D of the Submissions and Preferred Infrastructure Report. This concluded that during these weekend possessions, replacement buses would replicate the rail possessions that currently occur on up to four weekends a year for routine maintenance by Sydney Trains. The frequency of these buses during this time would be up to 28 buses per hour. The impact of the preferred project during these additional weekend possessions was assumed to be consistent with the impacts of these standard weekend possessions and traffic modelling was not undertaken for this scenario. No formal data on traffic conditions is available for these standard weekend possessions, however the operation of the rail replacement bus services is known to occur without significant disruption. Monitoring would be undertaken during these possessions and the outcome of that monitoring would be utilised to refine the approach to these closures during the preferred project.

Growth factor

The assessment was prepared in accordance with all relevant guidelines, and addressed the Secretary's environmental assessment requirements. The assessment involved modelling of existing and future situations, which included the conditions in 2016, as well as predicted future conditions in 2023.

For both the construction and operational assessments, a growth factor was used to account for forecast land use and traffic changes that are expected to occur between 2016 and 2023. The growth factor adopted was sourced from the Public Transport Project Model (PTPM), which has the most up to date land use assumptions for the Sydenham to Bankstown corridor and was therefore considered the most relevant to adopt for the assessment. Further information is provided in Section 4.5.5 (Traffic growth) of Technical Paper 1 (Traffic, transport and access assessment) of the Environmental Impact Statement. The growth factor applied to the preferred project was the same as that for the exhibited project.

Temporary Transport Strategy

Sydney Metro has, as part of construction planning undertaken to date, focussed on minimising impacts to commuters and the road network. Sydney Metro would continue to consult with Roads and Maritime Services, the Sydney Coordination Office and Sydney Trains to reduce traffic impacts due to the addition of replacement buses and impacts on other commuters.

Possession periods have largely been selected to ensure that they occur when train patronage is lower, thus minimising the number of buses required and the impacts to customers. Scheduling possession periods during school holidays would also assist with bus availability and the capacity of other train lines to accommodate additional patronage.

As outlined in the Temporary Transport Strategy (Appendix G of the Environmental Impact Statement), the temporary transport management plans developed for possession periods would provide a forecast of how those customers using the Bankstown Line would travel during the possession periods. In addition to the range of customer demand forecasts for each temporary bus route, surveys of weekend possession bus usage have been undertaken. This information was used to determine customer demand during the rail closures and hence the volume of temporary transport buses required. Temporary train and bus service plans would be developed that determine the additional capacity available on other rail lines where affected customers may be diverted.

The monitoring proposed during possession periods is an additional layer of management that allows for the incremental modification to the temporary traffic management plans to reflect differences (if they occur) between the actual impacts during the possessions and the forecast impacts. As such, this provides an additional opportunity to manage the possessions with reduced disruption to passengers or other users of the transport system during the possession periods.

5.8.2 Construction traffic and road network performance

Summary of issues raised

A submission raised the following issues:

- concern that the preferred project would impact on road network performance, with Table 15.2 indicating some small improvements from the Environmental Impact Statement, however seven intersection performances would still experience deterioration of the level of service
- concerns that construction traffic would impact the road network on already congested roads in Marrickville, causing disruption and hazards to road users.

Response

A traffic and transport and access assessment was completed for construction of the preferred project and was provided in Appendix D (Traffic, transport and access assessment) of the Submissions and Preferred Infrastructure Report.

The assessment indicated that several locations exhibited deteriorating levels of service as a result of natural growth in background traffic volumes, prior to construction commencing.

The assessment also concluded that a number of intersections across the project area were likely to experience additional delays as a result of increases in construction traffic. In the majority of cases, the levels of service and degree of saturation would remain acceptable, and infrastructure upgrades are not considered to be required. Impacts at other intersections were remodelled using mitigation options to identify whether the impacts could be reduced by changes to the way the intersections operate and were confirmed to reduce the level of congestion predicted.

Mitigation measure TC6 (refer to Appendix C of this report) commits Sydney Metro to considering the need for intersection modifications that could improve intersection performance at locations most affected by construction vehicles. This would be undertaken in consultation with Roads and Maritime Services, the Sydney Coordination Office and the relevant road authority. This measure would integrate with the construction traffic management plan required by mitigation measure TC8.

Access for emergency services vehicles to stations and surrounding properties would be provided at all times. Emergency service providers (i.e. police and ambulance) would be consulted throughout construction to ensure they are aware of changes to access, including lane, bridge or road closures, and changes to station or rail corridor access as outlined in mitigation measure TC21.

5.8.3 Impacts during rail possessions including impacts of temporary transport arrangements

Summary of issues raised

Concerns were raised regarding the impact during rail possessions, including:

- closing up to three stations concurrently would be disruptive for commuters and worse than the exhibited project
- any relief given in reducing the number of weeks originally proposed for possession during the school holidays (from two weeks in July and six weeks during Christmas holidays) has been lost due to the additional eight weekend possession periods added plus night time weekday possessions together with the proposed closure of up to three stations for up to two months. No information exists if this closure of the stations is a yearly event or one off occurrence
- there is a lack of clarity about station closures and alternative transport arrangements during construction
- concern that even though closures of the existing rail network during construction have been reduced there will still be an inconvenience to residents and extensive disruptions during construction
- concern that weekend possessions would result in additional buses per hour passing through Marrickville and that Marrickville Road between Illawarra Road and Silver Street Marrickville will be the worst affected location
- request that the Department of Planning and Environment defers approval of final rail shutdown until more information is provided about how it will be managed and the alternative transport strategy is placed on public exhibition for comment.

Response

Impacts of closing up to three stations concurrently

The exhibited project proposed the full closure of all stations on the line concurrently on a number of occasions, and for an extended period of time. The preferred project allows for passengers at the majority of stations to continue to use the line, with only those passengers who wish to board and alight at the closed stations required to use alternative transport services. This reduces the number of passengers needing to be carried by replacement buses, thereby reducing the number of passengers affected as well as the potential impacts of these buses, together with the length of the road transfer that the passengers would be making, allowing them to recommence their normal train journey sooner.

Station closures would occur during the possession periods described in Section 2.7 of the preferred project description, provided in Appendix B of this report. Additionally, individual stations may also be closed for up to two months during a one off occurrence, to complete the station works.

Impacts on intersection performance at Marrickville

The weekend possessions proposed are consistent with the possessions that currently occur on the T3 Bankstown Line. The buses required on these current weekend possessions utilise 28 buses per hour in each direction on Marrickville Road. This is a very small percentage of the total traffic on Marrickville Road, and there have been no reports of issues arising as a result of these additional buses during these current weekend possessions.

Final possession period approval

The potential impacts of the final possession period on road network performance has been assessed for the preferred project. Further, mitigation measure TC1 (refer to Appendix C of this report) commits Sydney Metro to developing the temporary transport plan/s in consultation with key stakeholders.

5.8.4 Parking impacts

Summary of issues raised

Concerns were raised regarding parking impacts during construction, including:

- concern that the shutdown of the T3 Bankstown Line during race days at Canterbury Racecourse would result in greater demand for parking and remove parking needed for nearby residents in Canterbury and Ashbury
- concern about loss of parking and impacts of construction worker parking despite changes to the project.

Response

Impact of possessions on special events

Mitigation measure TC11 (refer to Appendix C of this report) commits Sydney Metro to considering special events during construction work programming. During special events that require specific traffic and pedestrian management, measures would be developed and implemented in consultation with Roads and Maritime Services, the Inner West and Canterbury-Bankstown councils, and the organisers of the event to minimise impacts on the event attendees and other commuters.

Construction worker parking

Parking for workers and construction plant are addressed in Section 2.8 of the preferred project description, provided in Appendix B of this report. Construction compounds would include facilities for plant and vehicle parking and generally be on land owned by RailCorp or another government body. Section 2.8.6 of the preferred project description (Appendix B of this report) outlines the opportunity for worker parking at each site which would be reviewed further during detailed construction planning and particularly, opportunities for larger sites to accommodate additional parking for workers.

Mitigation measure TC12 (refer to Appendix C of this report) commits to considering the impacts of worker parking at construction compounds and work sites, and mitigation measure TC15 commits to developing a worker parking strategy to encourage workers to use public transport, car share and/or park in designated areas.

5.8.5 Pedestrian access

Summary of issues raised

A submission raised a concern regarding what pedestrian access would be provided if the footpath along Mooney Avenue and Westfield Street, Canterbury, adjacent to Hughes Park is blocked.

Response

As with all works associated with the preferred project, access for pedestrians would be retained wherever possible. If this is deemed not to be possible, the provision of a suitable alternative route would be developed as part of preparation and implementation of the construction traffic management plan (committed to through mitigation measure TC8) and the duration of the diversion would be minimised. Additionally, mitigation measure TC17 (refer to Appendix C of this report) commits Sydney Metro to notifying the community in advance of any proposed road and pedestrian network changes.

5.9 Operational traffic, transport and access

This section provides responses to issues raised about potential impacts to traffic, transport and access during operation.

5.9.1 Traffic and parking impacts

Summary of issues raised

Concerns were raised regarding operational impacts on road network performance and parking availability. These concerns included:

- minor improvements in Environmental Impact Statement intersection operation are noted in Table 15.2, however there will be long term deterioration of the intersections in Marrickville
- no additional commuter parking has been provided along the line, only the idea that demand will be monitored
- concern with the placement of a kiss and ride and taxi rank on Floss Street, Hurlstone Park as this street is already a narrow bus route and will result in additional traffic impacts
- concern with regard to the proposed new accessible parking space to be provided on Duntroon Street, considering there are already three accessible parking spots at Hurlstone Park Station
- concern about impacts to parking for residents near Canterbury Racecourse on race days during operation due to removal of some of the existing stations and associated increase in demand for parking.

Response

Deterioration of intersection performance

Table 15.2 appears to be an incorrect reference. No operational modelling was undertaken of road network performance as operation of Sydney Metro and the preferred project would not impact on road network performance. Further information regarding construction traffic modelling, including intersection performance at Marrickville is provided in Section 5.8.2 of this report.

Additional commuter parking

The preferred project retains the aim of achieving no net loss of dedicated commuter parking spaces located on NSW Government owned land between Marrickville and Bankstown stations.

This commitment applies to parking that is not currently time restricted, and is formally line marked and/or signposted as a dedicated commuter car park zone or area.

Sydney Metro would work with local councils to minimise adverse impacts from adjustments to parking and other kerbside uses in local streets, including during special events. This would include for example, relocation of spaces to other kerbside areas or the consideration of kiss and ride facilities that are only available during specified periods of the day such as the peak periods. In this situation, spaces would potentially be available at other times for short-term parking (e.g. outside of the peak periods). Such an arrangement would minimise the loss of spaces for the majority of the day, but would ensure that kiss and ride facilities are provided during periods when they are most likely to be needed. This commitment is confirmed by mitigation measure TO1, which provides for further consideration of car parking management at stations in consultation with relevant stakeholders (refer to Appendix C of this report). This consultation would be undertaken during detailed design to inform the final station layouts.

In addition, as per mitigation measure TO5, Sydney Metro commits to monitoring the demand for commuter car parking spaces between Bankstown and Marrickville stations, and continuing to consider opportunities for, and the implications of, meeting this demand.

Sydney Metro is unable to make car parking policies which apply to areas outside of rail corridor land. Local car parking issues and policies are matters for councils.

New accessible parking at Hurlstone Park Station

There are currently two accessible parking bays in the Floss Street carpark and one accessible bay on Duntroon Street on the northern side of the station. None of these parking bays have an accessible path of travel to the station entry. One untimed accessible bay would be provided on Duntroon Street, south of the station entry, and would provide an accessible path of travel to the station entry.

Unrestricted parking would remain available along Duntroon Street, and available for the residents use.

5.10 Construction noise and vibration

This section provides responses to issues raised about the potential for noise and vibration impacts during construction.

5.10.1 Construction noise impact management

Summary of issues raised

A number of submissions raised concerns regarding construction noise and the management of this noise including:

- concern that the potential noise impacts at Dulwich Hill and Marrickville are higher than other areas, especially when considering that rock breakers are no longer needed
- clarity is required regarding the number of days and nights there would be impacts at high noise levels
- it appears the project would still cause sleep disturbance
- concern that the mitigation measures appear to have been downgraded despite their still being high impacts to residents (i.e. number of residents receiving alternative accommodation seems to be less).

Response

Marrickville and Dulwich Hill precincts

The Marrickville and Dulwich Hill precincts are some of the most populated precincts in the study area. Because these precincts are densely populated in the region surrounding the railway stations and rail corridor, there is a higher concentration of residential receiver buildings in close proximity to the station and rail corridor works than in other precincts. For this reason the number of predicted impacts is proportionally higher for works performed in these regions.

Specifically in relation to Dulwich Hill, this precinct has a large number of residential receiver buildings located in close proximity to road overbridges. Further, the Dulwich Hill precinct has the highest number of bridge works worksite areas of any precinct in the study area. The higher than average number of bridge worksites, and the high density of residential receivers surrounding bridge worksites means that the number of predicted bridge works noise impacts in the Dulwich Hill precinct are higher than other precincts.

The actual works to be undertaken within the Dulwich Hill precinct are not anticipated to be noisier or extend for a significantly longer duration compared with other precincts.

Further, as outlined in the Submission and Preferred Infrastructure Report, rockbreakers were assumed to be required for the exhibited project in several construction scenarios and at major locations along the project area, with rockbreakers typically being the cause of the highest noise levels and impacts. Rockbreakers are no longer required for the preferred project.

Number of days and nights with impacts

Appendix E (Noise and vibration assessment) of the Submission and Preferred Infrastructure Report included the anticipated total work activity durations for each precinct.

Noise levels at sensitive receivers would likely be significantly lower than the worst case predicted noise levels presented in that report as the construction works move along the project area, to a more distant worksite. The duration of impact for an individual receiver would depend on many factors that are not yet defined. Mitigation measure NVC1 (refer to Appendix C of this report) commits to the preparation of construction noise impact statements, to consider the scale and duration of construction noise impacts, and identify measures to minimise impacts to sensitive receivers, in accordance with the *Construction Noise and Vibration Strategy*. This would include noise modelling to confirm the results of modelling undertaken as part of the Environmental Impact Statement and Submissions and Preferred Infrastructure Report.

Sleep disturbance

The potential for sleep disturbance is assessed using a screening criterion. A detailed description of the sleep disturbance assessment process was provided in Section 3.3.2.2 (Sleep disturbance) of Technical Paper 2 (Noise and vibration assessment) of the Environmental Impact Statement.

As outlined Technical Paper 2, the term ‘screening criterion’ indicates a noise level that is intended as a guide to identify the likelihood of sleep disturbance. It is not a firm criterion to be met, however where the criterion is met sleep disturbance is considered to be unlikely. When the screening criterion is not met, a more detailed analysis is required.

A minor exceedance of the sleep disturbance screening criterion does not necessarily mean that the construction noise will result in an awakening event. The existing night-time noise environment for all project precincts includes noise sources which exceed the sleep disturbance screening criterion (such as trains, road vehicles, aircraft, etc.). For the majority of the preferred project area, existing L_{Aeq}[1] noise levels are between 15 dB and 20 dB higher than the background noise levels. Additionally, ambient noise monitoring performed as part of the Environmental Impact Statement (Technical Paper 2) identified that existing night-time L_{A1}[2] noise levels (the statistic that sleep disturbance is assessed by) are 24 dB higher than the Rating Background Level (RBL) on average.

As outlined in Technical Paper 2, the Sydney Metro Construction Noise and Vibration Strategy contains further details relating to potential sleep disturbance impacts in Section 5.10 and Section 6.4. The Sydney Metro Construction Noise and Vibration Strategy contains procedures on how to assess these impacts in Construction Noise Impact Statements, which are site specific assessments of the potential impacts that would be undertaken at a later stage in the project, prior to undertaking any construction works. The commitment to preparing Construction Noise Impact Statements is also provided in mitigation measure NVC1.

5.10.2 Noise impact and mitigation

Summary of issues raised

A number of issues were raised in regards to the implementation of mitigation measures during construction works including:

- clarity is required regarding the process for offering alternative accommodation, and advising residents on the noise impacts
- clarity is required regarding what occurs when noise monitoring during construction records higher noise impacts, and the level of mitigation that would then be offered.

Response

Consultation regarding noise and mitigation and implementation

Mitigation measure NVC5, in line with Sydney Metro's *Construction Noise and Vibration Strategy*, commits to active community consultation and the maintenance of positive, cooperative relationships with schools, local residents and building owners and occupiers, through:

- periodic notification or work activities and progress
- specific notification prior to especially noisy activities
- comprehensive website information
- project information and construction response telephone line
- email distribution lists.

In accordance with Section 7 of the *Construction Noise and Vibration Strategy*, standard noise and vibration mitigation measures would be implemented on all Sydney Metro projects, including noise source controls and noise path controls. Such measures are identified in mitigation measure NVC5 (refer to Appendix C of this report) and include noise barriers around construction sites, avoiding simultaneous operation of noisy plant and equipment and scheduling of high noise generating activities during less sensitive periods.

[1] The A-weighted equivalent noise level (basically the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.
[2] The noise level exceeded for 1.0 per cent of the 15 minute interval.

The implementation of the standard management measures should significantly reduce the noise and vibration impact on nearby sensitive receivers. However, there may still be exceedances of the noise management level. In such circumstances, additional mitigation measures would be considered in accordance with Section 8 of the *Construction Noise and Vibration Strategy*.

The *Construction Noise and Vibration Strategy* provides a matrix for when additional mitigation measures should be considered in relation to both the relevant time period and the level of exceedance above the background noise levels.

In regards to alternative accommodation, mitigation measure NVC9 commits to offering alternative accommodation to residents living in close proximity to construction works where detailed construction planning and design investigations confirm unreasonably high noise impacts over a prolonged period. Alternative accommodation arrangements would be offered and discussed with residents on a case-by-case basis.

5.10.3 Vibration impacts and mitigation

Summary of issues raised

One submission raised a concern regarding the potential for vibration impacts on their heritage home.

Response

As outlined in Appendix E (Noise and vibration assessment) of the Submission and Preferred Infrastructure Report, the equipment required to be used during the construction of the preferred project is generally not considered to be vibration intensive and poses no higher risk to residential receiver buildings than what they are currently exposed to.

In line with mitigation measure NVC5 (refer to Appendix C of this report), the required equipment would be reviewed during construction planning to ensure the potential vibration impacts are minimised. If impacts are considered likely then vibration monitoring would be completed to ensure acceptable levels of vibration are not exceeded.

5.11 Operational noise and vibration

This section provides responses to issues raised about the potential for noise and vibration impacts during operation.

5.11.1 Impact mitigation

Summary of issues raised

A number of submissions raised concerns regarding the type of operational noise and vibration mitigation proposed, including a request for appropriate noise attenuation at Hurlstone Park such as denser vegetation or heritage sympathetic attenuation.

Response

Noise attenuation in the form of dense vegetation is not considered an industry best practice noise mitigation option. Noise attenuation in the form of source control measures and cost-effective path control measures (including noise barriers) are preferred.

As committed to through updated mitigation measure NVO1 (refer to Appendix C of this report) an operational noise and vibration review would be undertaken to guide the approach to identifying reasonable and feasible mitigation measures to incorporate in the detailed design. This would include noise modelling to confirm the results of modelling previously undertaken. Where exceedances of the operational noise objectives in the *Rail Infrastructure Noise Guidelines* (EPA, 2013) are identified reasonable and feasible mitigation measures would be identified.

5.12 Non-Aboriginal heritage

This section provides responses to issues raised about non-Aboriginal heritage, including the adequacy of the assessment and impacts to stations and other heritage items.

5.12.1 Assessment method

Summary of issues raised

A number of concerns were raised regarding the heritage assessment for the preferred project including:

- a full heritage analysis of the corridor should be conducted
- the heritage impact assessment undertaken for the preferred project (Appendix F of the Submissions and Preferred Infrastructure Report) does not mention the existence of non-statutory lists (National Trust Register or the form Register for the National Estate) or note draft heritage listings such as the heritage conservation areas (HCAs) proposed for Hurlstone Park
- the heritage impact assessment undertaken for the preferred project does not comment on places affected by the proposed rezoning of land around each railway station to enable higher density redevelopment of the railway corridor
- there is no suggestion that new heritage assessments should be undertaken for all affected areas to identify if there are any unlisted places which should be treated as heritage places
- the proposal to re-level the platforms of the stations may potentially affect their significance and there appears to be no peer review of the architects that have been engaged by the Sydney Metro to undergo this work. The same architects have been retained to do the revised project work for the South West Metro.

Response

A non-Aboriginal heritage assessment of the corridor was presented in Appendix F of the Submissions and Preferred Infrastructure Report. Architects and heritage specialists were engaged as part of the design technical advisor for the reference design and preferred project. The tender process is ongoing for the engagement of a design and construction contractor to prepare the detailed design for the preferred project.

The heritage assessment for the preferred project found no National Trust or Register of the National Estate listed items within the project corridor. Section 6.2.1 (Non-Aboriginal heritage) of the Submissions and Preferred Infrastructure Report mentioned the proposed Heritage Conservation Areas. The preferred project would not directly impact these areas.

Areas of rezoning are outside the scope of the preferred project.

There are very few heritage listed items within the study area which lie outside the rail corridor. All relevant heritage lists were examined along with Council heritage studies which provide a comprehensive assessment of each local government area in order to prepare the local environmental plan schedules of listed items. The local environmental plan schedules of heritage items were used to accurately capture significant items that may be indirectly impacted.

Works on platforms would affect heritage significance grading as outlined in the non-Aboriginal heritage assessment in Appendix F of the Submissions and Preferred Infrastructure Report. Impacts would generally be moderate as a result of platform re-levelling. This impact is justified in the context of the delivery of the project and is a reduced impact compared to the exhibited design which required demolition of platforms.

5.12.2 Impacts to heritage listed stations

Summary of issues raised

A number of submissions raised concerns regarding impacts to heritage listed stations including:

- railway heritage should be retained and restored to enable railway-related use including rest-rooms and toilets
- the station buildings should be protected and changes minimised to these items despite reduced heritage impacts in the preferred project
- concerned with the retention of the Hurlstone Park Station ticket office as this is not a heritage item
- concerns regarding impacts to heritage from the preferred project including:
  - the preferred project will still result in moderate direct and visual impacts at 10 stations
  - clarify whether the preferred project precludes the recommended State Heritage Listing of at Hurlstone Park Station Group
  - whether the historic character of the line would be “altered by the contemporary metro infrastructure due to metro branding
- concern regarding statements made in the non-Aboriginal heritage impact assessment undertaken as part of the Submissions and Preferred Infrastructure Report, namely that some “items or fabric (are) proposed for removal and …. the historic character of the line … would be altered by the contemporary metro” (p93).

Response

The preferred project would retain all station buildings and refresh them where needed. Mitigation measure NAH8 (refer to Appendix C of this report) addresses the approach to station repurposing and refreshing during detailed design.

Generally, impacts to fabric would be limited to platforms and the internal fabric of station buildings where the function and condition of the item would not easily enable re-use or interpretation in a meaningful way. The exact nature of repurposing is still to be determined during detailed design. This would be a positive heritage outcome, as it would enable public engagement with the significant heritage values of relevant stations, conservation of significant elements, and would facilitate maintenance and care of structures in use. All station buildings are likely to retain their level of significance with the implementation of the recommended mitigation measures.

The non-Aboriginal heritage assessment undertaken for the exhibited project (Technical Paper 3 of the Environmental Impact Statement) concluded ‘impacts assessed as major would not be fully mitigated and there would be some residual impacts’ and ‘the historic character of the line, a late nineteenth-century to early twentieth century railway line with layers of inter-war development, would be altered by the contemporary metro infrastructure’.

The non-Aboriginal heritage impact assessment prepared for the preferred project (Appendix F of the Submissions and Preferred Infrastructure Report) found the contrasting contemporary design of the metro stations would generally be distinguishable from the heritage character of the historic stations and provide enhanced views of significant platform buildings. The new metro line would be read as the latest phase of development of the Bankstown Line and would enable the line to function according to its original use within a modern railway infrastructure context. The continued use of the stations in their historic function, the retention of the platform buildings for re-use and enhanced views of significant buildings would constitute positive heritage impacts in the context of the project and its requirements.

The existing station entrance at Hurlstone Park Station would be retained and upgraded. The design of the preferred project has avoided the need to remove the overhead booking office built circa 1980 which is of little heritage significance. Sydney Metro has ensured that retention of all buildings at Hurlstone Park Station does not compromise the integrity of the station design and layout, or safety and customer requirements.

As mentioned on page 28 of the non-Aboriginal heritage assessment (Appendix F of the Submissions and Preferred Infrastructure Report), the NSW Heritage Division is not considering Hurlstone Park Station for State Heritage Register listing. This was confirmed by the Heritage Division and is not related to the metro proposal.

Sydney Metro has developed a design solution that enables the retention of existing station entrances, heritage buildings and concourses, but still enables upgrades that provide accessible stations. Mitigation measures NAH1 and NAH2 (refer to Appendix C of this report) commit Sydney Metro to deliver the project in a manner that ensures protection of station buildings including during construction. In addition mitigation measures NAH16 and NAH20 relate to protecting heritage items during construction works.

5.12.3 Impacts to other heritage

Summary of issues raised

The view from the proposed Floss Street Heritage Conservation Area should be considered in the development of the integrated urban and place making outcome for Hurlstone Park Station. Concerns were raised about the installation of anti-throw screens on the heritage listed bridge at Hurlstone Park Station. The anti-throw screen on the bridge at Hurlstone Park could include elements of heritage construction and images, and retain the ability for pedestrians to view the heritage buildings on platforms 1 and 2.

Concerns were raised about the impacts to an interpretive sign at Tobruk Avenue, Belmore, which explains the historical significance of the location with a World War II battle fought by Australian troops in Tobruk, Libya.

Response

Section 1.5.4.1 (Direct impacts – Hurlstone Park Railway Station Group) of Appendix F (Non-Aboriginal heritage assessment) to the Submissions and Preferred Infrastructure Report discussed the proposed Heritage Conservation Areas at Hurlstone Park and the requirement to consider them in detailed design once they were confirmed.

Anti-throw screens are required for safety reasons. Measures to mitigate impacts are included in Appendix C of this report (NAH1 – NAH4). The final materiality and form of the structure would be confirmed in detailed design. Mitigation measure NAH6 commits to heritage interpretation, including preparation of a Heritage Interpretation Plan. This could include images on the anti-throw screens but would be confirm during detailed design.

The preferred project would not impact the interpretive sign on Tobruk Avenue, Belmore. Kerbside facilities shown on Figure 9.6 (Belmore Station - indicative layout of key design elements) of the Submissions and Preferred Infrastructure Report would be wholly contained within existing the road alignment.

5.13 Land use and property

This section provides responses to issues raised about impacts to land use and individual properties, including concerns about acquisition.

5.13.1 Impacts of acquisition

Summary of issues raised

Concerns related to land use and property included:

- concern with the acquisition of a property containing the ticket office at Dulwich Hill Station
- concern that details have still not been provided on what land belonging to or being managed by councils will be utilised as part of the project, including commuter parking areas, open space parkland such as Warren Reserve in Punchbowl and the Canterbury Bowling Club.

Response

The ticket office at Dulwich Hill Station is not being acquired.

The preferred project would mainly be located on land that forms part of the existing rail corridor and adjacent road reserves owned by the NSW Government or the relevant local council. At this stage, no land or property is anticipated to be permanently acquired as part of the preferred project described in the Submissions and Preferred Infrastructure Report.

Construction of the preferred project would require the temporary leasing, generally for up to 18 months, of land located outside the rail corridor for construction compounds and work sites. Section 2.8.1 of the preferred project description, provided in Appendix B of this report lists the location and type of land proposed for leasing and identifies the two compounds (C12 at Bridge Road, Belmore and C19 at Urunga Parade, Punchbowl) that would require temporary leasing for greater than 18 months. These areas are generally located within road reserves or other council owned land. In addition, some areas of land may need to be temporarily leased or occupied to provide infrastructure to support the implementation of the temporary transport plans. Following further design development, consultation would be undertaken with the relevant landowner to arrange leasing of the required piece of land.

Work site 7 is proposed on the former Canterbury Bowling and Community Club. Further detail is provided in Figure 2.4 of Appendix B of this report, to assist the community in understanding the potential construction layout and associated impacts (for example, site access points, construction areas), and the area of site available for continuing public use.

Further information on impacts to parking during construction is provided in Section 5.8 of this report.

5.14 Visual impacts

This section provides responses to issues raised about visual impacts, including impacts to trees around stations and management.

5.14.1 Impacts on trees

Summary of issues raised

A number of concerns were raised regarding removal of trees including:

- clarity is required regarding what measures will be used to further reduce tree removal
- trees should be relocated to other natural reserves
- query on how endangered tree species will be monitored along the railway corridor
- concerns with the loss of mature trees and vegetation from council owned land along the corridor
- concerns with the loss of established trees even with the reduction from 893 to 503 for the preferred project. The final number of trees needs to be reviewed and reduced further as the area around Marrickville Station is lacking in trees.

Response

As noted in the Submissions and Preferred Infrastructure Report, impacts to trees would be minimised wherever practicable, and a Tree Management Strategy would be prepared in consultation with relevant stakeholders (including local councils). Where removal of trees would be unavoidable, mitigation measure LV4 (refer to Appendix C of this report) commits to replacing trees in accordance with the Tree Management Strategy. LV4 also commits to confirming opportunities to retain and protect existing trees during detailed design and construction planning. The design would aim to reduce tree removal to the extent practicable, particularly where trees contribute to screening vegetation or landscape character.

The Tree Management Strategy would be prepared in consultation with local councils, and would provide guidance on how and where vegetation is to be replaced. This would, where possible, seek to ensure that tree replacement occurs in a similar location to existing trees (including other parks and nature reserves if feasible), to ensure that benefits of the existing tree (e.g. screening or shade) are maintained where possible. Trees would be replaced on the basis of two trees for each one removed. The preferred project does not include tree relocation. Not all species of trees are conducive to transplanting or an age or size that would ensure success of a transplant. Councils would be consulted about the positioning of these trees as part of the development of the Tree Management Strategy.

Further information on the tree management strategy is provided in Section 2.3.2 of the preferred project description, provided in Appendix B of this report.

Sydney Metro has developed a design solution that has reduced the amount of vegetation requiring removal. Impacts to threatened species and habitats would be avoided during construction of the preferred project as per mitigation measure B10.

Mitigation measure B10 commits Sydney Metro to locate and protect threatened species and habitats where they occur inside the Sydenham to Bankstown rail corridor. Suitable protection measures would include fencing, signage and other measures where this would not impede the safe maintenance and operation of trains and related infrastructure.

As discussed in Section 7.10.20 (Marrickville Station) of the Submissions and Preferred Infrastructure Report, the number of trees around Marrickville Station with the potential to be impacted has reduced from 88 for the exhibited project to 65 for the preferred project. Further consideration would be given to minimising the need to remove existing trees around Marrickville Station as part of the detailed design. The need for tree removal, trimming, and protection would be undertaken in accordance with the Tree Management Strategy to be developed for the project, and mitigation measure LV4.

Trees would be planted within or in close proximity to the project area, where possible, or in another location determined in consultation with the relevant council. Tree species used would be consistent with the local context.

5.15 Hydrology, flooding and water quality

This section provides responses to issues raised in relation to flooding and hydrology during operation of the preferred project.

5.15.1 Impacts on flooding during operation

Summary of issues raised

Two submissions raised concerns about the removal of flood modelling for the preferred project including:

- whether metro trains can travel through flood water on tracks or would commuters face service delay/cancellations as result of flooding
- concern regarding the lack of flood modelling for the preferred project as:
  - Marrickville Valley Flood Study 2013 categorised Marrickville and Sydenham stations as high hazard areas in a one per cent annual exceedance probability event. In April 2015 Marrickville Station and surrounding track was inundated by run off
  - flood modelling was not undertaken around Canterbury Station or outside the Marrickville Valley
  - the predicted increase in rainfall intensity and extreme events affecting stations and surrounds requires that a flood management system is designed
  - alternative storm water and flood management has not been proposed to replace the retention basin at McNeilly Park which does not now form part of the project
  - the preferred project must address current or potential impacts it may have on social and economic costs to the community as consequences of flooding along the line.

Response

There are no new cross corridor drainage pipes to be installed as part of the preferred project and the existing drainage immunity to the railway would be maintained. The preferred project would be operated within the existing hydrological environment.

The existing hydrological environment and flood risk hazards were detailed in Technical Paper 8 of the Environmental Impact Statement.

The preferred project would not result in a change to existing flooding or flood hazard, in, or around the rail corridor between Marrickville and Punchbowl as the track alignment and stations are unaffected. As such, the preferred project does not result in changes to the existing NSW State Emergency Evacuation Plan in and around low lying areas of Marrickville and Sydenham.

At Bankstown, the detailed design of the preferred project would confirm the specific implementation of mitigation measures in consultation with the relevant stakeholders. An additional mitigation measure (FHW2) has been included in Appendix C of this report, which commits to the following:

Detailed design of the project would, as required at Bankstown between Stacey Street and Marion Street, take into account the impact of overland flooding for the full range of floods up to Probable Maximum Flood level.

The design of new trunk drainage infrastructure between Stacey Street and Marion Street in Bankstown would provide a 10 per cent allowance in the design criteria for climate change. Furthermore, the design of this new drainage would consider the increase in rainfall intensity by 20 per cent and 30 per cent over and above the 10 per cent set increase criteria. In addition, 0.4 metres and 0.9 metres sea level rises would be documented.

The preferred project does not include the provision of detention basins.

5.16 Biodiversity

This section provides responses to issues raised about impacts of vegetation clearing and how impacts would be managed.

5.16.1 Clearance and mitigation

Summary of issues raised

Clarification was requested on how many hectares of vegetation would need removal and how this can be minimised.

Additionally, a request was made that a landscape scale biodiversity conservation strategy, similar to the approach the Greater Sydney Commission is taking for the Badgerys Creek Airport, is implemented for the preferred project.

Response

The biodiversity assessment for the preferred project was undertaken based on the assumption that all vegetation within the rail corridor would need to be removed to construct the preferred project, with the exception of:

- native vegetation that would require biodiversity offsets if removed (specifically areas of 'Turpentine - Grey Ironbark open forest on shale', 'Degraded Turpentine - Grey Ironbark open forest on shale' and 'Broad-leaved Ironbark – Grey Box' (shown on Figure 2.1 of the Submissions and Preferred Infrastructure Report and included in mitigation measures B1 and B4)
- identified areas of the threatened species Downy Wattle located within the rail corridor between Punchbowl and Bankstown stations (shown in Figure 2.1 of the Submissions and Preferred Infrastructure Report and included in mitigation measures B1 and B4).

Based on this assumption, about 16.3 hectares of vegetation (not including vegetation classed as exotic grassland) may need to be removed, including:

- up to 7.3 hectares of planted native vegetation
- up to nine hectares of exotic scrub and forest.

It is expected that large areas of the planted native vegetation and exotic scrub and forest would not require removal for the corridor works, however this is subject to the detailed design of the proposed works, including fencing and the communications services route.

This vegetation would potentially include trees that provide screening along the corridor for surrounding properties. The need to clear vegetation would be reviewed by the construction contractor/s and minimised wherever practicable. Where removal of trees is unavoidable, trees would be replaced in accordance with the Tree Management Strategy (mitigation measure LV4), which would be prepared in consultation with relevant stakeholders (including local councils). The strategy would be used to guide the management of trees that need to be removed, and to consider options for their replacement.

No native vegetation requiring biodiversity offsets and no threatened species vegetation would be removed. Accordingly, a landscape scale biodiversity conservation strategy is not required.

Further detail on the Tree Management Strategy is provided in Section 2.3.2 of the preferred project description provided in Appendix B of this report.

5.17 Sustainability and climate change

This section provides responses to issues raised about sustainability targets and climate change.

5.17.1 Sustainability policy and strategy

Summary of issues raised

Concerns were raised that the following sustainability initiatives and targets around active transport and drainage design would only be considered where relevant and feasible: water sensitive urban design, inclusion of renewable energy sources and assessing and mitigating climate change.

It was requested that the above factors are mandatory for all aspects of the preferred project and that:

- inclusion of solar photovoltaic panels are mandatory to the design of the preferred project
- that sustainable initiatives must be reviewed and updated and relevant initiatives implemented including the use of renewable energy to minimise greenhouse gas emissions.

Response

An assessment of the exhibited project in terms of sustainability, and how it meets, and would continue to meet, relevant sustainability requirements during construction and operation was provided in Chapter 24 (Sustainability and climate change) of the Environmental Impact Statement. A description of the Sydney Metro City & Southwest Sustainability Strategy was provided in Section 24.2.1 (Sustainability) of the Environmental Impact Statement.

The strategy outlined the performance targets, initiatives, and outcomes that would be adopted during the design, construction and operation stages of the project. The strategy included a number of targets for ensuring that renewable energy (e.g. solar) would be considered to contribute to the electricity requirements of above ground stations.

This assessment was revised for the preferred project and outlined in Chapter 12 (Station upgrades environmental screening and assessment), Chapter 13 (Track and rail systems facility upgrades environmental screening and assessment), Chapter 14 (Other infrastructure elements environmental screening and assessment) and Chapter 15 (Construction environmental screening and assessment) of the Submissions and Preferred Infrastructure Report.

This revised assessment identified that the preferred project offered less opportunities for the inclusion of renewable energy sources however, the inclusion of solar photovoltaics would be incorporated in the detailed design of stations, where feasible. The majority of the sustainability initiatives and targets proposed in the Environmental Impact Statement for the exhibited project would be retained for the operation of the preferred project. However, some initiatives and targets would no longer be relevant.

Mitigation measure SCC1 commits to ensuring that sustainability initiatives and targets are reviewed and incorporated into the detailed design to support the achievement of the project's sustainability objectives. The measure also commits to targeting a best practice level of sustainability performance using relevant sustainability rating tools (e.g. an Infrastructure Sustainability Council of Australia as built 'excellent' level rating).

Additionally, mitigation measure SCC2 commits to developing a sustainable procurement strategy to apply to the principal contractor, their subcontractors, and suppliers during construction.

5.17.2 Climate change

Summary of issues raised

One submission raised concerns that climate change will be impacted by the replacement of trees with small flora.

Response

Section 24.3 (Assessment results) of the Environmental Impact Statement noted that construction and operation of the exhibited project would result in the generation of greenhouse gases. However, as summarised in Section 24.3.3 (Greenhouse gas) of the Environmental Impact Statement, the exhibited project was assessed as representing only a small percentage of emissions resulting from the transport sector in NSW (about 0.5 per cent during construction, and 0.7 during operation). Operational impacts are mainly associated with electricity use. The preferred project would be consistent with this, however greenhouse gas emissions during construction would be reduced.

A change to the type of vegetation planted for the preferred project would have a negligible change on greenhouse gas emissions and associated impacts to climate change.

5.18 Cumulative impacts

This section provides responses to issues raised about the potential cumulative impacts of the preferred project.

5.18.1 Cumulative construction impacts

Summary of issues raised

One submission raised concern about cumulative construction impacts from the preferred project alongside additional corridor development despite the reduction in number of shutdowns, and requested that the final rail shutdown be deferred due to cumulative impacts.

Response

The preferred project has been revised from the exhibited project assessed in the Environmental Impact Statement to address a number of issues raised in submissions during the public exhibition period. The preferred project significantly minimises potential impacts, especially in respect of construction, heritage and vegetation impacts, while delivering a world class metro. Chapter 15 (Construction environmental screening and assessment) of the Submissions and Preferred Infrastructure Report updated the cumulative assessment for the preferred project.

The construction methodology of the preferred project would minimise construction impacts. Potential cumulative impacts during construction of the preferred project would therefore be reduced from the exhibited project that were described in the Environmental Impact Statement.

Possession periods would be well advertised and managed in accordance with strict controls set out in the temporary transport plans, which would be developed in consultation with key stakeholders (including the Sydney Coordination Office, Roads and Maritime Services, Sydney Trains, local councils, emergency services, and bus operators) and consider other developments which may result in cumulative impacts.

The Department of Planning and Environment has identified a revised approach *Sydenham to Bankstown Urban Renewal Corridor Strategy*. The Department of Planning and Environment will develop the principle based, high level strategy for the corridor in collaboration with councils. Councils will then undertake a review of their local environmental plan in accordance with this framework. Sydney Metro would work with the Department of Planning and Environment and local councils, as key stakeholders, once a program for the development of this strategy has been provided. This commitment is included as mitigation measure LU1. Any future development in accordance with the Strategy would be subject to a separate assessment and planning approval process. Further, mitigation measure CI1 commits Sydney Metro to coordinate with projects under construction at the same time, including traffic management arrangements.

5.19 Issues beyond the scope of the Submissions and Preferred Infrastructure Report

This section provides responses to issues raised that were outside the scope of the preferred project and/or the Submissions and Preferred Infrastructure Report.

5.19.1 Issues beyond the scope of the preferred project and the Submissions and Preferred Infrastructure Report

Summary of issues raised

Issues raised that were outside the scope of the Sydenham to Bankstown project and/or the Submissions and Preferred Infrastructure Report included:

- a query whether the NSW Government, Sydney Metro and Ausgrid would assist Canterbury-Bankstown Council in replacing aging pedestrian/cycle bridges over Cooks River between Old Sugar Mill and Dulwich Hill Station as part of electrical cabling works
- whether another pedestrian/cycle bridge would be built near Tempe Station over Cooks River on the Gough Whitlam Park side to ease current and future congestion for the existing pedestrian/cycle bridge on the Waterworth Park side
- concerned that train carriages were not built in Australia and that any cost savings to the project would be lost through import duties
- concern about the impacts on Canterbury Racecourse as the urban renewal strategy associated with the project will put pressure on open space to be used for high rise development or increase land value making it more difficult for government buy back for use as public recreation.

Response

The issues raised were outside the scope of the preferred project and the Submissions and Preferred Infrastructure Report.

6. Responses to key stakeholder submissions

This section provides responses to issues raised in submissions from key stakeholders, which include key interest groups and peak bodies.

6.1 Overview

Submissions were received from the following key stakeholders:

- National Trust of Australia
- Western Sydney University.

The approach to processing and responding to submissions (including key stakeholder submissions) is described in Chapter 4 of this report. The issues raised in the key stakeholder submissions are categorised according to the key issue categories (as described in Section 4.2 of this report) and responses are provided in the following sections.

The issues listed in each section are a summary of the key issues raised in submissions. Full details of the issues raised are provided in the complete submissions, available on the Department of Environment and Planning's major projects' website.

6.2 National Trust of Australia - NSW

6.2.1 Non-Aboriginal heritage

Absence of discussion of other Statutory Heritage lists

Issue

The Sydenham to Bankstown Preferred Infrastructure Report Overview (June 2018) outlines that "all heritage buildings along the Bankstown Line will be retained". This was an important expectation given that all ten stations are heritage listed. Three stations are listed on the State Heritage Register (SHR) - Marrickville (SHR 1186), Canterbury (SHR 1109) and Belmore (SHR 1081) - all listed as Railway Station Groups. However this statement appears to relate only to the stations themselves, not the heritage buildings within the National Trust identified Conservation Areas along the route of the project.

Further, the non-Aboriginal heritage assessment in the Submissions and Preferred Infrastructure Report did not address all the core heritage issues. It discussed only places which are listed on statutory heritage lists: the State Heritage Register and local environmental plans, and some Section 170 listings. It does not discuss places not yet heritage listed, nor does it note or mention the existence of non-statutory lists such as the National Trust Register or the former Register of the National Estate. It does not mention or note draft heritage listings such as the heritage conservation areas proposed for Hurlstone Park. A better heritage analysis would recognise all these community-backed heritage listings and insist on undertaking an independent heritage assessment of the entire affected property on the assumption that these statutory heritage registers are not complete.

Response

All listed items within the project area and visual buffer would be retained.

All railway stations are heritage listed on statutory registers and have been assessed in Appendix F (Non-Aboriginal heritage assessment) of the Submissions and Preferred Infrastructure Report. As the majority of the project area is within the rail corridor potential (unlisted) heritage items are unlikely to be present. All land within the project area has been assessed for archaeological potential and significance.

Council heritage studies provide a comprehensive assessment of the local government area in order to prepare the local environmental plan schedule of listed items. This was relied upon to accurately capture significant items that may be indirectly impacted. It was not therefore seen as necessary to complete a heritage assessment of all structures within the project area (direct impacts) or study area (indirect impacts).

No National Trust Register items are located within the project area. Only five of the items listed on the National Trust register are in the study area (25 metre buffer around the project area) and would not be directly impacted. All five items within the study area are also listed on statutory registers. Indirect (visual) impacts to these five items were assessed in the Environmental Impact Statement or Submissions and Preferred Infrastructure Report under their statutory listings and the impacts were either neutral or negligible.

The draft heritage conservation area for Hurlstone Park was discussed in Section 1.5.3.2 of Appendix F (Non-Aboriginal heritage assessment) of the Submissions and Preferred Infrastructure Report. This assessment noted that detailed design would consider the character of the draft conservation areas in the vicinity of the station.

Adequacy of the assessment with respect to the definition of environmental heritage

Issue

The Trust is concerned that the environmental assessment requirements have not been addressed with regards to ‘environmental heritage’.

The *Heritage Act 1977* defines environmental heritage as places, buildings, works, relics, moveable objects, and precincts, of State or local heritage significance.

The Environmental Impact Statement has only addressed ‘heritage-listed’ items not ‘environmental heritage’ as defined under the Heritage Act.

Response

This issue was addressed in Section 6.2.1 (Non-Aboriginal heritage) of the Submissions and Preferred Infrastructure Report.

Impacts of rezoning on heritage around stations

Issue

Deep community concern has been expressed to the Trust on the impacts of proposed rezoning on the heritage in some station precincts. The Trust is also aware that many residents of these areas are unaware of the likely impact of the rezoning on their heritage and their locality's sense of place and of the very limited time to now comment and influence this process.

The Trust notes that, for the Dulwich Hill and Hurlstone Park station precincts, there appears to have been recognition of the significance of the heritage conservation areas, with a corresponding reduction in the density and height of new development proposed. However, with some other station precincts there appear to be major impacts on a number of Urban Conservation Areas, which had been identified and listed on the National Trust Register in 1998/1999.

The Trust raises its concerns in regard to the impacts of the proposed rezoning in the following station precincts where National Trust Register listed Urban Conservation Areas are located:

- Belmore Station – three National Trust Register listed Urban Conservation Areas
- Bankstown Station – one National Trust Register listed Urban Conservation Area
- Punchbowl Station – two National Trust Register listed Urban Conservation Areas
- Wiley Park Station – one National Trust Register listed Urban Conservation Area
- Lakemba Station – one National Trust Register listed Urban Conservation Area.

There are also individual National Trust Register listed places within the station precincts that may be under threat from redevelopment due to proposed rezoning.

The Trust noted that in the response to the previous submission by the Trust, the Submissions and Preferred Infrastructure Report noted that Sydney Metro is not proposing any rezoning or residential developments as part of the project. However, the Trust notes that it is clear that funding for the project is predicated on the proposed rezoning and residential redevelopment.

The Trust also notes the following:

- the National Trust is deeply concerned that the former Canterbury and Bankstown Councils did not follow the lead of Ku-ring-gai Council and act on the National Trust's 1988 Study and list the recommended heritage conservation areas
- the former Bankstown Council had listed no heritage conservation areas and the former Canterbury Council had listed only one heritage conservation area. This is despite the National Trust's 1998 Study identifying 24 precincts in the Canterbury local government area worthy of heritage listing and three precincts in Bankstown local government area
- the National Trust is aware that the Independent Commission against Corruption is investigating claims of improper conduct against two former Canterbury City Councillors and a current member of State Parliament in relation to property development dealings in Canterbury local government area. In the light of this investigation, the National Trust is concerned to see that the issue of heritage conservation area listing in Canterbury local government area is given fair consideration
- the National Trust will again be calling on Canterbury-Bankstown Council to address the issue of listing the heritage conservation areas on its local environmental plan and urges that these proposed listings be given due consideration in the planning and development assessment process for the project.

Response

The project subject to approval is a public transport project which would support future development of the corridor, but does not include the rezoning of areas surrounding the station catchments.

A response to this issue was provided in Section 6.2.1 (Non-Aboriginal heritage) of the Submissions and Preferred Infrastructure Report. As part of this response it was confirmed that no National Trust items are within the project area. Further, it confirmed that the potential for indirect (visual) impacts on any items within 25 metres of the project area (the study area) were considered to be either neutral or negligible.

Since the preparation of the Submissions and Preferred Infrastructure Report it is noted that the Department of Planning and Environment is progressing with a revised approach to the draft *Sydenham to Bankstown Urban Renewal Corridor Strategy*. The Department of Planning and Environment will develop the principle based, high level strategy for the corridor in collaboration with councils. Councils will then undertake a review of their local environmental plan in accordance with this framework. Potential impacts to heritage as a result of rezoning and redevelopment would be considered as part of that planning process.

Funding of the project forms part of the Sydney Metro City & Southwest project funding which has been approved and is independent of land rezoning or redevelopment in areas adjacent to the Sydenham to Bankstown project.

The comments provided regarding Canterbury-Bankstown Council are not relevant to the preferred project.

6.3 Western Sydney University

6.3.1 Consultation

Bankstown Campus and ongoing consultation regarding the Bankstown Station upgrades

Issue

The University is supportive of the project as a key transport infrastructure project to improve social, environmental and economic outcomes and planned growth of the region. The University's Western Growth strategy is reshaping the existing campus network by investing in new 'vertical campuses' in CBD locations. A key driver for this is to increase accessibility to our facilities for students and staff.

With new campuses established in Parramatta and Liverpool city centres, the University is now planning for a new Bankstown City campus, 300 metres north of Bankstown Station as part of Bankstown's Civic Precinct. The University is working closely with Canterbury-Bankstown Council in planning for the Bankstown City Campus and its relationship to the precinct in which it will be situated.

The Sydney Metro Sydenham to Bankstown upgrade project will significantly improve transport accessibility for Bankstown City and for the planned campus. The University advocates for a place based approach to the design of the Bankstown Station to ensure optimal design that serves to connect with Council's plans for the city centre.

The University sees Sydney Metro as essential infrastructure for Sydney and critical to the delivery of the Greater Sydney Commission's vision for a Metropolis of Three Cities. This includes ensuring that the public domain surrounding the station is safe, activated, functional, and remains valuable and well-utilised long into the future.

As the Preferred Infrastructure Report does not provide further detail on Bankstown Station upgrades, other than stating that 'upgrades will be consistent with the Environmental Impact Statement', the University supports the design matters raised by Canterbury-Bankstown Council in their submission prepared during the exhibition of the Environmental Impact Statement, and highlight the need for a design led approach to the station upgrade and the opportunity for renewal and city shaping. The University has a number of key urban design considerations and outcomes for the Bankstown precinct they would like considered.

As a key stakeholder, the University would like the opportunity to work collaboratively with Sydney Metro, Canterbury-Bankstown Council and the NSW Department of Planning and Environment.

Response

Support is noted. Sydney Metro has committed to ongoing consultation with Canterbury-Bankstown Council in mitigation measure LU2:

Sydney Metro would work with the Department of Planning and Environment, Greater Sydney Commission, Canterbury-Bankstown Council and other key stakeholders to plan for the strategic transformation of the Bankstown CBD, including an investigation into the long-term development and viability of an underground station configuration.

The Bankstown master planning work is focussed on the strategic vision of the station and CBD but would also include identification of short-term precinct improvements.

Western Sydney University would be consulted through this process as a key stakeholder.

6.3.2 Traffic, transport and access

Rail possession impacts

Issue

The University requests more detail to better understand the impacts of rail possessions and urban renewal disruptions to understand potential impacts for the delivery of the Bankstown City campus and in managing potential disruptions once our new facility is operational.

Response

The Temporary Transport Strategy (provided as Appendix G to the Environmental Impact Statement) is the overarching document that describes the process for planning and delivering the integrated, multi-modal temporary transport response that would operate during possession period shutdowns on the T3 Bankstown Line.

For each possession, a temporary transport management plan would be developed to detail the initiatives that would be implemented to assist customers affected by closures of the line and its stations. The Temporary Transport Strategy provides guidance for developing temporary transport management plans for each possession. The temporary transport management plans would be developed prior to construction, and would be informed by stakeholder and community feedback.

As each temporary transport management plan is developed, its impact on the transport network (including at Bankstown) would be considered.

Mitigation measure TC1 (refer to Appendix C of this report) commits to developing the temporary transport management plans in consultation with key stakeholders and this would include Western Sydney University, should the new university facility become operational during this time.

7. Response to government agency submissions

This section provides responses to the issues raised in submissions provided by government agencies, including local councils and NSW State Government departments and agencies.

7.1 Overview

Submissions were received from the following government agencies:

- NSW Government departments/agencies:
  - NSW Environment Protection Authority
  - NSW Office of Environment and Heritage
  - Heritage Council of NSW
  - NSW Department of Industry
- Utility providers:
  - Sydney Water
- Councils:
  - Inner West Council
  - Liverpool Council
  - Canterbury-Bankstown Council.

The approach to processing and responding to submissions (including agency submissions) is described in Chapter 4 of this report. The issues raised in the agency submissions are categorised according to the key issue categories (as described in Section 4.2 of this report) and responses are provided in the following sections.

The issues listed in each section are a summary of the key issues raised in submissions. Full details of the issues raised are provided in the complete submissions, available on the Department of Environment and Planning's major projects website.

7.2 NSW Environment Protection Authority

7.2.1 Hydrology, flooding and water quality

Water quality

Issue

The NSW Environment Protection Authority has reviewed the Submissions and Preferred Infrastructure Report and noted that concerns relating to water quality had been addressed.

Response

It is noted that previous concerns have been addressed.

Disturbance of contaminated land

Issue

The NSW Environment Protection Authority has reviewed the Submissions and Preferred Infrastructure Report and noted that concerns relating to contamination had been addressed.

Response

It is noted that previous concerns have been addressed.

7.2.2 Noise and vibration

Works outside of standard construction hours

Issue

The NSW Environment Protection Authority is pleased that the preferred project would result in less out of hours work as a result of a significant reduction in proposed station, track and bridge works. However, the preferred project would not totally eliminate out of hours works. The NSW Environment Protection Authority notes that any proposed works to be undertaken out of hours, must be supported by robust justification and mitigation measures. This will be a requirement of any environment protection licence for construction of the preferred project.

Response

This issue was addressed in Section 7.3.2 (Noise and vibration) of the Submissions and Preferred Infrastructure Report.

Operational noise

Issue

With respect to noise impacts from the operational rail line, the NSW Environment Protection Authority notes that the revised environmental mitigation measure NVO1 was modified to require an “increase in noise” to trigger mitigation. This approach reduces the potential for the project to redress existing noise and vibration issues. The EPA considers that, where reasonable and feasible, the preferred project should incorporate mitigation measures that would act to achieve the operational rail objectives in the Rail Noise Policy and reduce impacts to sensitive receivers even in the absence of noise increases.

Response

The mitigation measure NVO1 was revised in the Submissions and Preferred Infrastructure Report to identify instances where there is an increase in noise levels above those modelled as part of the Environmental Impact Statement, as well as instances where exceedances of the noise criteria are expected.

To simplify the mitigation measure, Appendix C of this report includes an amended mitigation measure NVO1. It has been amended to refer to 'exceedance' of applicable guidelines:

An operational noise and vibration review would be undertaken to guide the approach to identifying reasonable and feasible mitigation measures to incorporate in the detailed design. This would include noise modelling to confirm the results of modelling previously undertaken. Where exceedances of the operational noise objectives in the in the Rail Infrastructure Noise Guidelines (EPA, 2013) are identified, reasonable and feasible mitigation measures would be identified.

Construction noise

Issue

In relation to assessing mitigation measures for impacted receivers from construction noise, the EPA considers that recommended mitigation measures should be applied as per the *Interim Construction Noise Guideline* (EPA, 2009) rather than the proposed approach in the Submissions and Preferred Infrastructure Report which relied upon an increase in noise within the rail corridor to trigger mitigation. The latter approach is inconsistent with current policy and with the mitigation measures assessed and proposed in the Environmental Impact Statement.

Response

The mitigation measure NVC1 was revised in the Submissions and Preferred Infrastructure Report to identify instances where there is an increase in noise levels above those modelled as part of the Environmental Impact Statement, as well as instances where exceedances of the noise criteria are expected.

To simplify the mitigation measure, Appendix C of this report includes an amended mitigation measure NVC1. It has been amended to refer to 'exceedance' of applicable guidelines and the *Construction Noise and Vibration Strategy*:

In accordance with the Construction Noise and Vibration Strategy, construction noise impact statements would be prepared prior to the commencement of construction components, to consider the scale and duration of construction noise impacts, and identify measures to minimise impacts to sensitive receivers.

This would include noise modelling to confirm the results of modelling undertaken as part of the Environmental Impact Statement and Submissions and Preferred Infrastructure Report. Where exceedances of the noise management levels in the Interim Construction Noise Guidelines (EPA, 2009) and Sydney Metro's Construction Noise and Vibration Strategy are identified, feasible and reasonable mitigation measures would be identified.

7.3 NSW Office of Environment and Heritage

7.3.1 Aboriginal heritage

Aboriginal heritage mitigation measures and conditions of approval

Issue

The construction of the preferred project may disturb a potential Aboriginal archaeological deposit of moderate significance known as S2B PAD 02, located adjacent to Punchbowl Station. Given this and the need to minimise the potential impacts of the preferred project on Aboriginal heritage, it is recommended that the conditions of approval should include the following requirements:

1. The preferred project is to be undertaken in accordance with the Aboriginal Cultural Heritage Assessment Report (prepared by Artefact and provided in Appendix J of the Submissions and Preferred Infrastructure Report).
2. In accordance with the Aboriginal Cultural Heritage Assessment Report the following key heritage management plans/documentation are required prior to construction:
   - Construction Environmental Management Plan
   - Construction Heritage Management Plan which includes an unexpected finds procedure, details of registered Aboriginal parties and circumstances where additional consultation with the registered Aboriginal parties would be required
   - Archaeological Method Statement for excavation at S2B PAD02.

3. If suspected human skeletal remains are uncovered the Unexpected Finds Procedure prepared by the delivery contractor and Sydney Metro Exhumation Management Procedure is to be followed.

Additionally the conditions of approval should include mitigation measure AH3 and AH5.

Response

The existing mitigation measures (refer to Appendix C of this report) address the conditions of approval recommended by the submission, as described below.

The first and second of the recommended conditions of approval are addressed by mitigation measures AH2 and AH3. AH2 requires the implementation of the Aboriginal Cultural Heritage Assessment Report. AH3 requires archaeological test excavation to be undertaken at S2B PAD02 and the excavation to be undertaken in accordance with the Aboriginal Cultural Heritage Assessment Report.

The third of the recommended conditions of approval is addressed by mitigation measure NAH19 which requires the Sydney Metro Exhumation Management Plan to be implemented in the case of a potential burial site or human skeletal remains being exposed.

Sydney Metro would be required by conditions of approval to implement the mitigation measures provided in Appendix C of this report.

7.3.2 Biodiversity

Biodiversity mitigation measures

Issue

The Office of Environment and Heritage notes the significant reduction in the scope of construction works in the Submissions and Preferred Infrastructure Report and associated reduced impacts to native vegetation. As a result, the potential impacts on nesting and foraging habitat for threatened fauna species known to occur in the study area including the Grey-headed Flying-fox and Eastern Bentwing Bat would also be reduced.

The Submissions and Preferred Infrastructure Report also noted that impacts to one hectare of native plant community types in the rail corridor would be avoided during construction, which would also include impacts on about 0.6 hectares of threatened ecological communities listed under the *Threatened Species Conservation Act 1995*.

As such, it is recommended that the conditions of approval should include the following requirements:

- implementation of mitigation measure B1
- implementation of mitigation measure B3
- rehabilitation in accordance with the Tree Management Strategy (which is committed to through mitigation measure LV4).

Response

The design of the alignment for fencing and the communications services route would avoid threatened ecological communities. Impacts to other vegetation would be avoided where possible.

Sydney Metro would be required by the conditions of approval to implement the mitigation measures identified in Appendix C of this report, which includes B1, B3 and LV4.

7.3.3 Flooding

Flood risk management

Issue

The Submissions and Preferred Infrastructure Report included the following statements with regards to flooding:

- the preferred project would be operated within the current hydrological environment and the inclusion of additional drainage infrastructure does not form part of the preferred project
- retaining existing track along the alignment means that track drainage would not need to be modified or augmented for the project.

The Office of Environment and Heritage does not support the above two statements as they may misguide decisions on the preferred project and would result in jeopardising the adopted design criteria for the project's drainage system as previously identified in the Environmental Impact Statement.

The Office of Environment and Heritage recommends the Proponent review the floodplain risk assessment and associated drainage infrastructure in light of changes from the exhibited project to the preferred project. The Proponent has a duty of care to ensure that the revised exhibited project has accounted for the following floodplain risk management issues:

- consider the impact from overland flooding and any mainstream flooding (if applicable) for the full range of floods up to the probable maximum flood
- consider the flood risk to property and infrastructure damage and the risk to life. This includes the potential damage to the proposed infrastructure
- consider impacts from the abovementioned flooding during the construction phase
- provision of flood modification works, such as detention basins, is reasonable but should be subject to further consultation with stakeholders and the community
- consultation with the NSW State Emergency Service (Regional or Deputy Regional Controller) is recommended to ensure their requirements are satisfied. A Flood Emergency Plan for this project may be necessary. The plan should consider any evacuation concerns due to isolation of access roads and exit points, particularly during intense short duration storms
- consider the likely adverse impacts from increased rainfall and sea level rise due to climate change
- consider compensatory measures to negate any adverse impacts so the existing flood conditions are not worsened
- consider any impacts from the preferred project to the surrounding areas, particularly upstream and downstream of overland flow paths and mainstream corridors.

Response

There are no new cross corridor drainage pipes to be installed as part of the preferred project and the existing drainage immunity to the railway would be maintained. The preferred project would be operated within the existing hydrological environment.

The existing hydrological environment and flood risk hazards are detailed in Technical Paper 8 (Hydrology, flooding and water quality assessment) of the Environmental Impact Statement.

The preferred project would not result in a change to existing flooding or flood hazard, in, or around the rail corridor between Marrickville and Punchbowl as the track alignment and stations are unaffected. As such, the preferred project does not result in changes to the existing NSW State Emergency Evacuation Plan in and around low lying areas of Marrickville and Sydenham.

At Bankstown, the detailed design of the project would confirm the specific implementation of mitigation measures in consultation with the relevant stakeholders. An additional mitigation measure (FHW2) has been included in Appendix C of this report which commits to the following:

Detailed design of the project would, as required at Bankstown between Stacey Street and Marion Street, take into account the impact of overland flooding for the full range of floods up to Probable Maximum Flood level.

The design of new trunk drainage infrastructure between Stacey Street and Marion Street in Bankstown would provide a 10 per cent allowance in the design criteria for climate change. Furthermore, the design of this new drainage would consider the increase in rainfall intensity by 20 per cent and 30 per cent over and above the 10 per cent set increase criteria. In addition, 0.4 metres and 0.9 metres sea level rises would be documented.

The preferred project does not include the provision of detention basins.

During construction the preferred project would consider potential flooding impacts to ensure there are no adverse impacts to upstream or downstream properties over and above the pre-existing conditions. This is committed to by mitigation measures FHW4 and FHW5 (refer to Appendix C of this report).

7.4 Heritage Council of NSW

7.4.1 Non-Aboriginal heritage

Impacts to built heritage

Issue

The proposed mitigation measures to minimise impacts associated with the reuse of station buildings (namely, mitigation measures NAH1 to NAH5 and NAH8) are considered acceptable. It is recommended that, if the preferred project is approved, the conditions of approval should ensure the proposed mitigation and management measures outlined in Section 16.1 of the Submissions and Preferred Infrastructure Report and Appendix F (Non-Aboriginal heritage assessment) be implemented.

Additionally it is recommended that the conditions of approval should include the following:

- Detailed design and installation of platform screens and gap fillers must be developed to minimise impact to significant platform profiles as much as possible.
- The heritage sub-plan of the Construction Environmental Management Plan must include a transition management strategy to minimise the impacts of the transfer from Sydney Trains to metro operations on significant elements and buildings. The strategy should ensure that impacts to significant fabric are minimised during operational changes, including staging infrastructure installation. The strategy must also prescribe utilising the spaces vacated by Sydney Trains for public amenity, such as for waiting rooms, where possible.
- The commitment to interpretation for the preferred project is addressed via mitigation measure NAH6. A revised commitment should be adopted as a condition of consent to include results of the archaeological program undertaken for the preferred project.

Response

Sydney Metro would be required by conditions of approval to implement the mitigation measures provided in Appendix C of this report.

The detailed design and installation of platform screen doors and gap fillers would be designed in line with recommended mitigation NAH2, which commits to the following:

The project design would maximise the retention and legibility of heritage buildings, structures, fabric, spaces and vistas that are individually significant and contribute to the overall heritage significance of the Bankstown Line.

Mitigation measure NAH15 commits to:

Methodologies for the removal of existing structures and construction of new structures would be developed and implemented during construction to minimise direct and indirect visual impacts to other elements within the curtilages of the heritage items, or to heritage items located in the vicinity of works.

NAH12 commits Sydney Metro to implementing the archaeological research design, including any mitigation measures identified. Section 7.20 of Appendix I (Archaeological Assessment and Research Design Report) of the Submissions and Preferred Infrastructure Report included a commitment to archaeological finds in interpretation.

Non-Aboriginal archaeology

Issue

Previous Heritage Council comments on the exhibited project indicated the need for an archaeological assessment and research design to be provided for the management of impacts to historic archaeology along the project route. This was provided as an appendix to the Submissions and Preferred Infrastructure Report (Appendix I). This document provided an adequate assessment of archaeological potential and significance of archaeological information within the project area. However the following comments are made on the archaeological methods proposed in the Submissions and Preferred Infrastructure Report:

- The Archaeological Assessment and Research Design has not been updated since the project has been revised, which reduces the relevance of the Submissions and Preferred Infrastructure Report. The key issue of impact to archaeological information is thus inadequately assessed at this stage. An updated report incorporating the preferred infrastructure is required.
- The Archaeological Assessment and Research Design does not provide enough documentation on how the archaeological resource will be managed, leaving detail to Archaeological Work Method Statements (AWMS) to be prepared once construction impacts are known. This does not allow the Heritage Council to properly review the archaeological methods for the project. These management measures should be added to the Archaeological Assessment and Research Design based on the known heritage constraints, or alternatively, a commitment should be made that the Heritage Council or its delegate be consulted during the preparation of the AWMS. The AWMS should include provision for artefact sampling to focus the archaeological program, where appropriate.
- The research questions provided are not sufficiently specific for each site. They should be updated to present key phases and expected archaeological remains at each project area. Additionally, this large-scale project presents an opportunity to compare sites across the project footprint. This will guide the provision of archaeological themes which will also be relevant for interpretation.

- The preferred project is expected to require archaeological monitoring and excavation as archaeological relics are likely. To ensure artefacts are appropriately collected, analysed and stored, additional management measures are required for the collection of artefacts on site, the discard of artefacts on-site and off-site, and methods for long-term storage and re-use. It is also reiterated that archaeological information should be included in the interpretation of the project and this should be made clear in commitment NAH6.
- No excavation team has been provided, though the document does acknowledge the need to have Excavation Directors who are suitably qualified to manage State and locally significant sites. This information should be prepared and communicated to the Heritage Council for comment.

Response

The Archaeological Assessment and Research Design Report, included as Appendix I of the Submissions and Preferred Infrastructure Report, although not revised to specifically discuss the preferred project, did include an assessment and overarching management methodology of the entirety of the area that has the potential to be impacted by the preferred project. The Archaeological Method Statement (AMS) documents would fulfil the requirement for a work stage specific impact assessment. This is consistent with the approach on other metro projects. An updated Archaeological Assessment and Research Design Report is therefore not considered to be required.

General archaeological methodology is provided in Section 7 (Archaeological methodologies) of the Archaeological Assessment and Research Design Report including the application of each management approach for identified areas of potential and significance. These measures would be refined in the AMS to reflect impacts and construction methodology which are not known in enough detail at this stage. This two stage approach of Archaeological Assessment and Research Design Report and AMS has been proven to be successful on the Sydney Metro City & Southwest Chatswood to Sydenham component and has resulted in more targeted, focussed archaeological management with better outcomes.

Research questions would be refined during development of the AMS in response to impacts and additional research undertaken for this phase. It also allows nominated Excavation Directors to prepare their own research questions, which would align with a best practice approach.

The Archaeological Assessment and Research Design Report outlined the commitment to Excavation Directors, who would be nominated once contracts have been awarded.

Archaeological conditions of approval

Issue

It is recommended that the following be included in the conditions of approval:

- Historical Archaeological Management Documents: The Archaeological Assessment Research Design Report (AARD) listed in the A1 documents shall be implemented. Final Archaeological Method Statements (AMS) must be prepared in consultation with the Heritage Council of NSW (or its delegate) before commencement of archaeological excavation works. The AMS shall be submitted for the approval of the Department of Planning and Environment. The final methodology must include:
  - detailed site-specific research to inform the proposed methodology and include relevant research questions to guide the archaeological investigation. The AMS must also include a clear assessment of impacts to archaeology

  - an artefact storage and discard protocol to ensure appropriate management of artefacts during and after the project. This should include a protocol for retention and discard policies. It should also include provision for artefact sampling to focus the archaeological program, where appropriate
  - include a sampling strategy for the site, where appropriate, to focus the archaeological investigation and adequately address the research questions
  - the AMS must identify the nominated archaeological team proposed to manage the works including the nominated Excavation Director.
- Historical Archaeological Excavation Directors: Before excavation of archaeological sites, the Proponent must nominate a suitably qualified Excavation Director (ED) to direct the historical archaeological program during the project. The nominated Excavation Director nominated must satisfy the significance level and excavation type for the site against the Heritage Council of NSW Excavation Director Criteria 2011. The Excavation Director shall ensure the provisions of the approved AARD and mitigation measures developed in the approved AMS are implemented for the project.
- Archaeological Reporting:
  - a final archaeological excavation report shall be prepared within one (1) year of the completion of archaeological excavation for each stage of the project. This report shall include relevant comparative analysis and at a minimum address the research questions raised in the AARD and the AMSs for the project. It should also reference the final artefact storage location and include a summary of ongoing conservation and protection in perpetuity
  - a final consolidated archaeological report for the project must be submitted to the Heritage Council of NSW within one (1) year of the completion of all archaeological excavation for the approval. The report must include consolidated project reports and information for the entire historical archaeological program relating to this State Significant Infrastructure approval. This report must be provided to the Department of Planning and Environment, the Heritage Council and to the relevant Council Local Studies units.

We reiterate the importance and value of continuing to involve the Heritage Council as the project's detail design develops, to understand and ensure that design options considered will have minimal archaeology and heritage impacts.

Response

The recommended condition of approval for Historical Archaeological Management Documents would be implemented through mitigation measure NA12 (refer to Appendix C of this report) which requires that the archaeological assessment and research design be implemented.

The recommended condition of approval regarding Historical Archaeological Excavation Directors and archaeological reporting is covered in the commitments provided in the in the Archaeological Assessment and Research Design, provided as Appendix I of the Submissions and Preferred Infrastructure Report.

7.5 NSW Department of Primary Industries

7.5.1 Conditions of approval

Issue

The Proponent has adequately addressed the Department's comments. The Department requests that draft conditions be referred for review prior to any approval being issued.

Response

It is noted that previous comments have been addressed.

7.6 Sydney Water

7.6.1 Project description – construction

Sydney Water infrastructure

Issue

The Environmental Impact Statement identifies that numerous Sydney Water culverts and pipes, including several critical assets, cross the rail corridor. Many of these assets will require relocation, adjustment, protection or upsizing to accommodate future growth. Sydney Water will continue to work with the project team to address these impacts.

Response

This issue was addressed in Section 7.7.1 (Project description – construction) of the Submissions and Preferred Infrastructure Report.

Utilities Management Framework

Issue

Sydney Water does not accept the Utilities Management Framework assessment of whether Sydney Water assets are impacted or not until the detailed design of the works can be shown. The Utilities Management Framework doesn't identify all of the potentially impacted assets. Sydney Water will work with Sydney Metro to assess all works to determine the level and extent of impact and any action required. All potential impacts must be assessed in line with Sydney Water's Building Over / Adjacent to SWC Assets Policy through the process described in the Sydney Metro Program – SWC Interface Deed.

Response

A Utilities Management Framework (Appendix H of the Submissions and Preferred Infrastructure Report), outlined the process for utilities identification and management during construction and beyond, including steps to ensure that detailed design takes into account the input of utility providers and owners (including Sydney Water). This included consultation with utilities owners as part of the utilities working group for the project, and identifying opportunities to integrate works with utility owners and other affected stakeholders.

Consultation with Sydney Water has been ongoing during the design and development of the project, and Sydney Water would continue to be consulted in relation to its infrastructure and assets where there is the potential for these to be impacted. Sydney Metro has entered into an Interface Agreement with Sydney Water for the project and the process described in this agreement would be followed through the detailed design and construction of the project.

7.6.2 Hydrology, flooding and water quality

Flood management

Issue

The project should address in detail the existing flood risk and anticipated flood management system requirements to service future catchment conditions. The scope of flood management required at each station should be assessed in terms of risk to people and property. The proposal to simply maintain drainage systems at stations may be unreasonable if the project would increase the exposure of the public to flooding hazards. The flood management system for the project should be designed so that the residual flood risk to people and property is socially acceptable. Flood management should not rely on existing informal flood storages.

The flood management plan for the project should address any current or potential impacts, in terms of social and economic costs, that flooding may have on the community.

Designers should use existing catchment flood management plans as design context. If there is no existing flood management plan which considers future conditions then Sydney Metro must develop a strategy for the broader catchment in consultation with Sydney Water and the relevant council.

Response

The existing hydrological environment and flood risk hazards are detailed in Technical Paper 8 (Hydrology, flooding and water quality assessment) of the Environmental Impact Statement.

There are no new cross corridor drainage pipes to be installed as part of the preferred project and the existing drainage immunity to the railway would be maintained.

The preferred project would not result in a change to existing flooding or flood hazard, in, or around the rail corridor between Marrickville and Punchbowl.

At Bankstown, the detailed design of the project would confirm the specific implementation of mitigation measures in consultation with the relevant stakeholders. An additional mitigation measure (FHW2) has been included in Appendix C of this report which commits to the following:

Detailed design of the project would, as required at Bankstown between Stacey Street and Marion Street, take into account the impact of overland flooding for the full range of floods up to Probable Maximum Flood level.

Flood mitigation services

Issue

Works that will increase demand for, reduce availability of, or impede provision of, flood mitigation services must be agreed to by Sydney Water and the relevant council.

Response

This issue was addressed in Section 7.7.2 (Hydrology, flooding and water quality) of the Submissions and Preferred Infrastructure Report.

Flood models

Issue

Any flood models used should be independently reviewed to verify the suitability of the model assumptions.

Response

This issue was addressed in Section 7.7.2 (Hydrology, flooding and water quality) of the Submissions and Preferred Infrastructure Report.

Flooding issues near Marrickville Station

Issue

The following issues should be considered if drainage works are to be undertaken at Marrickville Station:

- the review of discharges to the Malakoff tunnel in minor flood events
- any proposal to pipe additional stormwater flows from the southern side of Marrickville Station to the northern side of the railway line will have a negative impact, which will cause flooding to the low-lying properties near the intersection of Byrnes and O'Hara streets

- the overall flood management plan should investigate a controlled overland flow path along the southern side of the railway line at Station Street
- water quality improvement measures should be incorporated into the design of the basin.

Response

No drainage works are proposed to be undertaken at Marrickville as part of the preferred project.

Water sensitive urban design

Issue

Any discharges to Sydney Water stormwater systems must meet or exceed Sydney Water's stormwater quality targets. This is in addition to the proposed design criteria for water quality and water reuse presented based on the *Water Sensitive Urban Design Guideline*. These targets and criteria should be included in the conditions of approval.

Response

This issue was addressed in Section 7.7.2 (Hydrology, flooding and water quality) of the Submissions and Preferred Infrastructure Report.

Table 1-3 (Water quality and water reuse requirements) and Table 4-4 (Water quality design criteria) of Technical Paper 8 (Hydrology, flooding and water quality assessment) in the Environmental Impact Statement presented the proposed water quality design criteria based on the *Water Sensitive Urban Design Guideline* (Roads and Maritime, 2017). In general, these criteria meet or exceed Sydney Water targets where there is sufficient information to conduct the comparison. Table 1-3 identified the areas where water quality and water reuse requirements are proposed to be met, which does not include the rail corridor.

Section 21.3.5 (Operation impacts – water quality) of the Environmental Impact Statement outlined the results of the assessment of operational impacts on water quality, which would be the same for the preferred project. It concluded that the main potential impacts of the project on water quality would be from increases in erosion and sedimentation, and the mobilisation of pollutants from the rail corridor. With regard to changes in pollutant levels from the rail corridor, the Environmental Impact Statement concluded that the proposed use of the rail corridor for Sydney Metro operations would be very similar to the existing use, and therefore the potential for an increase in contamination is expected to be very small.

Mitigation measure FHW3 has been revised in Appendix C of this report to address this issue:

The project would be designed in accordance with water quality design criteria based on the Water Sensitive Urban Design Guideline (Roads and Maritime, 2017) to ensure there is minimal potential for water quality impacts, including incorporating water sensitive urban design elements.

7.6.3 Non-Aboriginal heritage

State Heritage listed Marrickville Sewage Pumping Station

Issue

Sydney Water must be consulted early and throughout the project in relation to any works taking place which may impact the State Heritage listed Marrickville Sewage Pumping Station (SPS271).

Response

This issue was addressed in Section 7.7.3 (Non-Aboriginal heritage) of the Submissions and Preferred Infrastructure Report.

7.7 Fire and Rescue NSW

7.7.1 Project description – operation

Issue

Fire and Rescue NSW recommend that the ten existing stations incorporate a fire hydrant system that complies with the relevant requirements of Australian Standard 2419.1 – 2005.

Response

Sydney Metro would continue to work with Fire and Rescue NSW regarding the need for, and design of, any fire hydrant system at stations. This would be determined through a fire and life safety assessment undertaken as part of the detailed design.

Issue

Fire and Rescue NSW recommend that during construction works, they are informed of any works that will affect operational response and access to stations and surrounding properties.

Response

Mitigation measure TC21 commits to the following:

Access to stations and surrounding properties for emergency vehicles would be provided at all times. Emergency service providers (i.e. police and ambulance) would be consulted throughout construction to ensure they are aware of station closures, changes to access, including bridge lane closures, and changes to station or rail corridor access.

7.8 Inner West Council

7.8.1 Need and alternatives

Community benefit and justification

Issue

Council reiterates the view that the case for the Sydney Metro Sydenham to Bankstown has not been adequately made. Our community is not prepared to accept the disruption that would be caused by this project, that we are not convinced will benefit our community or Sydney as a whole.

Council suggest the State Government build new rail services to suburbs that don't currently have them rather than converting existing commuter rail services from one rail mode to another rail mode.

As outlined in Council's previous submission on the Environmental Impact Statement, while Council recognises that the upgrading of the T3 Line to a metro standard would increase frequency and connectivity, preference should have been given to the provision of a new service and alignment which would cater for areas currently deficient in public transport accessibility.

Council points out to the Department of Planning and Environment that simply reiterating the reasons for the project in the Submissions and Preferred Infrastructure Report has not changed our minds.

Further, Council considers that where Sydney Metro builds brand new rail lines to suburbs that don't currently have them, it represents an improvement to Sydney's mass transit network. Where it converts existing heavy rail lines to metro it is failing to expand Sydney's rail network, thus preventing a shift toward sustainable travel from private car dependency.

Council does not believe that the case for the Sydney Metro City and Southwest Sydenham to Bankstown has been adequately made and opposes the *Sydenham to Bankstown Urban Renewal Corridor Strategy*. At its meeting on 24 October 2017 Council called on the NSW Government to abandon the Strategy, given concerns about impacts on local character, heritage, existing affordable housing and the lack of provision of community and State infrastructure.

Response

This issue was addressed in Section 7.10.1 (Strategic context and alternatives) of the Submissions and Preferred Infrastructure Report.

Sydney Metro was adopted as the preferred alternative for modernising Sydney's rail network, because it would:

- be more flexible and provide frequent services that would benefit customers
- provide the required capacity and flexibility to respond to growing demand for rail in Sydney
- create a more modern, resilient and faster service
- deliver a seamless and less disruptive way of modernising Sydney's rail
- deliver transport benefits more cost effectively.

The increase in network capacity and ability to make a significant change to how the existing rail network operates would provide the following transport benefits:

- enabling the transport network to better cater for growth
- travel-time savings
- increased network capacity
- decreased train and station crowding, including at key CBD stations during peak periods
- increased reliability of the rail network
- enhanced customer satisfaction on the use of public transport
- improvements in customer safety.

Maintaining the existing catchment of train customers along the T3 Bankstown Line is critical to achieving the project objectives, including encouraging mode shift from cars and/or buses onto trains; delivering customers a more comfortable, reliable, and efficient train service; and contributing to the accessibility and connectivity of existing and future communities.

The Department of Planning and Environment has identified a revised approach to the *Sydenham to Bankstown Urban Renewal Corridor Strategy*. The Department of Planning and Environment will develop the principle based, high level strategy for the corridor in collaboration with councils. Councils will then undertake a review of their local environmental plan in accordance with this framework. Sydney Metro would work with the Department of Planning and Environment and local councils, as key stakeholders, once a program for the development of this revised strategy has been provided.

Construction costs

Issue

Given the appalling record of the State Government in managing infrastructure we also fear there will be a construction blowout.

Response

The preferred project would be delivered within the approved budget for Sydney Metro City & Southwest.

7.8.2 Non-Aboriginal heritage

Changes to impacts

Issue

Council supports Sydney Metro's proposal to recognise the heritage significance of many of the station buildings along the route and appreciates the extent to which Sydney Metro has endeavoured to modify the project to address many of the issues raised during the exhibition of the Environmental Impact Statement. However, concern is expressed that some of the proposed changes may result in new issues/impacts.

Response

The Submissions and Preferred Infrastructure Report included a screening of the potential changes to impacts assessed in the Environmental Impact Statement for the exhibited project, as a result of the preferred project. This screening identified that additional environmental assessment was required for the potential impacts of the preferred project on non-Aboriginal heritage. This additional assessment was provided in in Appendix F (Non-Aboriginal heritage assessment) and summarised in Section 12.2.2 (Non-Aboriginal heritage) of the Submissions and Preferred Infrastructure Report.

7.8.3 Construction impacts

Cumulative impacts

Issue

If the NSW Government is determined to press ahead with the *Sydenham to Bankstown Urban Renewal Corridor Strategy*, in the face of Council and community opposition, then the cumulative impacts of the metro and the Strategy need to be more adequately addressed.

It is requested that a higher level of coordination be clearly visible between the metro project and the Strategy. It is considered essential that both of these projects interface with each other and with adjacent land uses, in order to ensure that the vitality of the adjacent area be maintained (including catering for local businesses, public domain works and creative industries/activities).

Concern is expressed that the level of integration between the metro and the Strategy is insufficient as the metro project appears to be progressing well in advance of the Strategy and no information on the renewal corridor has been publicly available since the exhibition of the draft strategy at the end of 2017.

It is considered that the cumulative impacts associated with the simultaneous development of the metro and the Strategy (particularly in relation to construction traffic) have not been adequately addressed. Consequently, it is proposed that, in addition to the metro's proposed Construction Traffic Management Plan, a corridor-wide construction strategy should be developed (in consultation with Council, the Department of Planning and Environment, Greater Sydney Commission, Roads and Maritime Services and Sydney Metro).

Response

The Department of Planning and Environment has identified a revised approach to the *Sydenham to Bankstown Urban Renewal Corridor Strategy*. The Department of Planning and Environment will develop the principle based, high level strategy for the corridor in collaboration with councils. Councils will then undertake a review of their local environmental plan in accordance with this framework. Sydney Metro would work with the Department of Planning and Environment and local councils, as key stakeholders, once a program for the development of this strategy has been provided. This commitment is included as mitigation measure LU1 (refer to Appendix C of this report).

Any future development in accordance with the *Sydenham to Bankstown Urban Renewal Corridor Strategy* would be subject to a separate assessment and planning approval process. Further, mitigation measure CI1 commits Sydney Metro to coordinate with projects under construction at the same time, including traffic management arrangements.

Construction noise impacts

Issue

Should the alignment, as proposed in the Submissions and Preferred Infrastructure Report, no longer be negotiable, Council wishes to ensure that the greatest benefits are obtained for the community, with nil or minimum negative impacts. Further, in some cases proposed actions to counter concerns raised have the potential to create new issues or increase the magnitude of other issues (e.g. reduction of the duration of the heavy rail possession period - closure of the T3 Line for periods of time - may result in a need for additional night works, which may affect local residents).

Concern is expressed that reducing disruption to rail services (reduced periods of rail line possession) has the potential to require an increased number of night-time construction hours. It should be noted that there are several sensitive residential areas near the corridor which would be detrimentally affected by any night-time operations. Consequently it is requested that:

- no night-time, noise producing activities be carried out after 10pm
- should such activities be deemed essential, residents should be consulted
- well in advance of the activity and all measures possible be implemented to minimise any inconvenience to residents.

Response

A noise and vibration impact assessment was undertaken for the preferred project and was provided in Appendix E of the Submissions and Preferred Infrastructure Report. This assessment concluded that noise levels during construction are likely to be lower than those identified in the Environmental Impact Statement for the exhibited project, and that fewer receivers would be highly noise affected.

The out of hours work framework is provided in Section 2.7.4 of the preferred project description, provided in Appendix B of this report. This section noted that:

- an Out of Hours Work Strategy would be prepared to guide the assessment, management, and approval of works outside recommended standard hours
- the *Construction Noise and Vibration Strategy* (provided in Appendix E of the Environmental Impact Statement) includes a requirement for out of hours work to be included in the construction noise impact statements required under the strategy.

Implementation of these strategies would assist in the management of out of hours works and potential noise impacts of the preferred project.

Mitigation measure NVC16 also commits Sydney Metro to preparing the Out of Hours Work Strategy in consultation with key stakeholders, including councils, to guide the assessment, management, and approval of works outside recommended standard hours.

The implementation of the other construction noise mitigation measures (NVC1, NVC2, and NVC5 to NVC15) would also assist in minimising the potential for noise during construction.

Consultation during construction

Issue

A single point of community contact must be established, in the form of a community liaison coordinator, to ensure the concerns of local residents and business are dealt with in a transparent, efficient and timely manner.

Council requests that a formalised group be established to continue discussions as the project progresses into detailed design and that this working group should address issues including:

- construction traffic management
- maintaining accessible, reliable active and public transport both during
- construction and subsequent to opening of the metro
- mitigation of construction impacts, particularly on local residents and businesses
- opportunities to enhance active transport links, to, through and adjacent to the project
- potential for future place-making and public domain initiatives
- hydrology, flooding and drainage
- environmental sustainability and biodiversity.

Parking associated with both the construction and operation of the project should be coordinated through an appropriate Parking Management Plan. This Plan should be jointly developed with Council officers and its recommendations should be implemented to coincide with the project's progress in a manner which counters any impacts associated with the project.

Response

A single point of contact has been established with Council. Sydney Metro support, and are currently looking to establish, a working group with Council to ensure the ongoing consultation on the project, including the aspects identified above.

Further, Place Managers have been appointed to provide a single point of contact for the community. Place Managers allow for effective two-way communication by relaying important messages from the project team to the community and eliciting up-to-date information as to social impacts and suggestions for appropriate mitigation measures.

Regarding coordination on the potential parking impact of the project, mitigation measure TC15 and TO1 commit to consulting with Council (refer to Appendix C of this report).

7.8.4 Project description - operation

Active Transport

Issue

Removal of the proposed Greenway Southwest (active transport facility within the rail corridor) represents a significant reduction in the future active transport capability of the project and the Sydney Region as a whole. It is considered that the separated cycleway, provided by Greenway Southwest, would be a significant active transport link within the regional network and increase safe usable connectivity between the metro, adjacent areas and Sydney's active transport network. Consequently, it is requested that Sydney Metro reconsider the provision of the Greenway Southwest as a critical piece of regional active transport infrastructure. Should the Greenway Southwest be removed from the project, Council requests that the State Government funds a viable alternative separated active transport facility to satisfy the same future demand as the Greenway Southwest and that this facility should be developed in close consultation with relevant councils, the local community, Sydney Metro and Roads and Maritime Services.

While the Submissions and Preferred Infrastructure Report proposed the development of a Walking and Cycling Strategy, there is no indication of this project's funding or associated implementation mechanisms. Consequently, Council requests that the State Government guarantee funding of the Walking and Cycling Strategy and implementation of its recommendations as part of the Sydney Metro project.

Response

The Environmental Impact Statement outlined that Sydney Metro would work with the Department of Planning and Environment to support the development of an active transport corridor along its alignment, including walking and cycling infrastructure.

During the Environmental Impact Statement exhibition significant community feedback was received regarding the need to retain heritage buildings at stations as well as the need for a reduction in rail possession periods, and a reduction in construction impacts and vegetation removal. In response to this feedback a number of changes were made to the project including refining the project scope to minimise impacts to the local community and customers.

Refining the project to reduce construction impacts meant the corridor could no longer be widened or changed to accommodate shared facilities on existing rail land.

Notwithstanding this, Sydney Metro made the commitment in the Submissions and Preferred Infrastructure Report that it would work with the Department of Planning and Environment and local councils to determine how active transport connections could be delivered outside of the rail corridor and ensure it aligns with future planning. As part of this commitment, together with Sydney Metro's stated commitment to the development of a Walking and Cycling Strategy to encourage active transport to the stations, Sydney Metro has continued investigations into opportunities to improve the east-west pedestrian and cyclist facilities between Sydenham and Bankstown.

These investigations have identified some parts of the rail corridor that could potentially support these facilities which, together with other out of corridor areas, are shown indicatively in Figure 2.4 of this report.

Sydney Metro would continue to work with councils and other key stakeholders in a coordinated approach, as part of the future planning for the corridor, to assist in refining the identification and safeguarding of potential opportunities for future pedestrian and cyclist connections.

The Walking and Cycling Strategy (refer to mitigation measure TO3) would identify a range of customer and community initiatives to encourage walking and cycling as the preferred access mode to Sydney Metro stations. The strategy would include an implementation plan which will identify the initiatives and relevant stakeholder responsibility for their delivery, including actions, funding sources, estimated costs and timing of implementation. Sydney Metro would work collaboratively with key stakeholders to develop this strategy.

Open space

Issue

Loss of various areas of open space along the corridor significantly reduces opportunities for place-making, public domain and public art enhancement. Council requests that the project design be reconsidered to provide opportunities for such improvements.

Response

The preferred project presents opportunities for positive change within the vicinity of the stations, supporting urban renewal, and creating attractive, vibrant, and highly accessible places. However, the provision of open space, community facilities, and infrastructure to meet the needs of the existing and future community is the responsibility of relevant service providers, including the relevant council, and is beyond the scope of this project.

Mitigation measure LV3 (refer to Appendix C of this report) commits Sydney Metro to prepare a Station Design and Precinct Plan for each station. As part of the development of these plans, opportunities for public art would be explored.

Station design and accessibility

Issue

While Council recognise that a straightening of platforms would provide the most reliable accessibility, it is accepted that the proposed active and passive gap filling mechanisms should provide *Disability Discrimination Act 1992* compliance with a lower level of disruption to passengers and nearby residents.

Council requests that proposed treatments around both Marrickville and Dulwich Hill stations should be revisited, in consultation with Council, to ensure that the design outcomes provide a safe and friendly environment cognisant of the heritage value of the stations and the needs of the adjacent community. In particular concern is expressed over the loss of the previously proposed shared zone in Station Street, Marrickville and the need to ensure high quality pedestrian and cycle access to all stations.

It is considered that the previously proposed entrance to Dulwich Hill Station from Ewart Lane would provide significantly enhanced access for residents to the south west of the station, alleviating the need to climb the hill to the current station entrance. Consequently, Council requests that this entrance be included in the project.

Council requests that specific reference be made to its Draft Dulwich Hill Station Master Plan, which has been endorsed by Council and received 92 per cent community support during its public exhibition.

Response

The issues raised above would be considered in consultation with Council. Sydney Metro would work with Council to undertake detailed precinct planning around Marrickville and Dulwich Hill stations to integrate with planning undertaken by council including the Draft Dulwich Hill Station Master Plan. This work would include ensuring that the additional station entry from Ewart Lane is not precluded as a potential future station improvement, and that opportunities for shared zones are investigated.

7.8.5 Biodiversity

Impacts to native species

Issue

Clarification is sought regarding the degree of protection afforded to existing areas of Turpentine-Grey Ironbark open forest, Broadleaved Ironbark-Grey Box and Downey Wattle. Further, Council has concern over any loss of native vegetation and expresses the view that in many instances remotely located biodiversity offset areas are inappropriate.

Response

Sydney Metro has developed a design solution that has reduced the amount of vegetation requiring removal. Accordingly, impacts to native plant community types in the rail corridor would be avoided during construction of the preferred project.

Further, mitigation measure B1 (refer to Appendix C of this report) commits to avoiding direct impacts to vegetation mapped as threatened ecological communities and native plant community types. Mitigation measure B3 also outlines that areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance during construction.

As such, the preferred project would not require biodiversity offsets.

Tree replacement

Issue

Council expresses extreme concern over the loss of 503 trees and requests two for one replacement of any trees lost as a result of the project.

Response

The preferred project reduced the potential tree loss at stations from 893 to 503 trees. This is a maximum number of trees at stations that would be impacted. Impacts to trees would be minimised wherever practicable. Where removal of trees is unavoidable, trees would be replaced at a two to one ratio in accordance with the Tree Management Strategy for the preferred project (described in Section 2.3.2 of the preferred project description in Appendix B of this report). This strategy would be prepared in consultation with relevant stakeholders (including local councils). The Tree Management Strategy for construction would be used to guide the management of trees that need to be removed, protected, or trimmed.

Mitigation measure LV4 commits to the following:

The management of trees during detailed design and construction planning would be guided by the project's Tree Management Strategy, which would be developed in consultation with councils and include consideration of relevant local plans and strategies. Where removal cannot be avoided, trees would be replaced in accordance with the Tree Management Strategy, including replacement of removed trees in a two for one ratio.

Opportunities to retain and protect existing trees would be defined during detailed design and construction planning, in accordance with the project's tree management strategy. The design would aim to reduce tree removal to the extent practicable, particularly where they contribute to screening vegetation or landscape character.

7.8.6 Flooding, drainage and stormwater

Drainage and stormwater

Issue

Council expresses concern that the flooding, drainage and stormwater assessment provided in the Environmental Impact Statement was inadequate and it is considered that the proposed revised mitigation measures are insufficient. Consequently, Council requests that comprehensive stormwater modelling should be conducted to provide an evidence based assessment of all issues and that council officers be consulted prior to finalising any mitigation measures.

Response

The preferred project would be operated within the current hydrological environment.

There are no new cross corridor drainage pipes to be installed as part of the project and the existing drainage immunity to the railway is to be maintained.

The preferred project would not result in a change to existing flooding or flood hazard, in, or around the rail corridor within the Inner West local government area.

Mitigation measure FHW1 also notes that:

Where feasible and reasonable, detailed design would result in no net increase in stormwater runoff rates in all storm events, unless it can be demonstrated that increased runoff rates as a result of the project would not increase downstream flood risk.

Where required, this work would be undertaken in consultation with Council.

7.8.7 Traffic, transport and access

Construction traffic

Issue

Council requests that the draft Construction Traffic Management Plan be prepared in close consultation with Council and the community prior to being exhibited.

Response

TC8 commits Sydney Metro to the following:

A construction traffic management plan would be prepared and implemented prior to construction. The plan would be prepared in accordance with the Construction Environmental Management Framework, and would detail, as a minimum:

- *how traffic would be managed when construction works are being carried out*
- *the activities proposed and their impact on the road network and on road users*
- *how these impacts would be addressed.*

The plan would be prepared in consultation with the Traffic and Transport Liaison Group, and would be approved by the relevant authority before construction commences.

The Traffic and Transport Liaison Group includes council and the Construction Traffic Management Plan would be made publicly available after it has been approved by the relevant road authority.

Possession periods

Issue

While the preferred project description suggested that the preferred project would require reduced periods of rail possession, reference is still made to the need for a final possession period of three to six months, once the stations have been upgraded. Concern is expressed that this lengthy period of possession will impact on public transport patronage, potentially diverting people to private car use (possibly in the long term). Consequently, it is requested that opportunities to reduce this possession period should be further examined and, should prolonged periods prove essential, a detailed public transport response should be provided and clearly communicated to the travelling public.

Response

A longer final possession period of three to six months is required to enable the works that can only be completed once Sydney Trains services are no longer operating, and would include works such as the installation of new signalling, communication systems, and platform screen doors. It would involve full closure of the line to enable it to be converted to Sydney Metro systems.

The duration of the final possession would be as short as practicable to bring Sydney Metro trains into service. The duration of this possession would be refined in consultation with relevant stakeholders, and the community would be informed of any proposed changes once they are confirmed.

The Temporary Transport Strategy outlines a process to ensure the approach to managing the possession periods are developed in consultation with key stakeholders (including the Sydney Coordination Office, Roads and Maritime Services, Sydney Trains, local councils, emergency services, and bus operators).

Mitigation measure TC10 (refer to Appendix C of this report) commits Sydney Metro to undertake an extensive community awareness and information campaign prior to changes in the public transport system being implemented during possession periods. This would include a range of construction activities such as information at stations and web and transport ‘app’ based information.

Consultation on impacts

Issue

There does not appear to be detail on potential disruption to traffic flows, bus movements and active transport accessibility created by construction activity. Council seeks extensive consultation on measures to minimise any such inconvenience associated with the project’s construction activity.

Response

A detailed assessment of the potential disruption to traffic flows, bus movements and active transport as a result of construction was presented in the Environmental Impact Statement, and the Submissions and Preferred Infrastructure Report assessed and described changes to these potential impacts as a result of the preferred project.

The Temporary Transport Strategy outlined a process to ensure the approach to managing the possession periods, as well as the Construction Traffic Management Plan, are developed in consultation with key stakeholders including local councils.

Haulage route changes

Issue

While it is recognised that the proposed extension of the haulage route along the Illawarra Road will negate the need for sections of Marrickville Road, Jersey Street and Warren Road to be used, it is essential that a detailed analysis be carried out on the likely impacts of the extended route, particularly on adjacent residents, businesses, public and active transport.

Response

An assessment of the impacts of the changes to the haulage routes as a result of the preferred project was presented in Appendix D (Traffic, transport and access assessment) of the Submissions and Preferred Infrastructure Report.

7.8.8 Construction noise

Issue

With numerous major projects in the Inner West, construction noise has proven to be a major disruption to the quality of life of local residents. Council's recent experience indicates that the proposed 30 decibel (above background noise) threshold for significant amelioration is too high and does not adequately reflect impacts relating to projects with long construction periods (which may have slightly lower levels of noise for much longer periods). Consequently, Council requests that an expert advisory group be established (including Sydney Metro, the Department of Planning and Environment, Sydney Metro, Sydney South West Area Health Service, as well as Council and community representatives) to develop protocols and responses suitable to the project's long term construction period and extended noise/vibration impacts.

Response

Section 15.2.2 (Noise and vibration) of the Submission and Preferred Infrastructure Report provided an overview of the impacts of the preferred project. This showed that potential impacts for the preferred project on receivers are generally lower than stated in the Environmental Impact Statement of the exhibited project across the daytime, evening and night-time periods.

The construction noise impact assessments undertaken as part of the Environmental Impact Statement and the Submissions and Preferred Infrastructure Report, were undertaken based on the requirements of the *Interim Construction Noise Guideline* (EPA, 2009) and Sydney Metro's *Construction Noise and Vibration Strategy*. The identification of potentially feasible and reasonable mitigation measures presented in the assessments are aligned with the recommendations detailed within the Guideline and Strategy.

The construction of the project would also be required to be undertaken in accordance with the *Interim Construction Noise Guidelines* and the *Construction Noise and Vibration Strategy.* As outlined in Section 7 of the *Construction Noise and Vibration Strategy*, standard noise and vibration mitigation measures would be implemented on all Sydney Metro projects, including noise source controls and noise path controls. Such measures are identified in mitigation measure NVC5 (refer to Appendix C of this report) and include noise barriers around construction sites, avoiding simultaneous operation of noisy plant and equipment and scheduling of high noise generating activities during less sensitive periods.

The implementation of the standard management measures should significantly reduce the noise and vibration impact on nearby sensitive receivers. However, there may still be exceedances of the noise management level. In such circumstances, additional mitigation measures would be considered in accordance with Section 8 of the *Construction Noise and Vibration Strategy*.

The *Construction Noise and Vibration Strategy* provides a matrix for when additional mitigation measures should be considered in relation to both the relevant time period and the level of exceedance above the background noise levels.

In addition, in accordance with mitigation measure NVC1, noise mitigation measures would be identified for all works predicted to result in any exceedance of the noise management levels and not just exceedances greater than 30 dB.

7.8.9 Utility impacts

Issue

As lack of coordination between utility service providers regarding upgrades associated with major infrastructure projects (such as Sydney Metro) has the potential to result in unnecessarily lengthy construction/reconstruction activity impacting on residents, it is requested that (similarly to the M4-M5 link project) Sydney Metro provide a:

- Utilities Management Strategy
- Utilities Works Manager.

Response

A Utilities Management Framework was provided as Appendix H (Utilities Management Framework) of the Submissions and Preferred Infrastructure Report, this includes the requirement for a utility working group to be established. Further, mitigation measure HRS3 commits that: *All utilities adjustments or relocation would be undertaken in accordance with the Utilities Management Framework.*

Further, Sydney Metro has a dedicated utilities manager for the project.

7.9 Liverpool Council

7.9.1 Project description - construction

Alternative transport arrangements

Issue

Council requests that additional train services including express train services are provided on the T2 Line to mitigate impacts during the possession periods. Additionally, Council requests that commuters, including Liverpool residents, are advised of the details associated with the Temporary Transport Strategy and the associated temporary transport plans, prior to possession periods. The details provided should encompass the following information:

- details regarding the alternative transport arrangements (i.e. additional train services on the T2 Inner West and Leppington Line and bus replacement arrangements)
- timetables of temporary train and bus services
- temporary bus stop locations.

Response

The Temporary Transport Strategy outlines a process to ensure the approach to managing the possession periods are developed in consultation with key stakeholders (including the Sydney Coordination Office, Roads and Maritime Services, Sydney Trains, local councils, emergency services, and bus operators). This would include consideration of additional services on the T2 Inner West and Leppington Line.

Mitigation measure TC10 (refer to Appendix C of this report) commits Sydney Metro to undertake an extensive community awareness and information campaign prior to changes in the public transport system being implemented during possession periods. This would include a range of construction activities such as information at stations and web and transport 'app' based information.

7.9.2 Project description - operation

Servicing changes and impacts on travel times

Issue

The preferred project would convert the existing T3 Line between Sydenham and Bankstown to a metro line. This implies trains passengers from west through to Bankstown would have to change trains at Bankstown Station.

This will cause inconvenience and increase travel times for passengers who are currently using the T3 Line from Liverpool to the inner west area, the Sydney CBD and beyond. The current travelling time of 54 minutes from Liverpool to Sydney CBD via direct train services along the T3 Bankstown Line may increase.

Council request Sydney Trains provide additional express train services on the T2 Line to mitigate impacts associated with increased travel times for passengers west of Bankstown.

Response

Connections to the city for customers along the existing T3 Line are discussed in Section 2.6.1 of this report.

Section 11.4.2 (Traffic and transport – changes to station servicing arrangements) of the Environmental Impact Statement acknowledged that the introduction of Sydney Metro would result in some changes to station servicing arrangements and travel patterns along the T3 Bankstown Line.

Customers travelling to the CBD from stations between Bankstown and Sydenham would be able to travel directly to the city on Sydney Metro. For stations west of Bankstown:

- customers travelling from Yagoona, Birrong, Regents Park, Berala, Sefton, Chester Hill, Leightonfield, Villawood, and Carramar stations could travel to the CBD via Sydney Trains and Sydney Metro, changing trains at Bankstown, or by Sydney Trains only, changing at Lidcombe/Cabramatta
- customers travelling from Cabramatta and Warwick Farm could travel to the CBD via by Sydney Trains only, or by Sydney Trains and Sydney Metro, changing trains at Bankstown.

Further, Figure 5.1 (Overview of the project's effect on the City Circle) of the Environmental Impact Statement states that the service levels for Sydney Trains west of Bankstown is determined and managed by Sydney Trains. However, the project is expected to result in more capacity on the T2 line by removing the bottleneck caused by the existing T3 Bankstown Line.

7.9.3 Early planning and delivery of extension of Sydney Metro from Bankstown to beyond

Issue

Currently the T3 Line is one of the two lines that provide train services from between Liverpool and the Sydney CBD, via Bankstown. Without an efficient train service to attract people to live and work in the Liverpool city centre and local government area, the ability of Liverpool to make a strong contribution to Sydney's future development will be constrained.

Within this context, a transport system that will facilitate existing and future developments in the Liverpool local government area is vital. A Sydney Metro extension to Liverpool (and beyond) is a once in a generation opportunity for strategic investment in transport that will shape the development in south west Sydney.

Council welcomes continued involvement in the Sydenham to Bankstown metro upgrade project, and looks forward to working with Sydney Metro to help deliver improved public transport service across south western Sydney.

Response

Section 3.5 of this report outlines the ongoing consultation to be undertaken for the project.

Sydney Metro would continue to engage with stakeholders, including Council, as Sydney's *Future Transport Strategy 2056* (Transport for NSW, 2018a) is realised.

7.10 Canterbury-Bankstown Council

7.10.1 Strategic context

Inequity in metro delivery and planning

Issue

The project proposes a significant reduction in scope and investment in the Southwest corridor. The Southwest corridor is being designed to such a poor standard with minimal investment, despite having comparable population and employment figures to the Northwest corridor.

The Southwest corridor deserves an equivalent standard of station and precinct design and a similar customer experience to the Northwest corridor.

Response

This issue was addressed in Section 7.11.1 (Strategic context – inequity in metro delivery and planning) of the Submissions and Preferred Infrastructure Report.

Sydney Metro City & Southwest would improve the rail transport network, providing more frequent services and improved network capacity, and improving accessibility and amenity at stations.

To address a number of issues raised in submissions during the public exhibition period, Sydney Metro has developed a design solution that enables the retention of existing station entrances, heritage buildings and concourses, but enables upgrades that provide accessible stations and the same world class metro service. It will operate at the same level and to the same standard as Sydney Metro Northwest.

As with Sydney Metro Northwest, the detailed design of the stations would be undertaken following the project approval and would be informed by design guideline documents. The guideline *Around the Tracks: urban design for heavy and light rail* (Transport for NSW, 2016). recognises the role of stations as important infrastructure for local communities and the transport system as a whole and requires the design to seek either to reinforce the existing identity of an existing station or to create a new identity, repairing and revitalising the precincts around them.

Inconsistency with Government transport strategy

Issue

Future Transport 2056 outlines six state-wide outcomes to guide investment, policy reform and service provision.

The Submissions and Preferred Infrastructure Report failed to address four of the six outcomes and confirms that the project is not consistent with the government's intent for more holistic and integrated transport planning.

The Submissions and Preferred Infrastructure Report also fails to address how the project will adequately integrate with the 2056 vision for high frequency services from Bankstown to Liverpool, Parramatta and Kogarah. The Submissions and Preferred Infrastructure Report simply shows an indicative box next to Bankstown Station where an underground station could be built (although it appears too small for this) without any reference to constructability and impact minimisation.

The project must be designed to accommodate future transport and planning strategies including growth at station precincts and rail network expansions.

Response

The *Future Transport Strategy 2056* sets the 40 year vision, directions and outcomes framework for customer mobility in NSW, which will guide transport investment over the longer term.

The vision for the future of transport is based on six outcomes, all embraced during the development of Sydney Metro:

- a customer focus
- successful places
- a growing economy
- safety and performance
- accessible services
- financial and environmental sustainability.

The strategy recognises that Sydney Metro will be an integral part of Sydney's transport system into the future. Sydney Metro City & Southwest is a committed initiative to be delivered in the next 0 to10 years. A Parramatta to Kogarah mass transit / train link is an initiative for investigation over the next 10 to 20 years, and an extension to Sydney Metro City & Southwest to Liverpool is an initiative for investigation over the next 20+ years.

Further information is available at https://future.transport.nsw.gov.au/about-future-transport/program/.

Undertaking the preferred project would support the opportunity for other extensions to the metro network in the future. The preferred project would be designed to not preclude any future extension of metro to the west of Bankstown.

Refer to Section 7.10.17 of this report and Section 7.11.2 (Alternatives to the project) of the Submissions and Preferred Infrastructure report in regards to undergrounding at Bankstown.

Inconsistency with Greater Sydney strategic planning

Issue

The recently finalised regional and district plans identify the Sydenham to Bankstown corridor as one of the most dense clusters of Transit Oriented Development in Sydney. The plans also identify Bankstown as a Health and Education Precinct with major job growth, and Campsie as a Strategic Centre.

With both centres planned to transform significantly in the coming years, the Submissions and Preferred Infrastructure Report failed to address how the metro stations will integrate with these centres and facilitate the growth in terms of the built form, public domain and transport interchange needed to support the population, employment and patronage growth.

Response

The *South District Plan* (Greater Sydney Commission, 2018b) recognises Bankstown as a health and education precinct served by future Sydney Metro City & Southwest stations. The plan notes the benefits of Sydney Metro to centres along the line in terms of increased accessibility, and that Sydney Metro City & Southwest would improve connections to other parts of Sydney.

Detail around future plans for these centres is yet to be prepared by Council and will follow a principle based, high level strategy that the Department of Planning and Environment, in collaboration with council, is yet to complete. Mitigation measure LU1 commits Sydney Metro to working with the Department of Planning and Environment, the Greater Sydney Commission, and the Inner West and Canterbury-Bankstown councils, for future planning of the Sydenham to Bankstown Corridor.

An additional mitigation measure (LU3) has been included in Appendix C of this report which commits to the following:

Sydney Metro would establish a working group with Canterbury-Bankstown Council to investigate improved precinct outcomes in the vicinity of Campsie Station.

The working group would specifically address Campsie Station in terms of the relationship between the station and surrounding station precinct and also look at exploring opportunities for practical improvements in this area.

This supports the existing mitigation measure (LU2) that commits to working with Council to plan for the strategic transformation of the Bankstown CBD. The Bankstown master planning work is focussed on the strategic vision of the station and CBD but would also include identification of short-term precinct improvements.

Sydney Metro would continue to work with Council where there are opportunities for better design outcomes.

7.10.2 Alternatives to the project

Undergrounding the alignment and Bankstown Station

Issue

There is no mention of how an underground station could be built and then connected to the existing metro line. This would involve significantly more station and line closures and generate significant additional impact to commuters and the community compared to building the underground station as part of the current project.

The project will also create significant additional impacts to commuters and the broader community and businesses by requiring a separate major upgrade/undergrounding of the station in the near future which will be extremely disruptive and more costly than if built properly now.

Response

This issue was addressed in Section 7.11.2 (Alternatives to the project) of the Submissions and Preferred Infrastructure Report.

It is also further discussed in Section 7.10.17 of this report.

The preferred project does not propose an underground station for Bankstown, however an alternative station design has been safeguarded for the future (including potential underground platforms). A future proposal to underground the station would be subject to a separate approval process.

7.10.3 Design development

Station design

Issue

The project lacks station design excellence. While the retention of heritage and station entries to the main streets is supported, Council is concerned that the ageing station facilities, the limited canopy cover and spatial arrangements at stations will negatively impact the service level for customers. The designs for both underground and at-grade stations on the Northwest corridor include generous dimensions, large canopies, public plazas, landscaping, seating and an overall high level of amenity. In contrast the Submissions and Preferred Infrastructure Report proposed to retain 100 year old stations without any improvements, for example awnings, landscaping, pavements and furniture. In some instances the entries are narrow, there is not a direct path of travel and there are pinch points in pedestrian movement. The Submissions and Preferred Infrastructure Report made no effort to provide reasonable amenities and upgrades that would be expected for a major public transport project.

Response

Sydney Metro City & Southwest (including the Sydenham to Bankstown upgrade) is a 'brownfield' project, involving upgrading and converting an existing rail line and corridor, where the basic rail and supporting infrastructure is already established and constrained by the existing urban fabric.

The claim that stations will be retained without any improvements is incorrect.

The retention of the existing stations, their buildings and the overall setting of the T3 Bankstown Line due to individual and collective heritage values, was a desire that was clearly expressed in submissions received from the general community, interest groups and regulators during the exhibition of the Environmental Impact Statement. The focus of the preferred project has therefore been on the retention of existing infrastructure, station entrances, heritage buildings while still delivering enhancements within the station and in the areas surrounding the stations in response to that feedback. Upgrading of stations would provide improved accessibility, safety, amenity and customer experience, and does not preclude further upgrades in the future including infrastructure required to support development around the stations.

As required by mitigation measure LV3 (refer to Appendix C of this report), Station Design and Precinct Plans would be prepared in consultation with relevant stakeholders including Council and reviewed by the Design Review Panel. The plans would aim to ensure that the new stations and facilities to be provided are sympathetic and complementary to existing local character and are integrated with future plans for development.

The plans would include items such as access and permeability around stations; landscaping and opportunities to mitigate the visual impacts of rail infrastructure; and inclusion of local environmental, heritage and place-making values into the station designs.

Increased patronage

Issue

The Submissions and Preferred Infrastructure Report made no effort to cater for the significant increased patronage planned for each station resulting from both population and job growth as well as increased modal share of public transport.

Response

By upgrading the stations (Marrickville to Bankstown inclusive), the preferred project would enable better and safer access for more people, and facilitate accessible interchange with other forms of transport.

Increased patronage would also be catered for by the increased frequency of services that would occur with the implementation of the preferred project.

The preferred project has retained existing infrastructure and station entrances. The preferred project safeguards additional infrastructure for future consideration when future master planning of the areas around the rail corridor are completed and associated development is being realised. The preferred project would deliver fully-accessible stations, increased service frequency, interchanges to other rail services, and safe and efficient connections.

Once operational, the project would provide more than twice as many trains per hour in peak periods, reducing the waiting time for customers at stations, and significantly improving the capacity and reliability of the rail network. The fast and more frequent services provided by Sydney Metro would result in travel time savings, and is one of the factors that would encourage people to use Sydney Metro.

Sydney Metro is committed to providing the best possible services for customers and would continue to monitor patronage and train loading data to see whether further improvements can be made for the comfort of customers across the network.

Similar treatment for all stations

Issue

The Submissions and Preferred Infrastructure Report proposed the same treatment for each station. However the stations vary considerably in size, character and function. Some are in greater need of upgrades than others, some have more heritage values to be retained, some are part of larger strategic centres. A more tailored response is needed for each station that considers these aspects more sensitively.

Response

The preferred project does not propose the same treatment for each station. The preferred project has been developed with reference to the unique characteristics of each station having regard to heritage values, accessibility requirements, recent infrastructure updates (such as the Transport Access Program upgrades), connectivity to surrounding areas and safety. Ongoing design development would also consider the role of each station in the overall strategic planning context for the city with Campsie nominated by the South District Plan as a strategic centre and Bankstown as a health and education precinct.

An additional mitigation measure (LU3) has been included in Appendix C of this report which commits to the following:

Sydney Metro would establish a working group with Canterbury-Bankstown Council to investigate improved precinct outcomes in the vicinity of Campsie Station.

The working group would specifically address Campsie Station in terms of the relationship between the station and surrounding station precinct and also look at exploring opportunities for practical improvements in this area.

This supports the existing mitigation measure (LU2) that commits to working with Council to plan for the strategic transformation of the Bankstown CBD. The Bankstown master planning work is focussed on the strategic vision of the station and CBD but would also include identification of short-term precinct improvements.

Sydney Metro would continue to work with Council where there are opportunities for better design outcomes.

Design Guidelines

Issue

The Submissions and Preferred Infrastructure Report stated that the Design Guidelines included in the Environmental Impact Statement addressing topics such as station design, customer experience, public domain and connectivity are now being disregarded.

The Submissions and Preferred Infrastructure Report had disregarded the Design Guidelines included in the Environmental Impact Statement, which covered key topics such as customer experience, public domain and connectivity which need to be considered in a project of this scale.

Design outcomes will now be upheld via a Design Review Panel during the delivery process. However for the Panel to have any purpose or basis for making recommendations, the Submissions and Preferred Infrastructure Report and project approval needed to include station building upgrades in the scope of work.

On completion of the project, the stations along the corridor will become the responsibility of Sydney Metro, and would presumably need to comply with their design requirements and principles moving forward. Would these not be the same design principles that are being applied to the City and Northwest corridor, and which are set out in the disregarded design guidelines?

Response

The Sydenham to Bankstown Design Guidelines are no longer applicable because the preferred project retains the heritage items and existing infrastructure. Instead the preferred project would take into consideration the principles outlined in *Around the Tracks – urban design for heavy and light rail*.

A design review panel has already been established for Sydney Metro (the Sydney Metro City & Southwest Design Review Panel) to review the design at appropriate stages.

Inconsistency with Government policy on design – Better Placed

Issue

The Submissions and Preferred Infrastructure Report is not consistent with the NSW Government's *Better Placed* integrated design policy. The project must comply with the principles of *Better Placed* and *Future Transport 2056* to ensure it is delivering integrated design excellence.

All stations must be upgraded to adequately cater for future growth to an equivalent level of design excellence as the City and Northwest Metro; comply with *Better Placed*; and include heritage retention, spatial arrangements, amenities, awnings, pavements, furniture, wayfinding signage and lighting.

Response

The preferred project was developed considering the principles in the *Better Placed* policy (NSW Government, 2017) which provides the policy framework for better design in the built environment now and into the future. This policy establishes a baseline of what is expected to achieve good design across projects in NSW. This includes solutions that are efficient, practicable, and embody good design outcomes (refer also to Section 7.11.3 (Design development) of the Submissions and Preferred Infrastructure Report).

The detailed design process involves preparing Station Design and Precinct Plans for each station, in accordance with mitigation measure LV3 and is subject to review by the Sydney Metro Design Review Panel. The Design Review Panel would also refine the design objectives for place making and public realm and provide advice on the application of the objectives to key design elements. The Design Review Panel is chaired by the NSW Government Architect and it is expected that the refined design objectives would be consistent with the Better Placed policy.

Additional cross-corridor connections

Issue

The rail line currently impacts north-south movement via all modes with limited and often inadequate overbridges and underbridges.

There are several long sections with no connectivity (e.g. 1.6 kilometres between Bankstown and Punchbowl, 1.2 kilometres between Punchbowl and Wiley Park and between Tasker Park and Little Tasker Park).

Some connections have no footpaths (e.g. Foord Avenue) and most need widening to cater adequately for all modes and improve safety and visibility (e.g. Broughton Street underpass has inadequate footpath widths for the dense population and inadequate width for a regional cycleway).

Some also require additional height to improve permeability for buses and trucks (e.g. the underbridge at Bankstown) and require universal access (e.g. Campsie overpass).

The Submissions and Preferred Infrastructure Report proposed no overbridge or underbridge works, however Council recommends the project must include the upgrade of all overbridges and underbridges for all transport modes and ensure there is a rail crossing every 400 metres. This includes a new cross corridor connection between Bankstown and Punchbowl, between Punchbowl and Wiley Park and between Tasker Park and Little Tasker Park.

Response

Section 7.11.3 (Design development) of the Submissions and Preferred Infrastructure Report addressed the issue of cross corridor connectivity.

Mitigation measure TO2 (refer to Appendix C of this report) commits to investigating additional pedestrian and cycle cross corridor connections across the rail corridor, including consideration of a crossing between Punchbowl and Bankstown stations. If deemed to be feasible, Sydney Metro would work with Council and the Department of Planning and Environment to safeguard its future delivery.

Works at a number of overbridges and underbridges along the rail corridor have been refined to protection works only - to allow the metro to operate safely.

7.10.4 Post approval design and management

Approvals

Issue

Council recommends that all approvals, contracts, agreements and budgets do not restrict the ability to improve the station and precinct design and scope for Bankstown.

Response

Sydney Metro would continue to work with Council where there are opportunities for better design outcomes. However, there is a limited ability to realise substantial changes to stations and rail infrastructure. The contract would provide some flexibility if alternative design outcomes are agreed for the stations or precincts.

Mitigation measure LU2 commits Sydney Metro to working with the Department of Planning and Environment and Canterbury-Bankstown Council, and other key stakeholders to plan for the strategic transformation of the Bankstown CBD. Outcomes and recommendations developed during the planning process would be considered where relevant in the detailed design.

NSW State Design Review Panel

Issue

The government recently established the NSW State Design Review Panel to provide independent, expert and impartial advice on projects of state significance such as this.

The project meets the requirements of the Panel's terms of reference, which includes review *of "All projects on Government-owned land that anticipate public use and/or will impact on the public domain, including Green Grid corridors (current and anticipated); and development declared to be State Significant Development."*

The Submissions and Preferred Infrastructure Report is therefore required to be referred to the Panel for review prior to determination by Department of Planning and Environment. Council also requests the opportunity to present to the Panel.

Response

In early 2018, the State Government introduced the State Design Review Panel. The 12-month pilot program will review future State significant developments, which includes developments such as large scale commercial and residential, hospitals, educational institutions, and tourist and recreation facilities. As the project is being assessed as State significant infrastructure, it does not fall within the terms of reference of the panel.

Metro Design Review Panel

Issue

Sydney Metro proposes a Design Review Panel which Council would be invited to attend but not actually be part of. It is essential that Council be a member of the Panel with voting rights rather than an observer, given Council's key role delivering and integrating other town centre upgrades with the metro works.

The Submissions and Preferred Infrastructure Report stated the Panel would review station design, public domain and urban integration however it is unclear whether any recommendations of the Panel for station improvements and precinct upgrades would be implemented, given that these aspects are not in the scope of the Submissions and Preferred Infrastructure Report.

Council has recently established a Community Voice Panel (CVP) to provide community representation on issues impacting the community. It is recommended that community representatives from the CVP be appointed to the Design Review Panel.

Response

This issue was addressed in Section 7.11.6 (Post approval design and management) of the Submissions and Preferred Infrastructure Report.

Canterbury-Bankstown Council would be invited to participate in Design Review Panel meetings to advise on local issues, and the applicability of design review outcomes as they relate to the local context of each station within its council area. Members of the panel do not vote on outcomes; it is an advisory panel.

Council has recently established a Community Voice Panel (CVP) to provide community representation on issues impacting the community. Council representatives participating in Design Review Panel meetings would be afforded the opportunity to address issues raised by the CVP where relevant to matters being considered.

Each design stage would include preparation of a design report, which would identify and address design inputs from the stakeholder and community involvement process, and the Design Review Panel. The Design Review Panel is required to endorse each design stage.

Working groups

Issue

Sydney Metro has agreed to establish Working Groups for Campsie Station and for the Bankstown Strategic Framework. Of particular concern is the scope and ability of the Working Groups to make meaningful changes from the Submissions and Preferred Infrastructure Report and the lack of a Working Group for the short term Bankstown Station design.

Response

An additional mitigation measure (LU3) has been included in Appendix C of this report which commits to the following:

Sydney Metro would establish a working group with Canterbury-Bankstown Council to investigate improved precinct outcomes in the vicinity of Campsie Station.

The working group would specifically address Campsie Station in terms of the relationship between the station and surrounding station precinct and also look at exploring opportunities for practical improvements in this area.

This supports the existing mitigation measure (LU2) that commits to working with Council to plan for the strategic transformation of the Bankstown CBD. The Bankstown master planning work is focussed on the strategic vision of the station and CBD but would also include identification of short-term precinct improvements.

Sydney Metro would continue to work with Council where there are opportunities for better design outcomes.

7.10.5 Project features

Station precinct design

Issue

The project lacks any improvement to station precincts.

The Submissions and Preferred Infrastructure Report removed from the scope almost all work outside the station such as pavements, awnings, seating, landscaping, pedestrian crossings and other standard urban design elements necessary for quality interchange.

Omitting precinct works from the scope will have a negative impact on commuters in terms of amenity and safety in the short term. Undertaking precinct works separately in the future (after three years of metro construction impacts) will cause further unnecessary impacts to commuters, businesses and residents. It is vital that precinct upgrades are undertaken as part of the metro works.

The drastic reduction in scope proposed represents a significant financial saving which should be reinvested into station and precinct upgrades within this corridor.

Response

Where required, the preferred project includes improvements to station precincts.

The delivery of enhancements in the areas surrounding the stations would reflect the retention and upgrade of existing places – this would be a result of the focus on place-making in the design development process.

The detailed design of the stations would be informed by *Around the Tracks: urban design for heavy and light rail* (Transport for NSW, 2016). This guideline recognises the role of stations as important infrastructure for local communities and the transport system as a whole. Design objective 2 (Create places for people) recognises that creating precincts that are great places for people is fundamental for every project and that good urban design can improve customer experience by:

- making it easy to get to the station and find your way around it
- making transfer between modes seamless and efficient
- making the journey as enjoyable as possible.

Station Design and Precinct Plans would be developed for each station in accordance with mitigation measure LV3.

Further precinct works would be considered and integrated with future master planning of the areas when associated development is realised.

Integration with surrounding area

Issue

Almost all infrastructure projects whether rail, highways or bridges are typically required to have some level of integration and improvements to the surrounding area in order to deliver a public benefit. Excluding the station precinct from the scope is an outdated, siloed approach to infrastructure delivery that is at odds with contemporary government policy and completely contradicts Sydney Metro's vision for a world class metro.

Response

Sydney Metro has developed a design solution that would enable the retention of existing heritage buildings, station entrances and concourses. The delivery of additional public spaces in the wider public realm is not proposed as part of the preferred project.

As required by mitigation measure LV3 (refer to Appendix C of this report), Station Design and Precinct Plans would aim to present an integrated urban and place making outcome for each station, identify specific design objectives and principles based on the local context, and maximise the amenity of public spaces and permeability around station entrances. The plans would be prepared in consultation with relevant stakeholders including Canterbury-Bankstown Council.

Safe interchange and connection

Issue

Precinct Plans must be prepared for all stations in accordance with the Secretary's environmental assessment requirement no.14 and Better Placed and delivered as part of the project to provide high quality and safe interchange and connection to surrounding areas. The plans must include pavements, pedestrian crossings, landscaping, weather cover, furniture, lighting and signage. The Precinct Plans must be funded and implemented as part of the project.

Response

As discussed in Section 7.10.3 of this report, the preferred project has been developed considering the principles in the *Better Placed* policy (NSW Government, 2017).

Station Design and Precinct Plans and Interchange Access Plans for each station would aim to present an integrated urban and place making outcome for each station and to inform the final design of transport and access facilities and services, including footpaths, cyclist and passenger facilities, parking, traffic and road changes, and integration of transport initiatives around and at each station.

Precinct plans

Issue

The Submissions and Preferred Infrastructure Report noted that Precinct Plans will be prepared for each station and reviewed by the Design Review Panel. However if there are no precinct works included the scope of the Submissions and Preferred Infrastructure Report and project approval why would Precinct Plans be prepared, what would they cover, what scope will the Design Review Panel have, and who will fund its implementation?

Whereas the Environmental Impact Statement proposed sub-standard precinct works, the Submissions and Preferred Infrastructure Report proposed even less and will have a negative impact on the amenity, interchange experience and safety of commuters.

Response

The claim that no precinct works are part of the preferred project is incorrect. The proposed precinct works would provide improved accessibility, safety, amenity and customer experience to access the stations and transfer to other modes of travel.

During detailed design, the design of the stations and precincts would be informed by the preparation of Station Design and Precinct Plans, as committed to through mitigation measure LV3, which would form part of the conditions of approval. The scope identified in the Station Design and Precinct Plans within the project area would be delivered as part of the preferred project.

The delivery of enhancements in the areas surrounding the stations would reflect the retention of existing station entrances and there would be a negligible change in character of the existing station precincts.

Station Design and Precinct Plans would aim to ensure that the stations and facilities are sympathetic to, and complement, local character, taking into consideration urban design context, sustainable design and maintenance and community safety, amenity and privacy, amongst other drivers. These plans would be prepared in consultation with the Department of Planning and Environment, local councils, the Chamber of Commerce and the local community, and would be reviewed by the Design Review Panel.

7.10.6 Active transport corridor

Justification for removing active transport corridor

Issue

The active transport Corridor is proposed to be deleted. The active transport corridor is identified in the *South District Plan* as a 'Green Grid Priority Corridor' which will connect Cooks River, Wolli Creek and Saltpan Creek and form part of Transport for NSW's Principal Bicycle Network.

The NSW Government's *Greener Places* policy framework to ensure sustainable design of State Significant Developments such as the metro also champions green infrastructure such as the active transport corridor and Sydney Green Grid.

Discarding the active transport corridor would be in direct conflict with the strategic intent and priorities of the *South District Plan* and *Greener Places* and is not justified.

The active transport corridor must be reinstated and delivered in its entirety as part of the project, or an alternative corridor be designed, funded and delivered as part of the project.

Response

The Environmental Impact Statement outlined that Sydney Metro would work with the Department of Planning and Environment to support the development of an active transport corridor along its alignment, including walking and cycling infrastructure. During the Environmental Impact Statement exhibition significant community feedback was received regarding the need to retain heritage buildings at stations as well as the need for a reduction in rail possession periods, and a reduction in construction impacts and vegetation removal. In response to this feedback a number of changes were made to the project including refining the project scope to minimise impacts to the local community and customers.

Refining the project to reduce construction impacts meant the corridor could no longer be widened or changed to accommodate shared facilities on existing rail land.

Notwithstanding this, Sydney Metro made the commitment in the Submissions and Preferred Infrastructure Report that it would work with the Department of Planning and Environment and local councils to determine how active transport connections could be delivered outside of the rail corridor and ensure it aligns with future planning.

As part of this commitment, together with Sydney Metro's stated commitment to the development of a Walking and Cycling Strategy to encourage active transport to the stations, Sydney Metro has continued investigations into opportunities to improve the east-west pedestrian and cyclist facilities between Sydenham and Bankstown.

These investigations have identified some parts of the rail corridor that could potentially support these facilities which, together with other out of corridor areas, are shown indicatively in Figure 2.4 of this report.

Sydney Metro would continue to work with councils and other key stakeholders in a coordinated approach, as part of the future planning for the corridor, to assist in refining the identification and safeguarding of potential opportunities for future pedestrian and cyclist connections.

Active transport strategy

Issue

In lieu of the active transport corridor the Submissions and Preferred Infrastructure Report proposed an 'active transport strategy' for each station. There are a number of concerns with this:

- would the active transport strategy integrate with the need for broader public domain and transport upgrades within the station precinct (which are no longer in the metro scope)
- the Submissions and Preferred Infrastructure Report noted that active transport initiatives may be considered at detailed design however the Submissions and Preferred Infrastructure Report excluded any works outside the station, so the approval, project funding and contract for delivery will not make any provision for this
- it is unclear how Council will be involved in the design process (Council is not a member of the Design Review Panel, simply an observer), and whether Council will need to approve the strategy given it is responsible for most of the streets in the precincts
- there is no mention of funding allocated to the delivery of the active transport strategy – without this it cannot be implemented.

Council believe the proposed active transport strategy will not deliver any tangible outcomes for active transport in the precincts, will exacerbate car and parking requirements, and will negatively impact on the ability to safely and conveniently walk or cycle to the stations.

Response

Mitigation measure TO3 was included in the Submissions and Preferred Infrastructure Report which committed Sydney Metro to the development of a Walking and Cycling Strategy to encourage active transport to the stations. The Walking and Cycling Strategy would identify a range of customer and community initiatives to encourage walking and cycling as the preferred access mode to Sydney Metro stations. The strategy would include an implementation plan which will identify the initiatives and relevant stakeholder responsibility for their delivery, including actions, funding sources, estimated costs and timing of implementation. Sydney Metro would work collaboratively with key stakeholders to develop this strategy.

Sydney Metro also made the commitment in the Submissions and Preferred Infrastructure Report that it would work with the Department of Planning and Environment and local councils to determine how an active transport facility can be delivered outside of the rail corridor and ensure it aligns with future planning.

Since the exhibition of the Submissions and Preferred Infrastructure Report, Sydney Metro has continued investigations into opportunities that would improve the east-west pedestrian and cyclist facilities between Sydenham and Bankstown. These investigations have identified some parts of the rail corridor that could potentially support these facilities which, together with other out of corridor areas, would provide the opportunity to improve east-west pedestrian and cyclist facilities between Sydenham and Bankstown. These investigations have identified some parts of the rail corridor that could potentially support these facilities which, together with other out of corridor areas, are shown indicatively in Figure 2.4 of this report.

Sydney Metro would continue to work with councils and other key stakeholders in a coordinated approach, as part of the future planning for the corridor, to assist in refining the identification and safeguarding of potential opportunities for future pedestrian and cyclist connections.

7.10.7 Safety and convenience

Safety

Issue

The elimination of station and precinct upgrades from the project means the 100 year old stations will be retained without addressing Crime Prevention through Environmental Design (CPTED) issues that exist. This includes items such as blank walls, isolated stations, poorly lit walkways, inactive public spaces, poor sightlines to public areas and lack of active edges overlooking stations, all of which will negatively impact on customer safety.

In order to ensure the stations, interchanges and overall metro service is safe it is critical that CPTED principles are incorporated and include upgrades to station designs and the surrounding precincts. Council recommends the project scope to include station and precinct upgrades to address CPTED requirements.

Response

The claim that station and precinct upgrades have been eliminated from the project is incorrect, as is the claim that the project would not therefore be safe. Upgrading of stations and precincts would provide improved accessibility, safety, amenity and customer experience.

Safety is a fundamental consideration in the design of all elements of Sydney Metro. Safety in design and CPTED principles would be adopted (along with other measures) as an integral component of the detailed design of stations and surrounds. Where safety issues are apparent or remain unresolved, safety reviews would be undertaken.

Sydney Metro has developed a design solution that enables the retention of all existing station entrances. Therefore the location of these entrances within existing town centres and well-used high streets would be maintained. Safety is a fundamental consideration for the design of all elements. To ensure that this has been addressed, Safety in Design workshops and safety reviews of design options were embedded into the design process.

Numerous safety features are built into trains, platforms and stations, including:

- track intrusion monitoring – trains are prevented from moving if an intrusion onto the track area or obstacle is detected
- door gap monitoring – trains are prevented from moving until all doors are closed correctly
- CCTV surveillance cameras – linked to the operations control centre
- an appropriate level of lighting
- emergency help points
- security fencing.

Mitigation measure LV3 (refer to Appendix C of this report) requires safety considerations to form part of the Station Design and Precinct Plans for each station.

Use of gap fillers

Issue

In the event of a gap filler having a mechanical failure at a station or even part of a platform it is unclear whether the metro service can still operate. Will the system stall until it is fixed, will the train skip the station, or will it continue operating with a gap in the platform? It will either delay and inconvenience passengers or pose a safety risk by leaving a gap in the platform, both of which are unsatisfactory for a world class metro and will impact safety and convenience in the southwest corridor. It appears to simply be a cost-saving measure.

The use of gap fillers will also slow the boarding process at each station, which will reduce the meagre travel time savings the metro was set to deliver. The Submissions and Preferred Infrastructure Report stated that the metro will be seven minutes quicker than the current service from Bankstown to Central, which is the same as stated in the Environmental Impact Statement. However due to the use of gap fillers this time saving will be less – it is therefore incorrect, misleading and should be clarified with Council and the community. Council recommends the technical and safety impacts and risks of gap fillers be clarified and reviewed against the option of straightening platforms.

Response

The exhibited project proposed straightening of the platforms (with the exception of Dulwich Hill Station) to ensure they are the correct height and to reduce the gap between platforms and trains to improve access.

Sydney Metro has addressed issues raised by the community and other stakeholders during the exhibition period and developed a design solution that enables the retention of existing heritage buildings, station platforms and concourses.

The preferred project proposes relevelling of platforms to ensure they are the correct height and installing gap fillers to reduce the gap between platforms and trains and avoid the need to straighten the platforms. Removing straightening platforms, as part of the preferred project, provides benefits including the ability to retain heritage platforms and platform buildings, reduce construction impacts and reduce possession periods. This would necessitate the use of mechanical gap fillers as a safety and accessibility measure to close the gap that results from the curvature of the retained platforms.

Gap fillers would assist with train access for wheelchairs, pushchairs, passengers with suitcases and the elderly and visually impaired. Gap fillers are safely used on metro projects around the world, including by visually impaired passengers. The gap fillers are individualised to suit the particular requirements at each of the carriage doorways at which they will be deployed. Gap fillers operate independently of each other and should there be an operational issue with one of them, the platform screen door at that location would remain closed and customers would be directed to other serviceable screen doors for access to the train. The screen door would remain closed until such time as the mechanical issue is resolved and the gap filler can be operated safely.

Gap fillers open within seconds of the train arriving. The use of gap fillers would not affect overall travel time savings.

Travel times

Issue

The time savings stated in the Submissions and Preferred Infrastructure Report (and Environmental Impact Statement) only considered destinations on the new metro line such as Central and Macquarie University. Less than half of all passengers from Bankstown travel to these destinations so the time savings do not represent the impacts to the majority of passengers.

The need to change trains for these destinations such as Redfern (University of Sydney), Circular Quay, Erskineville, St Peters as well as west to Yagoona, Birrong, Sefton, Chester Hill, Leightonfield, Villawood, Carramar, Cabramatta and Liverpool, means the proposed concept will likely have a negative impact on travel times for a significant proportion of the Bankstown line passengers compared to the current service. Council recommends travel times for the proposed project from Bankstown and stations west of Bankstown to Redfern, Circular Quay and Erskineville be clarified and mitigated.

Response

Refer to Section 2.6.1 of this report.

Section 11.4.2 (Traffic and transport – changes to station servicing arrangements) of the Environmental Impact Statement acknowledged that the introduction of Sydney Metro would result in some changes to station servicing arrangements and travel patterns along the T3 Bankstown Line.

Customers travelling to the CBD from stations between Bankstown and Sydenham would be able to travel directly to the city on Sydney Metro. Sydney Metro would deliver direct access to the city via new stations at Martin Place, Pitt Street and Barangaroo, better connecting customers to Sydney's employment, financial and retail districts. Customers would continue to access the City Circle by interchanging to Sydney Trains services at either Sydenham Station or Central Station or by the walking connections identified in Section 2.6.1 of this report.

Customers travelling between Bankstown and Sydenham to Erskineville, St Peters and Redfern could interchange at Sydenham Station. These stations would continue to be served by Sydney Trains services. Customer demand levels at these stations would be taken into account when new train timetables are being designed over the coming years.

Further, Figure 5.1 (Overview of the project's effect on the City Circle) of the Environmental Impact Statement states that the service levels for Sydney Trains west of Bankstown is determined and managed by Sydney Trains. However, the project is expected to result in more capacity on the T2 line as a result of the removal of the bottleneck caused by the existing T3 Bankstown Line.

It is however noted that the benefits of the existing Sydney Trains express services are only experienced by customers at Bankstown, Lakemba, Campsie and Marrickville stations. The frequency of this service (i.e. every half hour) also means that metro is considered a more favourable service, as it would provide the same travel times as the express service, but would operate more frequently.

Seating

Issue

The metro trains have greatly reduced seating capacity compared to the current trains with only 35 per cent of passengers seated compared to 65 per cent on the current trains. While this may be acceptable for short journeys within dense CBDs, a large proportion of Sydney Metro passengers will be taking 20-40 minute journeys across Greater Sydney. The proposed concept will therefore have a negative impact on travel comfort by forcing more passengers to stand for relatively long journeys.

Response

This issue was addressed in Section 5.3 (Project need and justification) of the Submissions and Preferred Infrastructure Report.

7.10.8 Traffic, transport and access

Temporary Transport Strategy approach

Issue

Metro Southwest will impact more than three times as many passengers for a longer period of time than Metro Northwest. There is no indication how the various stations and surrounding streets will cope with the extra bus services, particularly as some bus stations and layovers already operate near capacity. Similarly there is no indication how the T2 Inner West and Leppington Line and T8 Airport and South Line to which passengers may be transferred to will accommodate the extra load given these are also at capacity during peak times.

Overall, Council is seriously concerned about the ability of Sydney Metro to adequately mitigate impacts to bus and rail passengers during construction as well the impacts to businesses from reduced employee and customer accessibility during construction. Council recommends preparation of a Temporary Transport Plan to detail how the extra buses and extra rail passengers on T2 and T8 Lines will be adequately accommodated and clarify the expected travel time impacts for passengers on these alternative routes.

Response

Sections 5.8.3 (Alternative transport arrangements) and Section 7.11.8 (Traffic, transport and access) of the Submissions and Preferred Infrastructure Report addressed the Temporary Transport Strategy and associated plans.

The possession periods for the preferred project would result in a significant reduction in the construction traffic impacts when compared to the possessions assessed for the exhibited project.

7.10.9 Submissions and Preferred Infrastructure Report consultation

Consultation

Issue

The four week consultation period for the Submissions and Preferred Infrastructure Report is insufficient. Council is disappointed their request for a 4 week extension of the consultation period for Council and the community, as well as additional consultation sessions, was rejected.

Response

The minimum public exhibition period for State significant infrastructure Environmental Impact Statement is 28 days, as per Schedule 1 of the EP&A Act. The Environmental Impact Statement was placed on public exhibition for a period of 57 days to allow additional time for community feedback.

Following the Environmental Impact Statement exhibition, Sydney Metro developed a design solution that enables the retention of existing station entrances, heritage buildings and concourses, but enables upgrades that provide accessible stations.

The Submissions and Preferred Infrastructure Report addressed submissions received in accordance with the requirements for State significant infrastructure under Division 5.2 (formerly Part 5.1) and, more specifically, section 5.17 (6) (formerly section 115Z(6)) of the EP&A Act. Section 5.17(6) of the EP&A Act specifies that:

'The Secretary may require the proponent to submit to the Secretary:

a) a response to the issues raised in those submissions, and

b) a preferred infrastructure report that outlines any proposed changes to the State significant infrastructure to minimise its environmental impact or to deal with any other issue raised during the assessment of the application concerned.'

In addition section 5.17(7) states:

If the Planning Secretary considers that significant changes are proposed to the nature of the State significant infrastructure, the Planning Secretary may make the preferred infrastructure report available to the public.

Following consultation with the Department of Planning and Environment, it was agreed that the Submissions and Preferred Infrastructure Report should not only be made available to the public, but that the Submissions and Preferred Infrastructure Report should also be placed on public exhibition to provide the opportunity for comment on the preferred project. It is noted that there is no statutory requirement to place the Submissions and Preferred Infrastructure Report on exhibition or guidance on the required timeframe and process. Accordingly, a 28 day period was adopted to provide the opportunity for comment on the changes to the project (the preferred project).

Council was provided an extension to the exhibition period by the Department of Planning and Environment from the 20 June – 27July (instead of the 18 July). The Department of Planning and Environment did not provide the requested four week extension to the exhibition period.

Sydney Metro would continue to engage closely with stakeholders and affected properties, owners, and occupiers, through all stages of design, planning, and construction.

7.10.10 Hurlstone Park Station

Station building

Issue

The preferred project excludes station building upgrades, which is currently extremely poor condition with inadequate amenity, weather protection, seating and landscape.

Response

The preferred project does not exclude upgrades to the station at Hurlstone Park.

The design of the preferred project has avoided the need to remove heritage buildings and structures. The existing heritage listed overhead booking office and heritage buildings on platforms 1 and 2 would now be retained and repurposed. Sydney Metro has ensured that retained heritage elements have a suitable station or operational purpose, and that their retention does not compromise the integrity of the station design and layout, or safety and customer requirements. The existing station entrance would be retained and upgraded and new lifts and stairs installed.

The detailed design process involves preparing a Station Design and Precinct Plan for Hurlstone Park Station in accordance with mitigation measure LV3. This plan would present an integrated urban and place-making outcome and would:

- be prepared in consultation with relevant stakeholders including the Canterbury-Bankstown Council
- be reviewed by the Design Review Panel.

The plan would consider the following:

- urban design context
- sustainable design and maintenance
- community safety, amenity and privacy, including ‘safer by design’ principles where relevant
- opportunities for public art
- landscaping and design opportunities to mitigate the visual impacts of rail infrastructure and operation facilities
- incorporation of salvaged historic and artistic elements on the project design
- details of where and how recommendations from the Design Review Panel have been considered in the plan.

7.10.11 Canterbury Station

Station entrances

Issue

The Canterbury Station design:

- excludes upgrades to the station frontage to Canterbury Road which is in need of renovation
- excludes the future station entry from Charles Street. This area has been developed and is not able to be delivered as part of private development
- excludes the station connection north to Broughton Street, which is required to service population growth expected as part of the redevelopment of Canterbury Racecourse.

Response

The preferred project does not exclude upgrades to the station frontage to Canterbury Road or a future station entry from Charles Street.

Sydney Metro has developed a design solution that enables the retention of existing station entrances, heritage buildings and concourses, but still enables upgrades that provide accessible stations. The preferred project retains and upgrades the existing entrance to Canterbury Station. The existing heritage station entry building on Canterbury Road would be retained and there would be works at the station entry to construct a new ramp and remove brick walls to improve station access and legibility. There would be two new lift shafts constructed at the station entry building and the existing stairs would be replaced. Overall, this would result in a noticeable improvement in the landscape quality and functioning of this precinct.

A future Charles Street entrance is currently safeguarded in the design. As such, the design does not preclude future upgrades to infrastructure which may be required to cater for future population or development requirements. These would be subject to separate approvals processes.

The preferred project safeguards additional corridor crossings for future consideration when future master planning of the areas around the rail corridor are completed and associated development is being realised, such as a connection to Broughton Street.

7.10.12 Campsie Station

Planning for Campsie Station's role as a strategic centre

Issue

Campsie is identified in the *Greater Sydney Region Plan* and *South District Plan* as a Strategic Centre. The proposed design for Campsie Station is inadequate for a Strategic Centre.

The Sydney Metro has the potential to become a catalyst for the realisation of Campsie as a genuine strategic centre by providing a quality place outcome at the centre of Campsie, enhancing amenity and driving renewal, investment and employment growth in the centre.

Unfortunately the strategic role of Campsie is not recognised in the Submissions and Preferred Infrastructure Report and the proposed project excludes all station and precinct upgrades.

Response

The preferred project does not exclude all station and precinct upgrades.

Sydney Metro recognises Campsie's strategic role as identified in the *South District Plan* as a strategic centre. It would continue to work with relevant agencies to integrate station designs with the urban renewal planning process and to determine funding priorities and sources for public domain works that are outside the scope of this project. However, in general, the focus of the preferred project would be on meeting customer needs and the operational requirements of Sydney Metro.

An additional mitigation measure (LU3) has been included in Appendix C of this report which commits to the following:

Sydney Metro would establish a working group with Canterbury-Bankstown Council to investigate improved precinct outcomes in the vicinity of Campsie Station.

The design principles identified by council would be considered by the working group.

Working group

Issue

Sydney Metro has verbally agreed to establish a Working Group with Council to improve the design of Campsie Station. The terms of reference for the working group are unclear given the lack of scope in the Submissions and Preferred Infrastructure Report for station and precinct works, and the relationship between the Working Group and the Design Review Panel is unclear.

The Working Group should be established with clear terms of reference to improve the design of Campsie Station and precinct to meet the future needs of this Strategic Centre in accordance with Better Placed and the Secretary's environmental assessment requirements no. 14, and include consideration to larger public spaces and over station development.

Response

Sydney Metro is not proposing any over station developments or larger public spaces as part of the project. The primary objectives of the project are to:

- improve the quality of the transport experience
- provide a system that is able to satisfy long-term demand
- improve the resilience of the transport network.

However, Sydney Metro has, and would continue, to work with relevant agencies to integrate station designs with the urban renewal planning process and to determine funding priorities and sources for public domain works that are outside the scope of this project.

An additional mitigation measure (LU3) has been included in Appendix C of this report which commits to the following:

Sydney Metro would establish a working group with Canterbury-Bankstown Council to investigate improved precinct outcomes in the vicinity of Campsie Station.

The working group would specifically address Campsie Station in terms of the relationship between the station and surrounding station precinct and also look at exploring opportunities for practical improvements in this area.

The design principles identified by Council would be considered by the working group.

Station design

Issue

Recommended design principles for the design of Campsie Station include:

- station design to apply the design excellence used in City and Northwest metro stations and comply with the Better Placed design policy
- station to provide a suitable sized high amenity public plaza and high quality landscape and architectural design that includes new pavements, landscaping, lighting and furniture

- future design of adjoining streets to be considered in the design of station interface, particularly Lilian Lane which may require widening to accommodate all modes of transport
- provide active frontages to surrounding high pedestrian activity streets and development of surplus rail land and over station development to permitted heights
- include an additional pedestrian concourse at western end of platform
- provide a high level all weather cover from the station to all interchanges (bus, taxi, kiss n ride, bike)
- provide ample bike parking at station interface
- the design does not propose to upgrade the frontages to Beamish Street despite its ageing appearance.

Response

The preferred project has been developed considering the principles in the *Better Placed* policy (NSW Government, 2017), with similar priority placed on achieving good design, and high quality outcomes for people, places, and the natural environment.

The detailed design of the stations would be informed by the document *Around the Tracks: urban design for heavy and light rail* (Transport for NSW, 2016). This guideline recognises the role of stations as important infrastructure for local communities and the transport system as a whole.

As required by mitigation measure LV3, a Station Design and Precinct Plan would be prepared for Campsie Station, in consultation with relevant stakeholders including Canterbury-Bankstown Council. The plan would aim to present an integrated urban and place-making outcome for Campsie Station, identify specific design objectives and principles based on the local context, and maximise the amenity of public spaces and permeability around station entrances. The need for additional pavements, landscaping, lighting and furniture within the precinct would be considered during detailed design as part of preparation of the Station Design and Precinct Plan for the station.

The Sydney Metro Design Review Panel would continue to be consulted during development of the detailed design for the project. The Design Review Panel would also refine the design objectives for place-making and public realm and provide advice on the application of the objectives to key design elements. The Design Review Panel is chaired by the NSW Government Architect and it is expected that the refined design objectives would be consistent with the *Better Placed* policy (NSW Government, 2017).

As outlined above, an additional mitigation measure (LU3) has been included in Appendix C of this report which commits to the following:

Sydney Metro would establish a working group with Canterbury-Bankstown Council to investigate improved precinct outcomes in the vicinity of Campsie Station.

The design principles identified by council would be considered by the working group.

Sydney Metro has developed a design solution that enables the retention of existing station entrances and the preferred project no longer includes the provision of new retail spaces on Beamish Street and North Parade. The station would retain its existing active frontage to Beamish Street. Development of surplus rail land and over station development does not form part of the scope of the preferred project.

No additional pedestrian connection is proposed as part of the preferred project. However, the design does not preclude the future delivery of an additional concourse along the alignment of Dewar Street to connect to Anzac Square. The delivery of this concourse could be considered during any future planning for the development of adjacent sites, such as the Campsie RSL.

Sydney Metro has developed a design solution that enables the retention of the existing station entrance and infrastructure. No additional weather protection is proposed outside of the station entry. Existing weather protection features would be retained as part of the preferred project.

Additional bike parking would be provided on North Parade, and the existing bike parking would be retained on Beamish Street. As committed to through mitigation measure TO3, Sydney Metro would develop a Walking and Cycling Strategy to encourage active transport to the station precincts.

7.10.13 Belmore Station

Station design

Issue

The Belmore Station design excludes upgrades to the station that is limited in space and quality.

Response

The preferred project does not exclude the upgrade of Belmore Station.

Sydney Metro has developed a design solution that has avoided the need to remove any heritage buildings or structures. Instead heritage buildings would be retained and repurposed.

The existing station entrance would be retained and upgraded. This would retain the station entry on Burwood Road, which would support the local centre.

No new concourse is proposed as part of the preferred project.

7.10.14 Lakemba Station

Safe pedestrian access

Issue

The Lakemba Station design excludes upgrade to the footpath on the Haldon Street overbridge which is too narrow for safe pedestrian use.

Response

The upgrade to the footpath on the Haldon Street overbridge is outside the scope of the preferred project. The current station concourse at Lakemba provides a cross corridor connection.

The preferred project would include development of an Interchange Access Plan to inform the final design of transport and access facilities and services, including footpaths, cyclist and passenger facilities, parking, traffic and road changes, and integration of transport initiatives around and at each station.

Upgrade to plaza

Issue

The Lakemba Station design excludes upgrades to the plaza fronting Railway Parade which is in poor condition.

Response

The preferred project would retain the existing entrance fronting Railway Parade. As Lakemba Station has been subject to relatively recent upgrade works, the preferred project has integrated these works as far as possible. The station entrance would be upgraded to provide additional bike parking and kerbside facilities.

7.10.15 Wiley Park Station

Station and entrance

Issue

The Wiley Park Station design excludes upgrades to the plaza fronting King Georges Road which is in poor condition.

The project removes a retail building without replacement, leaving an unsightly anti-throw screens at the station entry.

Response

The preferred project does not exclude the upgrade to the King Georges Road frontage of Wiley Park Station.

The existing heritage listed overhead booking office, concourse and platform buildings would be retained and repurposed and the existing station entrance would be retained and upgraded.

The existing retail shop and a disused premises at the station entrance would be demolished and the station entrance would be upgraded to provide a more open and pleasing entrance to the station from King Georges Road. New facilities would include:

- existing pedestrian pathways surrounding the station would be upgraded
- new bike parking would be provided on The Boulevarde and at the station entrance
- new kerbside facilities and accessible parking would be provided on The Boulevarde, east of King Georges Road.

Opportunities for the development of retail at the new station entrance would be investigated during detailed design.

Safety

Issue

The Wiley Park Station design excludes upgrades to the pedestrian lane along the north side of station which presents a safety issue.

Response

This issue is not correct.

The preferred project would include upgrading the existing laneway between King Georges Road and Stanlea Parade/Shadforth Street. Works would also include upgrades to lighting, CCTV, paving and the provision of landscaping.

7.10.16 Punchbowl Station

Public safety

Issue

The Punchbowl Station design excludes the embellishment of Warren Reserve which could impact safety of the northern station entry in terms of sightlines, activity, lighting and connectivity.

Response

A new concourse, lift and stairs would be provided to connect the station to Warren Reserve. The design of this entrance would include lighting and improved connectivity and would be undertaken in accordance with CPTED principles to ensure passive surveillance requirements are met.

Upgrade to southern public domain

Issue

The Punchbowl Station design excludes upgrade of the public domain between the southern entry and The Boulevarde which offers poor amenity.

Response

The preferred project would improve legibility and accessibility to the station access on The Boulevarde as a new lift, footbridge and stairs are being provided at the station as well as kerbside facilities. New bike parking would also be provided on the southern side of the station.

Punchbowl Road underpass

Issue

The preferred project excludes upgrade of the underpass under Punchbowl Road which poses a safety issue.

Response

This issue is not correct.

The existing underpass below Punchbowl Road would be retained and upgraded, including provision of lighting and CCTV, as part of the preferred project.

Station and concourse design

Issue

The preferred project excludes station upgrades, which is limited in space and quality.

Response

The preferred project does not exclude station upgrades at Punchbowl.

The preferred project would involve upgrading the station including the existing entrances fronting The Boulevarde and Warren Reserve, including new lifts and stairs requiring extension of the existing concourse footbridge. Lifts to the station entrances and platforms would be provided for the first time at Punchbowl.

7.10.17 Bankstown Station

Planning for Bankstown Station's role as a strategic centre

Issue

The proposed design for Bankstown Station is extremely inadequate for a Strategic Centre and for a Health and Education Precinct. Council does not support any aspect of the current design for Bankstown.

The Sydney Metro will be an important component and catalyst for Bankstown's transformation and emergence as a key strategic centre. In the context of the future planning and transport strategies it is clear that a visionary approach to the CBD heart – the rail station – is necessary.

In 2017 Council put forward a vision for an underground station that would transform the CBD, provide a new town square in the heart, permeable street network and new development sites to support the growth envisaged and attract investment in the centre.

While requiring higher upfront cost, an underground station would enable new public spaces and street connections, new development and greater activity amenity and vitality in the CBD – that is it would deliver the vision for the strategic centre in the Government's spatial and transport plans.

Council also offered an alternative above-ground station design as a potential short term strategy that delivered many of the outcomes desired: direct connectivity across the station, new public space and development of surplus land to create a truly integrated CBD station.

In the Environmental Impact Statement, and now the Submissions and Preferred Infrastructure Report, Sydney Metro has applied the same 'do least' approach as the small suburban stations and has completely ignored the government's future plans and Council's vision for Bankstown.

Bankstown is embarking on a transformational period to become a major centre which coincides with a rare opportunity to replace the 100 year old train station to suit Bankstown's next 100 years. It would be short sighted, illogical and wasteful to not take advantage of this opportunity to coordinate planning and transport decisions to achieve the government's stated vision for the centre.

Response

The undergrounding of Bankstown Station was discussed in Section 7.11.2 (Alternatives to the project) of the Submissions and Preferred Infrastructure report.

The design for the proposed upgrade of Bankstown Station would continue to take into account the station's role as a major regional interchange, providing connections between Sydney Trains services, Sydney Metro services, and the large number of bus routes that terminate at the station.

Sydney Metro would continue to work with the Department of Planning and Environment and Council during the detailed design process to ensure that the design for Bankstown Station is integrated with the urban renewal process and the role of the centre. To this end, Sydney Metro, together with Department of Planning and Environment, Canterbury-Bankstown Council and Greater Sydney Commission, have made a joint undertaking to develop a master plan for the Bankstown town centre. This exercise would identify how Bankstown Station, including the opportunity to underground the station if that is consistent with the future urban renewal plans, would fit within the town centre and in the longer term context.

Mitigation measure LU2 commits Sydney Metro to work with the Department of Planning and Environment, Greater Sydney Commission, Canterbury-Bankstown Council, and other key stakeholders to plan for the strategic transformation of the Bankstown CBD, including an investigation into the long-term development and viability of an underground station configuration.

The Station Design and Precinct Plan for Bankstown Station, as required by mitigation measure LV3, would be prepared in consultation with Council. The plan would aim to present an integrated urban and place-making outcome for the station, identify specific design objectives and principles based on the local context, and maximise the amenity of the station.

Bankstown Strategic Framework

Issue

Sydney Metro has confirmed they will lead a collaboration between Sydney Metro, the Department of Planning and Environment, Council, Greater Sydney Commission and the Government Architect to develop a long term Bankstown Strategic Framework. However there is no scope, timing or funding for this project. It is unclear what, if any, impact the long term Strategic Framework will have on the short term metro station design and it is unclear how the project will integrate with the Greater Sydney Commission's Bankstown Collaboration Area.

Response

The Greater Sydney Commission has nominated Bankstown CBD as a Collaboration Area in the period 2018/2019. The Commission has chosen Collaboration Areas because of their potential to grow into centres of increased productivity and innovation, attract knowledge intensive jobs, creative industries, leading edge researchers, and create unique places for people. Membership includes a diverse range of stakeholders, relevant to the specific place and issues involved. The core membership typically comprises the relevant council, key agencies including Sydney Metro, Health Infrastructure, Local Health District, Department of Education and tertiary education institutions. Each Collaboration Area will produce a Place Strategy that establishes a vision for the Collaboration Area, identifies impediments and opportunities, sets priorities for the Collaboration Area, and identifies projects and initiatives to deliver the vision. The Place Strategy is prepared by the Commission in collaboration with key stakeholders, and is reported to the Commission's Infrastructure Delivery Committee (IDC) for endorsement.

Sydney Metro would actively participate in the Collaboration Area planning process.

In recognition of Bankstown's role as a health and education precinct as identified in the *South District Plan* (Greater Sydney Commission, 2018b), Sydney Metro, together with key stakeholders would develop a master plan for the Bankstown town centre (refer to mitigation measure LU2). This exercise would identify how Bankstown Station, including the opportunity to underground the station, would fit within the town centre and in the longer term context.

Establish a Working Group

Issue

While we welcome long term planning for Bankstown, it is a greater priority to establish a Working Group with Council with clear terms of reference to urgently redesign Bankstown Station to a standard suitable for a major centre that is consistent with Better Placed; the Secretary's environmental assessment requirements no. 14; the regional, district and transport plans; and key matters raised by Council.

Response

Sydney Metro would continue to work with relevant agencies to integrate station designs with the land use and to determine funding priorities and sources for public domain works that are outside the scope of this project.

Sydney Metro would continue to work with Canterbury-Bankstown Council where there are opportunities for better design outcomes. This would be considered as part of the commitment to work with Council on the Bankstown master plan.

Station domain

Issue

The project will result in poor station access, lack of integration with the centre, poor safety in the isolated pedestrian area, lack of design excellence, inefficient use of land around station, lack of amenity and active interfaces and a lack of quality public space.

Response

This issue was addressed in Section 7.11.25 (Bankstown Station) of the Submissions and Preferred Infrastructure Report.

Master planning for the Bankstown Station precinct is currently underway. Mitigation measure LU2 (refer to Appendix C of this report) commits Sydney Metro to working with the Department of Planning and Environment, Canterbury-Bankstown Council, and other key stakeholders to plan for the strategic transformation of the Bankstown CBD.

The preferred project would include development of a Walking and Cycling Strategy to encourage active transport into the station precinct. Active transport routes may include pedestrian footpath upgrades, separated cycleways, shared footpaths and designated pedestrian and cyclist road crossings.

The final design for the transport and access facilities and services at Bankstown Station would also be informed by an Interchange Access Plan. The plan would consider the station access hierarchy to provide safe, convenient, efficient and sufficient access to the station and transfer between transport modes. In addition, the detailed design process involves preparing a Station Design and Precinct Plan, in accordance with mitigation measure LV3. This plan would present an integrated urban and place-making outcome for Bankstown Station, and would: consider the following:

- urban design context
- sustainable design and maintenance
- community safety, amenity and privacy, including ‘safer by design’ principles where relevant
- opportunities for public art
- landscaping and design opportunities to mitigate the visual impacts of rail infrastructure and operation facilities
- incorporation of salvaged historic and artistic elements on the project design
- details of where and how recommendations from the Sydney Metro Design Review Panel have been considered in the plan.

Connectivity and station access

Issue

The concept simply adds the new metro platform onto the end of the existing Sydney Trains platforms. This will create two separate stations and result in a 400 metre long 'wall of trains' through the centre of an emerging health and education precinct.

The main station access from the south is hidden between a disused heritage building and a bus layover area (not a bus interchange) where the parked buses will obstruct the view to the station entry. Station access on the north side is a convoluted ramp through a high flood risk area.

Metro will retain the existing toilet blocks on both sides of the station as the main gateways into this urban centre.

Response

This issue was addressed in Section 7.11.25 (Bankstown Station) of the Submissions and Preferred Infrastructure Report.

Key station principles

Issue

The following key principles would need to be considered in an integrated station redesign whether underground or above:

- station design to apply the design excellence used in City and Northwest metro stations and comply with the better placed design policy
- station designed to create a high amenity CBD core with a new key civic space and high quality landscape and architectural design that includes new pavements, landscaping, lighting and furniture
- station integrated with CBD built form and appropriately sized development sites on surplus rail land to accommodate buildings in accordance with height controls
- provide a direct at grade pedestrian link from the Appian Way to Restwell Street, a minimum of 22 metres wide to match street reserve widths and embellished as a key urban plaza
- provide an active frontage to pedestrian link and all high pedestrian streets with new commercial/ retail and well defined urban spaces
- remove bus layover and off-street parking from the station interface
- consolidate amenities such as toilets and other infrastructure into new integrated station facilities that are not isolated or dominant in the public domain
- retention and adaptive reuse of the heritage listed parcel office
- provide a high level of weather cover for the station to the interface
- provide ample bike parking at station interface.

Response

Master planning for the Bankstown Station precinct is currently underway. Mitigation measure LU2 commits Sydney Metro to working with the Department of Planning and Environment, Canterbury-Bankstown Council, and other key stakeholders to plan for the strategic transformation of the Bankstown CBD.

The principles listed above would form part of the Canterbury-Bankstown Council input to the planning process for the station part of the working group.

The Bankstown master planning work is focussed on the strategic vision of the station and CBD but would also include identification of short-term precinct improvements.

Sydney Metro would continue to work with Council where there are opportunities for better design outcomes.

8. Synthesis of findings

This Submissions Report had been prepared to support Sydney Metro's application for approval of the preferred project as critical State significant infrastructure, in accordance with the requirements of Division 5.2 (formerly Part 5.1) of the EP&A Act.

This section provides a synthesis of the findings of the Submissions Report.

8.1 Response to issues raised

8.1.1 Key issues raised

During the exhibition of the Submissions and Preferred Infrastructure Report, submissions were invited from the community and other stakeholders. 401 submissions were received from 400 submitters (one submitter provided two submissions) and registered by the Department of Planning and Environment. 390 submissions were received from members of the community and 11 from government agencies (including local councils) and key stakeholders.

Of the key issues raised in the community submissions regarding the preferred project, the top three most frequently raised issues were:

- stakeholder and community consultation, including the adequacy of the consultation period
- project description – design features, including issues regarding the station designs and the loss of the active transport corridor
- construction traffic, transport and access, including issues regarding the impacts during weekend and final rail possessions and station closures.

Key issues raised by government agencies and key stakeholders included:

- removal of the active transport corridor
- hydrology, flooding and stormwater drainage
- the need for ongoing consultation with regards to station designs.

8.1.2 Response

The purpose of the Submissions and Preferred Infrastructure Report exhibition was to keep the community fully informed of differences between the preferred project and the previously exhibited project, and provide people with an opportunity to respond to the preferred project presented in the Submissions and Preferred Infrastructure Report.

Issues that had been raised previously and addressed in the Submissions and Preferred Infrastructure Report, were not addressed again in this report. These issues generally related to Sydney Metro as a whole, or issues that were relevant to the exhibited project presented in the Environmental Impact Statement. For issues that had been previously addressed, references to the relevant sections of the Submissions and Preferred Infrastructure Report have been provided in Appendix A of this report.

Chapters 5 to 7 of this Submissions Report provides responses to each issue raised by the community, government agencies and key stakeholders, relevant to the preferred project described in the Submissions and Preferred Infrastructure Report.

8.2 Overview of the preferred project

The preferred project involves upgrading 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13 kilometre section of the T3 Bankstown Line, between west of Sydenham Station and west of Bankstown Station, to improve accessibility for customers and to meet the standards required for metro operations. The preferred project would enable Sydney Metro to operate beyond Sydenham, to Bankstown.

A summary of the key features, construction and operation of the preferred project is provided in Section 2 of this report and a full description of the preferred project is provided in Appendix B of this report.

The preferred project description provided in Appendix B of this report is essentially the same as that presented in Appendix B (Preferred project description) of the Submissions and Preferred Infrastructure Report, with the exception of a minor change to the text to clarify the scope of the preferred project as it applies to the temporary transport plans (Section 2.11.1 of Appendix B). Further information regarding this is provided in Section 2.6.3 of this report.

As described in Section 17.3 (Uncertainties of preferred project and approach to design refinements) of the Submissions and Preferred Infrastructure Report, there remain some uncertainties relating to technical requirements and how the preferred project would be constructed. A summary of these uncertainties was provided in Table 17.1 (Project uncertainties) of the Submissions and Preferred Infrastructure Report. These would be resolved as the design progresses, and the design of the preferred project would be subject to ongoing refinements during the detailed design phase.

8.3 Performance outcomes

8.3.1 Project consistency

As described in Section 17.6.1 (Project consistency) of the Submissions and Preferred Infrastructure Report, the preferred project is consistent with:

- the NSW strategic transport policy and strategic planning and policy documents discussed in the State Significant Infrastructure Application Report
- the aims and objectives of the exhibited project as specified in Section 1.2.4 (Project objectives and aims) of the Environmental Impact Statement
- the project benefits identified in the State Significant Infrastructure Application Report and the Environmental Impact Statement
- the key project elements identified for the exhibited project in Section 1.2.1 (The project) of the Environmental Impact Statement.

8.3.2 Environmental and social performance

The Secretary's environmental assessment requirements identified a number of desired performance outcomes for the preferred project.

These outcomes were reviewed in Section 17.6.2 (Environmental and social performance) of the Submissions and Preferred Infrastructure Report, based on the design clarifications, additional assessment, submissions received on the exhibited project (where relevant) and the preferred project. The consolidated preferred project environmental performance outcomes were listed in Table 17.4 (Compilation of preferred project environmental performance) of the Submissions and Preferred Infrastructure Report. The project specific environmental performance outcomes have not changed from those presented in the Submissions and Preferred Infrastructure Report.

8.4 Preferred project justification

The preferred project justification was described in Section 17.7 (Preferred project justification) of the Submissions and Preferred Infrastructure Report. A review was undertaken of the preferred project justification presented in the Submissions and the Preferred Infrastructure Report, based on the submissions received on the preferred project. The outcome of this review is summarised in Table 8.1.

Table 8.1 Summary of preferred project justification

Issue	Consistency with the Submissions and Preferred Infrastructure Report
Preferred project need	The preferred project need is consistent with that described in Section 17.7.1 of the Submissions and Preferred Infrastructure Report.
Preferred project benefits	The preferred project benefits are consistent with that described in Section 17.7.2 of the Submissions and Preferred Infrastructure Report.
Consequence of not proceeding	The consequence of not proceeding with the preferred project remains as described in Section 17.7.3 of the Submissions and Preferred Infrastructure Report.
Environmental considerations	The environmental considerations are as described in Section 17.7.4 of the Submissions and Preferred Infrastructure Report with the exception that the list of mitigation measures presented in Chapter 16 (Revised mitigation measures and performance outcomes) of the Submissions and Preferred Infrastructure Report has been updated with consideration given to the submissions received on the preferred project. Some new measures have been added, and the wording of some existing measures has been adjusted. Appendix C of this report shows the updated list of revised environmental mitigation measures for the preferred project.
Ecologically sustainable development	The assessment of the preferred project against the principles of ecologically sustainable development remains unchanged from that described in Section 17.7.5 of the Submissions and Preferred Infrastructure Report.

8.5 Conclusion

To address a number of issues raised in submissions during exhibition of the Environmental Impact Statement, Sydney Metro developed a design solution that enables the retention of existing station entrances, heritage buildings and concourses and enables upgrades that provide accessible stations, delivering a world class metro (the preferred project).

The preferred project was described in the Submissions and Preferred Infrastructure Report, which was exhibited to provide the community, government agencies and key stakeholders with an opportunity to respond to the preferred project. Submissions regarding the preferred project have been considered in this report.

Based on issues raised specific to the preferred project, some of the mitigation measures presented in the Submissions and Preferred Infrastructure Report have been updated and some new mitigation measures have been added. In response to of some of the submissions received on the Submissions and Preferred Infrastructure Report, clarifications were also provided around the following issues:

- connections to the city once Sydney Metro is operational
- the scope of the preferred project as it applies to the temporary transport arrangements (also revised in the preferred project description)
- investigations regarding the provision of active transport connections.

With the exception of the changes noted above, the submissions specific to the preferred project have not resulted in changes to the preferred project from that described in the Submissions and Preferred Infrastructure Report. The preferred project for which approval is sought, is presented in Appendix B of this report.

To manage the potential impacts identified by the Submissions and Preferred Infrastructure Report and in response to submissions received regarding the preferred project, Appendix C of this report provides the revised management and mitigation measures that would be implemented during construction and operation. The preferred project's environmental performance would be managed in accordance with the approach described in Section 17.4 (Approach to environmental management) of the Submissions and Preferred Infrastructure Report. This includes implementing the Construction Environmental Management Framework, Construction Environmental Management Plan, Construction Noise and Vibration Strategy, Temporary Transport Strategy, Utilities Management Framework, and the Operational Environmental Management Plan. These plans would also ensure compliance with relevant legislation and any conditions of approval.

With the implementation of the proposed management and mitigation measures, potential environmental impacts of the preferred project are considered manageable.

9. Reference list, definitions and abbreviations

9.1 Reference list

Canterbury City Council, 2012, *Local Environmental Plan*

DECCW, 2011, *NSW Road Noise Policy*, March 2011

Department of Planning and Environment, 2014, *A Plan for Growing Sydney,* December 2014

Department of Planning and Environment, 2017, Revised *Draft Sydenham to Bankstown Urban Renewal Corridor Strategy*, October 2017

Department of Planning and Environment, 2017, *Draft Environmental Impact Assessment Guidance Series, Responding to Submissions*

EPA/DECC, 2009, *Interim Construction Noise Guideline* July 2009

EPA, 2013, *Rail Infrastructure Noise Guideline* (the RING), May 2013

Greater Sydney Commission, 2018a, *Greater Sydney Region Plan,* March 2018

Greater Sydney Commission, 2018b, *South District Plan,* March 2018

Heritage Council of NSW, 2011, *Excavation Director Criteria*

NSW Government, 2016c, *Sydney Metro City & Southwest, Final Business Case Summary*, October 2016

NSW Government, 2017, *Better Placed policy*

Sydney Metro, 2017a, *Sydney Metro City & Southwest Construction Environmental Management Framework*

Sydney Metro, 2017b, *Sydney Metro City & Southwest Construction Noise and Vibration Strategy*

Sydney Metro, 2018 *Sydenham to Bankstown Preferred Infrastructure Report Overview*

Transport for NSW, 2012a, *Sydney's Rail Future - Modernising Sydney's Trains*, June 2012

Transport for NSW, 2012b, *NSW Long Term Transport Master Plan*, December 2012

Transport for NSW, 2016a, *Sydney Metro City & Southwest Chatswood to Sydenham Environmental Impact Statement*, May 2016

Transport for NSW, 2016, *Around the Tracks, urban design for heavy and light rail,* interim issue, December 2016

Transport for NSW, 2018a, *Future Transport Strategy 2056*, March 2018

Transport for NSW, 2018b, *Greater Sydney Services and Infrastructure Plan*, March 2018

9.2 Abbreviations

Abbreviation	Definition
%	per cent
ANZECC	Australian and New Zealand Environment and Conservation Council
AARD	Archaeological Assessment Research Design Report
AMS	Archaeological Method Statement
ARTC	Australian Rail Track Corporation
AS	Australian Standard
AWMS	Archaeological Work Method Statements
BS	British Standard
CBD	central business district
CCTV	closed circuit television
CPTED	Crime Prevention through Environmental Design
CVP	Community Voice Panel
CEMP	construction environmental management plan
dB	Decibel (A-weighted)
DDA	*Disability Discrimination Act 1992*
DEC	NSW Department of Environment and Conservation
DECC	Department of Environment and Climate Change
DECCW	Department of Environment, Climate Change and Water
DIPNR	NSW Department of Infrastructure, Planning and Natural Resources
DPI	Department of Primary Industries
DSAPT	*Disability Standards for Accessible Public Transport 2002*
ED	Historical Archaeological Excavation Directors
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
ESD	ecologically sustainable development
HCAs	heritage conservation areas
IDC	Greater Sydney Commission's Infrastructure Delivery Committee
ICNG	*Interim Construction Noise Guideline*
Infrastructure SEPP	*State Environmental Planning Policy (Infrastructure) 2007*
km	kilometres
km/hr	kilometres per hour
LEP	local environmental plan
LGA	local government area
m	metres
m/s	metres per second
NCA	noise catchment areas
NSW	New South Wales
OEH	Office of Environment and Heritage

Abbreviation	Definition
PMF	probable maximum flood
POEO Act	*Protection of the Environment Operations Act 1974*
PTPM	Sydney Metro's Public Transport Project Model
RBL	rating background level
RING	*Rail Infrastructure Noise Guideline*
RNP	*Road Noise Policy 2011*
Roads and Maritime / RMS	Roads and Maritime Services
SEPP	State environmental planning policy
State and Regional Development SEPP	*State Environmental Planning Policy (State and Regional Development) 2011*
SHR	State Heritage Register

9.3 Definitions

Term	Definition
100-year flood	A 100-year flood is the flood that will occur or be exceeded on average once every 100 years. It has a one per cent probability of occurring in any given year. The same principle applies to other flooding events, such as the 10-year, 20-year and 50-year floods.
Accessibility	A public transport customer's ability to reach their destination unhindered and as independently as possible. Includes compliance with relevant disability standards such as the *Disability Discrimination Act 1992* and the *Disability Standards for Accessible Public Transport 2002*. Also refers to a measure of the ability or ease of customers to travel between various origins and destinations.
Annual exceedance probability	The annual exceedance probability (AEP) is a measure of the frequency of a rainfall event. It is the probability that a given rainfall total, accumulated over a given duration, will be exceeded in any one year. A one per cent AEP event is a rainfall event with a one per cent chance of being exceeded in magnitude in any year.
Archaeological potential	The likelihood of unregistered surface and/or subsurface archaeological materials to be present at a location.
Australian height datum	A common reference surface level used in Australia which is approximately equivalent to the height above mean sea level.
Average delay	Duration, in seconds, of the average vehicle waiting time at an intersection.
Average recurrence interval	The long-term average number of years between the occurrence of a flood larger than the selected event.
Biodiversity offsets	Biodiversity offsets are measures that benefit biodiversity by compensating for the adverse impacts elsewhere of an action, such as clearing for development. Biodiversity offsets work by protecting and managing biodiversity values in one area in exchange for impacts on biodiversity values in another.
Biodiversity offset strategy	The section of a Biodiversity Assessment Report prepared in accordance with the *Framework for Biodiversity Assessment,* which presents the approach to the delivery of biodiversity offsets for a project, including the quantum of offsets required, options to deliver these offsets, an estimate of the costs involved, and the additional steps required to finalise their delivery.
Catchment	The area drained by a stream or body of water, or the area of land from which water is collected.
Chatswood to Sydenham project	One of the two components of the Sydney Metro City & Southwest project, the other being the Sydenham to Bankstown upgrade.
Classified road	A road that meets the definition of a classified road and is listed as such under the *Roads Act 1993* – includes main roads, highways, freeways etc.

Term	Definition
Community	A physical or cultural grouping of stakeholders with common interests created by shared proximity or use.
Concourse	The paved open area at a station – can be located either behind or in front of ticket barriers.
Construction compound	An area used as the base for construction activities, usually for the storage of plant, equipment and materials, and/or construction site offices and worker facilities.
Crossover	Points and tracks enabling trains to switch from one line to another.
Cutting	Excavation from the surface down, so that the new surface level sits below the adjacent ground level.
Degree of saturation	The ratio between traffic volumes and capacity of an intersection used to measure how close to capacity an intersection is operating. Degree of saturation is a direct measure of the congestion level at the intersection. As it approaches 1.0, both queue length and delays increase rapidly. Satisfactory operations usually occur with a degree of saturation between 0.8-0.9 or below.
Discharge	The quantity of water per unit of time flowing in a stream, for example cubic meters per second or megalitres per day.
Ecologically sustainable development	Development that uses, conserves and enhances the resources of the community so that ecological processes on which life depends are maintained, and the total quality of life, now and in the future, can be increased.
Emission	A substance discharged into the air.
Embankment	A structure to allow rail lines (or other infrastructure) to be located above the natural ground surface.
Erosion	A natural process where wind or water detaches a soil particle and provides energy to move the particle.
Flood	The inundation of normally dry land by water which escapes from, is released from, is unable to enter, or overflows from the normal confines of a natural body of water or watercourse, such as rivers, creeks or lakes, or any altered or modified body of water, including dams, canals, reservoirs and stormwater channels.
Flood liable land	Land which is within the extent of the probable maximum flood and therefore prone to flooding.
Floodplain	The area of land subject to inundation by floods up to and including the probable maximum flood.
Flora and fauna	Plants and animals
Formation	Refer to track formation
Groundwater	All waters occurring below the land surface. The upper surface of the soils saturated by groundwater in any particular area is called the water table.
Habitat tree	A tree that is recognised as being of value as a shelter, roosting, and/or nesting resource for fauna species. Includes hollow-bearing trees, stags (standing dead trees), and trees with nests or other signs of fauna occupancy.
Heritage listed	An item, building or place included on statutory heritage lists maintained by local, State and/or the Australian Government.
Interchange	A location where customers transfer from one mode of transport to another or between two services of the same mode. Also includes a place where customers join or leave the public transport system on foot, by bicycle, motorcycle, or car.
Kiss and ride	An area allocated for cars to pull out of the active traffic lane and drop passengers off at a station.
$L_{A90(period)}$	The sound pressure level exceeded for 90 per cent of the measurement period.
$L_{Aeq(1\ hour)}$	The busiest one hour 'equivalent continuous noise level', representing the typical L_{Aeq} noise level from all the proposal noise events during the busiest one hour of the assessment period.
$L_{Aeq(15\ hour)}$	The daytime 'equivalent continuous noise level', representing the cumulative effects of all the proposal noise events occurring in the daytime period from 7am to 10pm.

Term	Definition
$L_{Aeq(24\ hour)}$	The 'equivalent continuous noise level', sometimes also described as the 'energy-averaged noise level', representing the cumulative effects of all the proposal noise events occurring in one day.
$L_{Aeq(9\ hour)}$	The night-time 'equivalent continuous noise level', representing the cumulative effects of all the proposal noise events occurring in the night-time period from 10pm to 7am.
$L_{Aeq(time)}$	Typically used to describe ambient (background) noise levels.
L_{Amax}	The maximum sound level recorded during the measurement period.
Landform	A specific feature of the landscape or the general shape of the land.
Landscape	All aspects of a tract of land, including landform, vegetation, buildings, villages, towns, cities, and infrastructure.
Landscape character	The combined quality of built, natural and cultural aspects that make up an area and provide its unique sense of place.
Level of service	Defined by Austroads as a measure for ranking operating road and intersection conditions, based on factors such as speed, travel time, freedom to manoeuvre, interruptions, comfort, and convenience.
Local road	Road used mainly to access properties located along the road.
Platform screen doors	Screens the platform from an approaching train. The doors open after the train doors have opened to let passengers move between the train and platform, and close before the train doors have been closed, to improve safety and efficiency.
Possession	A period of time during which a rail line is shut down to trains, to permit work to be carried out on or near the line.
Potential archaeological deposit	An area where sub-surface stone artefacts and/or other cultural materials are likely to occur.
Power supply feeder	Electricity distribution line
Probable maximum flood	The largest flood that could conceivably occur (a worst-case flood event). It is typically estimated from probable maximum precipitation coupled with the worst flood-producing catchment conditions. The probable maximum flood extent defines the floodplain and incorporates all flood‑prone land.
Project	The construction and operation of the Bankstown to Sydenham upgrade component of Sydney Metro City & Southwest.
Project area	The area that would be directly affected by construction works (also known as the construction footprint). It includes the location of project infrastructure, the area that would be directly disturbed by the movement of construction plant and machinery, and the location of the storage areas/compounds sites etc, that would be used to construct that infrastructure.
Rail alignment	The exact positioning of the track, accurately defined both horizontally and vertically, along which the rail vehicles operate.
Rail corridor	The corridor within which the rail tracks and associated infrastructure are located.
Rating background level	The underlying level of noise present in an area once transient and short-term noise events are filtered out.
Runoff	The amount of rainfall which ends up as streamflow, also known as rainfall excess.
Sediment	Material of varying sizes that has been, or is being moved from its site of origin by the action of wind, water or gravity.
Surface water	Water that is derived from precipitation or pumped from underground and may be stored in dams, rivers, creeks and drainage lines.
Section 170 register	Under Section 170 of the *Heritage Act 1977*, all state government agencies must keep and administer a database of heritage assets called a Section 170 Heritage and Conservation Register.
Sensitive receivers	Land uses which are sensitive to potential noise, air, and visual impacts, such as residential dwellings, schools and hospitals.

Term	Definition
Sensitivity	The sensitivity of a landscape character area or view and its capacity to absorb change. In the case of visual impact this also relates to the type of viewer and number of viewers.
Spoil	Material generated by construction
Station area	A subset of the project area. It includes the station and the area around the station where works are proposed as part of the project – mainly to provide facilities/space for customers to transfer between other forms of transport (such as bus stops, taxi parking bays, kiss and ride bays, cycle parking/storage).
Study area	The study area is defined as the wider area including and surrounding the project area, with the potential to be directly or indirectly affected by the project (for example, by noise and vibration, visual or traffic impacts). The actual size and extent of the study area varies according the nature and requirements of each impact assessment technical paper.
Sydenham to Bankstown upgrade	The Sydenham to Bankstown upgrade forms the project for the purposes of the Environmental Impact Statement and this report. It is one of the two components of the Sydney Metro City & Southwest project, the other being the Chatswood to Sydenham project.
Sydney Metro	Sydney Metro is a new standalone automated rapid transit rail network under construction in Sydney. The Sydney Metro network consists of Sydney Metro Northwest (under construction) and Sydney Metro City & Southwest, which together would provide 66 kilometres of metro rail line and 31 metro railway stations. Early planning for Sydney Metro West is currently underway.
Sydney Metro City & Southwest	Part of the Sydney Metro network proposed between Chatswood and Bankstown, comprising two core components - the Chatswood to Sydenham project and the Sydenham to Bankstown upgrade.
Sydney Trains	The agency responsible for the provision of suburban passenger train services in/around Sydney.
Tree	A long lived woody perennial plant growing to greater than (or usually greater than) three metres in height, with one or relatively few main stems or trunks.
Topography	Representation of the features and configuration of land surfaces.
Track	The structure consisting of the rails, fasteners, sleepers, and ballast, which sits on the track formation.
Track formation	The earthworks/material on which the ballast, sleepers, and tracks are laid.
Trackside intruder detection system	A system where information is fed to the control centre whenever a large object moves from the platform to the tracks.
Traction substation	An electrical substation that converts electric power from the form provided by the electricity provider to an appropriate voltage, current type and frequency, which can be used to supply the rail network with power.
View	The visual experience from the viewer's perspective.
Visual amenity	The value of a particular area or view in terms of what is seen.
Visual impact	The impacts on the views from residences, workplaces, and public places. This can be positive (i.e. benefit or an improvement) or negative (i.e. adverse or a detraction).
Waste	Waste is defined by the EPA as any matter (whether liquid, solid, gaseous or radioactive) that is discharged, emitted, or deposited in the environment in such volume, constituency, or manner as to cause an alteration to the environment.
Waste management hierarchy	The waste management hierarchy is a set of priorities for the efficient use of resources, which underpins the objectives of the *Waste Avoidance and Resource Recovery Act 2001*. The waste management hierarchy progresses from avoidance (most preferred), to re-use/recycling, to disposal (least preferred).
Watercourse	Refers to waterways, such as rivers, streams and creeks
Water quality	Chemical, physical and biological characteristics of water, including the degree (or lack) of contamination.

This page has been left blank intentionally

NSW GOVERNMENT

sydney METRO

City & Southwest

SYDENHAM TO BANKSTOWN

SUBMISSIONS REPORT

> Appendix A - Issue categories and where to find responses to issues raised in submissions

NSW GOVERNMENT

This page has been left blank intentionally

Guide to tables

As described in Section 4, an assessment of each submission was undertaken, identifying all issues raised and coding the issues.

The list of issues, together with where they are addressed in this report or where they were previously addressed in the Submissions and Preferred Infrastructure Report, is provided in Table A.1. Table A.1 also identifies the submission numbers that raised each issue.

Table A.1 Submission number and section in Submissions and Preferred Infrastructure Report and this report where issues were addressed

Submission number	Issue	Where addressed in this report	Where addressed in Submissions and Preferred Infrastructure Report
Assessment and approvals			
5, 25, 48, 62, 82, 106, 120, 133, 139, 148, 159	Assessment and approval process	Section 5.1.1	Section 5.1.1
120, 122, 139, 379	Adequacy of the Submissions and Preferred Infrastructure Report (and Environmental Impact Statement)	Section 5.1.2	Section 5.1.2
Stakeholder and community Consultation			
25, 30, 143	Consultation prior to exhibition	-	Section 5.2.1
11, 20, 24 to 27, 29 to 31, 33, 36 to 40, 43 to 48, 52, 53, 56 to 59, 61 to 63, 67, 73, 80, 82, 86, 87, 90, 91, 93 to 98, 100, 104, 118, 122, 123, 125, 126, 130, 132, 137, 139, 148, 149, 151, 155, 158, 159, 161 to 208, 209, 210, 212 to 288, 291 to 326, 328 to 336, 338 to 350, 352 to 356, 359 to 361, 363 to 377, 392	Consultation during display of the Submissions and Preferred Infrastructure Report	Section 5.2.1	Section 5.2.2
5, 72, 122, 392	Future consultation and engagement	Section 5.2.2	Section 5.2.3
Project need and justification			
	Support/objection	Section 5.3.1	Section 5.3.1
	Strategic need for Sydney Metro	-	Section 5.3.2
5, 20, 24 to 27,28, 30, 31, 33, 34, 36 to 40, 43, 44 to 48, 52, 53, 55, 56, 57 to 59, 60, 61, 62, 63, 67, 73, 79, 80, 82, 86, 87, 88, 90, 91, 93, 94, 95 to 98, 100, 103, 104, 106, 115, 117, 118, 121, 122, 125, 126, 128, 130, 132, 137, 142, 143, 147, 148, 149, 155, 158, 159, 208, 211, 289, 290, 327, 337, 351, 358, 362, 373, 378 to 392	Need for the project	Section 5.3.2	Section 5.3.2
24 to 27, 30, 30, 31, 33, 36 to 40, 44 to 48, 52, 53, 56, 57 to 59, 61, 62, 63, 67, 80, 82, 86, 87, 90, 91, 93, 95 to 98, 100, 104, 111, 118, 122, 125,126, 130, 132, 136, 139, 142, 149, 155, 158, 208, 211, 289, 290, 327, 337, 351, 358, 362, 378 to 391, 392	Benefits of the project and the broader metro network	Section 5.3.3	Section 5.3.3

Submission number	Issue	Where addressed in this report	Where addressed in Submissions and Preferred Infrastructure Report
20, 24 to 27, 28, 30, 31, 33, 36 to 40, 44 to 48, 50, 52, 53, 55, 56, 57 to 59, 61, 62, 63, 64, 65, 67, 80, 82, 86, 87, 88, 90, 91, 93, 95 to 98, 100, 101, 103, 104, 105, 110, 111, 116, 118, 120, 122, 125, 126, 127, 130, 132, 133, 134, 139, 141, 148, 149, 151, 152, 153, 154, 155, 156, 157, 158, 159, 208, 211, 289, 290, 327, 337, 351, 357, 358, 362, 378 to 391	Further development concerns and links to project justification	Section 5.3.4	Section 5.3.4
79	Consistency with other transport and land use strategies and policies	-	Section 5.3.5
Project alternatives and options			
6	Process of alternatives and options assessment process	-	Section 5.4.1
11, 25, 70, 82, 88, 90, 117, 120, 135, 137, 142, 153, 156, 161 to 208, 209, 210, 212 to 288, 291 to 326, 328 to 336, 338 to 350, 352 to 356, 359 to 361, 363 to 377	Strategic alternatives to Sydney Metro as a whole	-	Section 5.4.2
1, 5, 6, 20, 24 to 27, 28, 30, 31, 33, 34, 36 to 40, 44 to 48, 52, 53, 54, 55, 56, 57 to 59, 61, 62, 63, 67, 69, 80, 81, 82, 86, 87, 88, 90, 91, 93, 95 to 98, 100, 104, 111, 118, 122, 125, 127, 130, 132, 137, 139, 141, 147, 149, 151, 154, 155, 157, 158, 159, 208, 211, 289, 290, 327, 330, 337, 351, 358, 362, 378 to 391, 392	Alternatives to the preferred project	Section 5.4.1	Section 5.4.3 Section 7.11.2
	Design options within the project	-	Section 5.4.4
Design development and place- making			
133	Heritage considerations	Section 5.5.1	Section 5.5.1
24 to 27, 28, 36 to 40, 44 to 48, 52, 53, 57 to 59, 61, 62, 63, 67, 80, 82, 86, 87, 90, 91, 93, 95 to 98, 100, 101, 103, 104, 118, 125, 130, 132, 149, 155, 158	Place making and future design considerations	Section 5.5.2	Section 5.5.2
Project description – design features			
5, 6, 11, 20, 22, 23, 30, 33, 54, 55, 60, 82, 88, 89, 94, 103, 105, 106, 110, 115, 117, 120, 126, 128, 129, 130, 131, 133, 137, 139, 141, 142, 147, 148, 157, 160, 357, 378, 379, 381, 382, 384, 385, 392	Characteristics of the metro product trains and facilities	Section 5.6.1	Section 5.6.1
4, 5, 6, 12, 14, 60, 75, 80, 81, 89, 120, 123, 129, 151, 392	Station features	Section 5.6.2	Section 5.6.2
33, 60, 75, 79, 145, 357, 392	Bridges, tracks and other ancillary facilities and services	Section 5.6.3	Section 5.6.3 Section 5.6.4 Section 5.6.5 Section 5.6.6

Submission number	Issue	Where addressed in this report	Where addressed in Submissions and Preferred Infrastructure Report
6, 20, 24 to 27, 33, 36 to 40, 44 to 48, 52, 53, 56, 57 to 59, 61, 63, 67, 80, 82, 86, 87, 89, 90, 91, 93, 95 to 98, 100, 101, 104, 105, 118, 125, 130, 132, 134, 149, 155, 158, 208, 211, 289, 290, 327, 337, 351, 358, 362, 378 to 391	Active transport corridor (ATC)	Section 5.6.5	Section 5.6.7
	Other design issues	-	Section 5.6.8
Project description – operation			
43, 69, 105, 127, 128, 135, 148, 151, 153, 154, 255, 261	Linkages and connections to other transport		Section 5.7.1
6, 29, 31, 32, 35, 43, 92, 115, 116, 137, 148, 165	Journey characteristics and time		Section 5.7.2
6, 20, 24 to 27, 29, 30, 31, 32, 33, 35, 36 to 40, 43, 44 to 48, 52, 53, 54, 55, 57 to 59, 61, 62, 63, 67, 69, 80, 82, 86, 87, 88, 90, 91, 92, 93, 95 to 98, 100, 104, 105, 110, 115, 116, 118, 120, 122, 125, 127, 128, 130, 131, 132, 133, 135, 137, 141, 148, 149, 151, 153, 154, 155, 156, 158, 161 to 208, 209, 210, 211, 212 to 288, 289, 290, 291 to 326, 327, 328 to 336, 337, 338 to 350, 351, 352 to 356, 358, 359 to 361, 362, 363 to 377, 378 to 391	Operational characteristics		Section 5.7.3
95	Operational issues - other	Section 5.6.4	Section 5.7.4
Project description – construction			
20, 24 to 27, 33, 36 to 40, 43, 44 to 48, 52, 53, 55, 57 to 59, 61, 63, 67, 75, 80, 86, 87, 90, 91, 93, 95 to 98, 100, 104, 118, 125, 130, 132, 149, 155, 158, 208, 211, 289, 290, 327, 337, 351, 358, 362, 378 to 391	Construction impacts	Section 5.7.1	Section 5.8.1
22, 30, 70, 75, 79, 88, 94, 105, 126, 131, 139, 373, 379, 387	Construction program and possessions	Section 5.7.2	Section 5.8.2
29, 30, 30, 31, 43	Alternative transport arrangements during possessions/TTS construction (incl TTS)	Section 5.7.3	Section 5.8.3
	Construction hours	-	Section 5.8.4
	Other construction issues	-	Section 5.8.5
Construction traffic, transport and access			
30, 33, 62, 82, 94, 123, 123, 159	Assessment method	Section 5.8.1	Section 5.9.1
5, 22, 30, 50, 107, 126, 139, 145	Construction traffic and road network (incl haul routes)	Section 5.8.2	Section 5.9.2
5	Pedestrian access (Active transport impacts)	Section 5.8.5	Section 5.9.3
	Public transport impacts	-	Section 5.9.4
	Road network performance	-	Section 5.9.25
30, 33, 62, 108, 115, 117, 123, 137, 141, 145, 148, 153, 154, 157, 159, 357, 382, 384, 388	Impacts of temporary transport arrangements during rail possession/impacts of temporary transport arrangements	Section 5.8.3	Section 5.9.5
30, 121, 123, 145	Parking impacts	Section 5.8.4	Section 5.9.6

Submission number	Issue	Where addressed in this report	Where addressed in Submissions and Preferred Infrastructure Report
	Bridge works	-	Section 5.9.7
	Emergency services	-	Section 5.9.8
Operational traffic, transport and access			
	Active transport impacts	-	Section 5.10.1
30, 44, 54, 88, 106, 120, 121, 107, 133	Traffic and parking impacts	Section 5.9.1	Section 5.10.2 Section 5.10.4
6, 11, 20, 29, 30, 33, 48, 55, 56, 62, 65, 73, 79, 89, 92, 94, 95, 99, 111, 116, 126, 128, 141, 142, 145, 148, 161 to 208, 209, 210, 212 to 288, 291 to 326, 328 to 336, 338 to 350, 352 to 356, 357, 359 to 361, 363 to 377, 381, 392	Servicing changes and impacts on travel times		Section 5.10.2
	Other public transport impacts	-	Section 5.10.3
	Other issues	-	Section 5.10.5
Construction noise and vibration			
	Assessment method	-	Section 5.11.1
16, 22, 30, 94, 120, 123, 126, 145	Construction noise impact managment	Section 5.10.1	Section 5.11.2
120	Out of hours noise	-	Section 5.11.3
	Construction traffic noise	-	Section 5.11.4
30, 88, 120, 133, 145	Vibration impacts and management	Section 5.10.3	Section 5.11.5
16, 106, 123, 145	Noise impact mitigation and management	Section 5.10.2	Section 5.11.6
Operational noise and vibration			
	Noise from metro trains	-	Section 5.12.1
	Noise from stations and ancillary facilities	-	Section 5.12.2
	Vibration impacts during operation	-	Section 5.12.3
24 to 27, 30, 33, 36 to 40, 44 to 48, 52, 53, 55, 56, 57 to 59, 61, 63, 67, 80, 82, 86, 87, 88, 90, 91, 93, 95 to 98, 100, 104, 118, 120, 125, 130, 132, 149, 155, 158	Impact mitigation and management	Section 5.11.1	Section 5.12.4
	Other issues	-	Section 5.12.5
Non-Aboriginal heritage			
30, 62, 94, 95, 131, 148, 159	Assessment method	Section 5.12.1	Section 5.13.1
95, 101	Heritage impacts of the project overall	-	Section 5.13.2
24 to 27, 36 to 40, 44 to 48, 52, 53, 54, 57 to 59, 61, 62, 63, 67, 80, 82, 86, 87, 90, 91, 93, 95 to 98, 100, 104, 118, 125, 130, 131, 132, 148, 149, 155, 158	Impacts to heritage listed stations	Section 5.12.2	Section 5.13.3
30, 82, 159	Impacts to other heritage items	Section 5.12.3	Section 5.13.4
131	Impacts to heritage conservation areas	-	Section 5.13.6
	Impacts to archaeological sites	-	Section 5.13.5

Submission number	Issue	Where addressed in this report	Where addressed in Submissions and Preferred Infrastructure Report
Aboriginal heritage			
	Impacts on Aboriginal sites heritage	-	Section 5.14.1
Land use and property			
	Direct impacts on land use/properties during construction	-	Section 5.15.1
	Direct impacts on land use/properties during operation	-	Section 5.15.1
73, 108, 159	Impacts of acquisition	Section 5.13.2	Section 5.15.2
	Impacts on to property values	-	Section 5.15.3
30, 108, 159	Compensation	-	Section 5.15.3
Socio-economic impacts			
	Construction impacts on community infrastructure	-	Section 5.16.1
108, 110, 120, 133, 392	Construction amenity impacts (community members). Community and amenity impacts during construction	-	Section 5.16.2
	Other construction impacts	-	Section 5.16.2
108, 160	Operation amenity impacts, Community and amenity impacts during operation construction	-	Section 5.16.3
	Other operation impacts	-	Section 5.16.3
Business impacts			
22, 108, 142, 148, 159	Access to businesses during construction Impacts to businesses during construction	-	Section 5.17.1
	Construction amenity impacts	-	Section 5.17.1
	Impacts to businesses during operation	-	Section 5.17.2
Visual impacts (including trees)			
5, 24 to 27, 30, 33, 36 to 40, 44 to 48, 52, 53, 57 to 59, 61, 62, 63, 67, 80, 82, 86, 87, 90, 91, 93, 94, 95 to 98, 100, 101, 104, 115, 118, 125, 130, 132, 149, 155, 158	Impacts on trees	Section 5.14.1	Section 5.18.1
	Impacts on character	-	Section 5.18.2
106, 120, 160	Other operation visual impacts	-	Section 5.18.3

Submission number	Issue	Where addressed in this report	Where addressed in Submissions and Preferred Infrastructure Report
Hydrology, flooding and water quality			
	Impacts on flooding during construction	-	Section 5.19.1
5, 30	Impacts on flooding during operation	Section 5.15.1	Section 5.19.2
	Water quality	-	Section 5.19.3
Biodiversity			
30, 62	Clearance and mitigation (Clearing along the rail corridor)	Section 5.16.1	Section 5.20.2
54	Other (incl adequacy)	-	Section 5.20.1, 5.20.3
Air quality			
88, 106	Construction impacts	-	Section 5.21.1
	Operation impacts	-	Section 5.21.2
Sustainability and climate change			
30	Sustainability policy and strategy	Section 5.17.1	Section 5.22.1
	Resource use	-	Section 5.22.2
20	Climate change	Section 5.17.2	Section 5.22.3
Hazards, risks and safety			
	Construction impacts	-	Section 5.23.1
30	Operation impacts	-	Section 5.23.2 Section 6.3.2
Waste management			
120	Construction impacts		Section 5.24.1
Cumulative impacts			
145	Impacts combined with WestConnex	-	Section 5.25.1
30, 30, 123, 126, 135	Cumulative construction impacts (Other cumulative impacts)	Section 5.18.1	Section 5.25.2
Future design and environmental management			
	Construction environmental management arrangements	-	Section 5.26.1
	Operational environmental management arrangements	-	Section 5.26.1
Issues beyond the scope of the Submissions and Preferred Infrastructure Report (Out of scope)			
139	Issues relating to other Sydney Metro projects	-	Section 5.27.1
5, 6, 30, 99, 121, 392	Non-metro other issues	Section 5.19.1	Section 5.27.2

This page has been left blank intentionally

SYDENHAM TO BANKSTOWN

SUBMISSIONS REPORT

> Appendix A - Issue categories and where to find responses to issues raised in submissions

City & Southwest

SYDENHAM TO BANKSTOWN

SUBMISSIONS REPORT

> Appendix B - Preferred project description

This page has been left blank intentionally

Table of contents

Table index

Figure index

1. Preferred project description – operation

This section provides a description of the preferred project's operational features, and how the preferred project would operate. The preferred project's construction description is provided in Section 2.

1.1 Preferred project infrastructure and features

The main infrastructure and features that form part of the preferred project are described in this section, and are shown in Figure 1.1. These include:

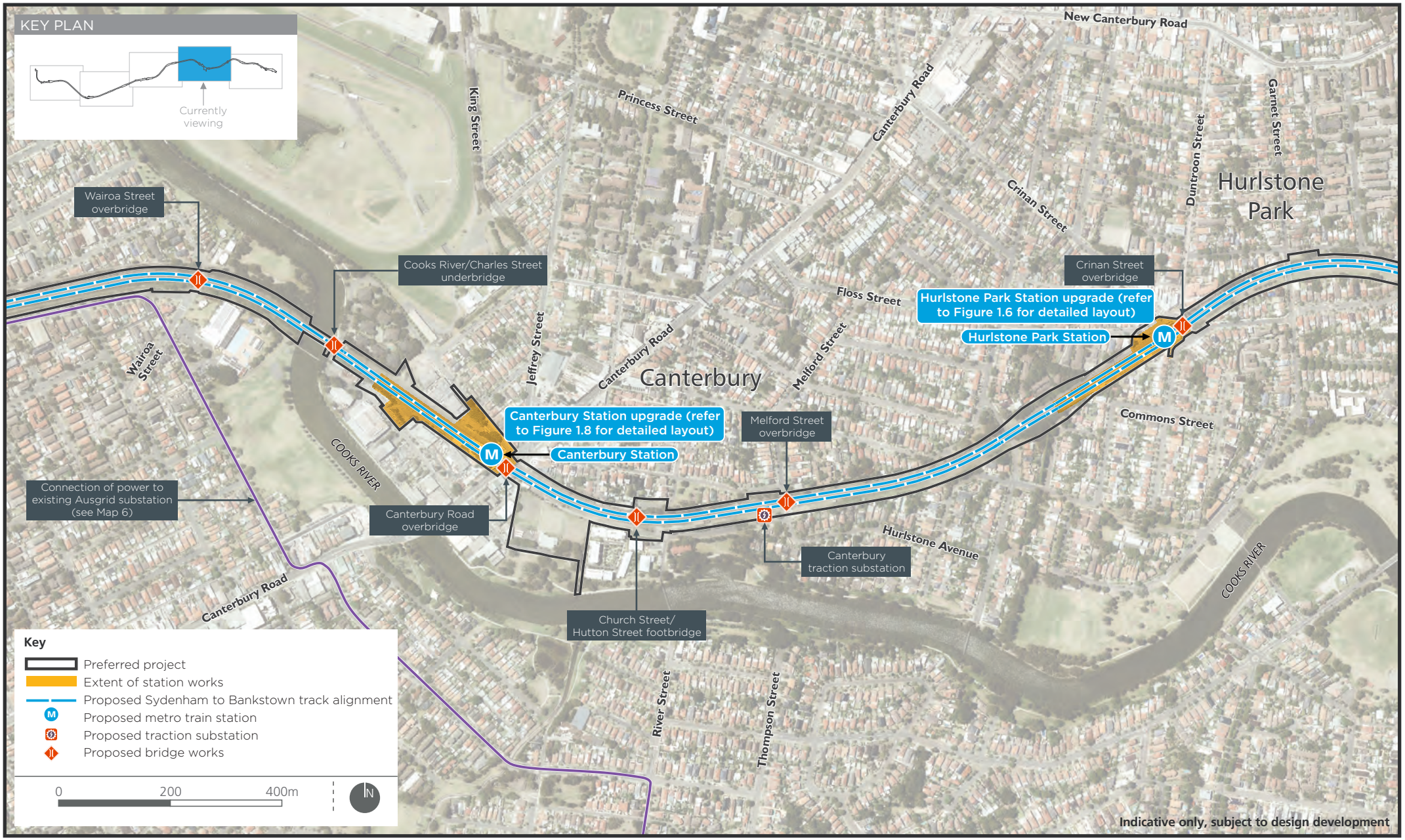
- works to upgrade the 10 stations and station areas between Marrickville and Bankstown (inclusive) and to provide lifts at stations where there are none currently
- works to allow for a metro service to Bankstown, including:
  - station works
  - track and rail system facility works
  - other works to support metro operations.

It is noted that the project scope described in this section is based on the level of design developed to date. Detailed design would include further engineering, construction planning, and detailed assessment work, and would be subject to further input from key stakeholders and consultation with the community.

sydney METRO | city & southwest

Preferred project infrastructure and features - map 1

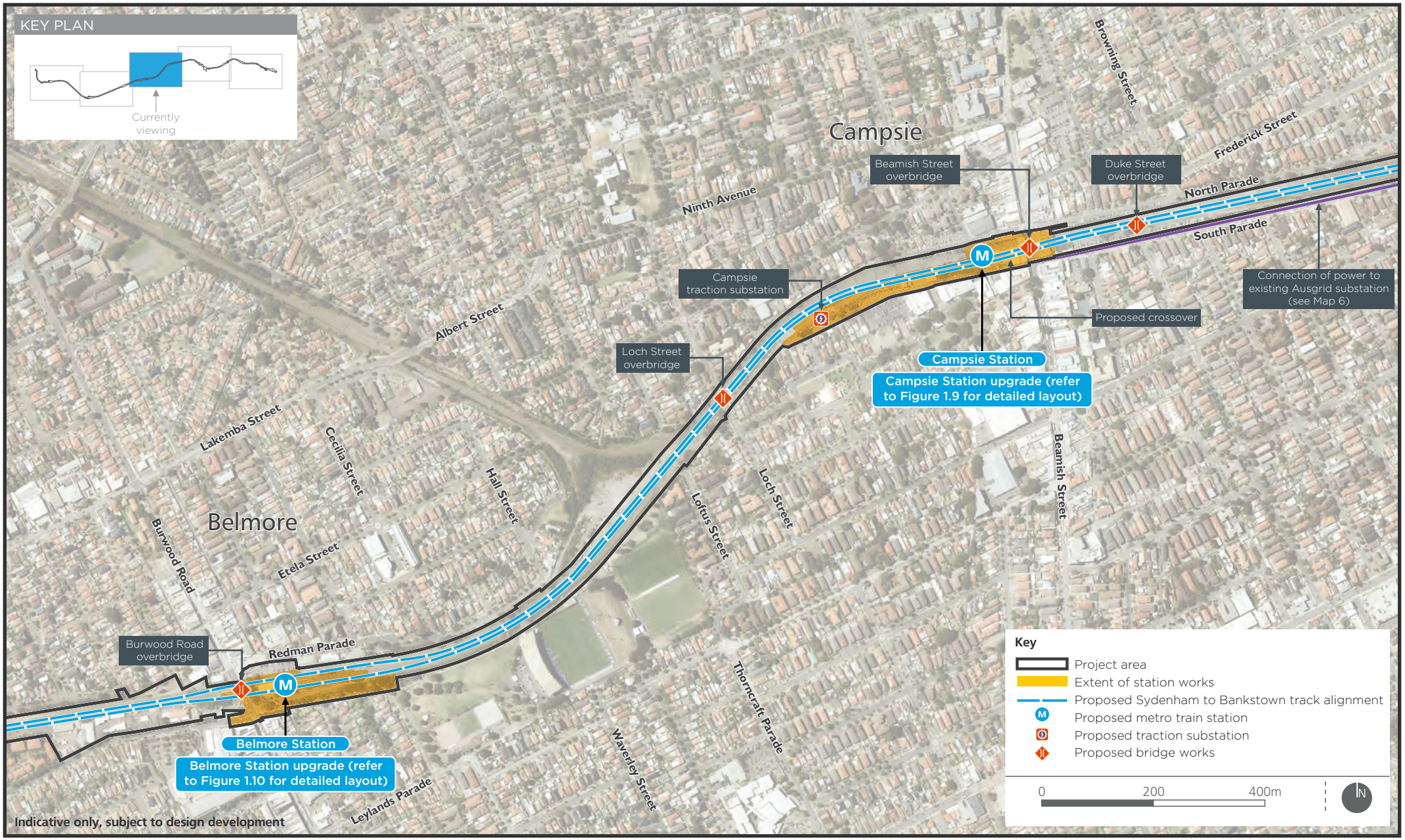
FIGURE 1.1



sydney METRO | city & southwest

Preferred project infrastructure and features - map 2

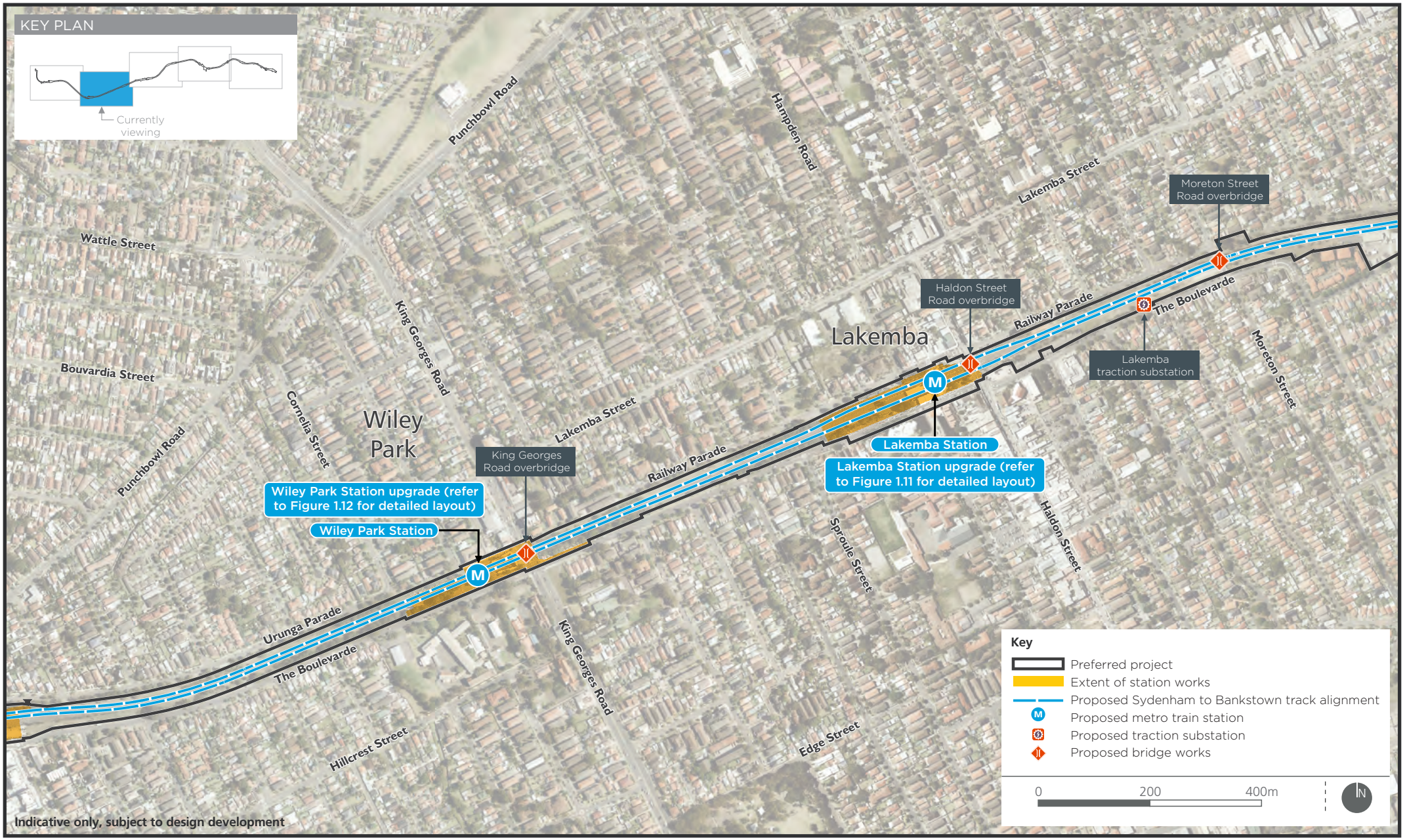
FIGURE 1.1



sydney METRO | city & southwest

Preferred project infrastructure and features - map 3

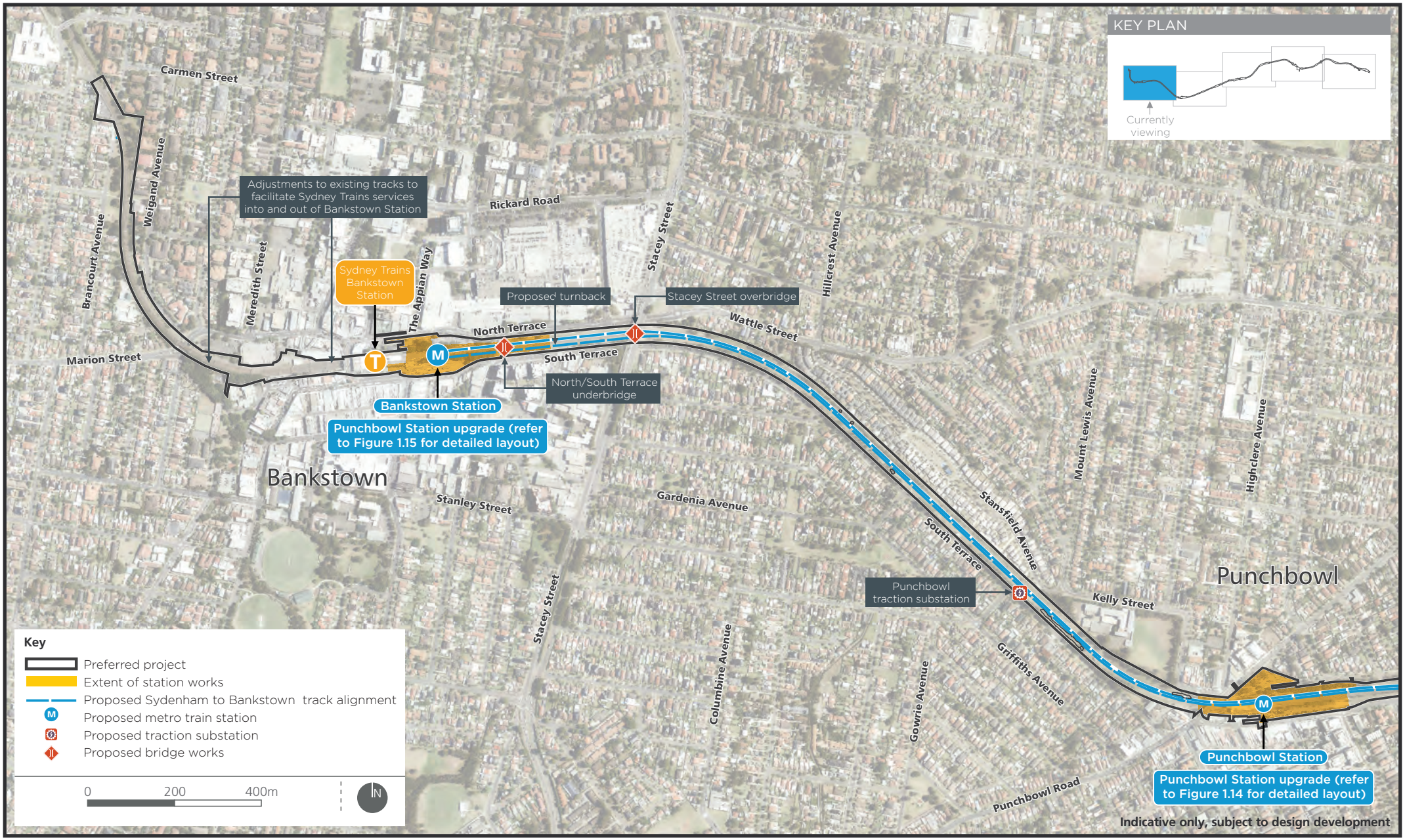
FIGURE 1.1



sydney METRO | city & southwest

Preferred project infrastructure and features - map 4

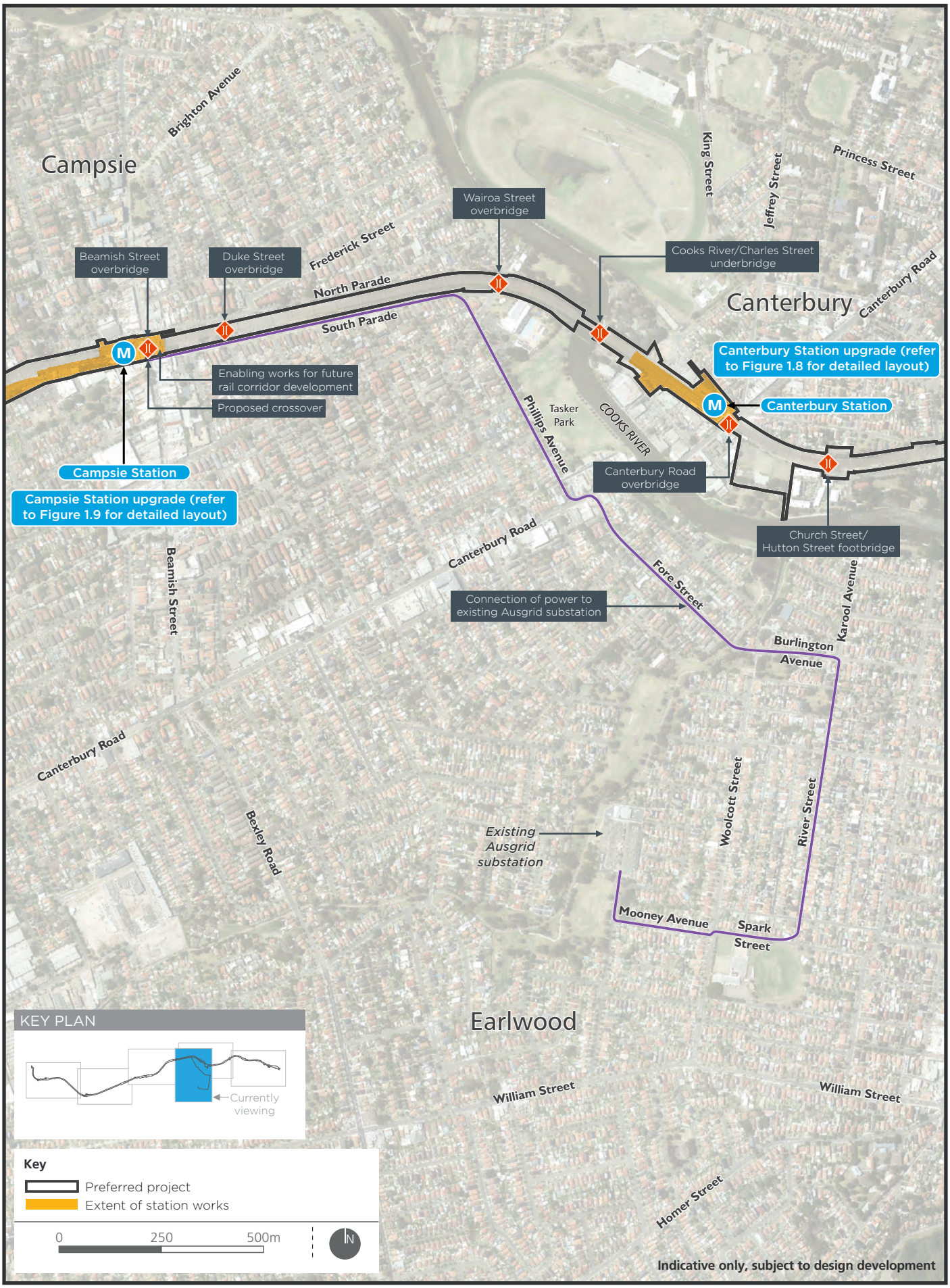
FIGURE 1.1



sydney METRO | city & southwest

Preferred project infrastructure and features - map 5

FIGURE 1.1



Preferred project infrastructure and features - map 6

FIGURE 1.1

1.1.1 Works to upgrade stations

The preferred project includes upgrading the 10 stations between Marrickville and Bankstown.

The works required at each station depend on the nature and condition of the existing facilities, and generally include:

- platform works, which could include:
  - re-levelling of the platforms to provide a consistent height and finish
  - provision of platform screen doors
  - provision of emergency egress ramps
- new lifts to access the station and station platforms at stations that do not currently have lift access
- refurbishment/repurposing of station buildings on platforms or at station entrances, including control and communication rooms, toilets, staff facilities, storerooms, and offices
- provision of accessible toilets
- renewing/revitalising of station interiors and exteriors, where required
- signage and wayfinding at the station.

Works would also be undertaken in the areas around the stations (i.e. the station area) to better integrate with other modes of transport. This would include:

- enhancements to footpaths / paving and lighting in the vicinity of station entrances
- landscaping and street furniture particularly within the areas near station entrances and along the corridor
- provision of new and/or relocated bicycle parking facilities
- new, upgraded or relocated parking and kerb side facilities, including accessible parking, kiss and ride, and taxi facilities.

A more detailed description of the works proposed at each station is provided in the following sections. The exact nature of the works required at each station would be confirmed as an outcome of the detailed design process, which would be informed by the *Around the Tracks: urban design for heavy and light rail* (Transport for NSW, 2016).

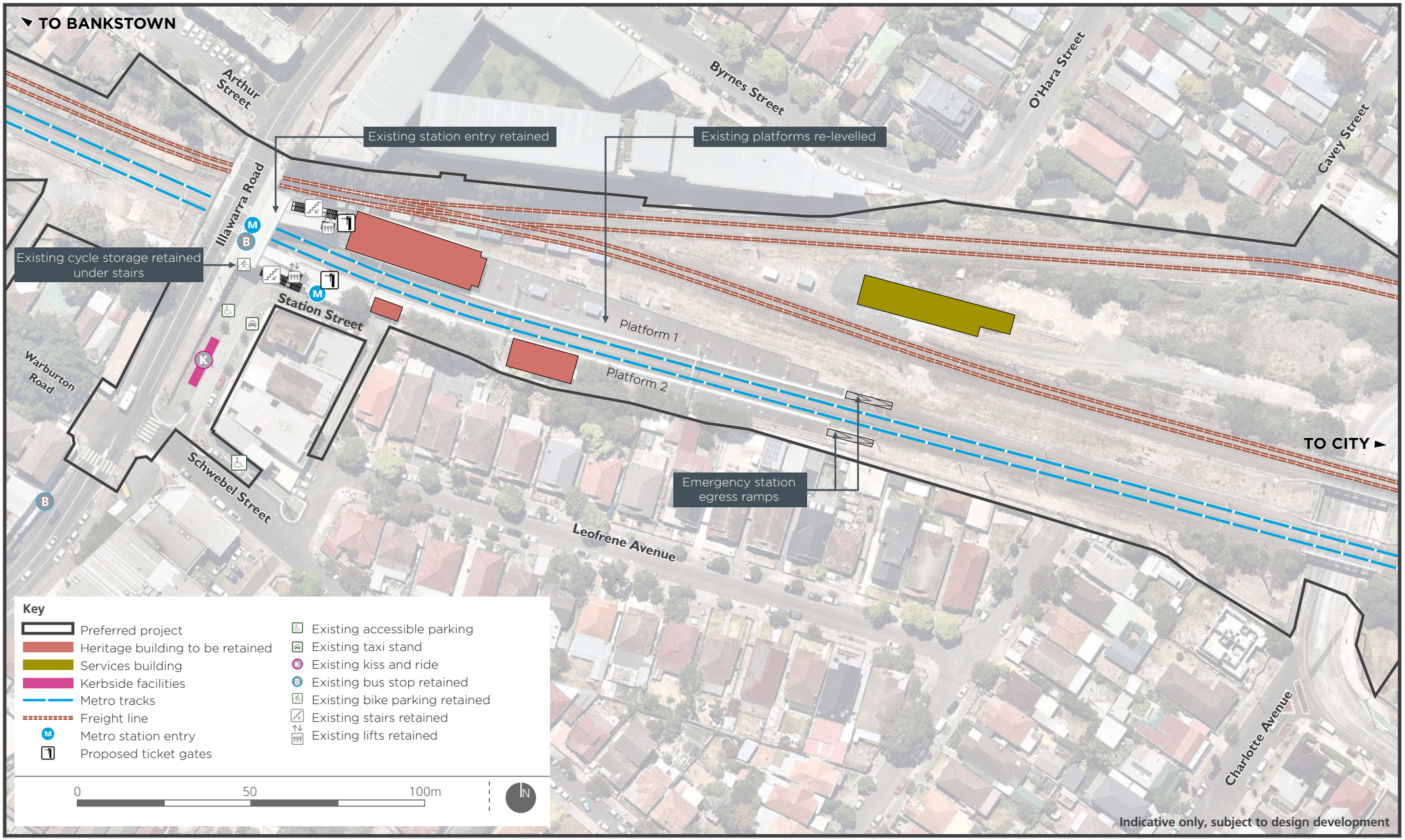
Marrickville Station

Marrickville Station is located east of the Illawarra Road overbridge. The station area is bound to the north by a multi-storey residential apartment building, located on the corner of Illawarra Road and Byrnes Street, to the south by Station Street and residential dwellings fronting Leofrene Avenue, and to the west by Illawarra Road. Station entrances are located on Illawarra Road and in Station Street.

Marrickville Station was recently upgraded as part of Transport for NSW's Transport Access Program. The key works proposed as part of the preferred project are shown on Figure 1.2 and summarised in Table 1.1. An artist's impression is provided in Figure 1.3.

Table 1.1 Marrickville Station key design elements

Description
Station works
• The existing station entrance from Illawarra Road would be retained. The existing lifts would also be retained. • The existing at-grade entry from Station Street to platform 2 would be retained. • The existing heritage listed platforms would be re-levelled. • The existing station buildings, including the recently completed elevated concourse and associated canopy, would be retained. • The existing heritage station buildings on platforms 1 and 2 would be retained and repurposed. • The former booking office on platform 2 would be retained.
Station area
• All bus stops would be retained in their current locations, including the southbound bus stop on Illawarra Road which was recently relocated as part of the upgrades to the station. • The existing kiss and ride facility on the western side of Station Street would be retained. • The existing accessible parking space on Station Street would be retained. • The existing taxi zone on Station Street would be retained. • The existing bike storage/parking facility below the station stairs would be retained. • The existing cycle route along the southern side of the rail corridor would be rerouted along Schwebel Street, Leofrene Avenue, and Riverdale Avenue.



sydney METRO | city & southwest

Marrickville Station - indicative layout of key design elements

FIGURE 1.2

sydney METRO | city & southwest

Marrickville Station - artist's impression

FIGURE 1.3

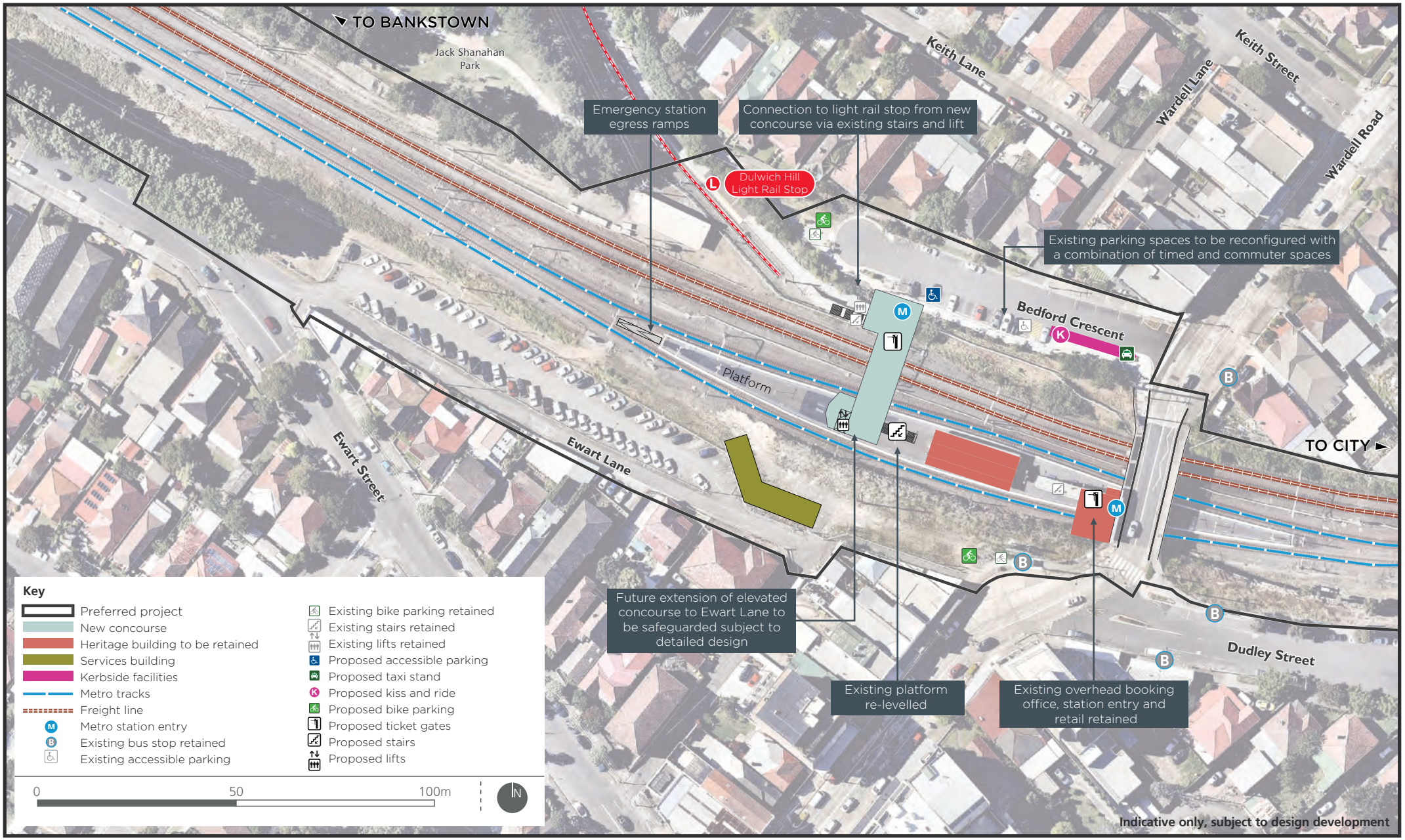
Dulwich Hill Station

Dulwich Hill Station is located west of the Wardell Road overbridge. The station area is bounded by Bedford Crescent to the north, Ewart Lane to the south, and Wardell Road to the east. The station entrance is on Wardell Road.

The key works proposed as part of the preferred project are shown in Figure 1.4 and summarised in Table 1.2. An artist's impression is provided in Figure 1.5.

Table 1.2 Dulwich Hill Station key design elements

Description
Station works
• The existing station entrance would be retained and upgraded. • A new elevated station concourse would be provided with new stairs and a lift, and would connect the station platform to the Dulwich Hill light rail stop. The concourse would be accessed from a new station entrance at Bedford Crescent (northern side). The future extension of the new elevated concourse to Ewart Lane has been safeguarded. • The existing heritage listed platforms would be re-levelled. • The existing heritage listed overhead booking office and station building on the platform would be retained and repurposed. • The existing retail within the overhead booking office would be retained.
Station area
• The existing bus stops located on Dudley Street and Wardell Road would be retained. • Existing pedestrian pathways surrounding the station would be upgraded, including from Ewart Lane to Wardell Road and from Keith Lane to Bedford Crescent. • New kiss and ride and taxi facilities would be provided on the southern side of Bedford Crescent at its eastern end. • The two existing accessible parking spaces on the southern side of the Bedford Crescent would be retained and one new accessible parking space would be provided. • Existing bike parking on Wardell Road to the south of the station would be retained. • New bike parking facilities would be provided on Wardell Road to the south of the station. • The existing bike parking spaces on Bedford Crescent would be retained and additional spaces provided.



sydney METRO | city & southwest

Dulwich Hill Station - indicative layout of key design elements

FIGURE 1.4

sydney METRO | city & southwest

Dulwich Hill Station - artist's impression

FIGURE 1.5

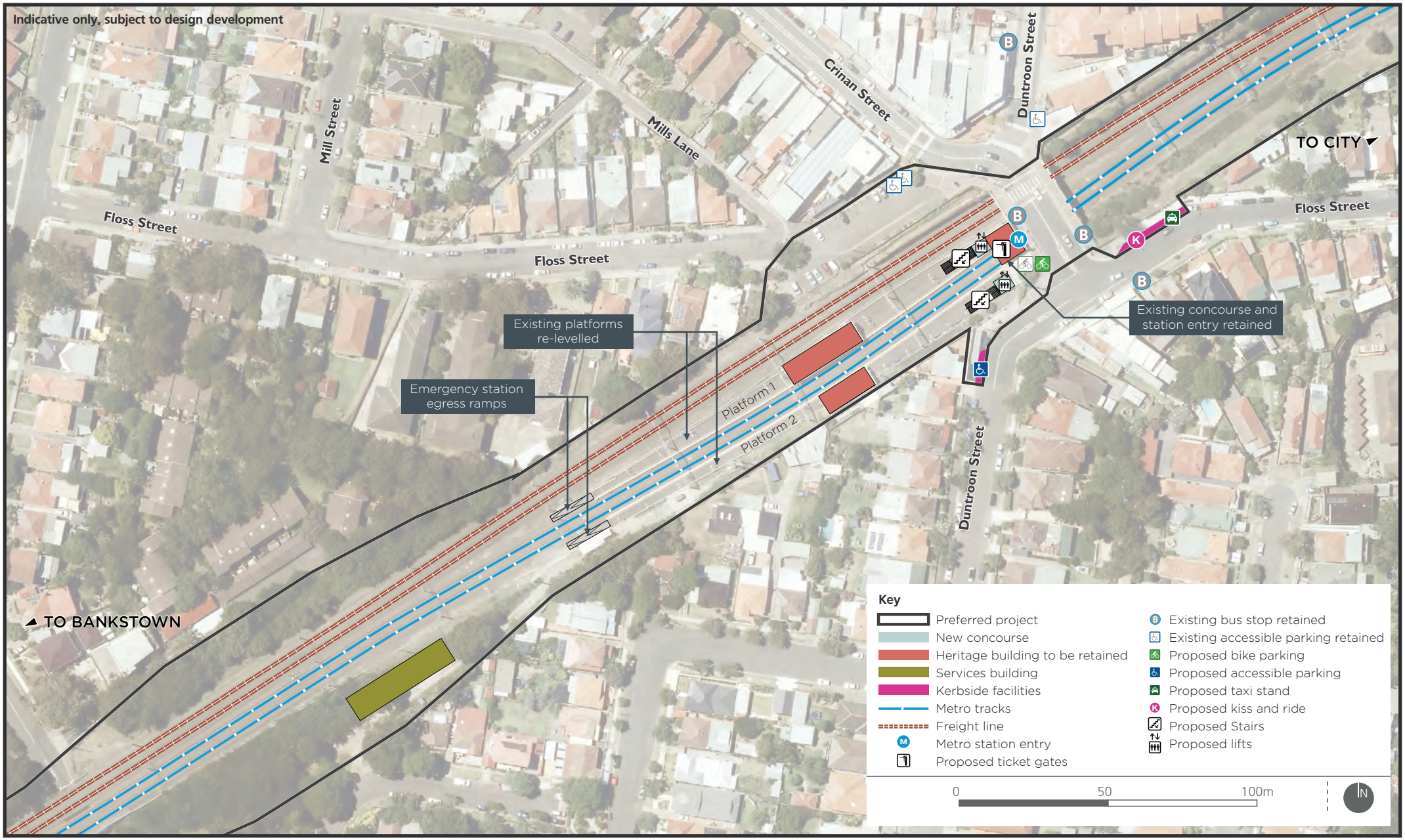
Hurlstone Park Station

Hurlstone Park Station is located to the west of the Crinan Street overbridge. The station area is bounded by Crinan and Floss streets and residential dwellings to the north, Duntroon Street and residential dwellings to the south, and Crinan Street to the west (on the bridge). The station entrance is on the overbridge.

The key works proposed as part of the preferred project are shown in Figure 1.6 and summarised in Table 1.3. An artist's impression is provided in Figure 1.7.

Table 1.3 Hurlstone Park Station key design elements

Description
Station works
• The existing station entrance would be retained and upgraded. • Two new lifts would be provided. • The existing stairs would be removed and replaced. • The existing heritage listed platforms would be re-levelled. • The existing heritage listed overhead booking office and heritage buildings on platforms 1 and 2 would be retained and repurposed.
Station area
• The existing bus stops on the overbridge would be retained. • New kerbside facilities would be located on Floss Street, on the eastern side of the overbridge adjacent to the station. • The existing accessible parking spaces on Floss Street and Duntroon Street on the northern side of the rail corridor would be retained. • New accessible parking would be provided on Duntroon Street on the southern side of the rail corridor. • The existing bike parking on Crinan Street outside the station entrance would be retained and additional bike parking provided.



sydney METRO | city & southwest

Hurlstone Park Station - indicative layout of key design elements

FIGURE 1.6

sydney METRO | city & southwest

Hurlstone Park Station - artist's impression

FIGURE 1.7

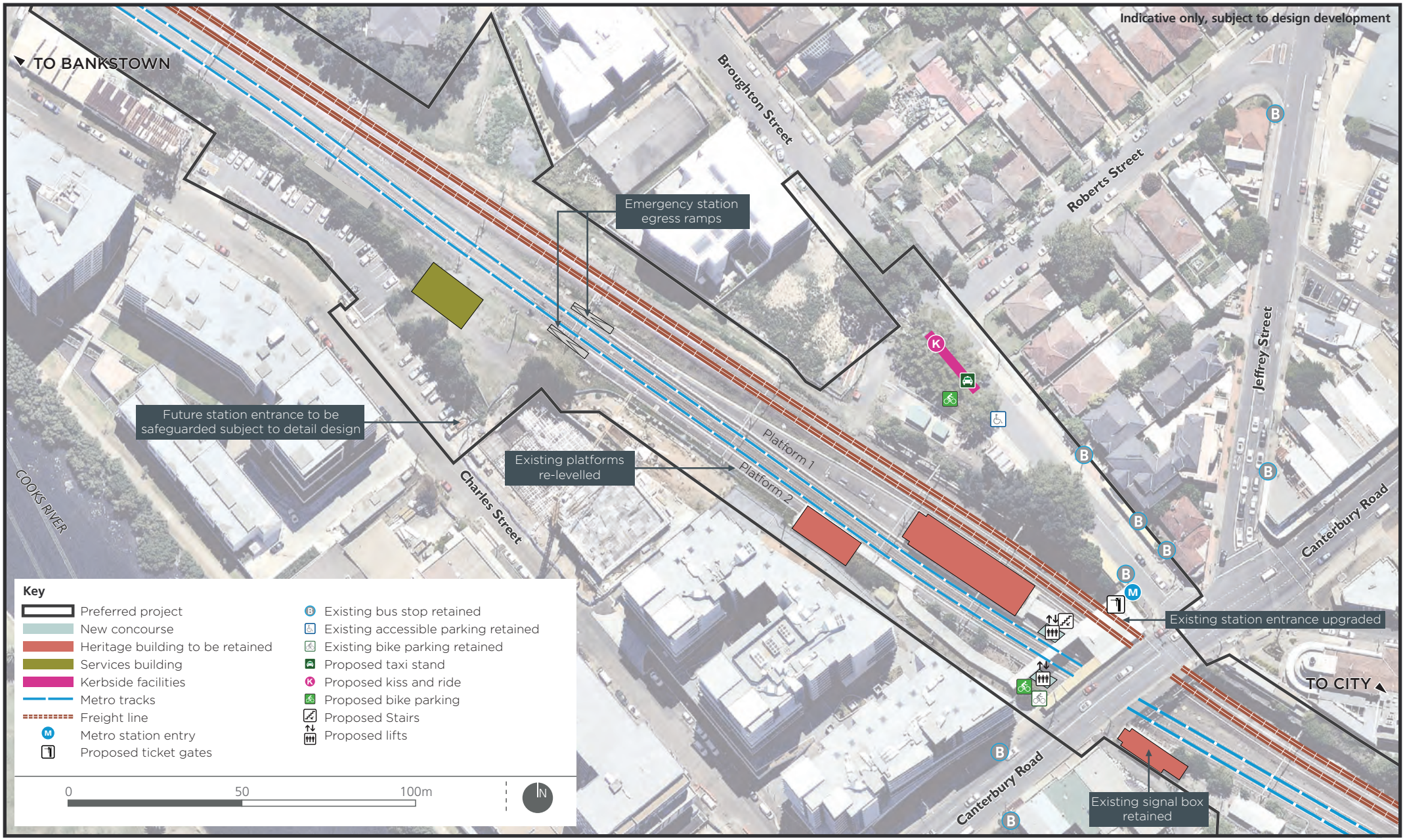
Canterbury Station

Canterbury Station is located to the north-west of the Canterbury Road overbridge. The station area is bounded by Broughton Street to the north, a large mixed use development fronting Charles Street to the south, and Canterbury Road to the east. The station entrance is on Canterbury Road.

The key works proposed as part of the preferred project are shown in Figure 1.8 and summarised in Table 1.4.

Table 1.4 Canterbury Station key design elements

Description
Station works
• The existing station entrance would be retained and upgraded. • The design provides for a potential future station entrance on Charles Street, to enable access to platform 2. • The existing heritage listed platforms would be re-levelled. • The existing stairs from platform 1 to the footbridge would be replaced with new stairs. • Two new lifts to the platforms would be provided. • The existing heritage listed footbridge and overhead booking office would be retained. • The existing heritage listed buildings on platforms 1 and 2 would be retained and repurposed. • The existing heritage listed signal box on the south-eastern side of the Canterbury Road overbridge would be retained.
Station area
• The existing bus stops on Broughton Street and Canterbury Road would be retained and the bus shelters on Broughton Street would be refurbished. • Existing pedestrian pathways surrounding the station would be upgraded. • New kerbside facilities would be provided on Broughton Street. • The existing accessible parking space on Broughton Street would be retained. • The existing bike parking on Canterbury Road would be retained and additional bike parking provided. • New bike parking would be provided on Broughton Street, directly south of the proposed kerbside facilities.



sydney METRO | city & southwest

Canterbury Station - indicative layout of key design elements

FIGURE 1.8

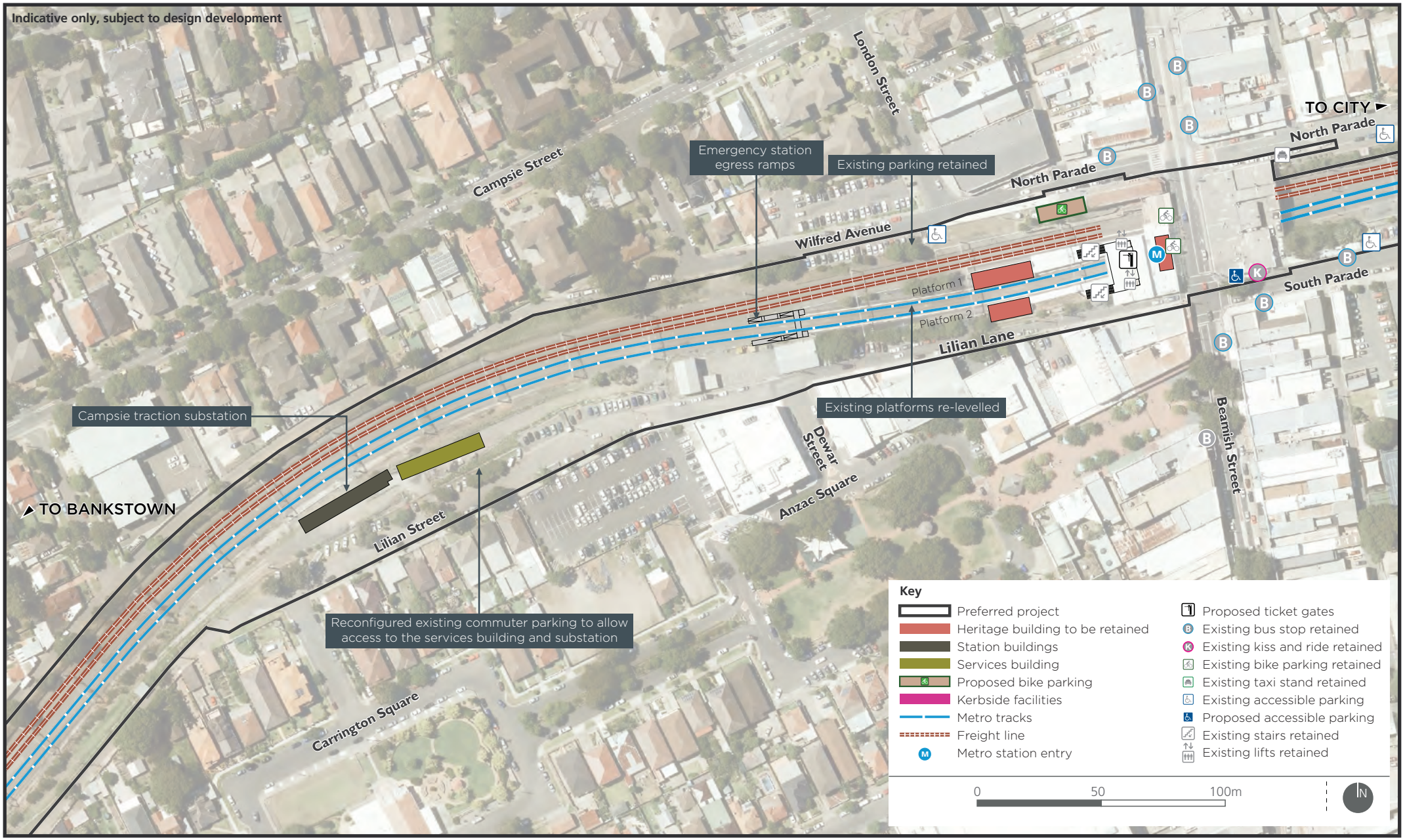
Campsie Station

Campsie Station is located to the west of the Beamish Street overbridge. The station area is bounded by Lilian Lane/South Parade to the south, Wilfred Avenue/North Parade to the north, and Beamish Street to the east. The station entrance is located on the overbridge.

The key works proposed as part of the preferred project are shown in Figure 1.9 and summarised in Table 1.5.

Table 1.5 Campsie Station key design elements

Description
Station works
• The existing station entrance at Beamish Street would be retained and upgraded. • The existing heritage listed platforms would be re-levelled. • The existing heritage listed buildings on platforms 1 and 2 would be retained and repurposed.
Station area
• The existing bus stops located in the vicinity of the station would be retained. • The existing kiss and ride facility on South Parade would be retained and a new accessible park provided at this location. • The existing taxi stand on North Parade would be retained. • The existing accessible parking on North Parade, Wilfred Avenue, and South Parade would be retained. • The existing bike parking on Beamish Street outside the station would be retained. • New bike parking facilities would be provided on North Parade.



sydney METRO | city & southwest

Campsie Station - indicative layout of key design elements

FIGURE 1.9

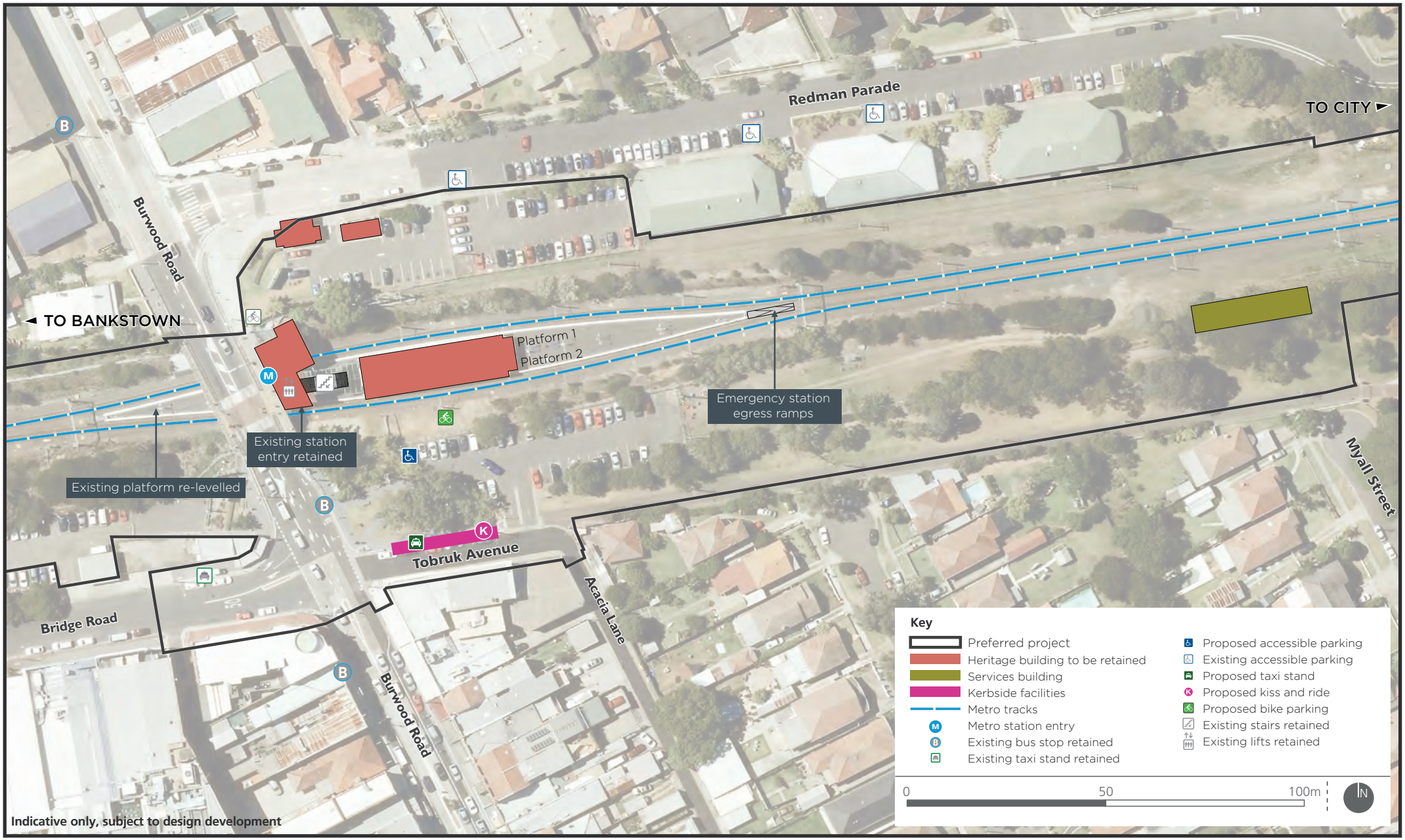
Belmore Station

Belmore Station is located to the east of the Burwood Road overbridge. To the north and south, the station area is bounded by commuter car parks fronting Redman Parade and Tobruk Avenue respectively. To the west, the station area is bounded by Burwood Road. The existing station entrance is located on the Burwood Road overbridge.

The key works proposed as part of the preferred project are shown in Figure 1.10 and summarised in Table 1.6.

Table 1.6 Belmore Station key design elements

Description
Station works
• The existing station entrance would be retained and upgraded. • The existing heritage listed platforms would be re-levelled. • The existing heritage listed platform building and overhead booking office would be retained and repurposed. • The existing heritage buildings located within the car park to the north of the station would be retained.
Station area
• The existing bus stops in the vicinity of the station would be retained. • New taxi and kiss and ride facilities, would be provided on Tobruk Avenue. • New accessible parking spaces would be provided in the Tobruk Avenue car park. • The existing accessible parking along Redman Parade would be retained. • New bike parking would be provided within the Tobruk Avenue car park. • The existing bike parking on Burwood Road to the north of the station entrance would be retained.



sydney METRO | city & southwest

Belmore Station - indicative layout of key design elements

FIGURE 1.10

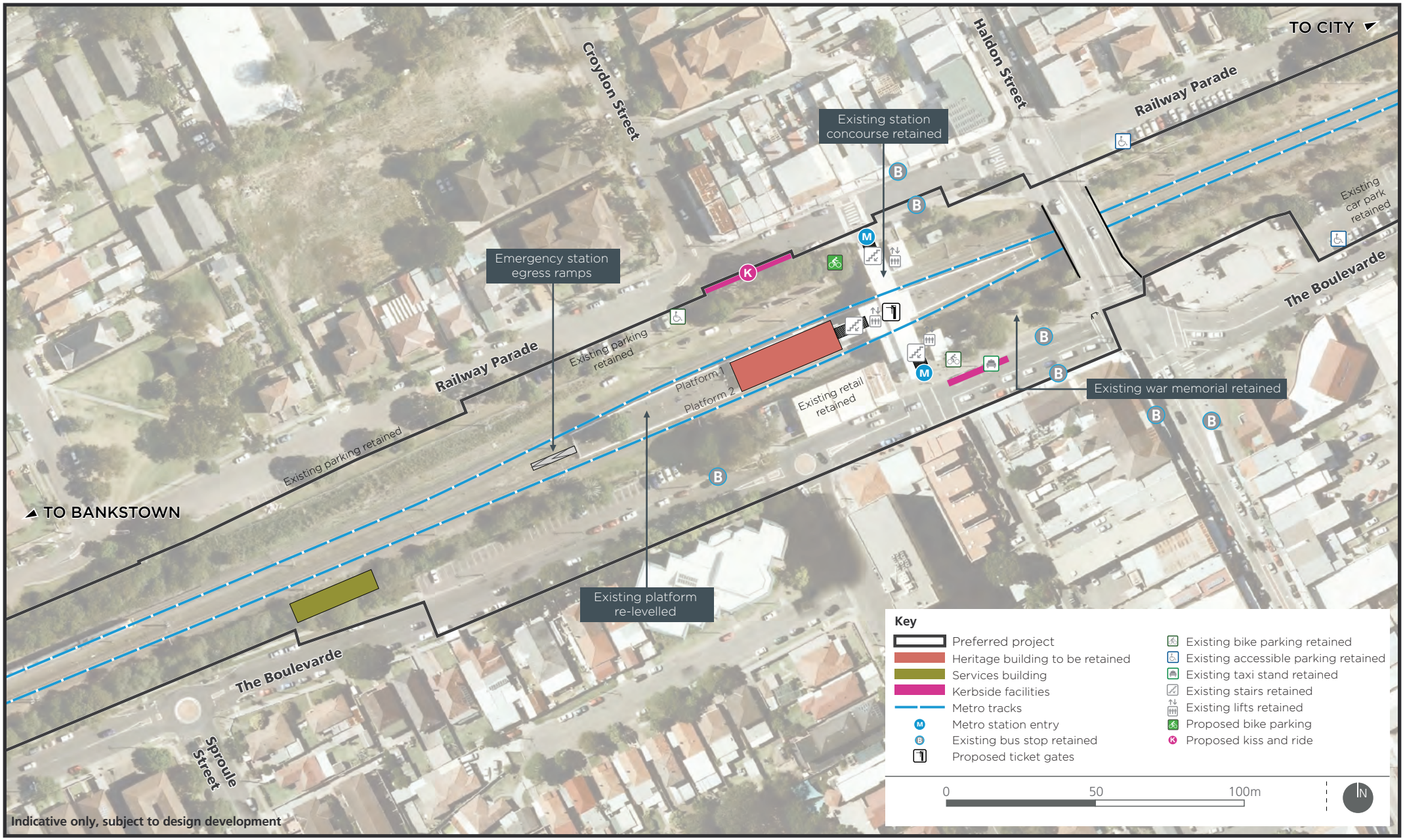
Lakemba Station

Lakemba Station is located about 60 metres to the west of the Haldon Street overbridge. The station area is bounded by Railway Parade to the north and The Boulevarde to the south. Access to the station is provided off Railway Parade and The Boulevarde.

The key works proposed as part of the preferred project are shown in Figure 1.11 and summarised in Table 1.7.

Table 1.7 Lakemba Station key design elements

Description
Station works
• The existing station entrance would be retained. • The existing heritage listed platforms would be re-levelled. • The existing heritage station building on the platform would be retained and repurposed.
Station area
• The existing bus stops located on The Boulevarde, Railway Parade, and Haldon Street (south) would be retained. • The existing bike parking on the northern side of The Boulevarde would be retained. • New bike parking would be provided on the southern side of Railway Parade. • New kiss and ride kerbside facilities would be provided on Railway Parade (west of new station entrance) and new taxi kerbside facilities would be provided on The Boulevarde (east of the new station entrance). • The existing accessible parking on Railway Parade and The Boulevarde would be retained.



sydney METRO | city & southwest

Lakemba Station - indicative layout of key design elements

FIGURE 1.11

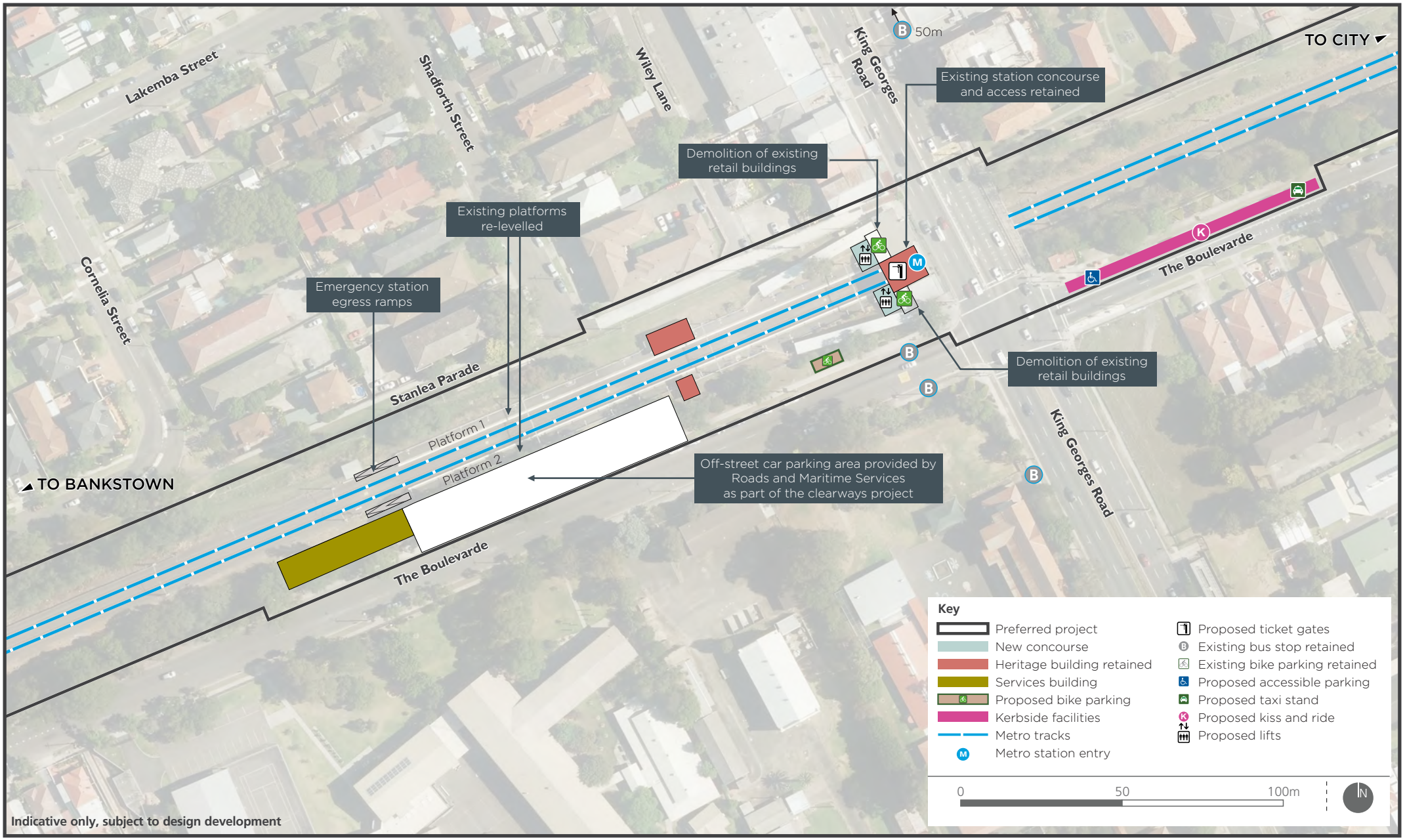
Wiley Park Station

Wiley Park Station is located to the west of the King Georges Road overbridge. The station area is bounded by Stanlea Parade walkway to the north, by King Georges Road to the east and The Boulevarde to the south. The station entrance is located on the overbridge.

The key works proposed as part of the preferred project are shown in Figure 1.12 and summarised in Table 1.8. An artist's impression is provided in Figure 1.13.

Table 1.8 Wiley Park Station key design elements

Description
Station works
• The existing station entrance would be retained and upgraded. • The existing retail shop and a disused premises at the station entrance would be demolished. • Two new lifts would be provided. • The existing heritage listed platform would be re-levelled. • The existing heritage listed overhead booking office, concourse and platform buildings would be retained and repurposed.
Station area
• The existing bus stops would be retained. • Existing pedestrian pathways surrounding the station would be upgraded. • New bike parking would be provided on The Boulevarde and at the station entrance. • New kerbside facilities and accessible parking would be provided on The Boulevarde, east of King Georges Road.



sydney METRO | city & southwest

Wiley Park Station - indicative layout of key design elements

FIGURE 1.12

sydney METRO | city & southwest

Wiley Park Station - artist's impression

FIGURE 1.13

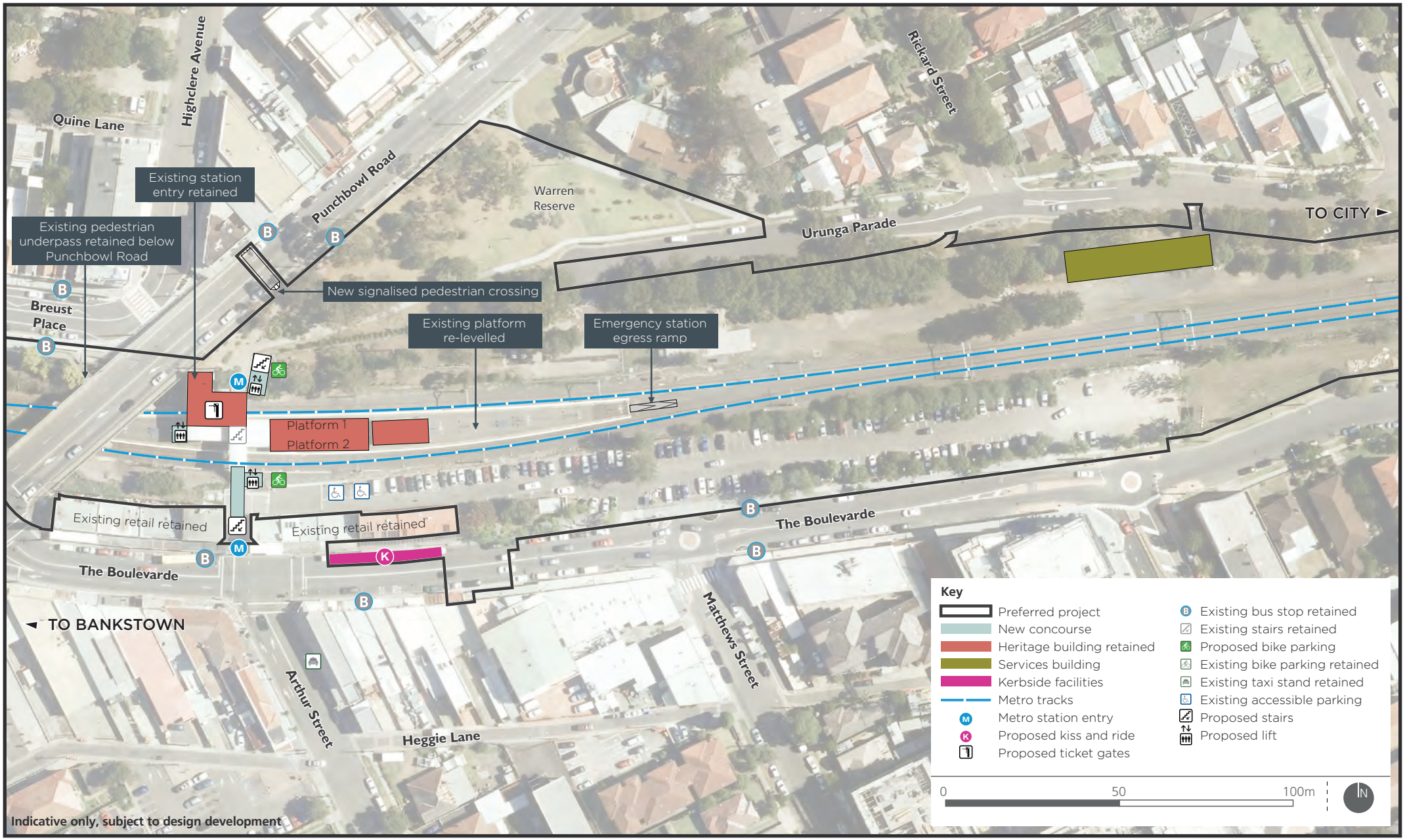
Punchbowl Station

Punchbowl Station is located to the east of the Punchbowl Road overbridge. The station area is bounded by commercial land uses and a car park fronting The Boulevarde to the south, Warren Reserve and Urunga Parade to the north, and Punchbowl Road to the west. The station entrances are located on Punchbowl Road (via Warren Reserve) to the north, and The Boulevarde to the south.

The key works proposed as part of the preferred project are shown in Figure 1.14 and summarised in Table 1.9.

Table 1.9 Punchbowl Station key design elements

Description
Station works
• The existing station entrance would be retained and upgraded. • Three new lifts and two new stairs would be provided. • The existing concourse footbridge would be extended to accommodate new lifts and stairs. • The existing stairs to both entrances would be replaced. • The existing heritage listed platform would be re-levelled. • The existing heritage listed station buildings and overhead booking office would be retained.
Station area
• The existing bus stops on Punchbowl Road and The Boulevarde would be retained. • New bike parking would be provided at the northern and southern station entrances. • Kerbside facilities would be provided on The Boulevarde. • The existing accessible parking adjacent to the southern station entrance would be retained. • A new pedestrian crossing would be provided on Punchbowl Road north-east of Bruest Place. • The existing pedestrian underpass below Punchbowl Road would be retained and upgraded.



sydney METRO | city & southwest

Punchbowl Station - indicative layout of key design elements

FIGURE 1.14

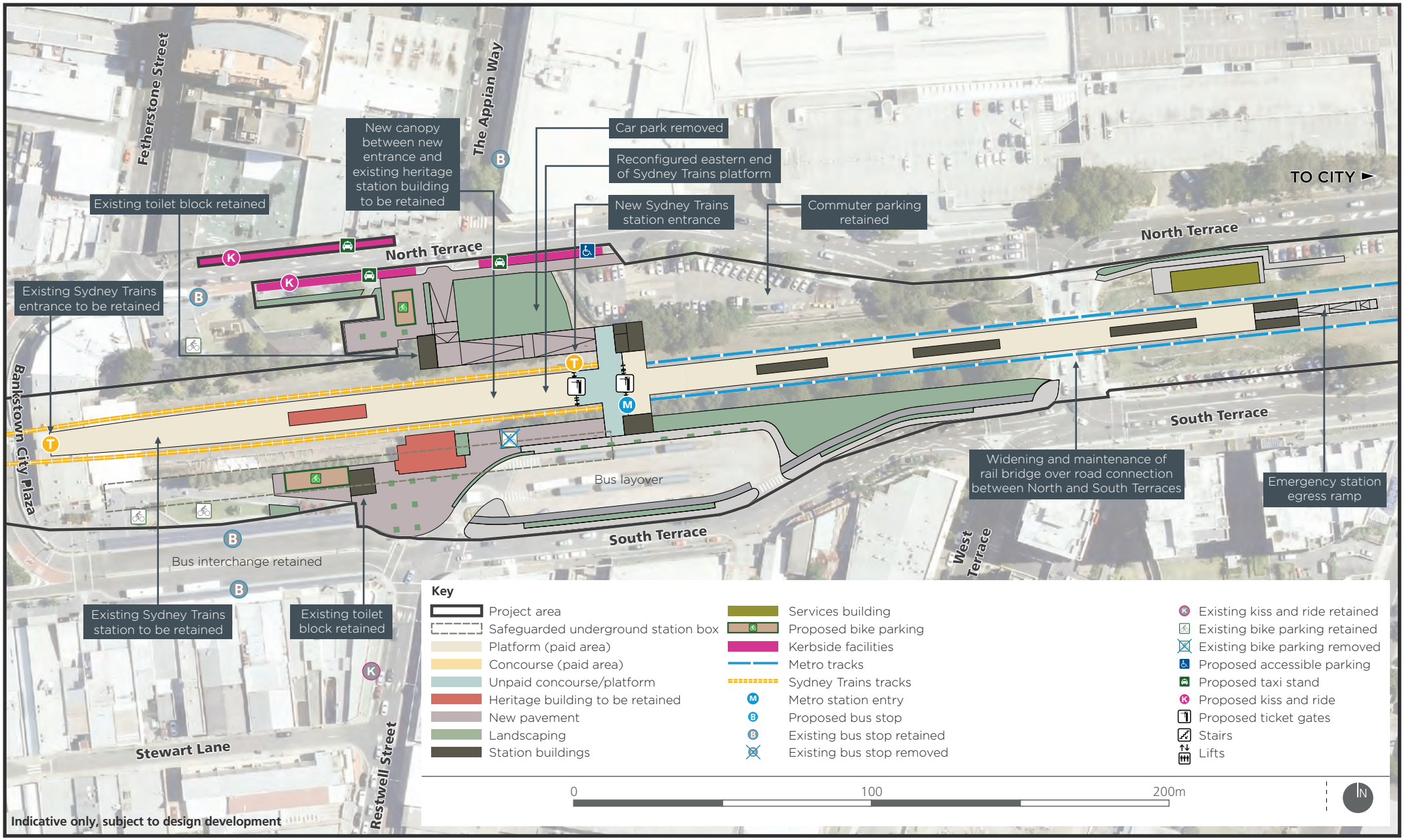
Bankstown Station

Bankstown Station is located to the east of the Bankstown City Plaza overbridge. The station area is bounded by North Terrace to the north, South Terrace to the south, and Bankstown City Plaza to the west. A new Sydney Metro station would be constructed to the east and adjoining the existing Sydney Trains Bankstown Station.

The key works proposed as part of the preferred project are as per those proposed as part of the exhibited project and are shown in Figure 1.15 and summarised in Table 1.10. Figure 1.15 also shows how the design safeguards for a potential future underground station.

Table 1.10 Bankstown Station key design elements

Description
Station works
• The existing Sydney Trains station entrance at Bankstown City Plaza would be retained. • A new at-grade corridor crossing would be provided at the eastern end of the existing Sydney Trains platform and would provide access to both Sydney Trains and new Sydney Metro platforms. • New station plazas would be constructed at station entrances on both sides of the rail corridor. • The heritage listed Sydney Trains platforms would be retained with minor modifications required at the eastern end. • New Sydney Metro platforms would be constructed to the east of the new at-grade corridor crossing. • All station buildings (including the heritage listed station building and Parcels Office) on the Sydney Trains platforms would be retained. • A new canopy would be constructed over the Sydney Trains platform between the new station entrance and the existing platform building.
Station area
• The bus layover area on South Terrace would be retained with minor adjustments to accommodate the new station entrance. • The bus interchange area on South Terrace, near the existing station entrance, would be retained. • The existing bus stop on the northern side of station on North Terrace would be retained. • A new ‘at grade’ corridor crossing would be provided at the eastern end of the existing Sydney Trains platform and would provide access to both Sydney Trains and new Sydney Metro platforms. • Changes would be made to kerbside facilities and parking along North Terrace, between the new station entrances and the existing entrance. Existing kerbside facilities (i.e. taxi rank) on northern side of North Terrace would be retained. • New bike parking would be provided on both sides of the station within the new station plazas. • Removal of existing car park located adjacent to the Appian Way off North Terrace, resulting in the loss of 10 off-street spaces.



sydney METRO | city & southwest

Bankstown Station - indicative layout of key design elements

FIGURE 1.15

1.1.2 Works to convert stations and the rail line to Sydney Metro operations – station and track works

The works described in this section are required to upgrade the T3 Bankstown Line, including the stations in the project area, to enable metro train services to operate.

Station works

To operate metro services, the following works would be required in addition to those described in Section 1.1.1:

- installation of platform screen doors on each side of all platforms which would open at the same time as the train doors once an arriving train has stopped, and would close simultaneously with the train doors
- fixed or mechanical gap fillers on platforms to ensure that the gap between the platform and the train is minimal – these devices automatically narrow the gap when the train arrives at the platform
- provision of operational facilities for Sydney Metro (such as station services buildings – described below).

Station services buildings

New services buildings would be located at all stations to house communications equipment, signalling equipment, electrical equipment and other rail systems equipment. Services buildings would be located where possible on land within the existing rail corridor close to the stations. The indicative locations of these buildings is shown in the figures provided in Section 1.1.1. Final locations would be confirmed during detailed design.

Track and rail system facility works

Track works

The preferred project would use the existing Sydney Trains tracks. In some locations, there may be a need to upgrade/replace the existing track, which would involve replacing the rails, sleepers, fastenings and ballast. The track may need to be replaced because of its condition.

Changes to the track alignment would be undertaken:

- around Bankstown Station to facilitate the separation of the metro tracks from the Sydney Trains network
- at the location of the new turnbacks and crossovers.

Track works would also include connecting to the metro tracks being provided west of Sydenham Station as part of the Chatswood to Sydenham project.

Turnback and crossover facilities

Turnback facilities allow trains to change direction while crossover facilities allow a train on one track to cross over to the other track. Installation of these features would facilitate train movement within the rail corridor. New turnback and crossover facilities are likely to be required at the following locations:

- new crossover on the eastern side of Campsie Station
- replacement of the existing track crossover to the east of Bankstown Station with a new Sydney Metro turnback
- a reconfigured rail junction and turnback to the west of Bankstown Station for Sydney Trains services.

The turnback and crossover facilities would involve the installation of new rails, sleepers, fastenings, and ballast, and new switches at crossover locations.

Signalling and train control

All sections of the Sydney Metro network would use advanced signalling technology to support safe operations. This would be controlled from the Sydney Metro Trains Facility at Tallawong Road, Rouse Hill. The system would:

- control the stopping of trains at stations
- ensure trains stop at the correct location on the platform
- control train speed
- initiate the opening and closing of train and platform screen doors.

Communications systems and masts

The preferred project would include an integrated information system to communicate with customers or metro staff via audio and visual links at each station and on trains. The communications equipment would be housed within designated services areas at each station. Equipment for radio communications, customer telecommunications, closed-circuit televisions, and emergency warning systems would be housed in the service areas at each station.

To facilitate automated operations, telecommunications masts would be positioned along the rail corridor between 180 and 250 metre intervals. The height of each mast would vary between three to six metres. Masts would consist of a concrete or steel pole.

Other track and rail system works

The following work would also be undertaken as part of the track and rail system facility works:

- adjustment of existing overhead wiring along the line to meet Sydney Metro operational requirements and Sydney Trains requirements
- adjustment of existing Sydney Trains rail systems, including removal of existing junctions to segregate the metro tracks from Sydney Trains tracks, and removal of redundant Sydney Trains systems (e.g. signalling, communications)
- utility and rail system protection and relocation works within the construction footprint.

With the exception of the utility protection and relocation works described in Section 2.10, these works would take place within the rail corridor.

1.1.3 Works to convert stations and the rail line to Sydney Metro operations – other works

Upgrading bridges along the rail corridor

Works are required to 16 road overbridges and six underbridges located within the project area (refer Table 1.11). The type of works required would vary, and would be confirmed during detailed design.

Generally, the bridge upgrade works would consist of providing enhanced protection to existing bridge piers, installation of anti-throw screens, vertical protection screens, vehicle collision barriers and general maintenance work.

The locations of the bridges proposed to be upgraded are shown in Figure 1.1.

Table 1.11 Overbridges and underbridges where works are proposed

Bridge	
Overbridge	Burwood Road overbridge, Belmore
Illawarra Road overbridge, Marrickville	Moreton Street overbridge, Belmore
Livingstone Road overbridge, Marrickville	Haldon Street overbridge, Lakemba
Albermarle Street overbridge, Dulwich Hill	King Georges Road overbridge, Wiley Park
Wardell Road overbridge, Dulwich Hill	Stacey Street overbridge, Bankstown
Crinan Street overbridge, Hurlstone Park	**Underbridge**
Church/Hutton Street footbridge, Canterbury	Meeks Road underbridge, Marrickville
Melford Street overbridge, Canterbury	Victoria Road underbridge, Marrickville
Canterbury Road overbridge, Canterbury	Ness Avenue/Terrace Road underbridge, Dulwich Hill
Beamish Street overbridge, Campsie	Cooks River/Charles Street underbridge, Canterbury
Duke Street footbridge, Campsie	Wairoa Street underbridge, Campsie
Loch Street overbridge, Campsie	North/South Terrace underbridge, Bankstown

Traction power supply

The Sydney Metro network traction power system would be designed to operate as an independent standalone system, segregated from the Sydney Trains network. All Sydney Metro traction power infrastructure would be controlled and monitored from the Sydney Metro Trains Facility at Rouse Hill.

Substations

Five new traction substations are required to power the metro trains. These would all be located within the existing rail corridor in the following locations:

- Dulwich Hill – southern side of the railway corridor at Randall Street
- Canterbury – southern side of the railway corridor, north of Hutton Street and west of the Melford Street overbridge
- Campsie – southern side of the railway corridor, north of Lilian Street and east of Carrington Street
- Lakemba – southern side of the railway corridor, north of The Boulevarde and west of Taylor Street

- Punchbowl – southern side of the railway corridor, north of South Terrace and east of Scott Street.

The proposed locations of these substations are shown on Figure 1.1. These locations are indicative, and the final locations would be confirmed during detailed design.

The substations would be above ground, and would be positioned within a secure compound within the rail corridor. The compound would include a parking area for one or two vehicles, and a loading dock for deliveries.

Traction power supply cable

To provide a reliable source of power to the new traction substations, a 33 kilovolt high voltage electricity supply cable is proposed between the Campsie traction substation and the existing Ausgrid Canterbury electrical substation, which is located about one kilometre south of Canterbury Station in Earlwood.

The route for the power supply cable would be about 3.5 kilometres long, and would be located within the following road reserves:

- Beamish Street
- South Parade
- Phillips Avenue
- Canterbury Road
- Fore Street
- Burlington Avenue
- Karool Avenue/ River Street
- Spark Street
- Mooney Avenue
- Westfield Street.

The indicative alignment is shown on Figure 1.1.

Maintenance access

Maintenance access to the rail corridor would be generally similar to the existing situation. Where the ARTC operated freight line is located within the corridor (between east of Marrickville Station and west of Campsie Station), the metro tracks would be accessed from the southern side of the corridor only, and the freight rail tracks would be accessed from the northern side of the corridor. For other sections of the corridor, the metro tracks would be accessed from both sides of the corridor.

Access to the rail corridor would be via existing access gates wherever possible. There are currently about 70 gates along the southern side of the corridor and about 55 gates along the northern side of the corridor. These access points are a mix of pedestrian and vehicular gates. Changes to existing accesses or provision of new access gates may be required to provide:

- access to new key infrastructure such as station services buildings and substations
- change of access type (for example, change from pedestrian to vehicular access)
- additional emergency access/egress points.

Some access points would include provision for access by rail-mounted vehicles.

The need for new access points (including for ARTC tracks) would be determined during detailed design.

Security

Security fencing

Security fencing would be installed as part of the preferred project. This would comprise a new security fence along both sides of the rail corridor. In addition, a segregation fence would be installed between the metro tracks and ARTC freight tracks, between west of Marrickville Station and west of Campsie Station.

Security fencing would be constructed from palisade or close-spaced welded mesh. Controlled access points would be provided at appropriate locations.

The design and type of fencing would be confirmed during detailed design, based on relevant Asset Standards Authority standards. Where practicable, fencing would be integrated with noise barriers (described below) where these are required.

Trackside intruder detection system

A trackside intruder detection system, consisting of non-mechanical protection measures, would be installed throughout the rail corridor. Closed circuit television would form part of the system, and would monitor all automatic control areas and stations. These would be fitted to the telecommunications masts positioned along the corridor.

Noise barriers

Noise barriers would be required in some locations to mitigate operational noise impacts. Noise modelling undertaken for the Environmental Impact Statement has identified preliminary locations where noise barriers are potentially required. The final location of barriers would be confirmed during detailed design.

The design of the barriers would form part of an integrated line-wide design process to ensure a consistent approach. Materials would be selected to ensure that the barriers are robust, vandal-resistant, and resilient from damage from vegetation. The design would be simple in form, and the use of textures and patterns would be avoided where possible.

Consultation with relevant stakeholders (including the local community) would be undertaken, to ensure that the design of barriers considers visual amenity.

Drainage

The preferred project would include maintenance of existing track drainage to ensure that stormwater is efficiently conveyed within and across the corridor to the surrounding stormwater drainage system.

1.2 Property requirements

The preferred project would mainly be located on land that forms part of the existing rail corridor and adjacent road reserves owned by the NSW Government or the relevant local council. The design of the preferred project has avoided the need to permanently acquire land and properties. Construction of the preferred project would require the temporary leasing of land and may require the need to cease commercial leases on NSW Government owned land. Leasing requirements and impacts are described below.

1.2.1 Cessation of commercial leases on NSW Government owned land

To undertake the proposed station upgrade works, the preferred project would require access to land, which is currently subject to one existing commercial lease at Wiley Park Station, on land owned by the NSW Government (RailCorp).

The preferred project would require the cessation of the lease at this station.

All the impacted leases would be ceased in accordance with lease agreements held with the NSW Government.

1.2.2 Temporary lease of property

Some areas of land would need to be temporarily leased or occupied for construction compounds and other work sites during construction of the preferred project (refer to Section 2.8 for further details of construction compounds and work sites). The majority of these sites would be located within the rail corridor, which would minimise the potential for direct impacts on land use and property. There would however be some construction compounds and work sites located outside the rail corridor. These areas are generally located within road reserves or other council owned land. In addition, some areas of land may need to be temporarily leased or occupied to provide infrastructure to support the implementation of the temporary transport plans. Following further design development, consultation would be undertaken with the relevant landowner to arrange leasing of the required piece of land.

1.2.3 Land access

Existing commercial leases may expire before access is required or early termination rights may be used. In some limited circumstances, access to public land may be obtained using statutory powers of access.

1.3 Operation of the preferred project

Operation of the preferred project would be as per that described in the exhibited project.

The preferred project would operate in conjunction with Sydney Metro Northwest (which extends from Tallawong to Chatswood stations), and the Sydney Metro City & Southwest Chatswood to Sydenham project (which extends from Chatswood Station to Sydenham Station).

The Sydney Metro network, including the stations, trains and railway line, would be operated and maintained under a public private partnership, with ownership of the infrastructure remaining with the NSW Government.

1.3.1 Timing

Sydney Metro Northwest will be operational by 2019. Sydney Metro City & Southwest would be fully operational by 2024, with the opportunity of operation commencing in two phases. Initially, Sydney Metro Northwest services would be extended by the City & Southwest project, and would operate from Chatswood Station to Sydenham Station. Some months later, metro operations would extend from Sydenham Station to Bankstown Station, with both phases planned to be completed before the end of 2024. The opportunity for phased opening of the project would enable metro trains to operate from Tallawong Station to Sydenham Station prior to the final conversion of the T3 Bankstown Line to metro operations.

1.3.2 Service frequency, capacity, and transfers

Once the project is operational, Sydney Trains services would no longer operate along the T3 Bankstown Line between Sydenham and Bankstown stations. Customers would be able to interchange with Sydney Trains services at Sydenham and Bankstown stations. Sydney Trains services from Bankstown Station to Liverpool and Lidcombe stations would not be affected, and these services would continue to operate.

At opening, six car metro trains would operate at least every four minutes during peak periods (averaging around 15 trains per hour) and at least every ten minutes in the off peak periods.

The project would initially have the capacity to move around 23,000 people per hour in each direction in peak periods. When required to meet increased demand, capacity could be increased to cater for around 40,000 people per hour in each direction. This would be achieved by increasing trains from six car sets to eight car sets, and increasing the service frequency up to 30 trains per hour through the Sydney CBD in peak periods.

This ultimate capacity forms part of the scope of the project.

1.3.3 Hours of operation

The first metro service to depart Tallawong Station (Sydney Metro Northwest) and Bankstown Station (Sydenham to Bankstown upgrade) would arrive at Central Station in the early morning. The last metro service to arrive at Tallawong and Bankstown stations would depart Central Station around midnight, and potentially later on weekends. The operating hours and service levels could be extended to accommodate planned special events, in conjunction with other Sydney public transport services.

The operating hours would be determined as part of the development of service schedules for the project, taking into account customer and maintenance access requirements.

1.3.4 Train types

Trains operating on the Sydney Metro network would be new-generation, single-deck metro trains (similar to those being introduced on Sydney Metro Northwest). The trains will deliver a fast, safe and reliable journey for customers, with high performance standards and good customer amenities. The key features of these trains include:

- fully automated trains, with passengers able to see from one end of the train to the other
- three doors per side per carriage, for faster boarding and alighting
- provision of accessible priority seating for those with a disability or using a wheelchair or mobility device, the elderly or those travelling with a pram or luggage
- emergency intercoms inside trains and customer service assistants at every station and moving throughout the network day and night
- two multi-purpose areas per train for prams, luggage, and bicycles
- on-board real time travel information and live electronic route maps
- level access between the platform and train
- air conditioning
- a new generation of fast, safe and reliable metro trains.

An eight car, single-deck Sydney Metro train has a capacity of about 1,500 passengers which is greater than an existing eight car, double-deck train. With a greater capacity per train and higher service frequency, the Sydney Metro network would be able to move more passengers per hour than existing trains.

Sydney Metro trains also allow customers to get on and off at stations faster, which reduces the time a train is stopped at each station and enables reduced travel times. Platform screen doors at stations would keep objects and people away from the platform edge and allow trains to get in and out of stations much faster. Using modern signalling technology and fully automated trains is also more efficient and would increase the capacity of the metro network.

1.3.5 Seating

Sydney Metro trains contain a mix of seating and standing areas, as well as multi-purpose areas for prams and luggage. Seating on trains would be padded and covered with fabric to improve passenger comfort.

The proposed seating layout would allow for between 5,500 and 6,000 seats per hour in each direction. The seating layout also includes wide aisles to make it easier for customers to get in and out of seats, and in and out of trains, which is further facilitated by the provision of three doors on each side of each carriage.

As an added safety benefit, metro customers will be able to see from one end of the train to the other from their seats, as no doors will divide the carriages.

An indicative image of a metro train interior is provided in Figure 1.16.

Figure 1.16 Indicative Sydney Metro train interior

1.3.6 Ticketing and pricing

The existing Opal electronic ticketing system will be used on the Sydney Metro network, which will allow for a ticketing system integrated with all other modes of public transport (Sydney Trains operated trains, buses, ferries, and light rail services). This system would be installed at all stations.

Fares for Sydney Metro would be set by the NSW Government. Ticket pricing for all transport in NSW is determined by the Independent Pricing and Regulatory Tribunal of New South Wales (IPART), and by NSW Government policy. The NSW Government reviews this pricing annually and may consider a change to the Opal policy at any time. Sydney Metro service pricing would be reviewed in line with the pricing review process for other forms of transport.

1.3.7 Stabling and maintenance

The stabling and maintenance of metro trains would occur at two locations:

- Tallawong Road at the Sydney Metro Trains Facility (constructed as part of Sydney Metro Northwest)
- Sydenham at the Sydney Metro Trains Facility South (constructed as part of the Chatswood to Sydenham project).

The Sydney Metro Trains Facility is proposed to be the primary stabling facility for the overall metro network as it would contain the heavy maintenance facilities required to manage the system. The Sydney Metro Trains Facility South is located about 750 metres north-east of the existing Sydenham Station. This facility would provide for overnight stabling of Sydney Metro trains, and light reactive maintenance activities to minimise the need to send trains to the Sydney Metro Trains Facility.

1.3.8 Emergency and incident management

The operational management plan for the project would include procedures for incident and emergency management.

This page has been left blank intentionally

2. Preferred project description – construction

This section provides a description of the indicative construction methodology for the preferred project. This includes an outline of the construction process and likely activities; the proposed approach to avoiding or minimising impacts during construction; the estimated construction resources that would be required; and an indicative construction program. The section also provides information on the proposed approach to out of hours work; utilities management during construction; and the alternative transport arrangements that would be implemented during temporary closures of the stations and track required during construction.

2.1 Overview

2.1.1 Key construction stages

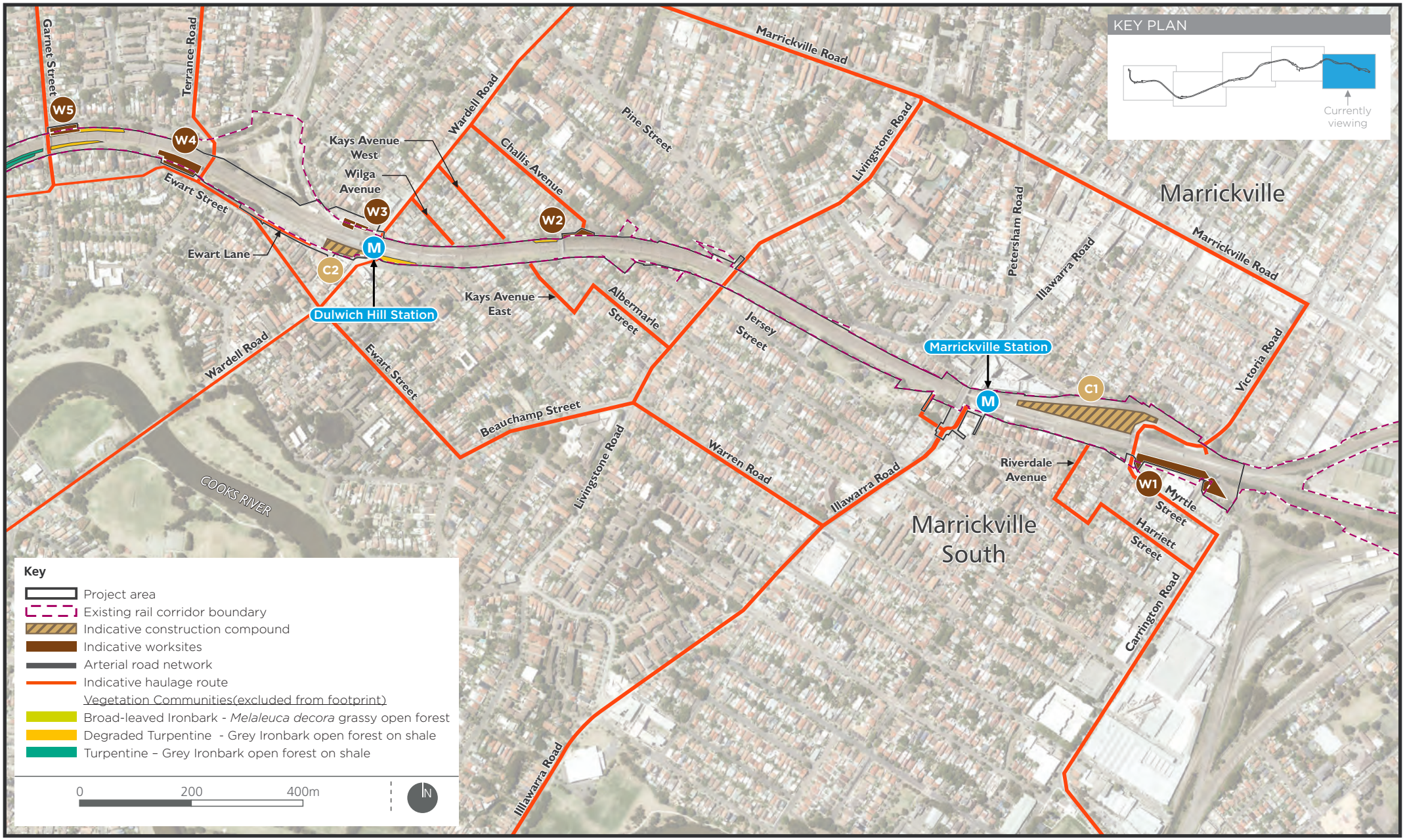
Construction of the preferred project would broadly involve the following key stages:

- enabling works (described in Section 2.2)
- main construction works, including track and station works (described in Sections 2.3 to 2.5)
- finishing works (described in Section 2.6.1)
- testing and commissioning (described in Section 2.6.2), including final conversion to Sydney Metro systems.

The construction methodology presented in this section is indicative and would continue to be modified and refined as the design process continues. A final construction methodology and program would be developed by the construction contractor when appointed.

Key construction areas, including the proposed construction compounds, work sites, and haul routes proposed for use during construction, are shown in Figure 2.1.

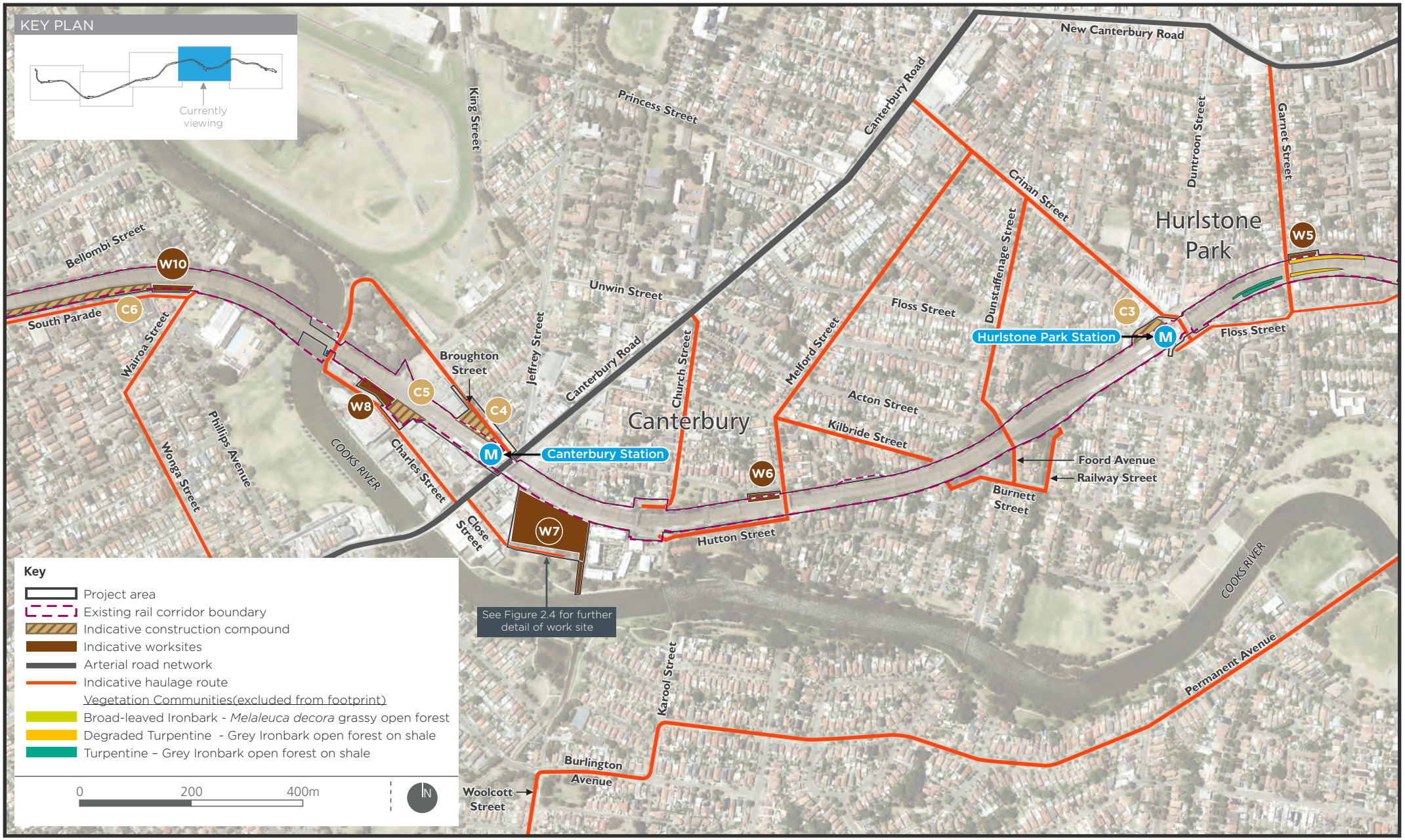
Construction of the preferred project would commence in 2018/2019 once all necessary approvals are obtained and the metro service to Bankstown would commence operation in 2024.



sydney METRO | city & southwest

Preferred project area - construction activities - map 1

FIGURE 2.1



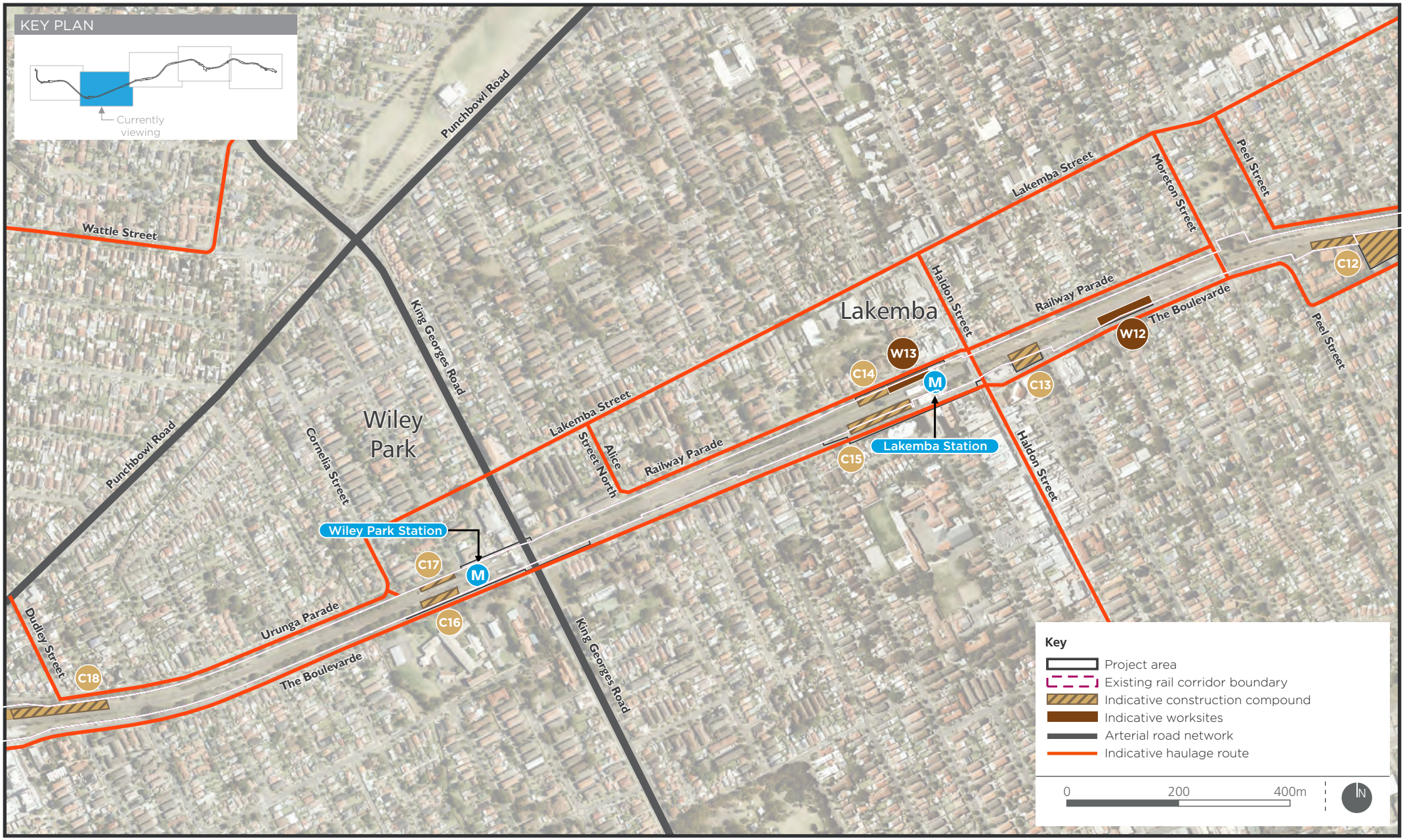
Preferred project area - construction activities - map 2

FIGURE 2.1

sydney METRO | city & southwest

Preferred project area - construction activities - map 3

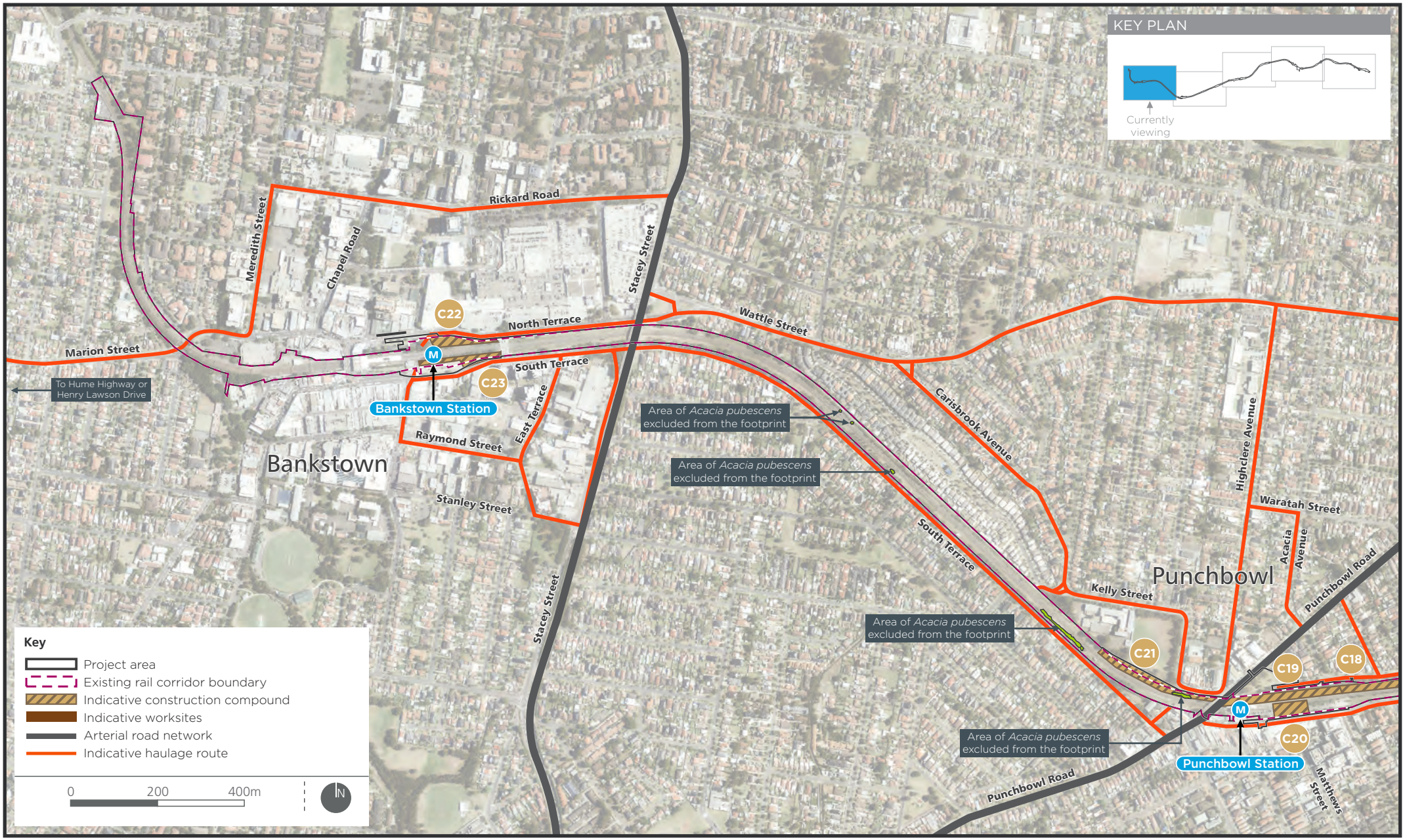
FIGURE 2.1



sydney METRO | city & southwest

Preferred project area - construction activities - map 4

FIGURE 2.1



Preferred project area - construction activities - map 5

FIGURE 2.1

2.1.2 Approach to avoiding or minimising impacts during construction

Construction planning

Design development has included a focus on avoiding and/or minimising the potential for impacts during all key stages of construction. The indicative construction methodology described in this section has been developed with consideration given to the environmental constraints and issues identified during the early stages of the design and environmental assessment process.

Construction environmental management

The *Sydney Metro City & Southwest Construction Environmental Management Framework* (Sydney Metro, 2017a) (the 'Construction Environmental Management Framework') defines the approach to environmental management and monitoring during construction of Sydney Metro City & Southwest as a whole. The framework is a linking document between the planning approval documentation and the construction environmental management documentation (including the Construction Environmental Management Plan), which would be developed and implemented by the construction contractor/s.

The *Sydney Metro City & Southwest Construction Noise and Vibration Strategy* (Sydney Metro, 2017b) (the 'Construction Noise and Vibration Strategy') defines how construction noise and vibration will be managed for Sydney Metro City & Southwest as a whole. The strategy provides a framework for managing construction noise and vibration impacts in accordance with the *Interim Construction Noise Guideline,* to provide a consistent approach to management and mitigation across all Sydney Metro projects.

2.2 Enabling works

Enabling works for major infrastructure (also known as early works) are typically carried out before the start of substantial construction to establish key construction sites and provide protection to the public where required. It is noted that some enabling works may require additional approvals prior to being implemented. However, these works are described chronologically here to aid comprehension.

2.2.1 Site establishment

Site establishment works are expected to include:

- carrying out heritage investigations, protection and archival recordings in accordance with the construction environmental management plan
- install site environment management and traffic controls in accordance with the construction environmental management plan
- establishing construction compounds and work sites
- supplying power, water and other utilities to construction compounds and other areas within the construction work area (whether temporary or permanent supplies)
- relocating, adjusting and protecting utilities and services affected by the project
- removing buildings and other structures where required (further information is provided in Section 2.2.2)
- potential remediation works (subject to identification of contaminated materials)
- adjusting or removing Sydney Trains rail infrastructure (signalling, communication routes) within the rail corridor
- vegetation clearance (as required) within the rail corridor.

2.2.2 Building removal works

A number of Sydney Trains buildings (e.g. section huts) located along the corridor would need to be removed. The need for removal of these buildings would be confirmed during detailed design.

Removal works would be carried out by licensed contractors. Typically, building removal would involve:

- establishment of hoarding, scaffolding and protection barriers around the perimeter of the site of the building to be removed
- all services into the buildings would be decommissioned, made safe and redundant
- soft stripping of internal building materials
- demolition of the building using an excavator, bobcat, cranes or other conventional methods following a top-down approach
- temporary propping and/or waterproofing provided for structural integrity of adjacent structures.

A hazardous materials analysis would be carried out prior to stripping and demolition of the main structure. Hazardous materials would be removed and disposed of in accordance with relevant legislation, codes of practice, and Australian Standards.

Materials such as bricks, tiles, timber, plastics and metals would be sorted where practicable and sent to a waste facility with recycling capabilities.

2.2.3 Transport network adjustments

Enabling works for transport infrastructure, including roads, would reduce the duration of construction works and associated disruptions to traffic and surrounding land uses. The indicative transport network adjustments proposed to be undertaken as part of enabling works would generally include:

- road modifications to facilitate the movement of construction vehicles, such as redesigned intersections and road layouts, kerb modifications, turn restrictions, changes to line marking, signage, and restrictions on parking at intersections
- optimisation of traffic signals to facilitate network management, including phase adjustments, bus priority measures, and geometry upgrades
- provision of minor access roads to construction compounds and work sites from the road network and access gates into the rail corridor (where required)
- temporary relocation of pedestrian and cycle paths and the provision of property access
- temporary relocation of some existing bus stops and associated facilities, bus service rerouting, and installation of infrastructure to support temporary bus services (such as new bus stops and shelters)
- relocation of kerbside facilities, including taxi ranks, mail zones, loading zones, and associated modifications to advisory signage
- relocation of pedestrian access points into stations and improvements to walkways and lighting, wayfinding, and information signage
- changes to parking, including on and off street parking and access changes
- installation of monitoring devices such as CCTV, to aid real-time traffic monitoring and improved incident response.

Some of this work would be undertaken in advance of the commencement of major station and corridor construction activities, while some works will continue concurrently with this more substantial construction.

These adjustments would be confirmed during detailed design and construction planning.

2.3 Station works

2.3.1 Outline methodology

Station works would be staged to suit operational requirements and the availability of possession periods.

The following general work activities would be undertaken for a typical station upgrade:

- Site establishment and enabling works:
  - establishment of site compound (erection of fencing, tree protection zones, site offices, amenities and plant/material storage areas, etc)
  - relocation of services/seats/bins on platforms.
- Lift and stairs construction:
  - erection of hoardings
  - removal/demolition of existing structures (existing canopies, shelters and stairs etc)
  - construction of footings/foundations for new stairs and lift shafts (on platforms)
  - construction of footings/foundations for new stairs and lift shafts (outside platforms areas)
  - fit out of stairs and anti-throw screens
  - installation of lifts
  - installation of fixtures, lighting and CCTV cameras for areas affected by construction works.
- Station works:
  - reuse and refurbishment of station and services buildings (including mechanical/electrical/building fit-out)
  - platform works and re-levelling
  - station area works
  - provision of new kerbside and bike parking facilities
  - landscaping, painting and paving works.
- Finalisation:
  - landscaping and public domain works, including installation of wayfinding signage to the station.
- Testing and commissioning:
  - various activities to test and commission power supplies, lifts, lighting, modifications to station services, ticketing systems and communication and security systems.

2.3.2 Tree removal and management

The preferred project would involve trimming or removing trees in the vicinity of stations. A tree is defined by Australian Standard AS 4373-2007 as ‘A long lived woody perennial plant growing to greater than (or usually greater than) three metres in height, with one or relatively few main stems or trunks’.

Table 2.1 provides an estimate of the number of trees with the potential to be affected within station areas, based on a preliminary survey conducted. The final number of trees that may need to be trimmed or removed in each area would be confirmed during detailed design and final construction planning. Minimising impacts to trees would be a key obligation incorporated into the construction contract.

Table 2.1 Number of trees at stations with the potential to be impacted

Station	Native trees	Exotic trees	Total trees
Marrickville	50	15	65
Dulwich Hill	11	2	13
Hurlstone Park	8	9	17
Canterbury	38	7	45
Campsie	28	6	34
Belmore	61	11	72
Lakemba	67	0	67
Wiley Park	22	41	63
Punchbowl	25	22	47
Bankstown	79	1	80

Note: The table presents the maximum number of trees around stations with the potential to be impacted during construction. The final numbers would be confirmed during detailed design. It does not include other trees along the corridor that may also need to be removed as part of general vegetation removal in the rail corridor (refer to Section 2.4.3).

Impacts to trees would be minimised wherever practicable. Where removal of trees is unavoidable, trees would be replaced in accordance with the Tree Management Strategy for the preferred project, which would be prepared in consultation with relevant stakeholders (including local councils). The Tree Management Strategy for construction would be used to guide the management of trees that need to be removed, protected, or trimmed. The strategy would address:

- minimising the need for tree removal
- protection of trees being retained
- replacement of trees being removed.

The strategy would provide for the following:

- consideration of all options to minimise the need for tree removal and to retain as many trees as possible
- preparation of comprehensive tree reports (by a qualified arborist) for trees requiring protection, pruning, or removal, to guide the approach to managing trees
- measures to minimise damage to, and ensure the health and stability of, trees to be retained, in accordance with *AS4970-2009 Protection of trees on development sites*
- replacement of trees where removal cannot be avoided, in accordance with the following general principles:
  - replacement of removed trees on a two for one ratio
  - provision of replacement trees to achieve similar outcomes as those removed where possible, such as screening, amenity, etc
  - tree species, and minimum tree size and height, in consultation with the relevant council
  - trees to be planted within or in close proximity to the project area, or in another location determined in consultation with the relevant council

– trees planted in the vicinity of stations would be in accordance with the station design and precinct plans for the preferred project.

2.4 Corridor works

2.4.1 Track works

As described in Section 1.1.3, the preferred project would involve changes to the existing track at Campsie and Bankstown. There may, however, also be a requirement to upgrade or replace track or supporting infrastructure elsewhere along the rail corridor following further investigations to be undertaken as part of detailed design.

Rail work would involve:

- removing existing fastenings, rail and sleepers
- placement of ballast (consisting of either recycled or new ballast) and sleepers on the formation
- tamping and profiling the ballast around the sleepers and to a smooth alignment
- installing, fixing, and welding the rails to the sleepers
- installing cable and equipment, including signalling, communications and electrical systems
- installing overhead wiring for rolling stock
- maintenance of existing track drainage.

2.4.2 Bridge works

It is anticipated that most bridges would be able to remain partially open to traffic during the installation of new traffic barriers and anti-throw screens.

Construction would typically involve:

- close bridge lanes and/or footpaths depending on requirements
- existing parapets being removed down to the existing bridge slab
- precast parapet sections being positioned with the use of cranes and fixed to the bridge deck, throw screens would be prefabricated prior to installation
- installation of bridge protection measures
- modifications and maintenance where required
- bridge lanes and/or footpaths reopened to traffic.

2.4.3 Other corridor works

The preferred project would require works along the length of the corridor as follows:

- installation of new communications services routes
- maintenance works to existing track drainage
- installation of fencing.

2.4.4 Removal of vegetation within the rail corridor

The biodiversity assessment for the preferred project was undertaken based on the assumption that all vegetation within the rail corridor would need to be removed to construct the preferred project, with the exception of:

- native vegetation that would require biodiversity offsets if removed (specifically areas of 'Turpentine - Grey Ironbark open forest on shale', 'Degraded Turpentine - Grey Ironbark open forest on shale' and 'Broad-leaved Ironbark – Grey Box' (shown on Figure 2.1)
- identified areas of the threatened species Downy Wattle located within the rail corridor between Punchbowl and Bankstown stations (shown in Figure 2.1).

Based on this assumption, about 16.3 hectares of vegetation (not including vegetation classed as exotic grassland) may need to be removed, including:

- up to 7.3 hectares of planted native vegetation
- up to nine hectares of exotic scrub and forest.

It is expected that large areas of the planted native vegetation and exotic scrub and forest would not require removal for the corridor works, however this is subject to the detailed design of the proposed works, including fencing and the communications services route.

This vegetation would potentially include trees that provide screening along the corridor for surrounding properties. The need to clear vegetation would be reviewed by the construction contractor/s and minimised wherever practicable.

Where removal of trees is unavoidable, trees would be replaced in accordance with the Tree Management Strategy, which would be prepared in consultation with relevant stakeholders (including local councils). The strategy would be used to guide the management of trees that need to be removed, and to consider options for their replacement. A summary of this strategy is provided in Section 2.3.2.

2.5 Associated infrastructure

2.5.1 Substations and station services buildings

Construction of substations and services buildings would generally involve:

- enabling works (as described in Section 2.2)
- earthworks to provide a level site
- piling works and site excavation for in-ground services:
  - use of piling rigs to construct piles required for ground slab
  - excavation of building and bund yard areas for construction of in-ground pits and conduits
  - excavation for oil/water separator tank and related services (for substations)
- preparation of concrete slab in location of substation or services building
- buildings would potentially be prefabricated off-site and delivered and installed on a concrete slab or would be constructed on site using prefabricated segments of the building
- fit out, including connection to the electrical network for substations
- connection to the overhead wiring structures which would require some trenching activities, (the size and location of trenches would be confirmed during detailed design)
- finishing, testing and commissioning as described in Section 2.6.

2.5.2 Traction power supply cable

Construction of the proposed traction power supply feeder from Campsie Station to Ausgrid's Canterbury Substation in Earlwood would be undertaken generally via trenching along the alignment. The use of horizontal directional drilling to install the cable would potentially be used in the following locations to minimise impacts:

- along Canterbury Road due to high traffic volumes
- between River Street and Karool Avenue due to a substantial change in elevation between the two streets - at this location, there is also a local heritage item which would need to be considered
- along Westfield Street (including the substation access road) between Mooney Avenue and the Canterbury Substation.

The alignment also crosses Cup and Saucer Creek on Fore Street, Canterbury, via an existing bridge. This crossing would involve integrating the cable into the bridge structure, and works within the creek would not be required. The final design of this crossing would be confirmed during detailed design.

2.6 Finishing, testing and commissioning

2.6.1 Finishing works

At the end of the construction phase, the contractor would remove construction equipment from the construction sites. Where relevant, sites that were occupied temporarily and do not form part of the operational footprint would be rehabilitated and revegetated.

As part of the operational readiness phase, the contractor would progressively deliver the station upgrades described in Section 1. Typically, this would involve the progressive removal of construction equipment, site sheds, hoardings and other temporary construction site elements.

Landscaping and finishing works would be undertaken at permanent operational sites. All construction work sites, compounds and access routes would be returned to the same or better condition than prior to construction commencement. Site reinstatement and rehabilitation would be undertaken progressively during the works, and would include the following activities:

- demobilise site compounds and facilities
- remove materials, waste and redundant structures from the works sites
- forming, and stabilising of spoil mounds
- decommission temporary work site signs
- remove temporary fencing
- establish permanent fencing
- decommission site access roads that are no longer required
- restoration of disturbed areas as required, including revegetation where required.

Site rehabilitation would be undertaken in accordance with the construction environmental management plan, guided by the Construction Environmental Management Framework, as described in Section 2.1.2.

2.6.2 Conversion to Sydney Metro systems and testing and commissioning

During this last stage of construction, the rail line would be converted to Sydney Metro systems. This would include works such as the installation of new signalling systems, controls, communication systems, and platform screen doors.

Testing and commissioning (checking) of the rail line and communication/signalling systems would be undertaken to ensure that all systems and infrastructure are designed, installed, and operating according to Sydney Metro's operational requirements.

The rail systems at each site (stations and services facilities) would be commissioned progressively as standalone entities. This would include:

- removal of any redundant Sydney Trains assets
- installation of platform screen doors and gap fillers.

Once all services are installed, testing and commissioning of the whole system would occur in three stages:

- collection of safety and quality assurance documentation and commissioning of readiness checks
- installation and operation tests and checks
- final inspection, site acceptance tests, commissioning and validation of individual systems.

During the final stages of commissioning, test trains would run on the line to test the signalling system and controls and the traction power supply.

This final stage of conversion and commissioning works would be undertaken during the final extended period rail possession (refer to Section 2.7.2). Alternative transport arrangements for rail customers would be implemented during this period (refer to Section 2.11).

2.7 Construction program and timing

2.7.1 Program

An indicative construction program is provided in Figure 2.2.

Construction of the preferred project would commence once all necessary approvals are obtained (anticipated to be in 2018/2019). Upgraded stations would be progressively delivered from 2019 until 2022, with the main station upgrade works estimated to take about one year for each station, however, the works would be spread across the entire project construction period (depending on the extent of works required). Works to upgrade other infrastructure would also occur during this period to improve the reliability of services.

Station works would potentially be staggered throughout the overall construction period so that not all station works would be undertaken at once. This would mean that most stations would be open to customers for the majority of the construction period. A typical construction program for station works is provided in Figure 2.3.

Sydney Trains services would continue to operate to each station throughout the construction period (excluding during possessions or any other closure periods).

Figure 2.2 Indicative construction program for the preferred project

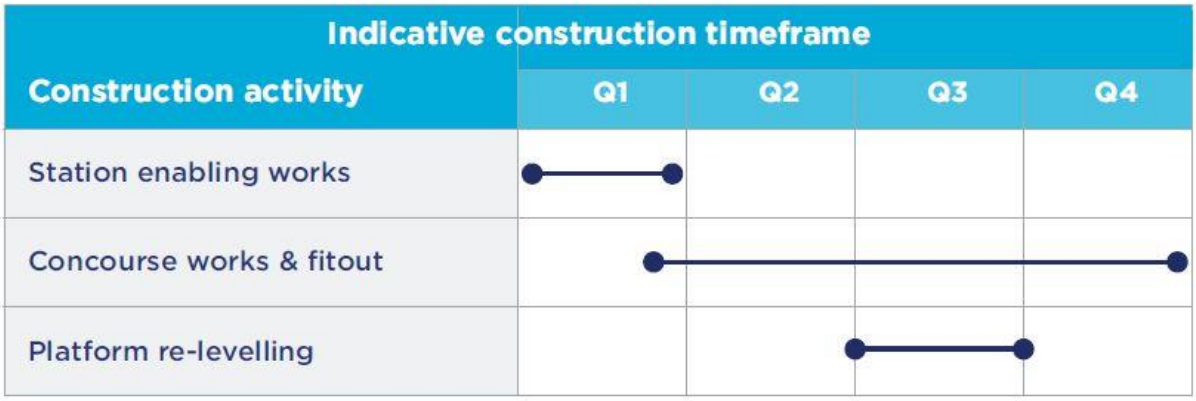


Figure 2.3 Indicative construction program for station works

2.7.2 Rail possession periods

Some construction works would need to be undertaken during rail possession periods when trains are not operating, to ensure that works are carried out as efficiently as possible and that worker safety is maintained. This would include possessions of both the Sydney Trains tracks, and the freight tracks located between Marrickville and west of Campsie stations. Works that may need to be undertaken during possession periods include:

- station works and activities on stations which cannot be undertaken during operation of the network
- track and corridor works
- bridge works.

This indicative possession program would be reviewed during detailed design in line with construction planning to ensure the available possessions are sufficient to complete the works. The schedule of possessions would be reviewed to reduce the overall impacts to the community as far as possible.

During each possession period when the rail lines are closed, alternative transport arrangements would be implemented to ensure that rail customers can continue to reach their destinations. A description of the proposed temporary transport arrangements that would be implemented during these periods is provided in Section 2.11.

Outside the possessions described below (for both Sydney Trains and freight lines) services would operate in parallel within any construction works not located close to the operational tracks.

Standard weekend possessions

Sydney Trains currently schedules routine maintenance possessions on four weekends each calendar year. Subject to detailed construction planning, these scheduled maintenance possessions would also be used to complete the preferred project works.

Additional weekend possessions

Up to an additional eight weekend possessions would be required each year to complete the preferred project works. Works to be undertaken during standard and additional weekend possessions would include installation of communications services routes, bridge works, fencing and station works that need to be undertaken from or interface with the rail track.

School holiday possessions

This would involve up to a two week possession of the T3 Bankstown Line (either in full or part) during the Christmas school holiday periods. Opportunities to minimise the number or duration of school holiday possessions would be further investigated during detailed design and following appointment of the construction contractor.

The assessment assumes the use of a full line possession during the Christmas school holiday periods. This would be in addition to the standard and additional weekend possessions outlined above. It is proposed to undertake possessions during the Christmas school holiday periods because there is:

- lower patronage on the Sydney Trains network generally and this would reduce inconvenience for school children and parents
- less traffic on the surrounding road network, which would assist the efficient operation of rail replacement bus services
- increased availability of buses and drivers for rail replacement bus services
- increased rail capacity available on other lines to accommodate customers who would normally travel on the T3 Bankstown Line.

Freight track possessions

The section of the rail corridor between east of Marrickville and west of Campsie is shared with freight tracks managed by ARTC. ARTC currently has four weekend possessions a year available for maintenance of the corridor. These periods coincide with the standard Sydney Trains possessions described above.

Given the proximity of the ARTC tracks, any works required would need to be undertaken during these possessions, unless otherwise agreed with ARTC.

Consultation would be undertaken with ARTC throughout the construction phase to ensure there are no impacts on the operation of freight services.

Night-time weekday possessions

Night-time weekday possessions would involve closure of the rail line once the evening peak train services have concluded and the line would be re-opened prior to morning train services commencing. Night-time weekday possessions would be required on an occasional basis to prepare the rail corridor ahead of weekend or school holiday possessions and maximise the activities that can be undertaken during these possessions. Other low noise generating activities, such as survey and investigations, may also be undertaken during this time.

Final possession

Once the stations have been upgraded, there would need to be a final possession period of between three and six months in duration. This final possession period is to enable the works that can only be completed once Sydney Trains services are no longer operating, and would include works such as the installation of new signalling, communication systems, and platform screen doors. It would involve full closure of the line to enable it to be converted to Sydney Metro systems, as described in Section 2.6.2.

The duration of the final possession would be as short as practicable to bring Sydney Metro trains into service. The duration of this possession would be refined in consultation with relevant stakeholders, and the community would be informed of any proposed changes once they are confirmed.

2.7.3 Temporary station closures

Individual stations may also be closed for up to 2 months to complete the station works. Up to three stations may be closed at any one time. Temporary rail replacement buses would be provided during these periods in accordance with the alternative transport arrangements described in Section 2.11.

Prior to any closures, the community (including customers) would be notified about any proposed changes to access.

2.7.4 Working hours including out of hours work framework

The scale and complexity of works required will mean that works will need to be undertaken during recommended standard working hours as well as at other times including: weekends, public holidays and in the evening and night time.

During non-possession periods, the majority of works would be undertaken during recommended standard hours as defined by the *Interim Construction Noise Guideline* which are:

- Monday to Friday: 7am to 6pm
- Saturday: 8am to 1pm
- Sundays and public holidays: no work.

Activities resulting in impulsive or tonal noise emissions would be limited to these hours, except as permitted by an environment protection licence which would be obtained once the preferred project is approved.

During possession periods (described in Section 2.7.2), works may be undertaken 24 hours per day, and involve working both during and outside the recommended standard hours.

During these periods, the use of highly noise intensive equipment, including ballast tamping, would not be used during the night-time period (between 10pm and 7am), unless constraints exist such as:

- works requiring a weekend rail possession and where those works cannot be undertaken during daytime and evening periods, due to the limited duration of the rail possession; or
- works subject to requirements of the relevant road authorities, emergency services, or the Sydney Coordination Office.

Out of hours work framework

The approach to out of hours work would involve preparing an Out of Hours Work Strategy to guide the assessment, management, and approval of works outside recommended standard hours. The strategy would be developed to ensure that out of hours works are managed effectively during construction, to avoid incidents and reduce impacts to the community as a result of out of hours work. It would:

- be consistent with the Construction Noise and Vibration Strategy for the project (described in Section 2.1.2), which includes a requirement for out of hours work to be included in the Construction Noise Impact Statements required under the strategy
- be prepared in accordance with the conditions of approval for the project
- take into account the results of the construction noise assessment for the Environmental Impact Statement
- address the requirements of the environment protection licence for the project
- provide guidance for the preparation of out of hours work plans for each construction work site and for key works (including for each station), which would be prepared in consultation with key stakeholders (including the EPA) and the community
- document procedures to control potential impacts
- identify responsibilities for implementation and management including managing complaints.

The strategy would be prepared in consultation with key stakeholders (including the EPA) and be approved prior to works commencing.

2.8 Construction compounds, work sites and access

The project area includes all areas required to construct the preferred project. The majority of construction would be located within the rail corridor from west of Sydenham to west of Bankstown.

Within the project area, a number of construction compounds would be required to support construction activities at stations, and at other key locations where civil works are required. In addition to the compounds, a number of work sites would also be used to facilitate construction of certain project elements.

For the purposes of the preferred project, it is assumed that construction activities would occur along the entire length of the rail corridor within the project area. Construction activities would include clearing and grubbing, fencing, stockpiling, and material laydown. These activities would move progressively along the project area.

There would also be established work areas within the project area. Work in these areas could include activities such as excavation, piling, and structural concreting.

Plant used for these activities would include vacuum trucks, cranes, generators, rollers, piling rig, water tankers, street sweepers and excavators.

Construction activities at these sites could occur concurrently at different locations along the project area.

Further information on the indicative construction activities within the project area is provided in Sections 2.2 to 2.6.

2.8.1 Construction compounds

Construction compounds would be required at each station to support construction activities and associated works. The location of construction compounds is shown on Figure 2.1. A summary of each compound is provided in Table 2.2.

Construction compounds would generally include site offices, worker amenities (such as toilets, change rooms, meal rooms, shower facilities and first aid facilities), workshops, material storage and lay down areas (including dangerous goods storage), plant and vehicle parking, loading and removal areas, and site security facilities.

Compounds would generally be located on land owned by RailCorp, mainly located within the rail corridor. Some compounds would need to be located on land outside of the rail corridor on other public land (i.e. owned by a government agency or council).

Table 2.2 Construction compound locations

Map Ref	Location	Existing use	Duration of use[1]
C1	Victoria Road, Marrickville	Rail corridor	Short-term
C2	Ewart Lane, Dulwich Hill	Rail corridor, parking	Short-term
C3	Floss Street, Hurlstone Park	Roads reserve and rail corridor	Short-term
C4	Broughton Street, Canterbury	Rail corridor and rail uses	Short-term
C5	Charles Street, Canterbury	Rail corridor, parking	Short-term
C6	South Parade, Campsie	Rail corridor	Short-term
C7	North Parade/Wilfred Avenue, Campsie	Rail corridor, road reserve with parking	Short-term
C8	Lilian Street, Campsie	Rail corridor, parking	Short-term
C9	Tobruk Avenue, Belmore	Rail corridor, open space	Short-term
C10	Redman Parade, Belmore	Parking and rail corridor	Short-term
C11	Railway Parade, Belmore	Rail corridor, open space	Short-term
C12	Bridge Road, Belmore	Sydney Trains maintenance facility	Long-term
C13	The Boulevarde, Lakemba	Rail corridor, parking	Short-term
C14	Railway Parade, Lakemba	Rail corridor, parking	Short-term
C15	The Boulevarde, Lakemba	Rail corridor, parking	Short-term
C16	The Boulevarde, Wiley Park	Rail corridor, road verge	Short-term
C17	Urunga Parade, Wiley Park	Rail corridor, road verge	Short-term
C18	Urunga Parade, Punchbowl	Rail corridor	Short-term
C19	Urunga Parade, Punchbowl	Rail corridor, road reserve	Long-term
C20	The Boulevarde, Punchbowl	Parking and corridor	Short-term
C21	Bruest Place, Punchbowl	Rail corridor	Short-term
C22	South Terrace, Bankstown	Rail corridor	Short-term
C23	North Terrace, Bankstown	Rail corridor, road reserve	Short-term

Note: 1. Short-term: area is to be used for up to about 18 months. Long-term: area is to be used for over 18 months and potentially for the entire construction period. The duration of use of these sites would be minimised where possible.

2.8.2 Work sites

In addition to the compounds and general construction activities within the rail corridor, there are also a number of other sites where construction activities would be undertaken, or where support would be provided for other construction areas. These sites would generally be located outside the rail corridor, are shown in Figure 2.1 and are listed in Table 2.3.

Table 2.3 Work sites located outside of the rail corridor

Map ref	Location	Existing use	Proposed use	Duration of use[1]
W1	Myrtle Street, Marrickville	Rail corridor and vacant land on residential property	Support for station works and relocation of services	Short-term
W2	Albermarle Street bridge	Roadway/ rail corridor	Bridge works	Short-term
W3	Dulwich Hill	Rail corridor and Council car park	Crane location for construction of station	Short-term
W4	Terrace Road bridge	Rail corridor and road verge	Bridge works	Short-term
W5	Garnet Street/The Parade, Dulwich Hill	Rail corridor and road verge/informal parking	Bridge works	Short-term
W6	Melford Street/Canberra Street, Hurlstone Park	Rail corridor and road reserve	Bridge works	Short-term
W7	Close Street, Canterbury	Former Canterbury Bowling and Community Club	Support for Canterbury Station works and corridor works including car parking	Long-term
W8	Charles Street, Canterbury	Rail corridor and car park	Station works	Short-term
W9	South Parade at Wairoa Street, Canterbury	Rail corridor and road verge	Bridge works	Short-term
W10	Lillian Lane, Campsie	Rail corridor and road verge	Bridge works	Short-term
W11	Redman Parade, Belmore	Rail corridor and road reserve	Bridge works	Short-term
W12	The Boulevarde	Rail corridor and road verge	Substation works	Short-term
W13	Railway Parade, Lakemba	Rail corridor and car parking	Station works	Short term

Note: 1. Short-term: area is to be used for up to about 18 months. Long-term: area is to be used for over 18 months and potentially for the entire construction period. The duration of use of these sites would be minimised where possible.

Work site 7 is proposed on the former Canterbury Bowling and Community Club. As a result, further detail is provided in Figure 2.4 to assist the community understand the potential construction layout and associated impacts (for example, site access points, construction areas), and the area of site available for continuing use.

2.8.3 Environmental management at construction compounds and work sites

Compounds and work sites would be managed in accordance with the approach to environmental management for construction as a whole (described in Section 2.1.2). Environmental controls would be implemented at all sites, in accordance with the construction environmental management plan. Impacts to trees would be minimised wherever practicable. Trees would be managed in accordance with the Tree Management Strategy for the preferred project, described in Section 2.3.2.

2.8.4 Approach for selecting additional construction compounds and work sites

Although every endeavour has been made to identify sufficient space needed for construction, the construction contractor may require additional construction compounds and/or work sites to those described above. This could include changes to the extent of compound or work sites.

Additional or alternative location compounds and/or work sites would be determined based on the following criteria:

- located more than 50 metres from a waterway, unless an erosion and sediment control plan is developed and implemented
- have ready access to the road network
- be located to minimise the need for heavy vehicles to travel on local streets and/or through residential areas
- be located on relatively level land
- be separated from the nearest residences by at least 200 metres, unless reasonable and feasible noise and light spill mitigation measures are implemented
- not require native vegetation clearing beyond that already required for the project
- not have any more than a minor impact on heritage items beyond those already assessed for the project
- not unreasonably affect the land use of adjacent properties
- be above the five per cent annual exceedance probability flood level, unless a contingency plan to manage flooding is prepared and implemented
- provide sufficient space for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard daytime construction hours.

Any additional compounds or work sites would potentially require additional land outside the rail corridor. Consultation would be undertaken with any impacted landowners (including councils) to discuss any additional land requirements. As described in Section 1.2.2, leases would be entered into as required.

Figure 2.4 Indicative layout for work site 7

2.8.5 Access to construction compounds and work sites

Construction areas would be generally accessed via existing corridor gates along the rail corridor. In some locations, new gates would also be installed.

Preliminary access routes to the construction compounds, work sites and the rail corridor in general are shown in Figure 2.1.

2.8.6 Worker parking

Some parking would be provided for construction workers within compounds and/or work sites where practicable. However, these spaces would generally be no more than 10 per compound or work site. Opportunities for additional construction worker parking would be investigated during detailed construction planning, particularly for larger sites.

2.8.7 Temporary site hoarding and fencing

Erection of site hoarding and fencing would be required to provide temporary enclosure of work sites and work areas to ensure the safety of the public.

Hoardings/fencing would be required in and around areas of heavy pedestrian usage, potentially including the temporary closure and/or diversion of pedestrian thoroughfares as well as management of pedestrians around work sites and past work site access points. Hoardings/fencing may also be erected to protect buildings or structures and to provide protection from dust and debris generated during construction.

The type of hoarding or fencing used would be further developed during detailed design and would consider the following principles:

- Reflect the context within which the construction sites are located and are sensitive to existing visual characteristics of neighbouring areas.
- Include artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations. This may include Sydney Metro advertising or public awareness campaigns.
- Provide community information, including contact numbers for enquiries or complaints.
- Ensure safety for vehicles and pedestrians is not compromised, with the principles of Crime Prevention through Environmental Design to be applied in the design of hoarding or fencing.
- Minimise impacts of visibility of businesses in the vicinity, where not possible signage would be provided to direct people to any obscured businesses.
- Be regularly inspected and kept clean and free of dust build up. Graffiti would be removed or painted over promptly.
- Consider use of chain-link or similar style of steel fencing in areas with limited public interface (i.e. away from stations).

An example of the style of hoarding which would be used is provided in Figure 2.5.

Figure 2.5 Indicative hoarding to be used at compounds and work sites

2.8.8 Preliminary haulage routes

Preliminary identification of haulage routes has been undertaken with consideration to the sensitive nature of surrounding residential areas. Preliminary haulage routes have been identified for each construction compound and other site access points likely to be required. The preliminary routes are shown on Figure 2.6 at a regional scale, and in more detail on Figure 2.1. The routes were developed to minimise impacts on residential streets as far as possible, while providing the most direct route to the arterial road network. Where possible, routes avoid movements through town centres, such as the Marrickville town centre located on Illawarra Road.

These preliminary haulage routes would be reviewed during detailed design and confirmed following appointment of the construction contractor. In general, vehicle movements would be scheduled to be undertaken outside peak periods and in some locations (e.g. near Wiley Park and Punchbowl stations where schools are nearby), outside school start and finish times. However, there would be a need for some vehicle movements during these periods.

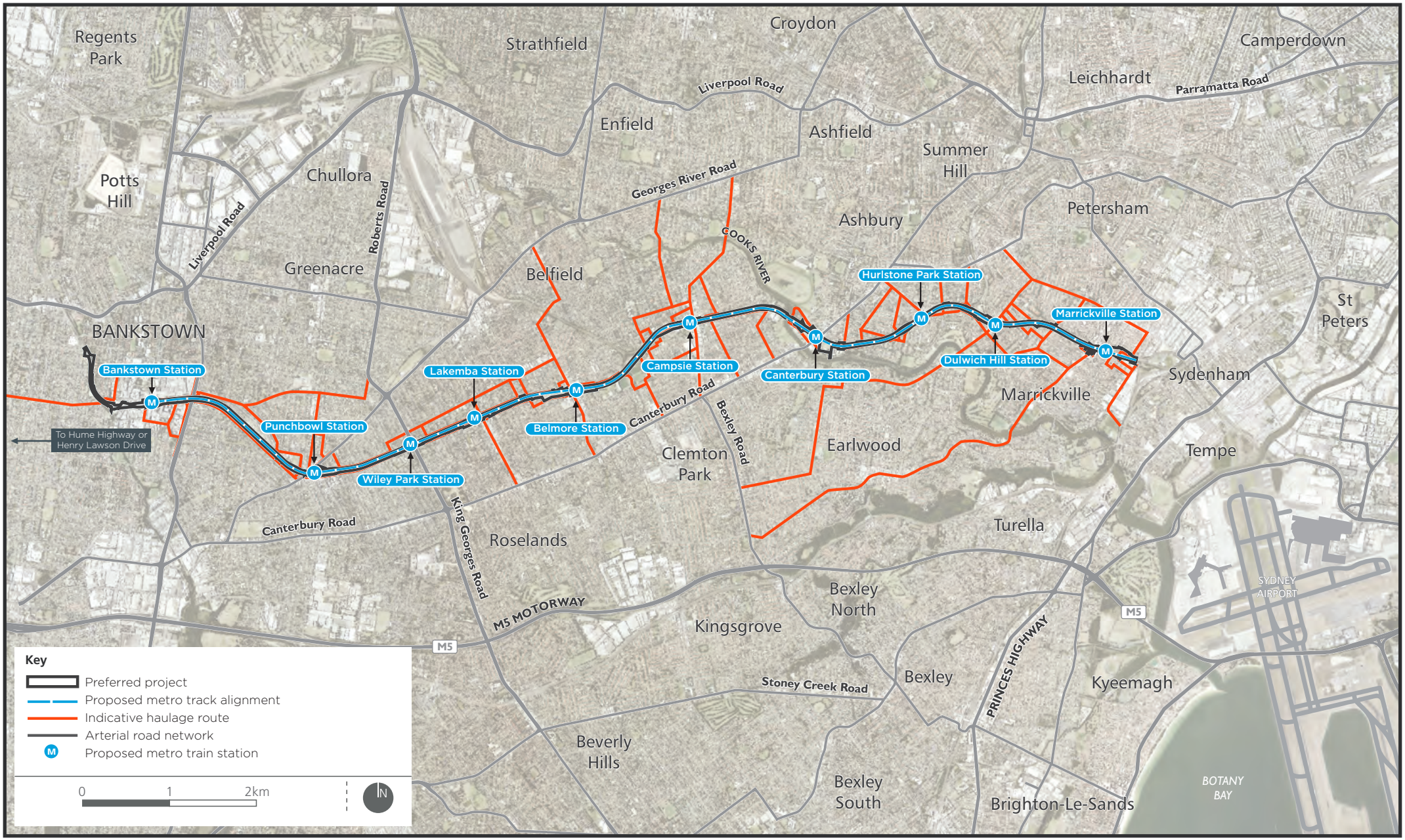
2.8.9 Construction traffic volumes

Construction traffic would include heavy and light vehicles associated with spoil and waste removal, material deliveries, and the arrival and departure of construction workers. The indicative construction traffic volumes are based on the following vehicle types:

- light vehicles – up to 4.5 tonnes
- heavy vehicles – up to 19 metres long (includes rigid and semi-trailer vehicles), greater than 4.5 tonnes.

Estimated traffic volumes are summarised in Table 2.4. These volumes are indicative of possession periods when vehicle movements would be at their maximum. Vehicle volumes are expected to approximately halve during non-possession periods.

The frequency of vehicle movements during construction would be further determined during detailed construction planning which would be undertaken following the appointment of a construction contractor.



sydney METRO | city & southwest

Preliminary haulage routes

FIGURE 2.6

Table 2.4 Estimated construction traffic volumes during possession periods

Construction compound	Vehicles per hour - AM peak (7.30 - 8.30am)[1]		Vehicles per hour - PM peak (4.15 - 5.15pm)[1]		Heavy vehicles per hour outside recommended standard hours[1]	
	Heavy vehicles	Light vehicles	Heavy vehicles	Light vehicles	Evening (6pm - 10pm)	Night (10pm - 7am)
Marrickville	20	20	20	20	18	18
Dulwich Hill	20	20	20	20	18	18
Hurlstone Park	20	20	20	20	18	18
Canterbury	48	44	48	44	18	18
Campsie	20	20	20	20	18	18
Belmore	20	20	20	20	18	18
Lakemba	20	20	20	20	18	18
Wiley Park	20	20	20	20	18	18
Punchbowl	20	20	20	20	18	18
Bankstown	20	20	20	20	18	18

Notes: 1. Figures are for possession periods, which represent the worst-case situation, and represent two-way total traffic volumes.

2.9 Workforce and construction resources

2.9.1 Workforce

During non-possession periods, it is estimated that a workforce of approximately 470 people would be required on average, with up to 700 people required during peak construction activity. During possession periods, it is estimated that a workforce of approximately 715 people would be required on average, with up to 1,540 people required during peak construction activity. An indicative breakdown of workforce staffing per station area is provided in Table 2.5.

The workforce would be encouraged to use public transport to reduce the number of vehicles accessing and needing to park in the project area. The majority of worker vehicles are likely to access the site outside the morning and afternoon traffic peaks.

Table 2.5 Indicative construction workforce estimates

Location	Non-possession periods		Possession periods	
	Peak	Average	Peak	Average
Marrickville Station	60	40	130	65
Dulwich Hill Station	60	40	130	65
Hurlstone Park Station	60	40	140	65
Canterbury Station	75	50	160	75
Campsie Station	75	50	160	75
Belmore Station	60	40	130	60
Lakemba Station	60	40	130	60
Wiley Park Station	60	40	130	60
Punchbowl Station	60	40	130	60
Bankstown Station	135	90	300	130

2.9.2 Materials and water usage

A variety of materials would be required to construct the preferred project. The major items and indicative quantities are listed in Table 2.6.

It is estimated that about 45,000 cubic metres of fill material would be required to construct the preferred project. It is expected that all, or the vast majority of, fill material could consist of spoil excavated from the project area.

Table 2.6 Indicative material and water usage estimates

Location	Concrete (m^3)	Steel (tonnes)	Water (litres)	Ballast (tonnes)
Marrickville Station	300 to 500	100	300,000	0
Dulwich Hill Station	300 to 500	100	300,000	0
Hurlstone Park Station	300 to 500	100	200,000	0
Canterbury Station	300 to 500	100	250,000	0
Campsie Station	300 to 500	100	400,000	0
Belmore Station	200	100	300,000	0
Lakemba Station	300 to 500	100	500,000	0
Wiley Park Station	300 to 500	100	200,000	0
Punchbowl Station	300 to 500	100	500,000	0
Bankstown Station	800	50	600,000	2,934
Corridor between Bankstown to Punchbowl	200	80	1,200,000	6,000

2.9.3 Construction plant and equipment

An indicative list of the plant and equipment expected to be used during construction is provided in Table 2.7. The actual plant and equipment used at each work site would be further refined during the detailed design stage and upon appointment of the construction contractor.

2.9.4 Site servicing requirements

Utilities such as water, power, sewer and telecommunications would need to be supplied to work areas. Generally, these utilities are located close to the sites (such as the adjacent footpath) and the supply is considered ‘business as usual’ for utility companies. The proposed approach to utilities management is described in Section 2.10.

Table 2.7 Indicative construction plant and equipment

Scenario	Back hoe	Ballast tamper	Bobcat	Cable trailer and truck	Cable winch	Compressor	Concrete pump	Concrete truck / agitator	Diamond saw	Excavator	Franna crane	Generator	Hand tools	Horizontal direction drill	Mobile crane (300 tonne)	Mobile crane (50 tonne)	Piling rig (bored)	Roller (non-vibratory)	Truck	Water tanker	Welding equipment
General work sites			✓			✓	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
Corridor works - ground and track		✓	✓			✓				✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
Corridor works - track support systems	✓	✓	✓								✓	✓	✓			✓			✓		✓
Station work sites			✓			✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Bridge work sites			✓			✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Substation work sites			✓				✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Power supply feeder			✓	✓	✓						✓			✓					✓		

2.10 Utilities management

The potential impacts on key utilities, and the proposed approach to managing utilities during construction, are considered in this section.

2.10.1 Utilities identification

There are a number of active and disused utilities located within and/or crossing the project area (either underground, aboveground or via existing road overbridges) with the potential to be affected by construction of the preferred project.

The location of trunk utilities has been based on Dial Before You Dig searches; and a review of utility data, including as-built surveys, and agency and council records. Preliminary consultation has also been held with utility owners, including Sydney Water, Ausgrid, Telstra, TPG, and Qenos.

The following utility owners have assets which may require adjustment, protection, and/or relocation as part of the preferred project:

- Sydney Water:
  - potable water mains
  - stormwater drains and channels
  - wastewater mains/tunnels including potentially disused assets
- Ausgrid:
  - underground electricity cables (potentially up to 132 kilovolts)
  - 33 kilovolt underground electricity cables
  - high voltage underground electricity cables
  - low voltage overhead and underground electricity cables
  - abandoned underground cables
- Qenos:
  - high pressure gas pipeline (currently filled with inert nitrogen gas)
- Jemena:
  - high pressure gas main (primary and secondary mains)
  - medium pressure gas main
  - low pressure gas main
- Telstra:
  - underground cables
  - underground and above ground service connections (i.e. to stations)
  - optic fibre underground cables
  - aerial optic fibre and coaxial cables
  - underground copper wire
  - vacant cable conduits
- NBN:
  - network cables
- Optus:
  - underground optic fibre cables
  - aerial optic fibre and coaxial cables

- Inner West and Canterbury-Bankstown councils:
  - stormwater channels
  - underground stormwater pipes
  - drainage culverts.

A number of the above assets are positioned within or below the existing road overbridges crossing the rail corridor.

2.10.2 Potential impacts and management framework

The *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Utilities Management Framework* (Sydney Metro, 2017c) (the 'Utilities Management Framework') has been prepared, adopting a risk-based approach to avoiding and/or minimising impacts associated with the relocation and/or adjustment of public utilities affected by the preferred project. The framework provides a consistent approach to the assessment and management of public utilities relocation/adjustment across all project activities. An outline of the framework is provided below.

The framework comprises the following steps:

- confirm affected utilities
- design response to potential conflict with a public utility including whether the utility can be avoided
- detailed assessment of requirements to meet utility owners specifications
- integration with utility owners through the Sydney Metro Utilities Working Group
- environmental assessment Australian Standard for risk management - *AS/NZS ISO 31000:2009, Risk management - Principles and guidelines*
- construction management which identifies typical mitigation measures successfully adopted by Transport for NSW on similar projects
- rehabilitation and re-instatement protocols following utility relocation/adjustment in roadways, footpaths and open space areas
- communications and notifications that can be expected and how these would be managed.

2.11 Alternative transport arrangements

2.11.1 Temporary Transport Strategy

The *Sydney Metro City & Southwest Sydenham to Bankstown Temporary Transport Strategy* (Sydney Metro, 2017d) (the 'Temporary Transport Strategy') describes the process for planning the integrated, multi-modal transport network changes required during possessions of the T3 Bankstown Line to enable construction of the preferred project.

The strategy outlines a number of components for alternative public transport arrangements by rail and bus during construction, to minimise impacts to customers during station closures and/or possession periods. The strategy provides:

- objectives for customers and bus services
- customer markets to be served by temporary transport management plans
- potential options to maintain public transport connections to and from affected rail stations
- potential impacts associated with temporary transport options and the level of assessment to be provided in temporary transport management plans

- temporary transport facilities and measures required to support the implementation of temporary transport management plans, ensuring accessible services are provided
- the process for developing temporary transport management plans, including stakeholder and community consultation
- performance outcomes for temporary transport plans.

The strategy would continue to be informed by stakeholder and community input, with the approach refined based on understanding customer needs and ongoing development of alternatives to deliver improved customer outcomes.

2.11.2 Temporary transport management arrangements

Guided by the Temporary Transport Strategy, temporary transport plans would be prepared for each possession period prior to works being undertaken, to manage the alternative transport arrangements. The temporary transport plan would define the initiatives to be implemented to assist customers affected by closures of the rail line, and the measures to minimise potential impacts associated with proposed alternative arrangements.

Each temporary transport plan would define the processes by which the impacts created by closures of the T3 Bankstown Line, and the operation of temporary train and bus services, would be managed. Each temporary transport plan would comprise a temporary transport service plan and a temporary transport management plan.

The temporary transport plans may include consideration of the following, depending on the type and duration of rail possession:

- increasing rail service frequencies on the T2 Inner West Line (between Lidcombe and the CBD) and the T8 Airport and South Line (between Revesby and the CBD)
- delivering a temporary bus service plan to carry customers from T3 Bankstown Line stations to stations on the T2 Inner West Line and the T8 Airport and South Line, including increasing the frequency of existing bus services at specific locations acknowledging that customers may prefer to use those instead of rail replacement services
- improving cycle facilities at stations on other lines
- potential road network enhancements and infrastructure improvements to support additional bus operations, such as:
  - directional signs to/from the rail station
  - bus route information displays
  - temporary seating and marquees for weather protection
  - relocation of bus stop poles
  - changes to bus zone signs.
- reviewing the facilities and commuter parking provision at stations on other lines that passengers may use
- the need to cater for special events such as New Years Eve during the Christmas shutdowns or NRL games held at Belmore Oval as to adequately handle crowds, this would include coordination with event organisers, the Sydney Coordination Office, councils and the Transport Management Centre.

To apply the learnings from previous temporary transport plans, development of the first temporary transport plan for the preferred project would include a review of the temporary transport plan for the Sydney Metro Epping to Chatswood conversion, which will have concluded by that time. Subsequent temporary transport plans for the Bankstown to Sydenham project would be developed with consideration given to the ones that preceded it, in an ongoing process of revision and refinement. Development of the plans would also include consultation with key stakeholders.

A temporary transport plan would identify the need for construction of additional infrastructure within the vicinity of the project area to support its implementation. It would also identify the need for construction of additional infrastructure beyond the vicinity of the project area, and any need for additional assessment and approval of construction of this infrastructure would be considered by the proponent. A plan would also include identifying any temporary leases required to support the implementation of the temporary transport management plans.

A number of different approaches are available for providing temporary bus services. Each approach may form a component of the temporary transport plans. These components, shown in Figure 2.7, include:

- buses that stop at all stations along the corridor (required for all possession types)
- buses that only stop at a limited number of stations before continuing an express service to the end of journey location (required for all possession types)
- buses that move passengers to another rail line such as the T2 Inner West Line, the T8 Airport and South Line and the T1 North Shore, Northern & Western Line (to be considered for the Christmas school holiday and final possessions)
- an increase in the frequency of existing bus services at specific locations, acknowledging that customers may prefer to use those instead of the rail replacement bus service (to be considered for the Christmas school holiday and final possessions).

During temporary closures of stations, buses would move passengers to the nearest open station.

Further details of these options and the process and criteria that would be used to inform decision making when multiple temporary transport service options are available for each possession period are outlined in the Temporary Transport Strategy.

2.11.3 Changes resulting from temporary transport arrangements

Closure of the stations between Marrickville and Bankstown during possessions would result in a number of flow-on effects to the Sydney Trains network and the need for operational changes beyond this section of the line, including at Birrong and Yagoona stations. Changes may also occur at stations on the T2 Airport and South Line between Revesby and Sydenham, and between Strathfield and Redfern. Changes may also occur at stations on the T4 Eastern Suburbs & Illawarra Line.

Adjustments to rail services would need to be put in place to reallocate capacity across the network, including some expected additional capacity that may be provided on the T8 Airport and South Line.

Similarly, changes to bus routes and facilities, and car parking arrangements, may result from the need to provide temporary bus zones near stations, and/or to provide temporary park and ride facilities at other locations supported by the temporary bus services.

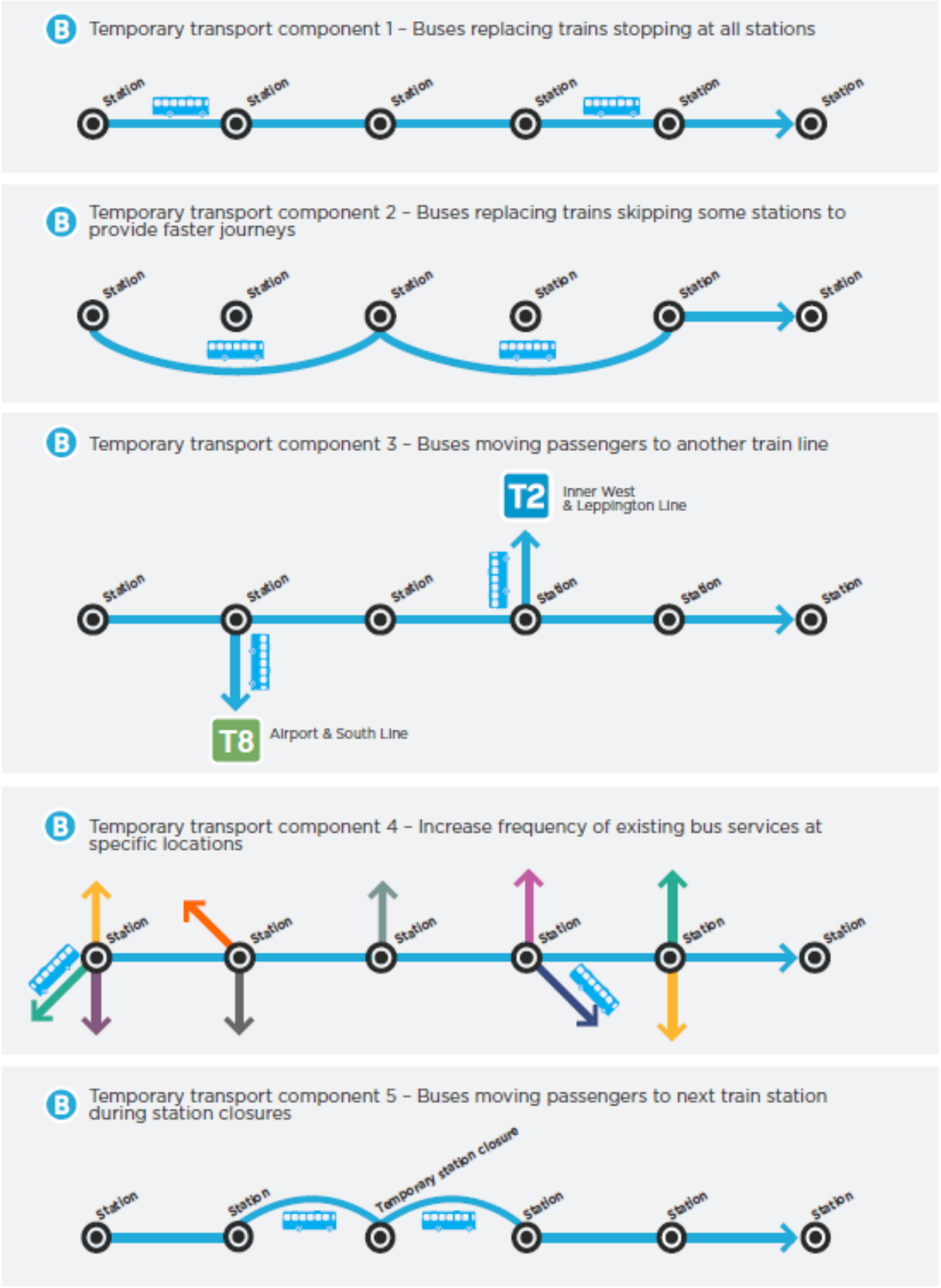


Figure 2.7 Temporary transport management plan components

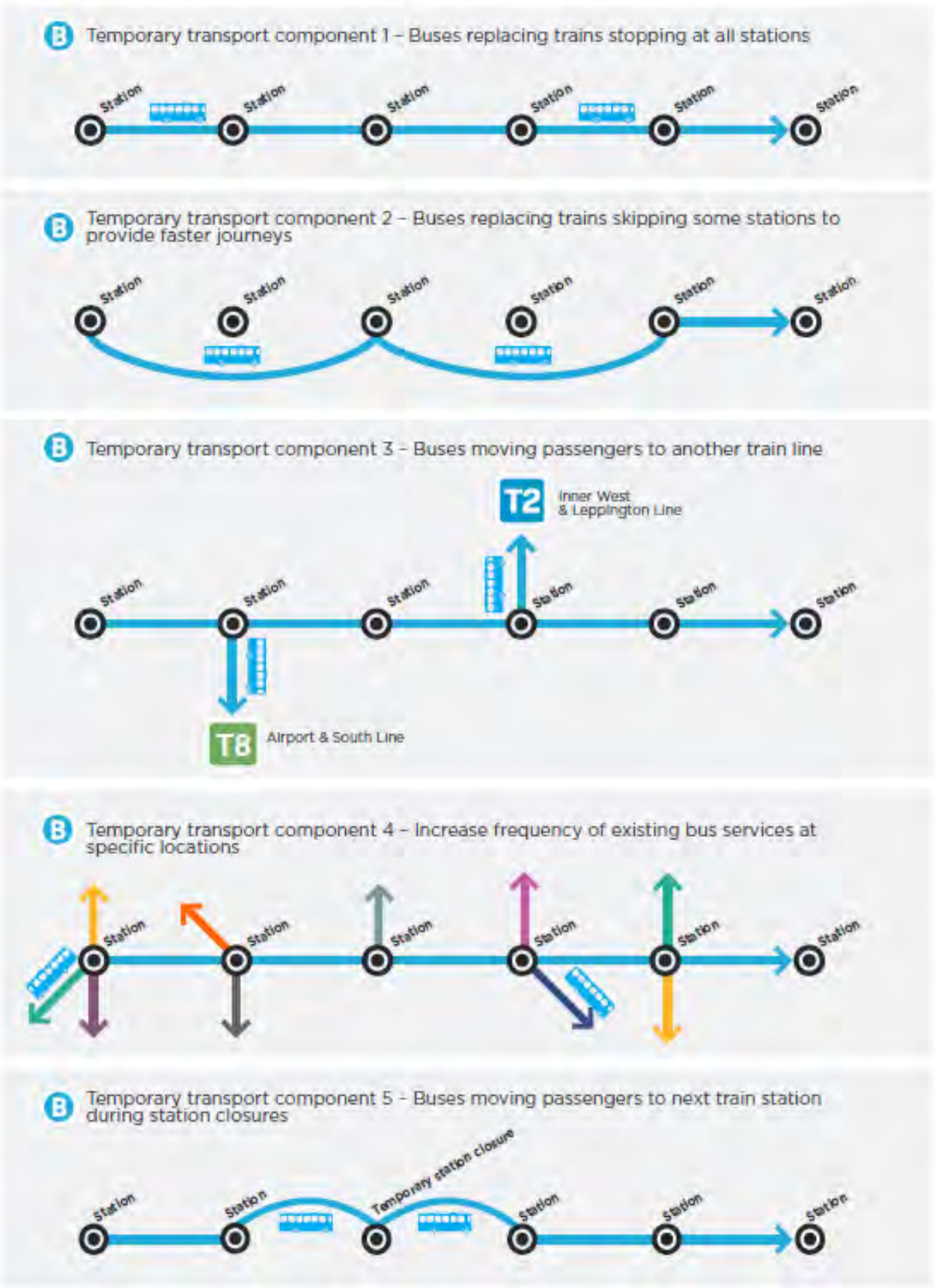


Figure 2.7 Temporary transport management plan components

SYDENHAM TO BANKSTOWN

SUBMISSIONS REPORT

> Appendix B - Preferred project description

City & Southwest

SYDENHAM TO BANKSTOWN

SUBMISSIONS REPORT

> Appendix C - Compilation of revised mitigation measures

This page has been left blank intentionally

Appendix C – Compilation of revised mitigation measures

Compilation of revised mitigation measures

The list of revised mitigation measures presented in Chapter 16 (Revised mitigation measures and performance outcomes) of the Submissions and Preferred Infrastructure Report has been updated with consideration given to the submissions received regarding the preferred project. Some new measures have been added, and the wording of existing measures has been adjusted.

Table C.1 provides the consolidated revised environmental mitigation measures. This table supersedes the revised mitigation measures presented in the Submissions and Preferred Infrastructure Report. New mitigation measures or additions to mitigation measures are shown in **bold** text, with deletions shown with a ~~strikethrough~~.

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

The location/s applicable to each mitigation measure are identified by using a unique identifier as follows:

- All – Project as a whole
- BW – Bridge works
- AS – All stations
- MA – Marrickville Station
- DU - Dulwich Hill Station
- HP – Hurlstone Park Station
- CB – Canterbury Station
- CP – Campsie Station
- BE – Belmore Station
- LA – Lakemba Station
- WP – Wiley Park Station
- PB – Punchbowl Station
- BA – Bankstown Station
- SS – Substations.

The approach to environmental management and mitigation for the preferred project is provided in Section 17.4 (Approach to environmental management) of the Submissions and Preferred Infrastructure Report.

Table C.1 Revised environmental mitigation measures

ID	Impact	Mitigation measures	Relevant location(s)
Traffic, transport and access			
Design/pre-construction			
TC1	*Temporary transport arrangements*	Guided by the Temporary Transport Strategy, detailed temporary transport plan/s would be developed prior to construction to manage the movement of people along the T3 Bankstown Line during possession periods. The plans would be developed in consultation with key stakeholders (including ~~the~~ **Transport for NSW,** Sydney Coordination Office, Roads and Maritime Services, Sydney Trains, local councils, emergency services, and bus operators), and would address the requirements specified by the Temporary Transport Strategy. The development of each plan would consider, as a minimum: • a review of the road network constraints along any proposed rail replacement bus route • further traffic analysis of key intersections used by rail replacement buses • potential impacts to local road networks affected by rail passengers diverting to cars to reach their destinations • the design of temporary facilities at bus stop locations in consultation with the relevant road authority • expected changes to parking demand at other stations, displacement of existing parking, and any upgrades that may be required.	AS
TC2		**Sydney Metro** ~~Transport for NSW~~ would consult with **Transport for NSW**, Roads and Maritime Services, the State Transit Authority, the Inner West and Canterbury-Bankstown councils, and bus operators, to identify opportunities to minimise impacts to bus layovers and existing bus stops during operation of rail replacement buses.	AS
TC3		The impacts on the surrounding road network of lane closures resulting from bridge works across the rail corridor would be assessed in detail, to identify the suite of management measures to be implemented for each closure required. This would be undertaken in consultation with **Transport for NSW**, Roads and Maritime Services, the Sydney Coordination Office, the Inner West and Canterbury-Bankstown councils, emergency services, and relevant bus operators. Planning for partial bridge closures would consider bus rerouting and timetabling, with the intention of minimising impacts to bus customers and bus operators.	BW
TC4	*Parking impacts during construction*	Opportunities to reduce the loss of existing on and off street car parking (including the amount of spaces reduced and the time associated with this reduction) would be reviewed during detailed design and construction planning.	AS

ID	Impact	Mitigation measures	Relevant location(s)
TC5		Where parking spaces are lost or access is impeded, particularly for extended periods, alternative parking would be provided wherever feasible and reasonable. This would include consideration of other privately owned (or vacant) land within close proximity to affected stations.	AS
TC6	*Impacts of intersection performance*	Further consideration of the need for intersection modifications would be undertaken, to improve intersection performance at locations most affected by the addition of construction heavy vehicles and rail replacement buses. This would be undertaken in consultation with **Transport for NSW**, Roads and Maritime Services, the Sydney Coordination Office, and the relevant road authority. The improvements considered would include: • modification to the existing traffic signal phasing • lane priority changes • changing lane designations (line markings and signage) • kerbside changes (such as removing on street parking or implementing no standing zones at peak times to increase lane capacity) • physical geometric changes (such as minor kerb cut-backs to enable large vehicles to safely move through intersections) • restricting turning movements where traffic demand is low.	All
TC7	*Changes to cyclist facilities during construction*	Where existing cycle facilities (e.g. bike parking) would be temporarily unavailable at a station, suitable replacement facilities would be provided while the facility is unavailable.	AS
TO1	*Parking impacts during operation*	Further consideration of car parking management at stations would be undertaken in consultation with Roads and Maritime Services, the Sydney Coordination Office, and the Inner West and Canterbury-Bankstown councils, to minimise adverse impacts of operation on parking and other kerbside use in local streets.	AS
TO2	*Consideration of cross corridor connections*	**Sydney Metro** ~~Transport for NSW~~, in consultation with Canterbury-Bankstown Council, would investigate the feasibility of the provision of a cross-corridor connection between Bankstown and Punchbowl stations. Should a cross-corridor connection be deemed feasible, **Sydney Metro** ~~Transport for NSW~~ would work with Canterbury-Bankstown Council and the Department of Planning and Environment to safeguard its future delivery.	All

ID	Impact	Mitigation measures	Relevant location(s)
Construction			
TC8	*Management of traffic, transport and access*	A construction traffic management plan would be prepared and implemented prior to construction. The plan would be prepared in accordance with the Construction Environmental Management Framework, and would detail, as a minimum: • how traffic would be managed when construction works are being carried out • the activities proposed and their impact on the road network and on road users • how these impacts would be addressed. The plan would be prepared in consultation with the Traffic and Transport Liaison Group, and would be approved by the relevant authority before construction commences.	All
TC9	*Changes to public transport services and alternative transport arrangements*	Modification of existing bus stops, or implementation of new stops and alterations to service patterns, would be carried out by **Sydney Metro** ~~Transport for NSW~~ in consultation with ~~the~~ **Transport for NSW**, Sydney Coordination Office, Roads and Maritime Services, the Inner West and Canterbury-Bankstown councils, and bus operators.	AS
TC10		**Sydney Metro** ~~Transport for NSW~~ would undertake an extensive community awareness and information campaign before changes to public transport services are implemented. This would include a range of communication activities such as: • information at stations • wayfinding signage • clearly marked bus stop locations • letter box drops • web based information and transport 'app' where changes to travel are found in a single place • information via 131 500 • advertising in local papers • email information bulletins.	AS
TC11	*Impacts on special events*	Consideration of special events would be undertaken as part of construction work programming. For special events that require specific traffic and pedestrian management, measures would be developed and implemented in consultation with **Transport for NSW, Sydney Coordination Office**, Roads and Maritime Services, the Inner West and Canterbury-Bankstown councils, and the organisers of the event.	All
TC12	*Impacts of construction compounds and work sites*	Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist, and motorist safety. Depending on the location, this may require manual supervision, barrier placement, temporary traffic signals, modifications to existing traffic signals, or police assistance.	All

ID	Impact	Mitigation measures	Relevant location(s)
TC13	*Construction vehicles*	Construction vehicles (including contractor staff vehicles) would be managed to: • minimise parking or queuing on public roads • minimise use of residential streets to gain access to work sites or compounds • minimise vehicle movements near schools, particularly during school start and finish times.	All
TC14	*Signage*	Directional signage and line marking would be used to direct and guide drivers, pedestrians, and other road users past construction compounds and work sites, and on the surrounding road network. This may be supplemented by variable message signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternate routes.	All
TC15	*Construction parking impacts*	Construction sites would be managed to minimise construction worker parking on surrounding streets. A worker car parking strategy would be developed in consultation with the relevant local council to identify measures to reduce the impact on the availability of on street and off street parking. The strategy would identify potential mitigation measures including alternative parking locations. The strategy would encourage contractor staff to: • use public transport • car share • park in a designated off site area and access construction sites via shuttle bus.	All
TC16	*Traffic incidents*	In the event of a traffic related incident, co-ordination would be carried out with the Sydney Coordination Office and Transport Management Centre's Operations Manager.	All
TC17	*Changes to road, pedestrian and cyclist networks*	The community would be notified in advance of proposed road and pedestrian network changes through appropriate forms of community notification.	All
TC18	*Impacts on pedestrian or cyclist paths*	A condition survey would be undertaken to confirm changes to routes proposed to be used by pedestrians and/or cyclists are suitable (e.g. suitably paved and lit), with identified modification requirements discussed with the Inner West and/or Canterbury-Bankstown councils and implemented prior to use of the routes.	All

ID	Impact	Mitigation measures	Relevant location(s)
TC19	*Pedestrian, cyclist and motorist safety*	Pedestrian, cyclist, and motorist safety in the vicinity of the construction sites would be addressed during construction planning and development of the construction traffic management plan. Measures that may be implemented to assist in multi modal traffic management include: • speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers • a community engagement program to provide road safety education and awareness to road users about sharing the road safely with heavy vehicles • heavy vehicle training for drivers to understand route constraints, safety issues, and limiting the use of compression braking • safety technology and equipment installed on heavy vehicles to enhance vehicle visibility, eliminate vehicles' blind spots, and monitor vehicle location, speeding compliance, and driver behaviour.	All
TC20	*Impacts to access*	Access for residents, businesses, and community infrastructure would be maintained. Where disruption to access cannot be avoided, consultation would be undertaken with the owners and occupants of affected properties, to confirm their access requirements and to discuss alternatives.	All
TC21		Access to stations and surrounding properties for emergency vehicles would be provided at all times. Emergency service providers (i.e. police and ambulance) would be consulted throughout construction to ensure they are aware of station closures, changes to access, including bridge lane closures, and changes to station or rail corridor access.	All
TC22	*Co-ordination of cumulative traffic effects*	The potential cumulative effects of construction traffic from multiple construction sites within the project would be further considered during development of the construction traffic management plan. Where there is potential for cumulative impacts across the project, these issues would be addressed with the assistance of the Traffic and Transport Liaison Group.	All
Operation			
TO3	*Walking and Cycling*	**Sydney Metro** ~~Transport for NSW~~ would develop a Walking and Cycling Strategy in consultation with Inner West Council, Canterbury-Bankstown Council and other relevant stakeholders, which would identify walking and cycling facilities to encourage active transport to the station precincts.	AS
TO4	*Bus*	**Sydney Metro** ~~Transport for NSW~~ would work with ~~the~~ **Transport for NSW,** Sydney Coordination Office, Roads and Maritime Services, the Inner West and Canterbury-Bankstown councils, and bus operators to identify improvements to bus stops and services.	AS

ID	Impact	Mitigation measures	Relevant location(s)
TO5	*Commuter parking*	**Sydney Metro** ~~Transport for NSW~~ would monitor the demand for additional commuter car parking spaces and consider opportunities for, and implications of, meeting this demand between Bankstown and Marrickville stations. **Sydney Metro** ~~Transport for NSW~~ would investigate ways to manage demand, subject to consideration of local station and town centre implications, including local traffic conditions.	AS
Noise and vibration			
Design/pre-construction			
NVC1	*Predicted construction noise impacts*	In accordance with the *Construction Noise and Vibration Strategy,* construction noise impact statements would be prepared prior to the commencement of construction components, to consider the scale and duration of construction noise impacts, and identify measures to minimise impacts to sensitive receivers. This would include noise modelling to confirm the results of modelling undertaken as part of the Environmental Impact Statement and Submissions and Preferred Infrastructure Report. Where ~~increases~~ **exceedances of the** ~~in~~ noise **management** levels ~~and exceedances~~ are identified, **feasible and reasonable** mitigation measures would be ~~reviewed~~ **identified**.	All
NVC2		In accordance with the *Construction Noise and Vibration Strategy*, all employees, contractors and subcontractors would receive an environmental induction. The induction must at least include: • relevant project specific and standard noise and vibration mitigation measures • relevant licence and approval conditions • permissible hours of work • any limitations on high noise generating activities • location of nearest sensitive receivers • designated loading/unloading areas and procedures • site opening/closing times (including deliveries).	All
NVC3	*Predicted vibration impacts*	Where vibration levels are predicted to exceed the vibration screening level, a more detailed assessment of the structure would be carried out to determine the appropriate vibration limits for that structure.	All
NVC4		For heritage items where vibration screening levels are predicted to be exceeded, the more detailed assessment would include condition assessment and specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.	Heritage items along the project area

ID	Impact	Mitigation measures	Relevant location(s)
NVO1	*Predicted operational noise and vibration impacts*	An operational noise and vibration review would be undertaken to guide the approach to identifying reasonable and feasible mitigation measures to incorporate in the detailed design. This would include noise modelling to confirm the results of modelling previously undertaken. Where **exceedances of the operational noise objectives in the *Rail Infrastructure Noise Guidelines* (EPA, 2013)** ~~increases in noise levels and exceedances~~ are identified **reasonable and feasible** mitigation measures would be ~~reviewed~~ **identified**.	All
NVO2		The height and extent of noise barriers adjacent to the project would be confirmed during detailed design with the aim of not exceeding trigger levels from the *Rail Infrastructure Noise Guidelines* (EPA, 2013). At-property treatments would be offered either on their own or in combination with a noise barrier where there are residual exceedances of the noise trigger levels. Where practicable, operational stage noise mitigation would be installed early to assist with the management of construction noise.	All
NVO3		Operational noise from substations would be controlled by inclusion of appropriate mitigation, such as shielding or enclosures, and specification of equipment selection, to comply with the *Industrial Noise Policy* (EPA, 2000).	All
Construction			
NVC5	*Construction noise and vibration management*	The *Construction Noise and Vibration Strategy* would be implemented with the aim of achieving the noise management levels where feasible and reasonable. This may include the following example mitigation measures alone or in combination, where feasible and reasonable: • The provision of noise barriers around each construction site. • The coincidence of noisy plant working simultaneously close together would be avoided. • Residential grade mufflers would be fitted to all mobile plant. • Non-tonal reversing alarms would be fitted to all permanent mobile plant. • High noise generating activities would be scheduled for less sensitive periods considering the nearby receivers, where reasonable and feasible. • The layout of construction sites would consider opportunities to shield receivers from noise. • Stationary noise sources would be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained. • Loading and unloading of materials/deliveries is to occur as far as possible from noise sensitive receivers. • Select site access points and roads as far as possible away from noise sensitive receivers. • Dedicated loading/unloading areas to be shielded if close to noise sensitive receivers wherever feasible and reasonable.	All

ID	Impact	Mitigation measures	Relevant location(s)
		• Use quieter and less vibration emitting construction methods where feasible and reasonable. • The noise levels of plant and equipment must have operating Sound Power Levels compliant with the criteria in the *Construction Noise and Vibration Strategy.* • Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site. • Where feasible and reasonable, the offset distance between noisy plant items and nearby noise sensitive receivers would be as great as possible. • Where reasonable and feasible heavy vehicle movements would be limited to daytime and evening hours, with night-time movements avoided where possible. • Active community consultation and the maintenance of positive, cooperative relationships with schools, local residents and building owners and occupiers, through: – periodic notification or work activities and progress (e.g. regular letterbox drops, e-consult) – specific notification (letter-box drop) prior to especially noisy activities – comprehensive website information – project information and construction response telephone line – email distribution lists. • Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site. • Where feasible and reasonable, the offset distance between noisy plant items and nearby noise sensitive receivers would be as great as possible. • Where reasonable and feasible heavy vehicle movements would be limited to daytime and evening hours, with night-time movements avoided where possible. • Active community consultation and the maintenance of positive, cooperative relationships with schools, local residents and building owners and occupiers, through: – periodic notification or work activities and progress (e.g. regular letterbox drops, e-consult) – specific notification (letter-box drop) prior to especially noisy activities – comprehensive website information – project information and construction response telephone line – email distribution lists.	
NVC6		Noise intensive plant for construction activities, including ballast tampers would not be used during the night-time period (10pm to 7am) unless: • during a weekend rail possession or shut down • a requirement of a road authority, emergency services or Sydney Coordination Office requires works to be undertaken during this period.	All

ID	Impact	Mitigation measures	Relevant location(s)
NVC7		When working adjacent to schools, medical facilities and child care centres, particularly noisy activities would be scheduled outside normal working hours, where reasonable and feasible.	All
NVC8		When working adjacent to churches and places of worship, particularly noisy activities would be scheduled outside services, where reasonable and feasible.	All
NVC9		Alternative accommodation may be offered to residents living in close proximity to construction works where detailed construction planning identifies unreasonably high noise impacts over a prolonged period. Alternative accommodation arrangements would be offered and discussed with residents on a case-by-case basis.	All
NVC10		High noise and vibration generating activities including ballast tamping may only be carried out in continuous blocks, not exceeding 3 hours each, with a minimum respite period of one hour between each block and these works.	All
NVC11		Ongoing noise monitoring would be undertaken during construction at sensitive receivers during critical periods (i.e. times when noise emissions are expected to be at their highest to identify and assist in managing high risk noise events.	All
NVC12	*Vibration monitoring*	Where vibration levels are predicted to exceed the vibration screening level, attended vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for that structure.	All
NVC13	*Groundbourne noise*	Reasonable and feasible measures would be implemented in accordance with the *Construction Noise and Vibration Strategy* to minimise groundbourne noise where exceedances are predicted.	All
NVC14	*Utility adjustments/ relocation works*	Reasonable and feasible mitigation measures would be implemented where power supply works would result in elevated noise levels at receivers. This could include: • carrying out works during the daytime period when in the vicinity of residential receivers • where out of hours works are required, scheduling the noisiest activities to occur in the evening period (up to 10pm) • use of portable noise barriers around particularly noisy equipment.	All
NVC15	*Road traffic noise*	The routes for construction haulage vehicles and bus services associated with the Temporary Transport Strategy would be selected on the basis of compliance with the relevant road traffic noise criteria, where reasonable and feasible. Where compliance with the noise criteria is not possible, reasonable and feasible noise mitigation would be implemented.	All

ID	Impact	Mitigation measures	Relevant location(s)
NVC16	*Out of Hours Work Strategy*	An Out of Hours Work Strategy would be prepared, in consultation with the Environment Protection Authority, to guide the assessment, management, and approval of works outside recommended standard hours.	All
Non-Aboriginal heritage			
Design/pre-construction			
NAH1	*Minimising impacts during design*	The project design would minimise adverse impacts to heritage buildings, elements, fabric, spaces and vistas that contribute to the overall heritage significance of the Bankstown Line.	All heritage items
NAH2		The project design would maximise the retention and legibility of heritage buildings, structures, fabric, spaces and vistas that are individually significant and contribute to the overall heritage significance of the Bankstown Line.	All heritage items
NAH3		The project design would complement retained heritage buildings, elements, fabric, spaces and vistas to avoid outcomes that compromise the significance of these heritage items.	All heritage items
NAH4		The project design would be developed with guidance from an appropriately qualified and experienced conservation architect.	All heritage items
NAH5	*Reuse of retained items*	Where heritage significant items or elements are to be retained within the operational area, an adaptive reuse strategy would be prepared by an appropriately qualified and experienced heritage architect.	All heritage items
NAH6	*Interpretation*	A Heritage Interpretation Plan would be prepared to document the development of the Bankstown Line and detail the history of each station and its contribution to both the Bankstown Line and the surrounding suburbs. Appropriate heritage interpretation would be incorporated in the design and would provide legible connection between stations.	AS Bankstown Parcels Office (former)
NAH7	*Management of moveable heritage and heritage fabric*	A moveable heritage item strategy would be prepared by an appropriately qualified and experienced heritage specialist in consultation with Sydney Trains, and would include a comprehensive record of significant railway elements to be impacted. This would include items contained within station and platform buildings as well as of any other significant equipment within the curtilage of the heritage railway stations. The moveable heritage item strategy would form part of the broader interpretation strategy.	AS apart from BA and Bankstown Parcels Office (former)

ID	Impact	Mitigation measures	Relevant location(s)
NAH8	*Station Building repurposing and refreshing*	Where significant buildings are to be re-purposed or refreshed: • the inherent character of the building should be retained with new additions, including form, palette and materiality, sympathetic to its heritage values • a suitably qualified and experienced heritage architect should advise on appropriate materials and finishes which would be sympathetic to the heritage values of each individual station • the internal layout of the building should be retained where possible, and rooms should not be subdivided unless it can be completed without adverse impact and/or is reversible without any long term adverse impact • a significant element register should be prepared by a suitably qualified and experienced heritage architect. The register should list significant fabric, assess its condition, tolerance for change and recommend retention or salvage • where fabric of high significance is to be removed, adequate assessment should be carried out that outlines impact and justification in accordance with the Statements of Heritage Impact guidelines (NSW Heritage Council 2002)	All
NAH9	*Design of new access stairs, concourses, canopies and lift shafts*	The design and materials used for the construction of new access stairs, concourses, canopies and lift shafts should be as sympathetic as possible to the existing character of the stations with the aim of minimising visual impacts. The design should use unobtrusive, modern, lightweight materials such as glass panelling and slim frame elements. The Design Review Panel should be consulted in regard to the design, form and material of these additions.	All
NAH10	*Design of platform re-levelling*	Where platforms are re-levelled, door thresholds and steps should be accessible without raising or relocation of entries. Sub-floor ventilation should remain open to avoid long term impacts to the structures.	All
NAH11	*Impacts to the Old Sugarmill*	A landscape scheme would be prepared for the Old Sugarmill to re-instate planting within and close to the curtilage of the item. The scheme would consider appropriate period plants and trees. Any boundary wall treatment would be designed in consultation with a heritage architect.	Old Sugarmill
NAH12	*Impacts to archaeology*	The archaeological research design, including any mitigation measures identified in the Archaeological Assessment and Research Design report, would be implemented.	All
NAH13	*Archival recording*	Photographic archival recording would be carried out in accordance with the NSW Heritage *Office's How to Prepare Archival Records of Heritage Items* (1998), and *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).	AS Bankstown Parcels Office (former)

ID	Impact	Mitigation measures	Relevant location(s)
NAH14	*Unexpected finds*	An unexpected finds procedure would be developed and included in the construction heritage management plan.	All
Construction			
NAH15	*Minimising impacts during construction*	Methodologies for the removal of existing structures and construction of new structures would be developed and implemented during construction to minimise direct and indirect impacts to other elements within the curtilages of the heritage items, or to heritage items located in the vicinity of works.	All
NAH16		All retained heritage buildings, structures, fabric and moveable heritage items would be protected to avoid damage during works in the vicinity of these items, including from vibration. Retained significant buildings or elements susceptible to damage would be protected by hoardings or screens.	All
NAH17		Prior to construction commencing, a detailed inventory of all buildings, structures, fabric, spaces and vistas of heritage significance that are to be retained or removed would be prepared by appropriately qualified and experienced heritage specialists. The inventory must provide an assessment of the heritage impact based on the significance of each element and sub-element that comprises it and include recommendations for protection and conservation relative to the identified level of heritage significance.	All
NAH18	*Unexpected finds*	In the event that unexpected archaeological remains, relics, or potential heritage items are discovered during construction, all works in the immediate area would cease, and the unexpected finds procedure would be implemented.	All
NAH19	*Human skeleton material*	In the event that a potential burial site or potential human skeletal material is exposed during construction, the Transport for NSW Exhumation Management Plan would be implemented.	All
NAH20	*Works to heritage fabric*	All works to conserve, protect or remove significant heritage fabric would be undertaken by skilled tradespeople with experience working on heritage sites, in consultation with an appropriately qualified conservation heritage architect.	AS Bankstown Parcels Office (former)
Operation			
NAH21	*Conservation management*	A conservation management plan would be prepared for all State Heritage Register listed stations, in accordance with NSW Heritage Council guidelines. The plan would address any changes to the item, including updated assessment of significance of elements and recommendations on curtilage changes. It would also provide suggested site specific exemptions and management policies.	MA, CA, BE
NAH22		A conservation management strategy would be prepared for nominated Section 170 register listed stations not listed on the State Heritage Register, in accordance with NSW Heritage Council guidelines.	DU, HP, CP, LA, WP, PB, BA

ID	Impact	Mitigation measures	Relevant location(s)
Aboriginal heritage			
Design/pre-construction			
AH1	*Consultation*	Aboriginal stakeholder consultation would continue to be undertaken in accordance with *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECC, 2010).	All
AH2	*Avoiding impacts to Aboriginal heritage*	The Aboriginal Cultural Heritage Assessment Report would be implemented.	All
AH3	*Managing impacts to identified PADs*	Archaeological test excavation (and salvage if required) would be carried out at S2B PAD02 at Punchbowl Station. Excavations would be conducted in accordance with the methodology outlined by the Aboriginal cultural heritage assessment report.	S2B PAD02
AH4	*Interpretation*	Appropriate Aboriginal heritage interpretation would be incorporated into the design in consultation with Aboriginal stakeholders.	All
Construction			
AH5	*Unexpected finds*	If potential Aboriginal items are uncovered during the works, all works in the immediate area would cease, and the unexpected finds procedure included in the construction heritage management plan would be implemented. During pre-work briefings, employees would be made aware of the unexpected finds procedures and obligations under the *National Parks and Wildlife Act 1974*.	All
Land use and property			
Design/pre-construction			
LU1	*Future planning*	**Sydney Metro** ~~Transport for NSW~~ would continue to work the Department of Planning and Environment, the Greater Sydney Commission, and the Inner West and Canterbury-Bankstown councils in relation to future planning for the Sydenham to Bankstown corridor.	All
LU2		**Sydney Metro** ~~Transport for NSW~~ would work with the Department of Planning and Environment, Greater Sydney Commission, Canterbury-Bankstown Council and other key stakeholders to plan for the strategic transformation of the Bankstown CBD, including an investigation into the long-term development and viability of an underground station configuration.	BA
LU3		**Sydney Metro would establish a working group with Canterbury-Bankstown Council to investigate improved precinct outcomes in the vicinity of Campsie Station.**	
Construction			
LU4	*Temporary use*	Temporary use areas, including public open space, would be restored to their pre-existing condition (as a minimum) as soon as practicable following completion of construction. This would be undertaken in consultation with the relevant council and/or the landowner.	All

ID	Impact	Mitigation measures	Relevant location(s)
Socio-economic impacts			
Design/pre-construction			
SO1	*Socio-economic impacts*	**Sydney Metro** ~~Transport for NSW~~ would continue to work with stakeholders and the community to ensure they are informed about the project and have opportunities to provide feedback to the project team. The existing community contact and information tools would remain in place throughout the duration of the project. Consultation prior to and during construction would involve the use of appropriate tools, including, but not limited to, tools such as community information sessions, forums, briefings, and displays; distribution of project materials in a variety of languages; door knocks; Place Managers; and site signage.	All
SO2	*Community facilities*	Prior to construction, consultation would be undertaken with sensitive community facilities (including aged care, childcare centres, educational institutions, and places of worship). Consultation would aim to identify and develop measures to manage the specific construction impacts for individual sensitive community facilities. These measures would be incorporated into the relevant management plans.	All
Construction			
SO3	*Community facilities and infrastructure*	Access to community facilities and infrastructure would be maintained during construction, where possible. Where alternative access arrangements need to be made, these would be developed in consultation with relevant service providers, and communicated to users.	All
SO4	*Employment*	A workforce development plan would be prepared and implemented during construction, to support local employment and business opportunities, provide skills development, and increase workplace diversity.	All
Business impacts			
Design/pre-construction			
BI1	*Managing construction impacts*	A business management plan would be prepared and implemented during construction, to define the location specific measures and strategies to minimise impacts on individual businesses during construction. The plan would also include: • a business consultation forum • roles and responsibilities • monitoring, auditing, reporting, and complaints management procedures.	All
BI2	*Supporting businesses during construction*	The Sydney Metro City & Southwest Small Business Owners Support Program would be implemented to provide assistance to small business owners adversely impacted by construction. The program would be administered by a retail advisory/support panel established by **Sydney Metro** ~~Transport for NSW~~.	All

ID	Impact	Mitigation measures	Relevant location(s)
Landscape and visual impacts			
Design/pre-construction			
LV1	*General visual impacts*	The design would be guided by the Transport for NSW Around the Tracks – urban design for heavy and light rail.	All
LV2		**Sydney Metro** ~~Transport for NSW~~ would work with the Inner West and Canterbury-Bankstown councils to identify relevant urban design principles, and deliver agreed urban design outcomes on council land, where reasonable and feasible.	All
LV3		**Sydney Metro** ~~Transport for NSW~~ would prepare Station Design and Precinct Plans for each station. The plans would aim to ensure that the stations and facilities are sympathetic and complement local character, and are integrated with future plans for development. The plans would consider the following: • urban design context • sustainable design and maintenance • community safety, amenity and privacy, including 'safer by design' principles where relevant • opportunities for public art • landscaping and design opportunities to mitigate the visual impacts of rail infrastructure and operation facilities • incorporation of salvaged historic and artistic elements on the project design • details of where and how recommendations from the Design Review Panel have been considered in the plan. Documents to be considered by the plans include, but are not limited to: • Inner West Council's Dulwich Hill Station Precinct public domain master plan • Outcomes of the master plan for Bankstown Station. The plans would be prepared and implemented in consultation with the Department of Planning and Environment, Inner West and Canterbury-Bankstown councils, Chambers of Commerce, and the local community.	AS

ID	Impact	Mitigation measures	Relevant location(s)
LV4	*Impacts to trees and screening vegetation*	The management of trees during detailed design and construction planning would be guided by the project's Tree Management Strategy, which would be developed in consultation with councils and include consideration of relevant local plans and strategies. Where removal cannot be avoided, trees would be replaced in accordance with the Tree Management Strategy, including replacement of removed trees in a two for one ratio. Opportunities to retain and protect existing trees would be defined during detailed design and construction planning, in accordance with the project's Tree Management Strategy. The design would aim to reduce tree removal to the extent practicable, particularly where they contribute to screening vegetation or landscape character.	All
LV5	*Light spill*	Lighting would be designed in accordance with *AS 4282 Control of the Obtrusive Effects of Outdoor Lighting*. Lighting would be designed to minimise light spill and glare into adjoining areas.	All
LV6	*Noise barriers and fencing*	The selection of materials and colours for noise barriers and hoardings would aim to minimise their visual prominence.	Noise barrier locations
LV7		The use of transparent panels in noise barriers would be considered where views to local landscape features and district views would be obstructed.	Noise barrier locations
LV8		Fencing would be designed to be of a high quality urban finish near stations.	AS
LV9	*Substations*	The detailed design of the substations would ensure that they incorporate appropriate architectural treatments and landscaping to minimise the potential for visual impacts. Surrounding property owners would be consulted during design of the substations.	Substations
Construction			
LV10	*Visual impacts*	A visual amenity management plan would be prepared and implemented during construction, to define the measures to minimise visual impacts during construction. The plan would include requirements in relation to construction site remediation.	All
LV11		Mitigation measures for landscape and visual impacts would be implemented as soon as feasible and reasonable after the commencement of construction, and remain for the duration of the construction period.	All
LV12	*Impacts to trees*	Trees to be retained would be protected prior to the commencement of construction in accordance with *AS4970-2009 Protection of trees on development sites* and the project's Tree Management Strategy. Any tree pruning would be undertaken in accordance with the project's Tree Management Strategy, guided by a tree report prepared by a qualified arborist.	All

ID	Impact	Mitigation measures	Relevant location(s)
LV13	*Impacts from construction, including compounds and work sites*	The design and maintenance of construction compound hoardings would aim to minimise visual amenity and landscape character impacts. Graffiti would be removed promptly, and public art opportunities would be considered.	All
LV14		The selection of materials and colours would aim to minimise their visual prominence.	All
LV15		Lighting of work areas, compounds and work sites would be oriented to minimise glare and light spill impact on adjacent receivers.	All
LV16		Following completion of construction, site restoration would be undertaken in accordance with the visual amenity management plan. Temporary impacts to public open space would be rehabilitated in consultation with the relevant local council and/or landowner.	All
Soils and contamination			
Design/pre-construction			
SC1	*General soil and erosion management*	Erosion and sediment control measures would be implemented in accordance with *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom, 2004) and *Managing Urban Stormwater: Soils and Construction Volume 2A* (DECC, 2008). Measures would be designed as a minimum for the 80th percentile, five day rainfall event.	All
SC2	*Acid sulfate soils*	Prior to ground disturbance in high probability acid sulfate areas, testing would be carried out to determine the presence of acid sulfate soils. If acid sulfate soils are encountered, they would be managed in accordance with the *Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee, 1998) and the *Waste Classification Guidelines* - Part 4: Acid Sulfate Soils (EPA, 2014).	MA, CB, CP
SC3	*Saline soils*	Prior to ground disturbance in areas of potential soil salinity, testing would be carried out to confirm the presence of saline soils. If saline soils are encountered, they would be managed in accordance with *Site Investigations for Urban Salinity* (DLWC, 2002).	PB, BA
SC4	*Contamination*	WorkCover dangerous goods searches would be carried out for properties that have potential contamination near Belmore Station, to provide additional site characterisation and identify the risk of contamination in these areas.	BE
SC5		Prior to ground disturbance, a detailed contamination assessment would be undertaken in areas with a medium to high risk of contamination, to confirm the nature and extent of contamination, specific requirements for further investigation and remediation, and/or management requirements of any contamination.	MA, CP, BE, PB, BA
SC6		Hazardous materials surveys would be undertaken during detailed design for all proposed demolition activities, and for utility adjustments as required.	All

ID	Impact	Mitigation measures	Relevant location(s)
SC7		In the event a Remediation Action Plan is required, it would be developed in accordance with *Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land* (Department of Urban Affairs and Planning and Environment Protection Authority, 1998) and a NSW Environment Protection Authority Accredited site auditor would be engaged to audit the works.	MA, CP, BE, PB, BA
Construction			
SC8	*Unexpected contamination*	In the event that indicators of contamination are encountered during construction (such as odours or visually contaminated materials), work in the area would cease, and the finds would be managed in accordance with the unexpected contamination finds procedure.	All
Operation			
SC9	*Soil erosion and sedimentation*	During any maintenance work where soils are exposed, sediment and erosion control devices would be installed in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).	All
Hydrology, flooding and water quality			
Design/pre-construction			
FHW1	*Stormwater runoff*	Where feasible and reasonable, detailed design would result in no net increase in stormwater runoff rates in all storm events, unless it can be demonstrated that increased runoff rates as a result of the project would not increase downstream flood risk.	All
FHW2	*Flooding*	**Detailed design of the project would, as required at Bankstown between Stacey Street and Marion Street, take into account the impact of overland flooding for the full range of floods events up to the Probable Maximum Flood level.**	BA
FHW3	*Water quality*	The project would be **designed in accordance with water quality design criteria based on the *Water Sensitive Urban Design Guideline (Roads and Maritime, 2017)*** to ensure there is minimal potential for water quality impacts, including incorporating water sensitive urban design elements.	All
FHW4	*Water quality monitoring*	A construction water quality monitoring program would be developed and would commence prior to construction, to monitor water quality at identified discharge points. The program would include relevant water quality objectives, parameters, and criteria and specific monitoring locations identified in consultation with DPI (Water) and the EPA.	All
Construction			
FHW5	*Flooding*	Detailed construction planning would consider flood risk for all compounds and work sites. This would include identification of measures to not worsen existing flooding characteristics. Not worsen is defined as: • a maximum increase in flood levels of 50 mm in a one per cent AEP event	All

ID	Impact	Mitigation measures	Relevant location(s)
		• a maximum increase in time of inundation of one hour in a one per cent AEP event • no increase in the potential for soil erosion and scouring from any increase in flow velocity in a one per cent AEP flood event.	
FHW6		The site layout and staging of construction activities would: • avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required • consider how works would affect the existing stormwater network such that alternatives are in place prior to any disconnection or diversion of stormwater infrastructure.	All
FHW7	*Watercourse impacts*	Works within or near watercourses (including the Cooks River) would be undertaken with consideration given to the NSW Office of Water's guidelines for controlled activities.	All
FHW8	*Water quality*	Erosion and sediment mitigation measures would be installed and maintained for the duration of the construction period.	All
FHW9	*Water quality monitoring*	The ~~A~~ water quality monitoring program would continue during construction, to monitor water quality at identified discharge points.	All
FHW10		Discharges from construction water treatment devices would be monitored to ensure compliance with the discharge criteria in the environment protection licence.	All
Operation			
FHW11	*Water quality*	Operational water discharges would be managed in accordance with the water quality management requirements specified in the environment protection licence.	All
Biodiversity			
Design/pre-construction			
B1	*Direct impacts to biodiversity*	Detailed design and construction planning would avoid direct impacts to vegetation mapped as threatened ecological communities or native plant community types, specifically Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box.	All
B2		Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.	All
Construction			
B3	*Direct impacts to biodiversity*	Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	All

ID	Impact	Mitigation measures	Relevant location(s)
B4		Impacts to Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.	All
B5		Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	All
B6		A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	All
B7	*Management of weeds*	Priority weeds would be managed in accordance with the *Biosecurity Act 2015*. Weeds of national environmental significance would be managed in accordance with the *Weeds of National Significance Weed Management Guide*.	All
Operation			
B8	*Management of weeds*	Annual inspections would be undertaken for weed infestations and to assess the need for control measures.	All
B9		Any outbreak of priority weeds and/or weeds of national environmental significance would be managed in accordance with the relevant guidelines.	All
B10	*Threatened species and habitats*	**Sydney Metro** ~~Transport for NSW~~ would take necessary steps to locate and protect threatened species and habitats where they occur inside the Sydenham to Bankstown rail corridor. Suitable protection measures would include fencing, signage and other measures where this would not impede the safe maintenance and operation of trains and related infrastructure.	All
Air quality			
Design/pre-construction			
AQ1	*Air quality impacts*	An air quality management plan would be prepared and implemented during construction, to define the measures to minimise air quality impacts during construction.	All
Sustainability And Climate Change			
Design/pre-construction			
SCC1	*Sustainability*	Sustainability initiatives and targets would be reviewed and incorporated into the detailed design to support the achievement of the project's sustainability objectives. A best practice level of performance would be targeted using relevant sustainability rating tools e.g. ISCA as built 'excellent' level rating.	All
SCC2		A sustainable procurement strategy would be developed and implemented to apply to Principal Contractors, their subcontractors and their suppliers.	All

ID	Impact	Mitigation measures	Relevant location(s)
SCC3		A workforce development and industry participation strategy would be developed covering both construction and operation.	
SCC4	*Climate change*	The need for climate change risk treatments would be assessed and incorporated into the detailed design, where required.	All
SCC5	*Greenhouse gas emissions*	An iterative process of greenhouse gas assessments and design refinements would be carried out during detailed design and construction to identify opportunities to minimise greenhouse gas emissions. Performance would be measured in terms of a percentage reduction in greenhouse gas emissions from a defined reference footprint.	All
Construction			
SCC6	*Sustainability*	Sustainability reporting (and corrective action where required) would be undertaken during construction.	All
SCC7		The construction workforce development plan would be implemented.	All
SCC8	*Greenhouse gas emissions*	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction would be offset.	All
Operation			
SCC9	*Sustainability*	Prior to operation commencing, sustainability initiatives would be reviewed and updated, and relevant initiatives would be implemented to support the achievement of the project's sustainability objectives.	All
SCC10		The operation workforce development plan would be implemented.	All
SCC11	*Climate change risks*	Periodic review of climate change risks would be carried out to ensure ongoing resilience to the impacts of climate change.	All
SCC12	*Greenhouse gas emissions*	100 per cent of the greenhouse gas emissions associated with consumption of electricity during operation would be offset.	All
Hazards, risks and safety			
Design/pre-construction			
HRS1	*Public safety*	A hazard analysis would be undertaken during the detailed design stage to identify risks to public safety from the project, and how these can be mitigated through safety in design.	All
HRS2	*Electric and magnetic fields*	Substations would be designed to ensure that electric and magnetic fields remain within the limits set by the following guidelines: • RHS 30 (Radiation Health Series 30), *Interim Guidelines on Limits of Exposure to 50/60Hz Electric & Magnetic Fields* (1989), National Health and Medical Research Council • RPS 3 (Radiation Protection Series No.3), *Maximum Exposure Levels to Radiofrequency Fields – 3 kHz to 300 GHz* (2002), Australian	SS

ID	Impact	Mitigation measures	Relevant location(s)
		Radiation Protection and Nuclear Safety Agency (ARPANSA)	
		• AS/NZS 2344:1997 and Amdt 1:2006 *Limits of electromagnetic interference from overhead a.c. powerlines and high voltage equipment installations in the frequency range 0.15 to 1000 MHz.* During commissioning of the substations, monitoring would be undertaken to determine the electric and magnetic field levels. Should exceedances of the criteria be found, measures to reduce these exceedances would be implemented.	
HRS3	*Utilities*	All utilities adjustments or relocation would be undertaken in accordance with the Utilities Management Framework.	All
Construction and operation			
HRS4	*Hazardous materials and substances*	All hazardous substances that may be required for construction and operation would be stored and managed in accordance with the *Storage and Handling of Dangerous Goods Code of Practice* (WorkCover NSW, 2005) and the *Hazardous and Offensive Development Application Guidelines: Applying SEPP* 33 (Department of Planning, 2011).	All
Waste management			
Design/pre-construction			
WM1	*Waste generation and recycling*	Detailed design would include measures to minimise excess spoil generation. This would include a focus on optimising the design to minimise spoil volumes, and the reuse of material on-site.	All
WM2		A recycling target of at least 90 per cent would be adopted.	All
Construction			
WM3	*Waste and spoil management*	Spoil would be managed in accordance with the spoil management hierarchy.	All
WM4		Target 100 per cent reuse of reusable spoil.	All
WM5		Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging.	All
WM6		All waste would be assessed, classified, managed and disposed of in accordance with the *Waste Classification Guidelines* (EPA, 2014).	All
WM7		Waste segregation bins would be located at various locations within the project area, if space permits, to facilitate segregation and prevent cross contamination.	All

ID	Impact	Mitigation measures	Relevant location(s)
Cumulative impacts			
Pre-construction and construction			
CI1	*Cumulative impacts*	**Sydney Metro** ~~Transport for NSW~~ would manage and co-ordinate the interface with projects under construction at the same time. Co-ordination and consultation with the following stakeholders would occur, where required: • Department of Planning and Environment • Roads and Maritime Services • Sydney Trains • NSW Trains • Sydney Buses • Inner West Council • Canterbury-Bankstown Council • Sydney Motorways Corporation • emergency service providers • utility providers • construction contractors.	All
		Co-ordination and consultation with these stakeholders would include: • provision of regular updates to the detailed construction program, construction sites and haul routes • identification of key potential conflict points with other construction projects • developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve: – adjustments to the construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of Sydney Metro or other construction projects • co-ordination of traffic management arrangements between projects.	

This page has been left blank intentionally

SYDENHAM TO BANKSTOWN

SUBMISSIONS REPORT

> Appendix C - Compilation of revised mitigation measures

SYDENHAM TO BANKSTOWN

SUBMISSIONS REPORT

> September 2018