

## 5. PROJECT DESCRIPTION

This chapter provides a description of the Metro project. The information below provides a planning and design background to assist in understanding the proposed heritage impacts within the project area. Metro requirements and objectives are outlined as well as descriptions, justifications and drawings of the project for each of the ten station catchments constituting the project area. The ten railway station catchments are situated along the Bankstown Line between Marrickville and Bankstown Stations.

### 5.1 General design

#### 5.1.1 Key features of the project

The key features of the project, once built, are summarised in section 1.2.2. This includes the key features for track and rail system facility works, metro stations, transport network, surrounding development, and ancillary infrastructure and works.

#### 5.1.2 Design principles and guidelines

##### Design guidelines and standards

Sydney Metro has developed design guidelines, The *Sydney Metro Sydenham to Bankstown Design Guidelines*, to establish the aesthetic standards for the project and respond to strategic directions, urban design strategies, customer needs, and the initiatives of the local councils. The design guidelines provide guidance on:

- the interface between stations and their surrounding locality, including:
  - station entries
  - transport interchange facilities (bicycle facilities, bus stops, kiss-and-ride, taxi ranks and connections to existing transport facilities)
  - landscaping and other public domain elements.
- rail corridor works, rail cuttings and embankments.
- station and service buildings.

Five design objectives have been developed to guide decision-making and the design process for the project:

1. Ensuring an easy customer experience
2. Being part of a fully integrated transport system
3. Being a catalyst for positive change
4. Being responsive to distinct contexts and communities
5. Delivering an enduring and sustainable legacy for Sydney.

The project would be designed, constructed and operated in accordance with the current standards of the following agencies, as applicable:

- Australian Standards
- Building Code of Australia
- Asset Standards Authority

- Transport for NSW
- Council (for the public domain)
- Sydney Trains
- Roads and Maritime Services
- utility companies or asset owners.

The design would only depart from the specified standards with the agreement of the relevant authority.

### Urban design

The design of the project would:

- be consistent with the principles and strategies of the *Bankstown to Sydenham Corridor Strategy: Open space* and the *Draft Sydenham to Bankstown Urban Renewal Corridor Strategy* (Department of Planning and Environment, 2016)
- take into account heritage considerations
- provide for an activated public domain, pedestrian connectivity and fully integrated transport system
- provide safe and convenient interchange opportunities
- explore opportunities for new development including re-purposing existing unused rail land
- incorporate sustainable design considerations such as photovoltaics, natural ventilation and light and water sensitive urban design
- enhance the immediate and broader urban context.

The appearance and visual form of the visible features of the project have been considerations in the options assessment and design definition process. The preliminary design for the project has been prepared in accordance with the above principles. The design would continue to be refined during the detailed design phase, which would integrate all relevant considerations, including:

- security and safety (including consideration of crime prevention through environmental design (CPTED) principles)
- functional and operational requirements
- community and stakeholder input
- the role of the project and the objectives of the *Draft Bankstown to Sydenham Corridor Strategy: Open space and recreation strategy* (Government Architect's Office, 2015) and the *Draft Sydenham to Bankstown Urban Renewal Corridor Strategy*
- urban design and visual impacts
- environmental constraints and sustainability
- access and maintenance requirements
- minimising impacts to heritage.

## Design principles for metro stations

The metro stations are part of a wider system requiring consistency between station planning, operations and architecture. Station entries, platforms and circulation elements have been designed to meet operational requirements while ensuring an easy customer experience.

The following design principles have been developed to describe the intention of the design objectives for the metro stations:

- Functionality, accessibility and circulation – ensure that access between the stations, catchments and other forms of transport is safe, quick and efficient and available to all members of the community including those with accessibility issues such as parents with prams and those with a disability.
- Customer information and wayfinding – ensure that movement around stations and catchments is made easy with clear signage and that information about metro services are readily available.
- Safety – ensure the safety of all users of stations and catchments.
- Customer comfort and amenity – ensure that stations function in a way that they do not become overcrowded and that suitable furniture is provided on platforms.
- Heritage and archaeology - identify opportunities for heritage conservation to contribute to the celebration of local identity in station design.

## Safety and security

A key metro characteristic is to provide a system that is inherently safe for customers on trains, at stations, and at the interface with the public domain. The safety of passengers and the general public has been and will continue to be a key consideration during the design process.

The following metro features would contribute to the safety and security of customers:

- customer service assistants at every station and moving through the network during the day and night
- station and train design allows for good line of sight to enable passive and active surveillance
- stations and catchments that are designed to be highly visible, active spaces with good lighting and amenity
- ensuring customers can see all the way along the train and move easily between carriages, including wide, open walkways between carriages
- providing platform screen doors at stations which keep people and objects away from the edge, improving customer safety and allowing trains to get in and out of stations much faster.

Other station safety features include:

- CCTV cameras linked to the operations control centre
- an appropriate level of lighting
- emergency help points
- passenger information signage.

The design and layout of each station and stabling and maintenance facility would include consideration of crime prevention through environmental design (CPTED) principles.

Fencing of the rail corridor is being provided/upgraded as part of the project to ensure the safety of the general community. A trackside intruder detection system would also be installed.

The design of the project would also incorporate relevant fire and life safety/evacuation requirements.

### 5.1.3 Sustainability and environmental considerations

#### Sustainability in design

One of the objectives of EP&A Act is to 'encourage ecologically sustainable development'. Transport for NSW is committed to ensuring that its projects are implemented in a manner that is consistent with the principles of ecologically sustainable development.

Transport for NSW has applied, and will continue to apply, the principles of ecologically sustainable development throughout the development of the project.

#### Environmental considerations

The approach to design development has included a focus on avoiding and/or minimising the potential for impacts during all key phases of the process.

Strategic assessment undertaken during the initial option selection included consideration of delivery risk, including feasibility of construction and risks in implementation. Following identification of the preferred option the design of the project evolved over a number of stages which incorporated further consideration of environmental constraints. As a result, the design of the project has been influenced by a number of environmental factors and has generally been designed to:

- minimise direct and indirect impacts on heritage items
- minimise direct impact on property
- minimise flooding impact and flood behaviour
- minimise impacts on protected species.

### 5.1.4 Common station elements

Sydney Metro stations and catchments are being designed to provide safe and efficient interchange between transport modes, including minimising conflicts between pedestrians, cyclists, buses and vehicles.

#### Station works

Each metro station would have a number of common elements or design features. These include:

- for some stations a new station concourse and station entrance locations, including:
  - new stairs and ramps
  - new or relocated lifts
- platform works and installation of platform screen doors which would open with the train doors once an arriving train has stopped, and close simultaneously with the train doors) (described below)
- signage and wayfinding within the station and catchment

- station service buildings to house services for each station, including communications equipment, signalling equipment, electrical equipment and other rail systems equipment
- station buildings on platforms or at station entrances, including control and communication rooms, toilets, staff facilities (locker room, toilets and meal rooms), storerooms and offices
- new, upgraded or relocated parking and kerb side facilities within the station catchment, including accessible parking, kiss and ride and taxi facilities
- provision of new and/or relocated bicycle parking facilities
- awnings for shade and shelter at stations
- enhancements to the footpaths in the vicinity of the station entries and interchange areas
- landscaping and street furniture to maintain high quality urban design outcomes.

### Platform works

The project includes the modification of station platforms at all stations to allow installation of platform screen doors, and ensure platforms meet the minimum requirements (length, height and gap) for metro trains.

The extent of work to platforms at each station would vary. Platform works may include:

- Replacement of existing platforms - existing platforms would be demolished and replaced with new platforms in their existing or slightly adjusted locations. This would occur where existing platforms need to be upgraded due to their age, or where upgrades are required to meet Sydney Metro standards.
- Fixed or mechanical gap fillers on platforms where required – gap fillers would be installed only in instances where platforms are not rebuilt to meet operational requirements. Gap fillers would ensure that the gap and height difference between the platform and the train is minimised. This could include mechanical gap fillers, which incorporate mechanisms that automatically narrow the gap between the platform and the train when the train arrives at the platform.
- Extension or shift of platform position along existing corridor – platforms would be shifted along the rail corridor (in line with the existing corridor/track) to optimise the platform for the metro trains. At these locations, the existing platforms may be extended to provide for the desired length.
- Change in platform alignment – existing platform structures would be replaced with straighter platforms, with associated changes to the position of the track and other infrastructure. The platforms would integrate with the existing station and would generally remain within the existing railway corridor.

Platforms would be fitted with platform screen doors. These operate similarly to lift doors, in that they only open (with the train doors) once an arriving train has stopped, and close simultaneously with the train doors. Platform screen doors provide an enhanced level of customer safety, as they prevent access to the track by providing a solid barrier along the edge of the platform.

Upgraded stations and platforms have been designed to comply with the requirements of the *Disability Discrimination Act 1992* (i.e. DDA compliant) and *Disability Standards for Accessible Public Transport 2002*. This would include, but not be limited to, works such as ensuring that the platforms slope away from the tracks.

## Canopies

The metro style of modern, high quality design which is distinguishable from the historic elements has been used across all station catchments. Canopies have been designed to reduce bulk and height, to meet safety and customer requirements and to minimise direct impacts to heritage structures. Where possible views from the concourse to significant structures have been opened up to allow appreciation of the buildings and their setting.

Originally large scale glass and steel canopies were proposed to extend from the concourses, with medium scale canopies across the platforms. Ribbon canopies have now been proposed to reduce bulk and to respond to stakeholder needs. Design has avoided direct impacts to significant platform buildings by canopy elements. Canopies are in general separated from heritage structures by about two metres, with portions of canopy adjacent to heritage structures glazed to maximise opportunity for views from the concourse.

### 5.1.5 Ancillary railway works

The following work would also be undertaken as part of the track and rail system facility works:

- adjustment of existing track alignments and overhead wiring along the line to meet Sydney Metro operational requirements, Sydney Trains, and freight operational requirements, whilst Sydney Trains and ARTC continue to operate in the corridor
- adjustment of existing Sydney Trains rail systems, including removal of existing junctions to segregate the metro tracks from Sydney Trains tracks, and removal of any redundant Sydney Trains systems (e.g. signalling, communications)
- utility and rail system protection and relocation works within the construction footprint and public areas.

With the exception of the utility protection and relocation works, these utility and rail system works would take place within the rail corridor.

### 5.1.6 Bridges

A total of 17 road overbridges and three pedestrian footbridges/walkways (excluding those forming part of station concourses) are located within the project area. A number of the overbridges directly adjoin the stations. There are also 10 underbridge structures that support the rail tracks over roadways and waterways.

Upgrades would be required to a number of the bridge structures to meet current design standards, Sydney Metro operation specifications, and in places to suit the amended track alignment. In addition, all overbridges would be provided with parapet throw screens and vehicle collision barriers to provide an improved level of safety and security for customers.

The project would involve works to each of these bridges, however the type of works required would vary and would be confirmed during the detailed design. Changes to the scope may potentially be required based on investigations that would inform the final design. The bridge upgrade works would generally consist of one or more of the following:

- Bridge replacement – full bridge replacement where required due to track realignment, insufficient widths, structural issues, to improve precinct gradients, or to meet metro standards.
- Strengthening works – strengthening of existing bridge piers, abutments, bridge decks and primary steel elements.

- Protection – providing enhance protection to existing bridge piers, over-height vehicle crash protection beams adjacent underbridge structures, vehicle collision protection to overbridge parapets, and installation of parapet throw screens.
- Widening – widening would generally be required where the track alignment has been adjusted. A combination of existing embankment strengthening and new retaining walls may also be required.
- General maintenance – to ensure long-term durability of the bridge structures, maintenance works would include preparation and re-painting of steel elements and, where appropriate, raking out and re-pointing of masonry, and waterproofing works to bridge decks.
- Retaining wall works – replacement of existing retaining walls or installation of new walls.

The project scope includes replacing two bridges:

- Illawarra Road overbridge at Marrickville
- Albermarle Street overbridge at Dulwich Hill.

Protection and maintenance works are proposed at the following footbridges:

- Church Street/Hutton Street footbridge, Canterbury
- Duke Street footbridge, Campsie.

The work to upgrade bridges is provided in Table 9.

**Table 9: Works to overbridges and underbridges**

| Bridge                                             | Replacement | Strengthening | Protection | Widening | Maintenance | Retaining wall |
|----------------------------------------------------|-------------|---------------|------------|----------|-------------|----------------|
| <b>Overbridge</b>                                  |             |               |            |          |             |                |
| Illawarra Road overbridge, Marrickville            | ●           |               |            |          |             |                |
| Livingstone Road overbridge, Marrickville          |             |               | ●          |          | ●           |                |
| Abermarle Street overbridge, Dulwich Hill          | ●           |               |            |          |             |                |
| Wardell Road overbridge, Dulwich Hill              |             |               | ●          |          | ●           |                |
| Garnet Street overbridge, Hurlstone Park           |             |               | ●          |          | ●           |                |
| Duntroon Street overbridge, Hurlstone Park         |             |               | ●          |          | ●           |                |
| Church Street/Hutton Street footbridge, Canterbury |             |               | ●          |          | ●           |                |
| Melford Street overbridge, Canterbury              |             |               | ●          |          | ●           |                |

| Bridge                                             | Replacement | Strengthening | Protection | Widening | Maintenance | Retaining wall |
|----------------------------------------------------|-------------|---------------|------------|----------|-------------|----------------|
| Canterbury Road overbridge, Canterbury             |             |               | ●          |          | ●           |                |
| Beamish Street overbridge, Campsie                 |             |               | ●          |          | ●           |                |
| Duke Street footbridge, Campsie                    |             |               | ●          |          | ●           |                |
| Loch Street overbridge, Campsie                    |             |               | ●          |          | ●           |                |
| Burwood Road overbridge, Belmore                   |             |               | ●          | ●        | ●           | ●              |
| Moreton Street overbridge, Belmore                 |             |               |            |          | ●           |                |
| Haldon Street overbridge, Lakemba                  |             |               | ●          |          | ●           | ●              |
| Kings Georges Road overbridge, Wiley Park          |             | ●             | ●          |          | ●           |                |
| Punchbowl Road overbridge, Punchbowl               |             |               |            |          | ●           | ●              |
| Stacey Street overbridge, Bankstown                |             |               | ●          |          | ●           | ●              |
| Chapel Road overbridge, Bankstown                  |             |               | ●          |          | ●           |                |
| <b>Underbridge</b>                                 |             |               |            |          |             |                |
| Meeks Drive underbridge, Marrickville              |             | ●             |            |          | ●           |                |
| Canal 1/M24, Marrickville                          |             |               |            |          | ●           |                |
| Canal 2/M24, Marrickville                          |             |               |            |          | ●           |                |
| Charlotte Avenue underbridge, Marrickville         |             | ●             | ●          |          | ●           |                |
| Ness Avenue/Terrace Road underbridge, Dulwich Hill |             |               | ●          |          | ●           |                |
| Sewer line underbridge, Marrickville               |             |               |            |          | ●           |                |
| Foord Avenue underbridge, Hurlstone Park           |             |               |            |          | ●           |                |
| Cooks River/Charles Street underbridge, Canterbury |             |               | ●          |          | ●           |                |
| Wairoa Street underbridge, Campsie                 |             |               | ●          |          | ●           | ●              |

| Bridge                                     | Replacement | Strengthening | Protection | Widening | Maintenance | Retaining wall |
|--------------------------------------------|-------------|---------------|------------|----------|-------------|----------------|
| Pedestrian access to Belmore Sports Ground |             | ●             |            | ●        | ●           | ●              |
| North/South Terrace underbridge, Bankstown |             |               |            | ●        | ●           |                |

The following sections outline the methods that would be used to upgrade bridges and replace road decks on bridges, where required.

### Parapet replacement and waterproofing of bridge deck

In general, only partial closures of bridges would be required to replace parapets and waterproof the bridge deck. In some locations, where the roadway is narrow, full closures would be required. Works would be undertaken during possession periods to ensure the safety of workers and customers.

For bridges that would remain partially open during construction, works would involve:

- relocation of services on the bridge to a new alignment (some services would be terminated at the bridge abutments)
- existing parapets removed down to the existing bridge slab
- asphalt surface on bridge removed to the bridge deck
- bridge deck to be cleaned and waterproofed
- precast parapet sections to be positioned with the use of cranes and fixed to the bridge deck, throw screens would be preinstalled prior to installation
- asphalting surface applied to roadway along with any line marking
- bridge tie-ins adjusted to match the new bridge roadway surface levels
- bridge reopened to traffic
- footpaths to be periodically closed to allow for the reinstatement of services within the bridge
- fencing and traffic barriers on either side of the bridge would be adjusted to the new bridge parapets.

### Bridge replacement and widening with new abutments

For bridges that would be closed during construction, works would involve:

- relocation of services on the bridge to a new alignment (some services would be terminated at the bridge abutments)
- closure of bridge to all traffic, including pedestrians
- removal of asphalt surface of bridge down to the concrete deck
- installation of new abutment extension piles, using piling rigs. A drill rig would be located on either side of the bridge to improve the program time

- excavation of the new abutment would occur during possession period
- demolition of bridge deck would occur during possession period
- installation of new bridge beams to span the tracks
- installation of concrete slab
- waterproofing of bridge deck once concrete is cured
- installation of bridge parapet
- installation of screens on bridge
- installation of asphalt surfaces
- installation of bridge drainage
- adjustment of road levels on either side of bridge to match the bridge
- installation of line marking
- relocation of services relocated at start of work back to the bridge.
- installation of make up panels at each corner of the bridge from the new bride parapets to the existing alignment fencing.

Bridge replacement works would require closure of the bridge for about three months. Construction would mainly be undertaken during possession periods, however some works would be undertaken outside possession periods.

#### 5.1.7 .33 kilovolt high voltage feeder

To provide power supply to the new traction substations, a 33 kilovolt high voltage feeder needs to be constructed between the rail corridor at Campsie Station (connects to the Campsie traction substation) and the existing Ausgrid Canterbury electrical substation, located about one kilometre south of Canterbury Station in Earlwood.

The electricity feeder route would be about 3.5 kilometres long, and would be constructed within the following road reserves:

- Beamish Street
- South Parade
- Phillips Avenue
- Canterbury Road
- Fore Street
- Burlington Avenue
- River Street
- Spark Street
- Mooney Avenue.

The alignment would also traverse Hughes Park to the south of the substation. The indicative alignment is shown on Figure 1.

Construction of the high voltage feeder (as outlined in the EIS Section 7.2.3) would generally be trenched along the alignment. The use of horizontal directional drilling to install the cable would potentially be used in the following locations to minimise impacts:

- at Canterbury Road which is a Roads and Maritime Services road with high traffic volumes
- at Elise Street between River Street and Karool Avenue due to a substantial change in elevation between the two streets.

The alignment also crosses Cup And Saucer Creek on Fore Street, Canterbury, via an existing bridge. This crossing would involve the integration of the feeder into the bridge structure with works within the creek not required. The final design of this crossing would be confirmed further during detailed design.

## 5.2 Station works

### 5.2.1 Marrickville Station

#### *Design description*

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. The station entrance is on Illawarra Road.

Marrickville Station was recently updated as part of Transport for NSW's Transport Access Program. The key works proposed as part of the project are shown on Figure 98 and summarised in Table 10.

An artist's impression is provided in Figure 99.

**Table 10: Marrickville Station key design elements**

| Feature              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Station entry/exit   | <ul style="list-style-type: none"> <li>• The existing station entrance from Illawarra Road would be retained and upgraded, including retention of existing lifts.</li> <li>• The existing at-grade entry from Station Street to platform 2 would be retained and upgraded to include a new entry canopy.</li> </ul>                                                                                                                                                                                                                                                           |
| Platform details     | <ul style="list-style-type: none"> <li>• The existing heritage listed platforms would be straightened and extended to the east.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Station buildings    | <ul style="list-style-type: none"> <li>• The existing station buildings, including the recently completed elevated concourse would be retained.</li> <li>• New station buildings would be provided on platform 1.</li> <li>• Heritage station buildings on platforms 1 and 2 would be retained .</li> <li>• The former booking office on platform 2 would be retained and relocated to east of the building on platform 2.</li> <li>• New retail space would be provided in Station Street (the use of the space would be subject to a separate approval process).</li> </ul> |

#### **Station area**

| Feature                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public transport integration | <ul style="list-style-type: none"> <li>All bus stops would be retained in current location, including southbound stop on Illawarra Road which was recently relocated as part of upgrades to the station.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Access                       | <ul style="list-style-type: none"> <li>A new shared zone in Station Street would be provided, allowing access to the southern station entrance, with this entrance and the shared zone forming a new station plaza. This would form part of an active transport corridor.</li> <li>Signalisation of Warburton Road, Schwebel Street and Illawarra Road intersection is proposed, including installation of pedestrian crossings.</li> <li>The existing signalised crossing of Illawarra Road outside the station would be removed. A zebra crossing would be provided on Illawarra Road immediately north of Arthur Street.</li> <li>The existing cycle route along the southern side of the rail corridor would be rerouted along Schwebel Street, Leofrene Avenue, and Riverdale Avenue.</li> <li>A new accessible ramp would be provided from the southern station entrance to Schwebel Street along Station Street.</li> </ul> |
| Kerbside uses, bike parking  | <ul style="list-style-type: none"> <li>New kerbside facilities would be provided within the new Station Street shared zone/plaza area on both the northern and western sections of the new shared zone.</li> <li>A new bike storage/parking area would be provided along the eastern side of the Station Street plaza with the existing facility retained.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Car parking                  | <ul style="list-style-type: none"> <li>Loss of one on-street parking space due to new kerbside facilities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

### *Indicative layout*

The following drawings provide an indicative layout of Marrickville Station.

Figure 98: Marrickville Station – indicative layout of key design elements

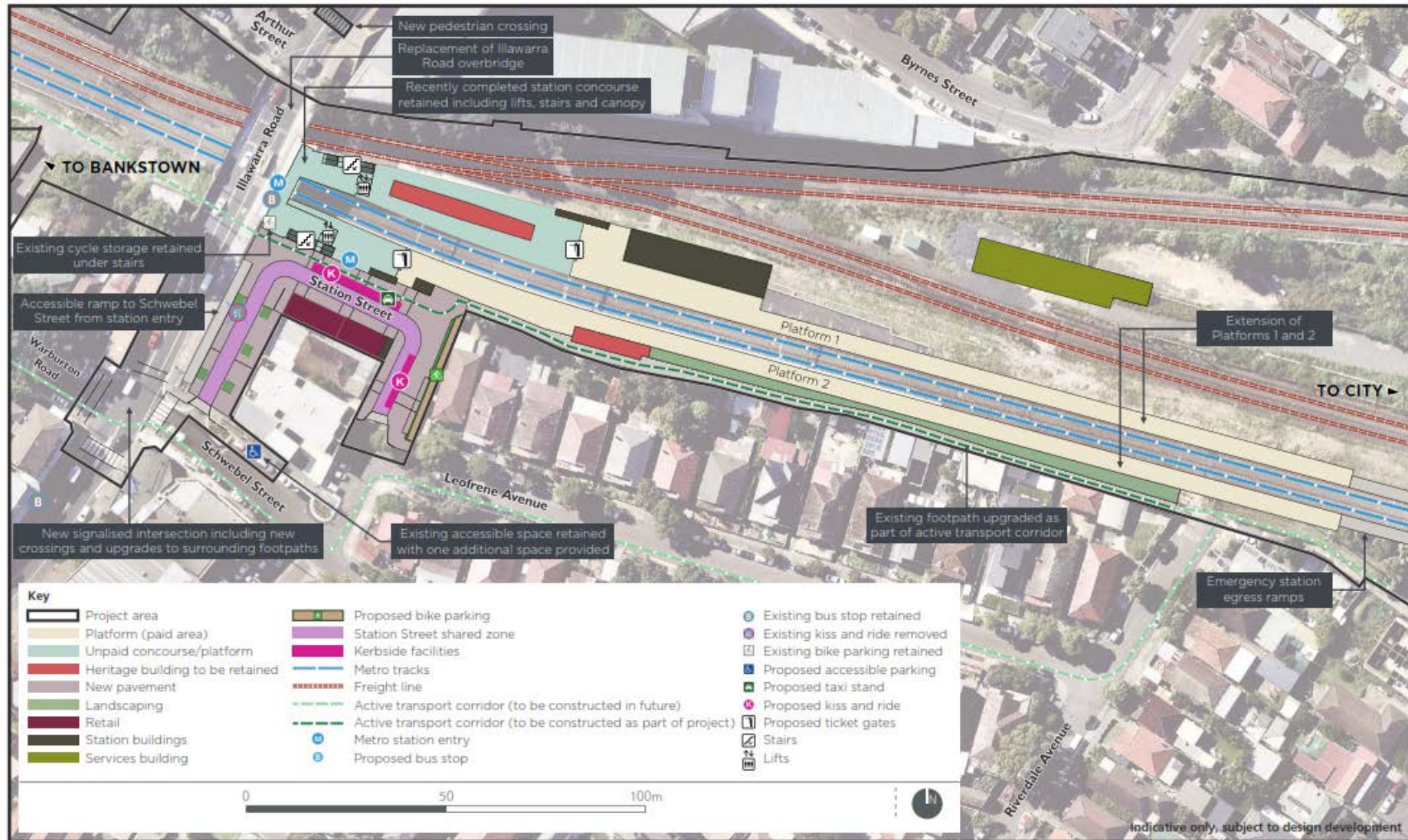


Figure 99: Marrickville Station – artist's impression



## 5.2.2 Dulwich Hill Station

### Design description

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 project are shown in Figure 100 and summarised in Table 11.

An artist's impression is provided in Figure 101.

**Table 11: Dulwich Hill Station key design elements**

| Feature                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing station entrance would be removed.</li><li>• A new elevated station concourse would be provided and would connect with the existing stairs and lift to Dulwich Hill Light Rail stop. The concourse would be accessed from two new station entrances at Bedford Crescent (northern side) and adjacent to Ewart Lane (southern side).</li></ul>                                                                                                                                                                                     |
| Platform details             | <ul style="list-style-type: none"><li>• The heritage listed platforms would be rebuilt in their current location and extended to the west. A portion of the existing platform east of Wardell Road would be removed.</li></ul>                                                                                                                                                                                                                                                                                                                                                         |
| Station buildings            | <ul style="list-style-type: none"><li>• New station facilities would be provided within the new concourse structure and within a new building located on the platform.</li><li>• The heritage listed overhead booking office would be removed as part of the removal of the existing station entrance.</li><li>• The existing heritage station building on the platform would be retained.</li><li>• New retail space would be provided within the southern station entrance below the new concourse (the use of the space would be subject to a separate approval process).</li></ul> |
| <b>Station area</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Public transport integration | <ul style="list-style-type: none"><li>• The existing bus stops located in Dudley Street and Wardell Road would be retained.</li><li>• The new concourse would connect the existing lift and stairs to the Dulwich Hill light rail stop.</li></ul>                                                                                                                                                                                                                                                                                                                                      |
| Access                       | <ul style="list-style-type: none"><li>• A new public plaza would be provided between the proposed southern station entrance and the existing pedestrian crossing on Wardell Road.</li><li>• Ewart Lane would be widened/upgraded adjacent to the new southern station entrance to improve vehicular access to the reconfigured Ewart Lane car park.</li><li>• Pathways would be provided along Ewart Lane, Ewart Street, and Dudley Street, to form part of an active transport corridor.</li></ul>                                                                                    |

| Feature                     | Description                                                                                                                                                                                                                                                                    |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kerbside uses, bike parking | <ul style="list-style-type: none"> <li>• New kiss and ride, taxi, and accessible parking would be provided on the southern side of Bedford Crescent.</li> <li>• New bike parking facilities would be provided on the upper level of the proposed services building.</li> </ul> |
| Car parking                 | <ul style="list-style-type: none"> <li>• Commuter parking on Ewart Lane would be reconfigured with the same number of spaces retained.</li> <li>• Loss of five on-street parking spaces due to new kerbside facilities.</li> </ul>                                             |

### *Indicative layout*

The following drawings provide an indicative layout of Dulwich Hill Station.

Figure 100: Dulwich Hill Station – indicative layout of key design elements

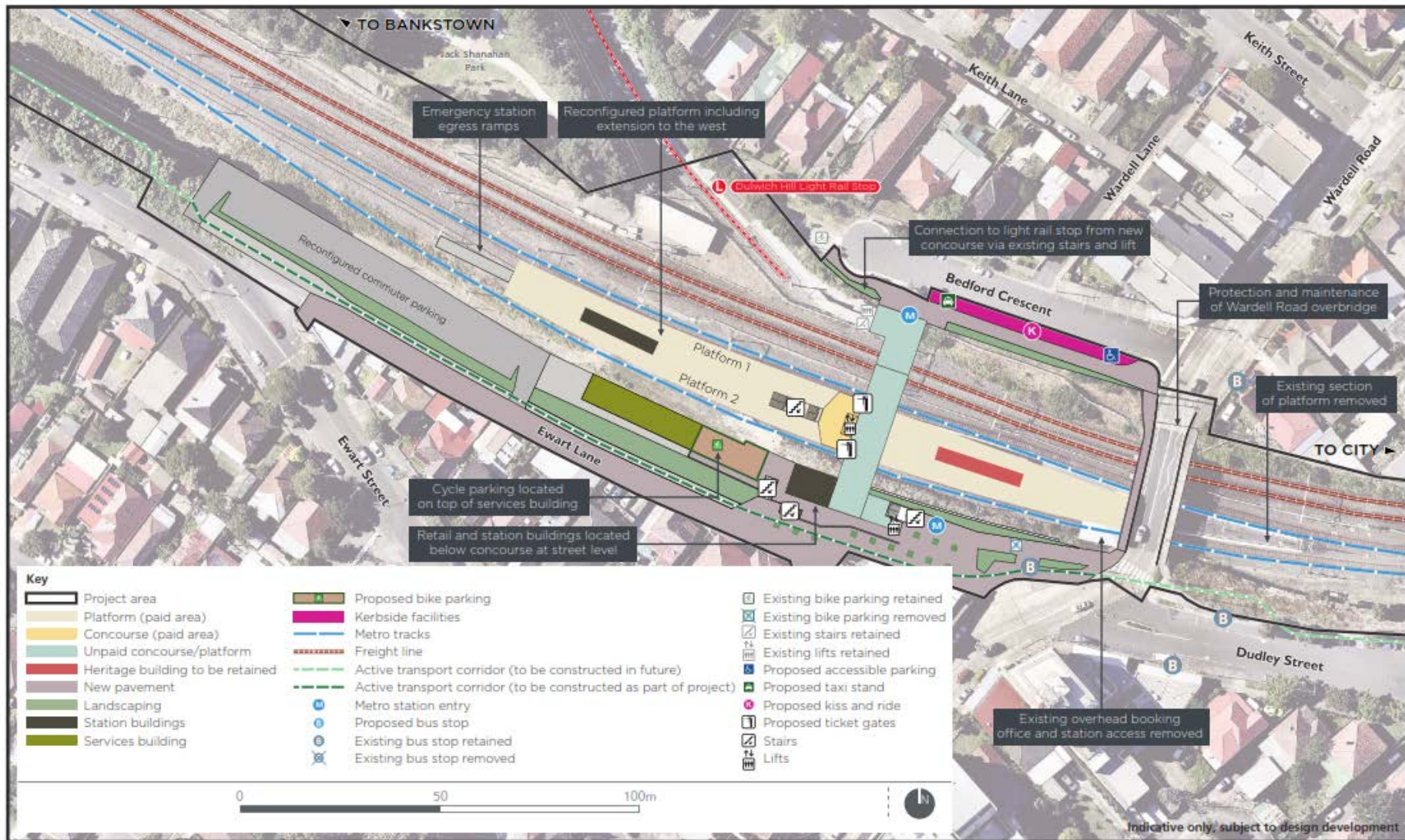


Figure 101: Dulwich Hill Station – artist's impression



### 5.2.3 Hurlstone Park Station

#### Design description

Hurlstone Park Station is located to the west of the Duntroon/Crinian Street overbridge. The station area is bounded by Crinian and Floss streets and residential dwellings to the north, Duntroon Street and residential dwellings to the south, and Duntroon/Crinian Street to the west. The station entrance is on the overbridge.

The key works proposed as part of the project are shown in Figure 102 and summarised in Table 12.

An artist's impression is provided in Figure 103.

**Table 12: Hurlstone Park Station key design elements**

| Feature                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing station entrance on the overbridge would be upgraded.</li><li>• A new enlarged, elevated station concourse would be provided in the same location to provide an enlarged station forecourt area and entry set back from the road.</li></ul>                                                                                                                                                                                                |
| Platform details             | <ul style="list-style-type: none"><li>• Heritage listed platforms would be rebuilt, straightened, and extended to the southwest along the rail corridor, generally in their existing locations.</li></ul>                                                                                                                                                                                                                                                                                       |
| Station buildings            | <ul style="list-style-type: none"><li>• New station buildings would be located within the concourse and on platforms.</li><li>• The existing heritage listed overhead booking office and heritage building on platform 1 would be removed.</li><li>• The existing heritage station building on platform 2 would be retained.</li><li>• New retail space would be provided as part of the new concourse (the use of the retail space would be subject to a separate approval process).</li></ul> |
| <b>Station area</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Public transport integration | <ul style="list-style-type: none"><li>• The existing bus stops on the overbridge would be retained.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                   |
| Access                       | <ul style="list-style-type: none"><li>• New pedestrian crossing facilities would be provided adjacent to the new southern station entrance and on Crinian Street just north of Floss Street.</li><li>• The existing pedestrian crossing on the overbridge would be modified to improve pedestrian flow by including more space on the southwestern side.</li><li>• Connection to an active transport corridor along the western side of Duntroon Street (south of rail corridor).</li></ul>     |

| Feature                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kerbside uses, bike parking | <ul style="list-style-type: none"> <li>• New kerbside facilities would be located near the southern station entrance on Floss Street on the eastern side of the overbridge adjacent to the station.</li> <li>• New bike parking areas would be provided in Floss Street on the northern side of the rail corridor.</li> <li>• The existing accessible parking spaces on Floss Street would be retained, and a new accessible space would be provided on Duntroon Street.</li> </ul> |

### *Indicative layout*

The following drawings provide an indicative layout of Hurlstone Park Station.

Figure 102: Hurlstone Park Station – indicative layout of key design elements

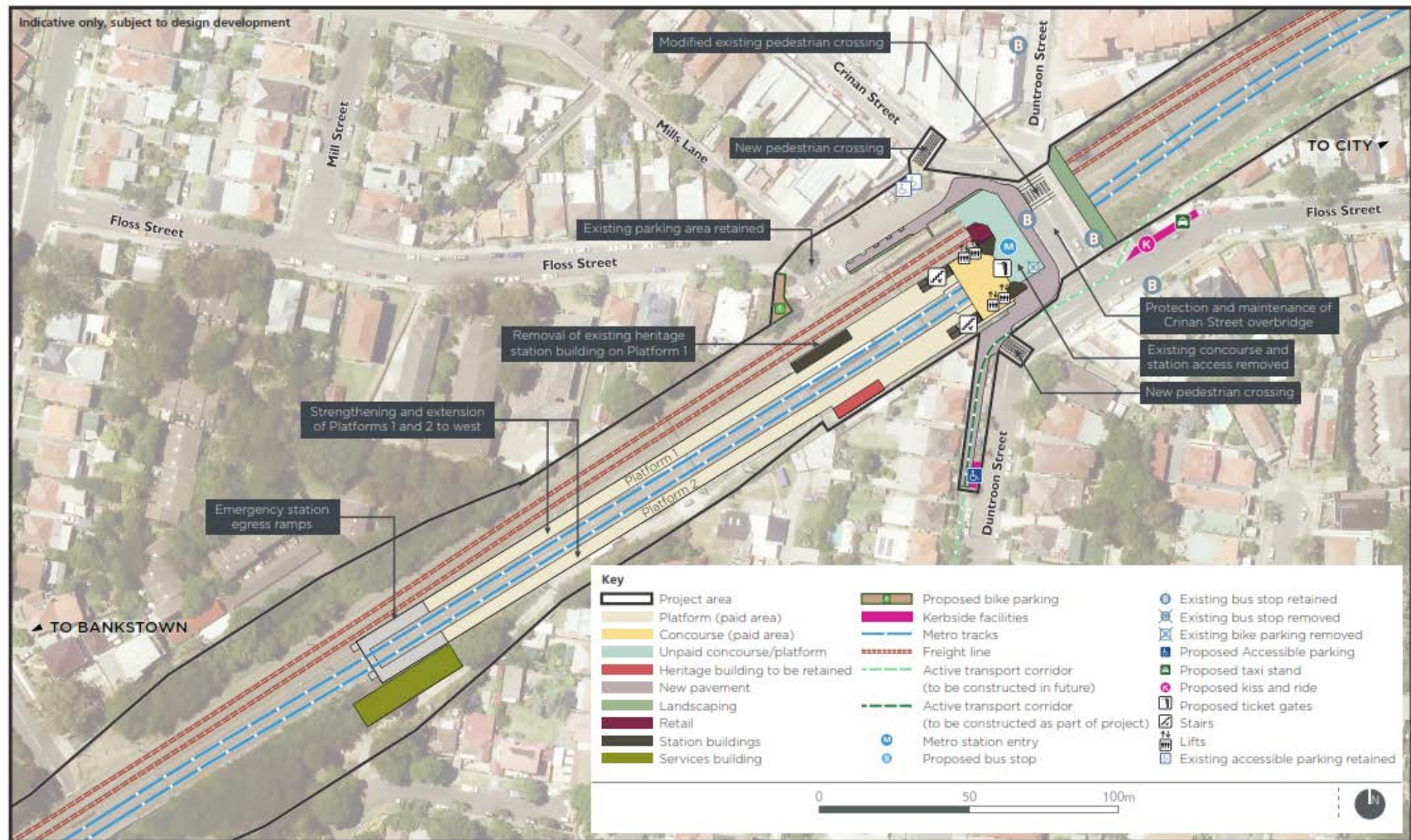


Figure 103: Hurlstone Park Station – artist’s impression



## 5.2.4 Canterbury Station

### Design description

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 project are shown in Figure 104 and summarised in Table 13.

An artist's impression is provided in Figure 105.

**Table 13: Canterbury Station key design elements**

| Feature                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing station entrance on Canterbury Road would be relocated to the western side of the rail corridor and provide access to platform 2.</li><li>• A new elevated station concourse would be provided about 150 metres west of Canterbury Road.</li><li>• A new station entrance would be provided on Broughton Street providing access to platforms 1 and 2.</li><li>• Futureproofing for a potential future station entrance on Charles Street as part of any future development along Charles Street. This entrance would provide access to platform 2.</li></ul>                        |
| Platform details             | <ul style="list-style-type: none"><li>• The heritage listed platforms would be rebuilt and extended to the northwest.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Station buildings            | <ul style="list-style-type: none"><li>• The heritage listed footbridge and overhead booking office would be removed.</li><li>• The heritage listed buildings on platform 1 and 2 would be retained.</li><li>• The existing heritage listed signal box on the southeastern side of the Canterbury Road overbridge would be retained.</li><li>• New station buildings would be provided at the station entrance on Broughton Street.</li><li>• New retail space would be provided at the station entrances at Broughton Street and Canterbury Road (the use of the retail space would be subject to a separate approval process).</li></ul> |
| <b>Station area</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Public transport integration | <ul style="list-style-type: none"><li>• All existing bus stops would be retained, with the exception of one stop on Broughton Street, which is to be relocated to the new Broughton Street entrance.</li><li>• A new bus shelter would be provided at the station entrance on Broughton Street.</li></ul>                                                                                                                                                                                                                                                                                                                                 |
| Access                       | <ul style="list-style-type: none"><li>• Connection to an active transport corridor located along Charles Street via Canterbury Road.</li><li>• New pedestrian crossing on Broughton Street in line with new station entrance.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                   |

| Feature                     | Description                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kerbside uses, bike parking | <ul style="list-style-type: none"> <li>• Kerbside facilities would be provided on Broughton Street adjacent to the new station entry. This would include new accessible parking on Broughton Street.</li> <li>• New bike parking areas would be provided within the new station plaza areas on Broughton Street, Charles street and Canterbury Road.</li> </ul> |

### *Indicative layout*

The following drawings provide an indicative layout of Canterbury Station.

Figure 104: Canterbury Station – indicative layout of key design elements

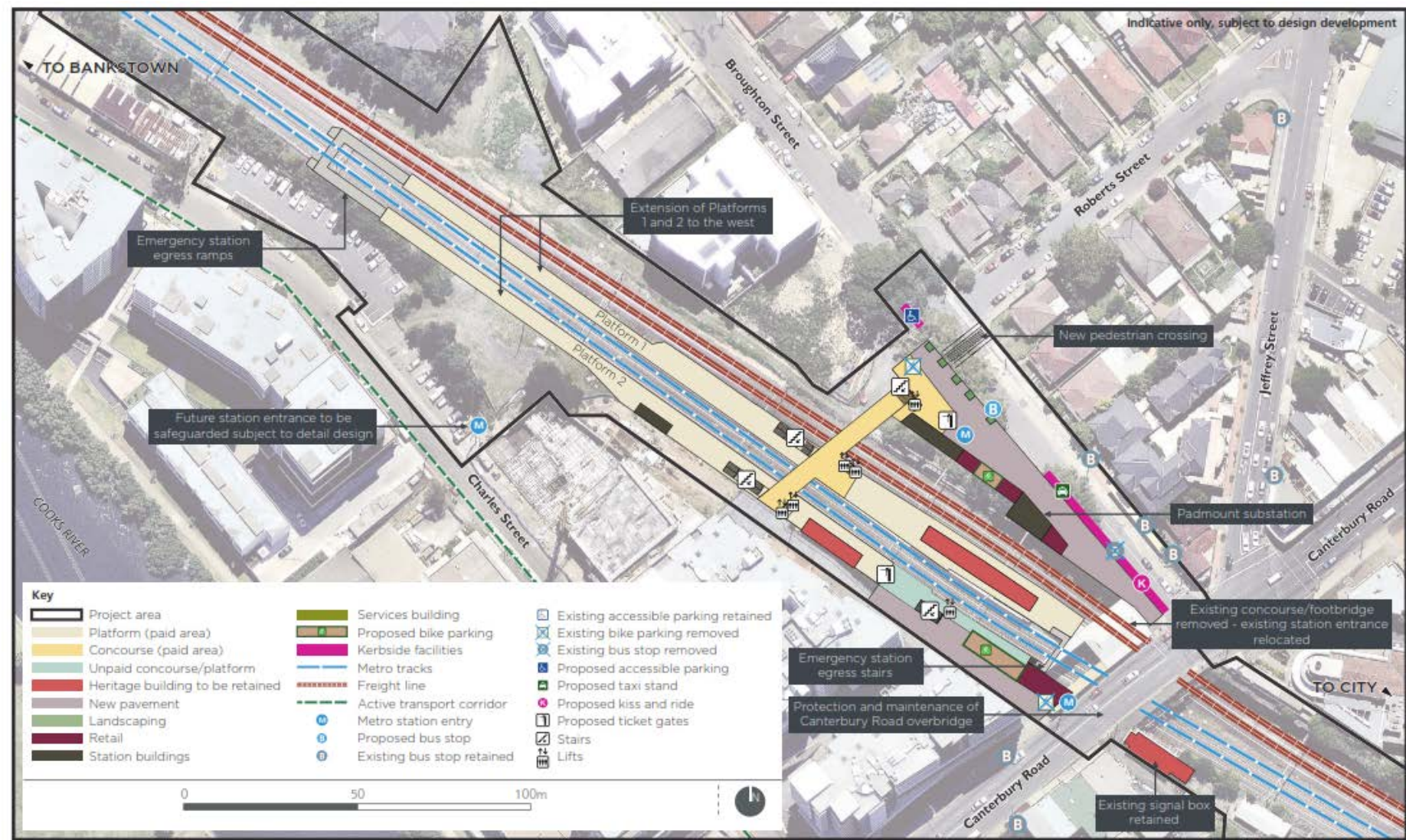


Figure 105: Canterbury Station – artist’s impression



## 5.2.5 Campsie Station

### Design description

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 project are shown in Figure 106 and summarised in Table 14.

An artist's impression is provided in Figure 107.

**Table 14: Campsie Station key design elements**

| Feature                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing station entrance at Beamish Street would be upgraded.</li><li>• A new station entry would be provided on North Parade.</li><li>• A new enlarged, elevated station concourse would provide more space for pedestrian circulation and pedestrian movement along Beamish Street. The part of the existing concourse built in 2001 would be retained.</li></ul>                                                                                                                                      |
| Platform details             | <ul style="list-style-type: none"><li>• The heritage listed platforms would be rebuilt, straightened and extended to the west.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                              |
| Station buildings            | <ul style="list-style-type: none"><li>• The heritage listed overhead station concourse and footbridge (except the part built in 2001) would be removed.</li><li>• The existing heritage listed buildings on platforms 1 and 2 would be retained.</li><li>• New station facilities would be provided within the new concourse.</li><li>• New retail space would be provided at the station entrance on North Parade and on the eastern side of Beamish Street (the use of the retail space would be subject to a separate approval process).</li></ul> |
| <b>Station area</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Public transport integration | <ul style="list-style-type: none"><li>• Existing bus stops located in the vicinity of the station would be retained.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Access                       | <ul style="list-style-type: none"><li>• New shared zone would be provided along Lilian Lane between Beamish and Dewar streets. This would form part of an active transport corridor.</li></ul>                                                                                                                                                                                                                                                                                                                                                        |

| Feature                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kerbside uses, bike parking | <ul style="list-style-type: none"> <li>• New kerbside facilities would be provided on the southern side of North Parade, adjacent to the northern station entrance.</li> <li>• The existing kerb facilities on the northern side of South Parade would be removed.</li> <li>• New kerbside facilities would be provided as part of the new elevated platform on the eastern side of Beamish Street.</li> <li>• The existing accessible parking on North Parade, Wilfred Avenue, and South Parade would be retained.</li> <li>• New bike parking facilities would be provided near the northern station entrance on North Parade, and on the southern side of the station concourse.</li> </ul> |
| Car parking                 | <ul style="list-style-type: none"> <li>• The existing parking area along the northern side of Lilian Lane would be reconfigured, which would result in the provision of 80 additional commuter car parking spaces.</li> <li>• The new kerbside facilities would result in the loss of about 20 on-street car parking spaces on North Parade and South Parade.</li> </ul>                                                                                                                                                                                                                                                                                                                       |

### *Indicative layout*

The following drawings provide an indicative layout of Campsie Station.

Figure 106: Campsie Station – indicative layout of key design elements

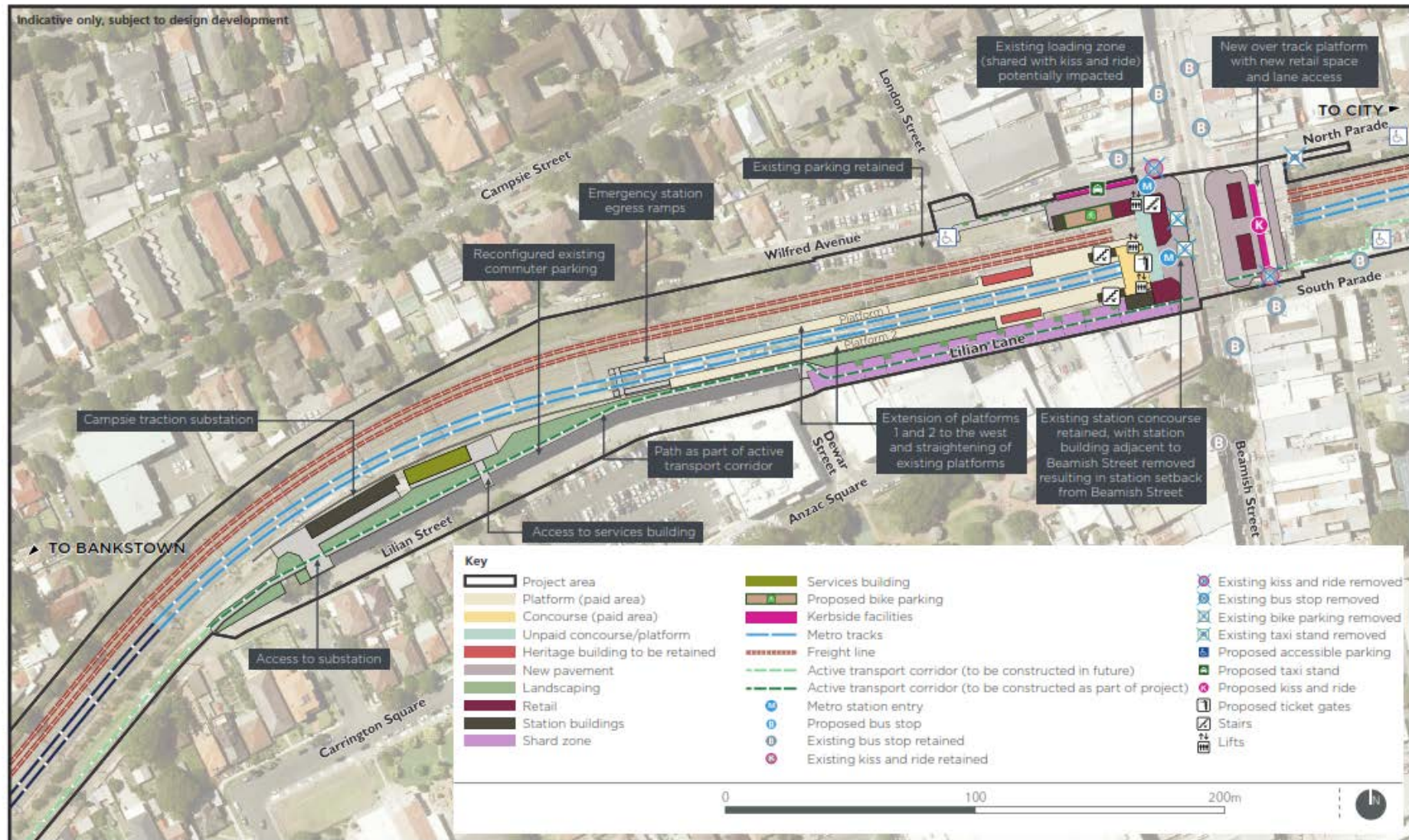


Figure 107: Campsie Station – artist’s impression



## 5.2.6 Belmore Station

### Design description

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 project are shown in Figure 108 and summarised in Table 15.

An artist's impression is provided in Figure 109.

**Table 15: Belmore Station key design elements**

| Feature                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing station entrance would be removed.</li><li>• A new station entrance and plaza would be at Tobruk Avenue to the south and a new entrance provided to Redman Parade to the north.</li><li>• A new elevated concourse would be provided to the east of the heritage platform building.</li></ul>                                                                                                                                                                                                                                                                                                                             |
| Platform details             | <ul style="list-style-type: none"><li>• The heritage listed platforms would be rebuilt, straightened and extended to the east.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Station buildings            | <ul style="list-style-type: none"><li>• New station buildings would be provided within the concourse and at the eastern end of the platform.</li><li>• The existing heritage listed platform building would be retained.</li><li>• The existing overhead booking office would be retained. Existing stairs from the overhead booking office to the platform would, however, be removed.</li><li>• Existing heritage buildings located within the car park to the north of the station would be retained.</li><li>• New retail spaces would be provided within the new plaza on Tobruk Avenue (the use of the space would be subject to a separate approval process).</li></ul> |
| <b>Station area</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Public transport integration | <ul style="list-style-type: none"><li>• The existing northbound bus stop on Burwood Road would be retained.</li><li>• The southbound stop on Burwood Road would be relocated to the south of Tobruk Avenue.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Feature                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Access                      | <ul style="list-style-type: none"> <li>The existing signalised crossing on Burwood Road at the station entrance would be removed, and a new signalised intersection would be provided at the Tobruk Avenue, and Burwood Road intersection. The new signalised intersection would include pedestrian crossings.</li> <li>New pathways would be provided on Tobruk Avenue to connect to an active transport corridor along Bridge Road, and the existing pathways along the southern side of the rail corridor.</li> </ul> |
| Kerbside uses, bike parking | <ul style="list-style-type: none"> <li>Tobruk Avenue would be extended and widened to provide a shared zone, including new taxi and kiss and ride facilities.</li> <li>A new bike parking area would be provided within the new plaza on Tobruk Avenue.</li> </ul>                                                                                                                                                                                                                                                       |
| Car parking                 | <ul style="list-style-type: none"> <li>Potential impacts to commuter parking and council parking on the northern side of existing station due to new northern station entrance.</li> <li>Removal of existing council off-street car park located south of the station, resulting in the loss of 48 spaces.</li> </ul>                                                                                                                                                                                                    |

### *Indicative layout*

The following drawings provide an indicative layout of Belmore Station.

Figure 108: Belmore Station – indicative layout of key design elements

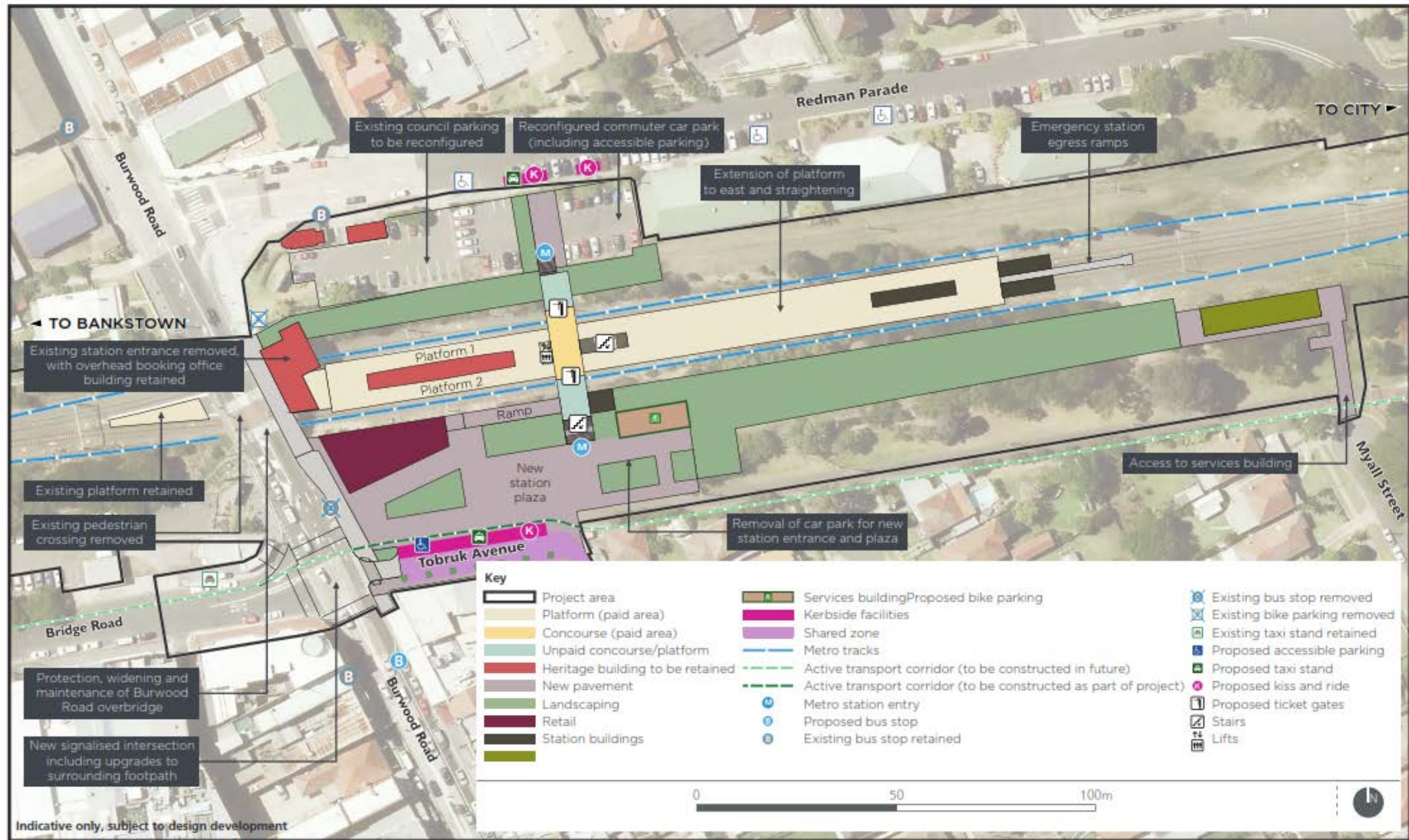


Figure 109: Belmore Station – artist's impression



## 5.2.7 Lakemba Station

### *Design description*

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 project are shown in Figure 110 and summarised in Table 16.

An artist's impression is provided in Figure 111.

**Table 16: Lakemba Station key design elements**

| Feature                      | Proposed                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                              |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing station entrances on Railway Parade and The Boulevarde would be retained.</li><li>• The existing elevated concourse would be retained with a minor expansion on the western side to accommodate additional station buildings/facilities.</li></ul>                                                      |
| Platform details             | <ul style="list-style-type: none"><li>• The platform would be reconstructed to a new straight alignment with extensions to meet metro requirements.</li></ul>                                                                                                                                                                                                |
| Station buildings            | <ul style="list-style-type: none"><li>• The heritage station building on the platform would be retrofitted for reuse.</li><li>• New station buildings would be provided in the concourse, on the platform and would also be provided adjacent to the Railway Parade entrance.</li></ul>                                                                      |
| <b>Station area</b>          |                                                                                                                                                                                                                                                                                                                                                              |
| Public transport integration | <ul style="list-style-type: none"><li>• The existing bus stops located on The Boulevard, Railway Parade, and Haldon Street (south) would be retained.</li></ul>                                                                                                                                                                                              |
| Access                       | <ul style="list-style-type: none"><li>• Connection to an active transport corridor along The Boulevarde east of Haldon Street, and along the rail corridor boundary east of Haldon Street.</li><li>• A new footpath is proposed on the southern side of Railway Parade, adjacent to the existing car parking area leading to the station entrance.</li></ul> |
| Kerbside uses, bike parking  | <ul style="list-style-type: none"><li>• New kerbside facilities would be provided on Railway Parade and on The Boulevard, east of the new station entrance.</li><li>• New bike parking areas would be provided on either side of the rail corridor adjacent to the existing station entrances.</li></ul>                                                     |

### *Indicative layout*

The following drawings provide an indicative layout of Lakemba Station.

Figure 110: Lakemba Station – indicative layout of key design elements

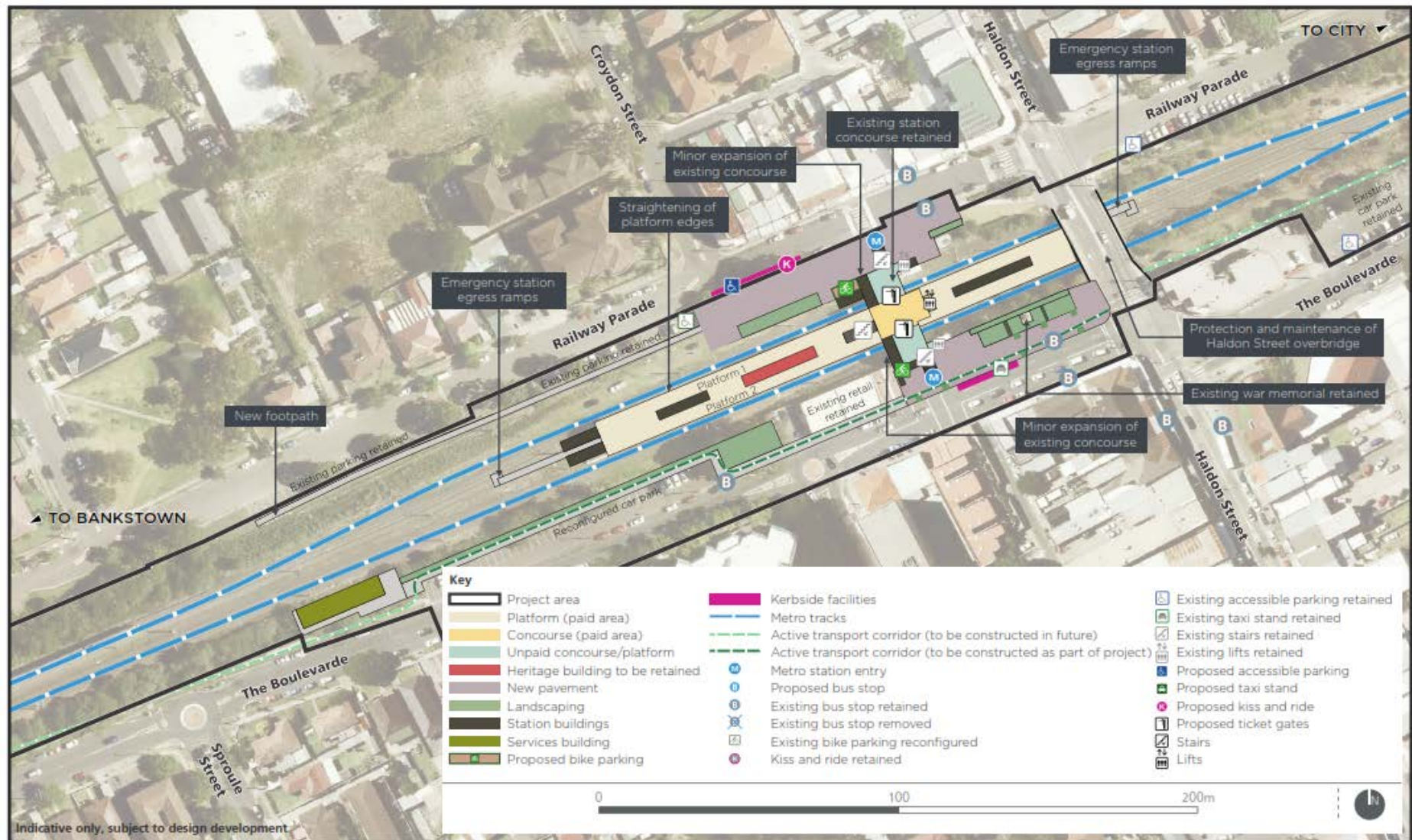


Figure 111: Lakemba Station – artist's impression



## 5.2.8 Wiley Park Station

### *Design description*

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 project are shown in Figure 112 and summarised in Table 17.

An artist's impression is provided in Figure 113.

**Table 17: Wiley Park Station key design elements**

| Feature                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing station entrance on King Georges Road would be upgraded.</li><li>• Two new entrances would be provided on The Boulevarde and from the Stanlea Parade walkway near King Georges Road.</li><li>• The existing station concourse would be removed but a new structure installed in the same location.</li><li>• A new elevated concourse would be built to provide more space for pedestrian circulation.</li></ul>                                            |
| Platform details             | <ul style="list-style-type: none"><li>• The heritage listed platform would be rebuilt, straightened and extended to the west.</li></ul>                                                                                                                                                                                                                                                                                                                                                                          |
| Station buildings            | <ul style="list-style-type: none"><li>• New station buildings would be provided within the new concourse, on platforms 1 and 2 and adjacent to The Boulevarde.</li><li>• The existing heritage listed overhead booking office, concourse and platform buildings would be removed to enable the new facilities to be provided.</li><li>• New retail space would be provided in the new concourse along King Georges Road (the use of the retail space would be subject to a separate approval process).</li></ul> |
| <b>Catchment works</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Public transport integration | <ul style="list-style-type: none"><li>• No changes would be made to existing bus stops.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                |
| Access                       | <ul style="list-style-type: none"><li>• Connection to active transport corridor along the southern side of the station along The Boulevarde east of Haldon Street, and along the rail corridor boundary west of Haldon Street.</li></ul>                                                                                                                                                                                                                                                                         |
| Kerbside uses, parking       | <ul style="list-style-type: none"><li>• New bike parking areas would be provided on either side of the corridor adjacent to the platforms</li><li>• Kerbside facilities would be provided on the northern side of the Boulevarde, east of King Georges Road.</li></ul>                                                                                                                                                                                                                                           |

| Feature     | Description                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Car parking | <ul style="list-style-type: none"> <li>Land within the rail corridor on the northern side of The Boulevardde would be used to provide replacement off-street parking as part of the King Georges Road clearways project undertaken by Roads and Maritime Services.</li> </ul> |

### *Indicative layout*

The following drawings provide an indicative layout of Wiley Park Station.

Figure 112: Wiley Park Station – indicative layout of key design elements

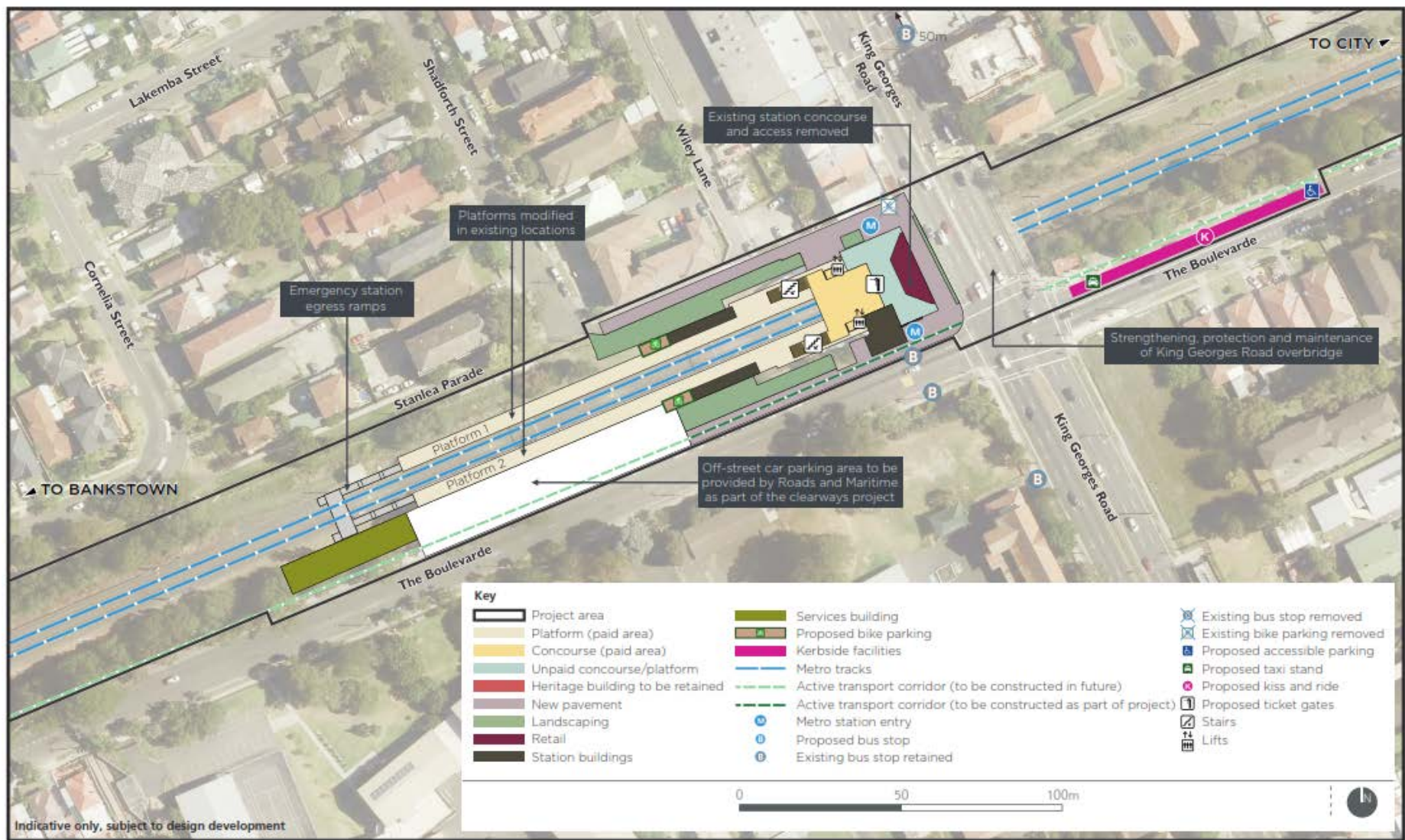


Figure 113: Wiley Park Station – artist's impression



## 5.2.9 Punchbowl Station

### *Design description*

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 project are shown in Figure 114 and summarised in Table 18.

An artist's impression is provided in Figure 115.

**Table 18: Punchbowl Station key design elements**

| Feature                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing station entrance would be removed.</li><li>• Two new station entrances would be provided from The Boulevarde (to the south) and adjacent to Warren Reserve to the north. The new southern entrance would be located within a new station plaza.</li><li>• A new elevated bridge would be constructed to provide access between the two platforms.</li></ul>                                                                        |
| Platform details             | <ul style="list-style-type: none"><li>• The heritage listed platform would be rebuilt, straightened and extended to the east. A portion of the existing platform to the west of the new concourse would be removed.</li></ul>                                                                                                                                                                                                                                                           |
| Station buildings            | <ul style="list-style-type: none"><li>• New station buildings would be provided at the station entrances and platforms.</li><li>• The heritage listed station buildings and overhead booking office would be removed. Further information on the ability to retain these items is provided in Table 6.3.</li><li>• New retail space would be provided within the southern station plaza adjacent to The Boulevarde (use of this space would be subject to separate approval).</li></ul> |
| <b>Station area</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Public transport integration | <ul style="list-style-type: none"><li>• The existing bus stops on Punchbowl Road would be retained.</li><li>• The existing eastbound stop on The Boulevarde would be relocated east of Arthur Street, adjacent to new station entry.</li></ul>                                                                                                                                                                                                                                          |
| Access                       | <ul style="list-style-type: none"><li>• Paths located in the vicinity of the station between the rail corridor and The Boulevarde would form part of an active transport corridor.</li></ul>                                                                                                                                                                                                                                                                                            |

| Feature                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kerbside uses, bike parking | <ul style="list-style-type: none"> <li>• New bike parking areas would be provided on either side of the corridor at the station entrances.</li> <li>• Kerbside facilities would be provided on both sides of The Boulevarde adjacent to the southern station entrance.</li> <li>• Kerbside facilities would be provided along the southern side of Urunga Parade to the east of the northern station entrance.</li> <li>• A new pedestrian crossing would be provided on Punchbowl Road northeast of Bruest Place.</li> </ul> |
| Car parking                 | <ul style="list-style-type: none"> <li>• About 30 existing commuter parking spaces located on the northern side of The Boulevarde would be relocated further to the east to provide space for the new station plaza and entrance.</li> </ul>                                                                                                                                                                                                                                                                                  |

### *Indicative layout*

The following drawings provide an indicative layout of Punchbowl Station.

Figure 114: Punchbowl Station – indicative layout of key design elements

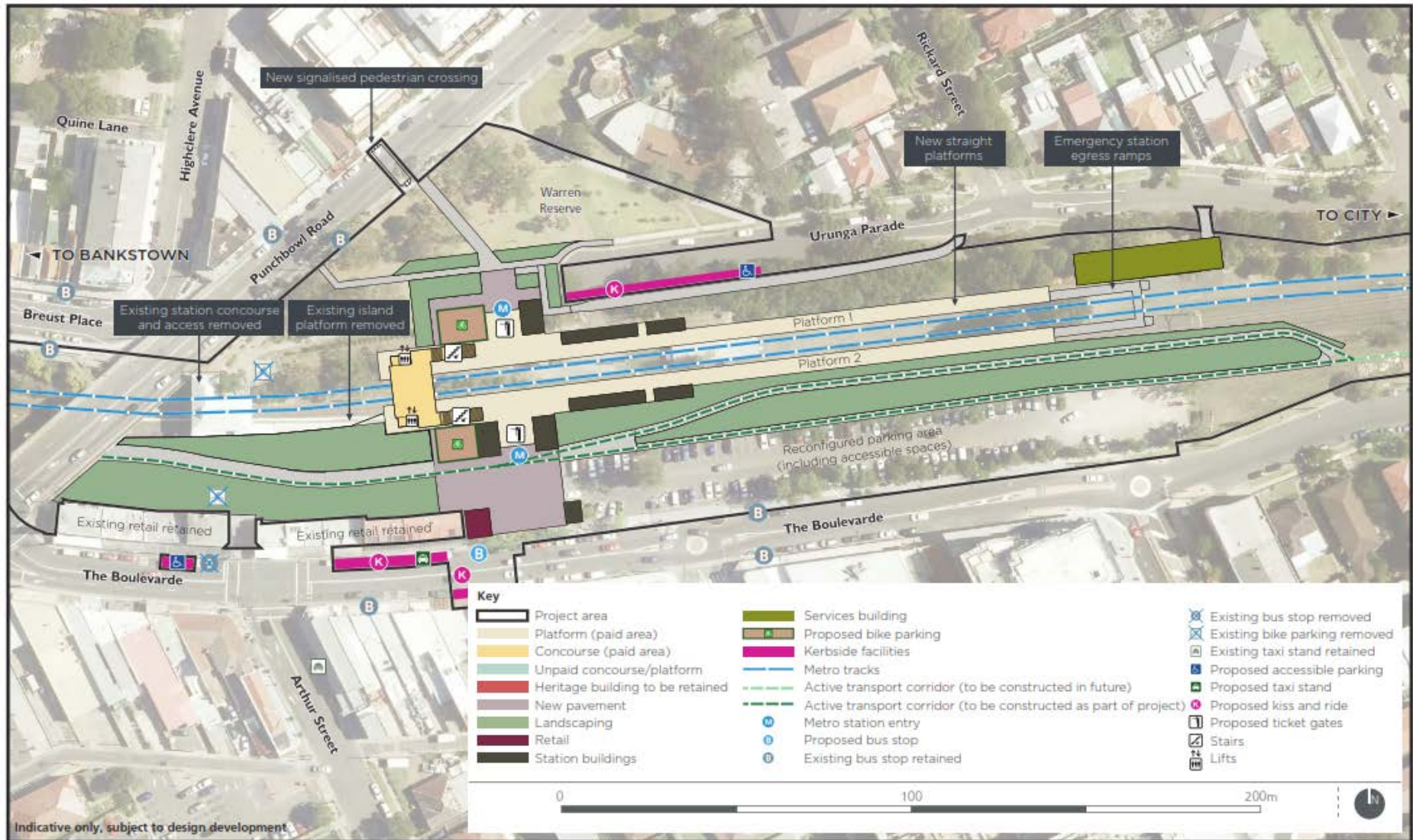


Figure 115: Punchbowl Station – artist’s impression



## 5.2.10 Bankstown Station

### *Design description*

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. The station entrance is on Bankstown City Plaza.

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 project are shown in Figure 116 and summarised in Table 19.

An artist's impression is provided in Figure 117.

**Table 19: Bankstown Station key design elements**

| Feature                      | Proposed                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Station works</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Station entry/exit           | <ul style="list-style-type: none"><li>• The existing Sydney Trains station entrance at Bankstown City Plaza would be retained.</li><li>• 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.</li><li>• New station plazas would be constructed at station entrances on both sides of the rail corridor.</li></ul> |
| Platform details             | <ul style="list-style-type: none"><li>• The heritage listed Sydney Trains platforms would be retained with minor modifications required at the eastern end.</li><li>• New Sydney Metro platforms would be constructed to the east of the new at-grade corridor crossing.</li></ul>                                                                                                                                                                        |
| Station buildings            | <ul style="list-style-type: none"><li>• All station buildings (including the heritage listed station building and Parcels Office) on the Sydney Trains platforms would be retained.</li><li>• A new canopy would be constructed on the Sydney Trains platform between the new station entrance and the existing platform building.</li></ul>                                                                                                              |
| <b>Station area</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Public transport integration | <ul style="list-style-type: none"><li>• The bus layover area off South Terrace would be retained with minor adjustments to accommodate the new station entrance.</li><li>• The bus interchange area on South Terrace, near the existing station entrance, would be retained.</li><li>• The existing bus stop on the northern side of station on North Terrace would be retained.</li></ul>                                                                |
| Access                       | <ul style="list-style-type: none"><li>• The pedestrian/shared paths located along South Terrace would form part of an active transport corridor.</li><li>• An 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.</li></ul>                                                                                       |

| Feature                     | Proposed                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kerbside uses, bike parking | <ul style="list-style-type: none"> <li>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.</li> <li>New bike parking would be provided on both sides of the station within the new station plazas.</li> </ul> |
| Car parking                 | <ul style="list-style-type: none"> <li>Removal of existing car park located adjacent to the Appian Way off North Terrace, resulting in the loss of 10 spaces.</li> </ul>                                                                                                                                                                                                                                |

### *Indicative layout*

The following drawings provide an indicative layout of Bankstown Station.

Figure 116: Bankstown Station – indicative layout of key design elements

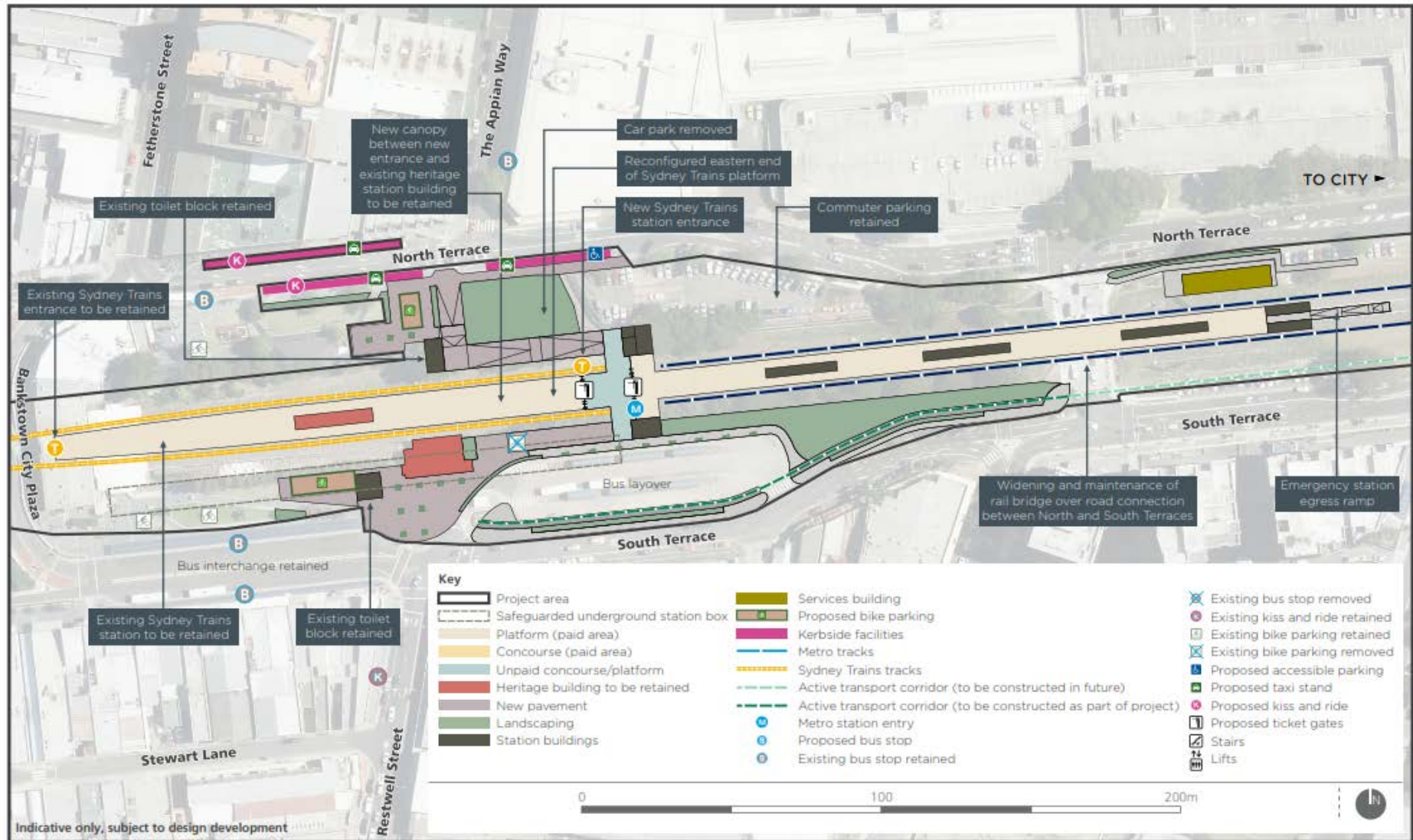


Figure 117: Bankstown Station – artist's impression



## 5.3 Options and justification

### 5.3.1 Project need

An overview of project needs is discussed in Chapter 5 of the Environmental Impact Statement.

### 5.3.2 Design

Table 20 outlines the five design objectives and supporting principles that have been developed for the City & Southwest project and were used to guide the design and decision-making process for the project.

**Table 20: Design objectives**

| Design objective                                                              | Design principle                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Objective 1: Ensuring an easy customer experience.</b>                     | Sydney Metro places the customer first. Stations are welcoming and intuitive with simple, uncluttered spaces that ensure a comfortable, enjoyable and safe experience for a diverse range of customers.                                                                                                                    |
| <b>Objective 2: Being part of a fully integrated transport system.</b>        | Sydney Metro is a transit-oriented project that prioritises clear and legible connections with other public and active transport modes within the wider metropolitan travel network that intersect with this new spine.                                                                                                    |
| <b>Objective 3: Being a catalyst for positive change.</b>                     | Sydney Metro is a landmark opportunity to regenerate and invigorate the city with new stations and associated development that engage with their catchments, raise the urban quality and enhance the overall experience of the city.                                                                                       |
| <b>Objective 4: Being responsive to distinct contexts and communities.</b>    | Sydney Metro's identity is stronger for the unique conditions of centres and communities through which it passes. This local character is to be embraced through distinctive station architecture and public domain that is well integrated with the inherited urban fabric of existing places.                            |
| <b>Objective 5: Delivering an enduring and sustainable legacy for Sydney.</b> | Sydney Metro is a positive legacy for future generations. A high standard of design across the corridor, stations and station catchments, that sets a new benchmark, is vital to ensuring the longevity of the Metro system, its enduring contribution to civic life and an ability to adapt to a changing city over time. |

### 5.3.3 Accessibility and safety requirements

A key influence on the design of the Sydney Metro along the Bankstown Line is the requirement for all stations and interchanges to be accessible, meaning that connections from the transport interfaces with all transport modes (accessible parking, buses, taxis, kiss and ride facilities, and park and ride areas) are to be accessible, easy and intuitive for all customers of the Metro. It also means that there should be equality of access for all people within the stations.

Station and interchange designs and layouts have been developed in accordance with relevant accessibility legislation and guidelines – including the Disability Discrimination Act (DDA), Disability Standards for Accessible Public Transport (DSAPT). An outline of the options considered to meet these requirements is provided below.

#### 5.3.4 Platform geometry and platform edge barriers

Platform edge barriers are required to be constructed on the Sydney Metro system to meet train loading and safety requirements. The existing brick faced platforms cannot accommodate the necessary footings for platform edge barriers.

#### 5.3.5 Station and interchange design

The design of stations and interchange nodes along the project corridor has taken into consideration the following accessibility requirements:

- Stations, plazas, interchanges, walkways, fixtures and fittings and the provisioning for retail precincts are to be designed to meet DDA guideline requirements. Stations have been designed to be accessible including the platform-train interface, platform, concourse, facilities and interchange.
- Interchanges are to incorporate accessible facilities, and accessible paths of travel between station and bus/light rail, taxi and kiss and ride facilities, in accordance with the DSAPT and resting seats are to be provided along pathways in stations and plazas.

The design of station catchments has sought to comply with the DDA and DSAPT as far as practicable and within the Metro project's zone of influence.

#### 5.3.6 Architectural Design Strategy for Stations

Transport for NSW is seeking to establish a Sydney Metro network that has a coherent identity to unify the different sections of the line (Sydney Metro Northwest, Sydney Metro City & Southwest), whilst providing sufficient flexibility to address and celebrate the differences in local context and communities, and the engineering and architecture responses to these differences.

The architectural strategy developed for the Marrickville to Bankstown stations is to introduce elegant, contemporary structures that complement the earlier station buildings, and to ensure that this fourth overlay on the Bankstown Line railway landscape is clearly distinguishable from the earlier heritage fabric. Specifically the design has been developed with reference to the Heritage Design Guidelines prepared for the Reference Design by GML Heritage (February 2017). GML Heritage has worked closely with the design team during the design process preparing advice and providing input into options analysis as well as attending workshops and design review meetings. Detailed design, including final design of architectural forms and fabric, will be prepared in consultation with the design review panel, which includes a Heritage Architect who will oversee development of the design in relation to sensitivity to heritage values.

#### 5.3.7 Retrofitting and reuse

Retrofitting and reuse of significant structures to be retained in accordance with their heritage values has been a key consideration during the design process and will continue to be developed during detailed design. This would be a positive heritage outcome as it would enable public engagement with heritage values within the upgraded stations, conservation of significant elements and would facilitate maintenance and care of structures in use.

The following options for reuse of spaces would be considered during detailed design, although are yet to be confirmed:

- operational
- community
- commercial

- public space / non-public space.

Retrofitting would aim to highlight the heritage values of the structures to the customers, both through sensitive design and fitout and use of heritage interpretation.

Reuse of salvaged significant fabric, such as platform bricks or fittings, could be used as part of design or as public art/interpretation. A salvage strategy would be prepared as a recommendation of this report which would outline strategies for selecting salvaged material.

Reuse and retrofitting would be guided by the Burra Charter, the Heritage Council Guidelines for Altering Heritage Assets, relevant Sydney Trains guidelines, and all relevant Conservation Management Plans and Statements of Significance previously prepared the site.

### 5.3.8 Heritage Strategy

As indicated above, the introduction of Sydney Metro on the Bankstown Line constitutes the fourth major intervention to this existing railway landscape. The design of the Sydney Metro stations along the Marrickville to Bankstown railway line has been undertaken having regard to the heritage values of the stations and the line, and has sought to:

- recognise and demonstrate the heritage significance of all phases of rail transport development along the Bankstown Railway 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
- carefully and clearly express the presence of the Sydney Metro with new high quality design elements
- deliver a functionally viable line, stations and catchments while enhancing the legibility of key heritage values.

The design approach adopted to meet the operational requirements of the Sydney Metro system whilst minimising impacts on heritage involves the following:

- Provision of a canopy which would minimise bulk while allowing views of platform buildings, allowing these buildings to be viewed in the round as originally intended, without attached awnings and other later additions. The canopy would typically provide weather protection between the concourse and platform buildings.
- New aerial concourses that bridge the rail corridor would be carefully placed so that they directly address heritage platform buildings. This would generally involve the positioning of new stairs from the concourse leading directly down to heritage buildings.
- The design of the concourse needs to accommodate the minimum depth and area required for gatelines and customer requirements at the concourse level.
- In a number of instances, the existing entry to the station is too close to the road and the platform heritage buildings are also in relatively close proximity to the existing entry. In these instances, there is not sufficient space between the existing road overbridges and platform buildings to accommodate the Sydney Metro concourse and accessibility requirements to the platform (i.e. lifts

and stairs). At these locations, in order to retain existing heritage platform buildings, the aerial concourse and station entrance have been relocated away from their traditional location on the adjacent road overbridge.

- Provision of weather protection along the length of the platforms. The strategy is to ensure that a contemporary material provides the link between the existing canopy and a new platform canopy, ensuring that the impact to the existing building is minimised.

### 5.3.9 Heritage input during design

Through the design of the project to date, significant work has been undertaken to reduce the heritage impacts of the project. GML Heritage has worked closely with the design team during the design process preparing advice and providing input into options analysis. The Sydney Metro Heritage Working Group which includes representatives from Sydney Trains and the NSW Heritage Division (as delegates of the NSW Heritage Council) has been presented with information on the project including discussion around heritage impacts, options to avoid impact and justifications for impact. The members of the Heritage Working Group have had the opportunity to provide comment during this process.

Platforms are required to be reconstructed along the alignment to meet operational requirements including provision of PEBs for safety and for accessibility purposes. This results in an unavoidable impact to platforms at every station along the alignment.

The approach to remaining heritage elements has been to retain where possible existing significant items and/or elements on all heritage registers, with particular focus given to those items listed on the SHR. As part of this process, Transport for New South Wales has had to ensure that the heritage elements retained have a suitable station or operational purpose and that their retention does not compromise the integrity of the station design and layout as well as safety and other customer requirements.

Significant SHR listed masonry platform buildings have been retained at Marrickville, Canterbury and Belmore stations. Belmore Station has also been designed to retain the overhead booking office to be adaptively reused as a retail/ commercial or community building. Transport for New South Wales has worked with heritage stakeholders on some of the options available to reduce impacts on heritage values.

The following table summarises the justification for impacts on those elements at each station which are proposed to be removed as part of the proposed project design.

**Table 21: Justification of heritage impacts**

| Station              | Heritage Elements Directly Impacted | Comment/Justification                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Marrickville Station | Overbridge                          | Significant optioneering work has been undertaken to reduce the number of heritage elements impacted, resulting in retention of Platform 1 and 2 buildings and retention of the booking office. Earlier in the design process, these elements were proposed to be removed.<br>The overbridge is required to be replaced as it is past its operational life and damaged as a result. This impact is unavoidable. |

| Station        | Heritage Elements Directly Impacted                           | Comment/Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dulwich Hill   | Overhead booking office                                       | <p>The relocation of the entry and associated concourse to a location east of the platform heritage building are to avoid impacts on the platform building which has high significance.</p> <p>Given a decision was made to change the entry/concourse location to retain the existing platform building, the existing overhead booking office would be physically separated and isolated from the station and have no future rail purpose. The works required to be undertaken to reconstruct the platforms and corridor works mean that it physically cannot remain in situ. In addition the existing support structures are inadequate for its long term retention within an operating rail environment.</p> <p>Retention of the overhead booking office would have significant cost, program and constructability implications. Given it would no longer function for rail purposes, a decision was made to remove this building.</p> |
| Hurlstone Park | Overhead booking office and footbridge<br>Platform Building 1 | <p>The impact on overhead booking office and footbridge is associated with the limited space between Crinan Road and the platform building to accommodate the new relocated entry and concourse. The new entry and concourse provide better integration with surrounding streets and the urban centre, together with improved accessibility throughout the precinct.</p> <p>Platform 1 building is to be removed to provide sufficient safe platform width and accommodate the new Metro tracks whilst retaining the existing Platform 2 building.</p> <p>Retention of the overhead booking office would have significant cost, program and constructability implications. Given it would no longer function for rail purposes, a decision was made to remove this building as it was not in the public interest.</p>                                                                                                                     |

| Station    | Heritage Elements Directly Impacted                   | Comment/Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Canterbury | Overhead booking office/footbridge                    | <p>Significant optioneering work has been undertaken to reduce the number of heritage elements impacted at Canterbury Station, resulting in retention of the exceptionally significant rated Platform 1 building and the highly significant Platform 2 building. Earlier in the design development process, these elements were proposed to be removed.</p> <p>The relocation of the concourse/entry to a location west of the Platform 1 building is to avoid impacts on this heritage building (exceptional heritage significance).</p> <p>Given a decision was made to change the entry/concourse location to retain the existing platform building, the existing overhead booking office would be physically separated and isolated from the station and have no future rail purpose. The new entry and concourse locations are consistent with Council and DP&amp;E aspirations to have a new town centre focussed on the junction of Broughton and Robert Street. A new southern entry off Canterbury Road will enable customers to enter a covered activation area which extends from Canterbury Road in front of heritage buildings opening up views to heritage buildings on both platforms.</p> |
| Campsie    | Overhead footbridge with concourse and booking office | <p>The station entry remains on Beamish Street however the entry and concourse is being widened to accommodate the greater patronage of the station anticipated and the pedestrian flows along Beamish Street. This requires removal of the existing overhead footbridge, booking office and concourse to create a safer and improved customer experience. The existing (original) concourse steel structure will be retained and refurbished to ensure compliance with Metro standards.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Belmore    | Intrusive modern canopies                             | <p>Significant optioneering work has been undertaken to develop an option which retains all existing elements of heritage significance except for the station platforms, and removes intrusive modern platform canopy structures. Earlier options proposed removal of the overhead book office and platform building.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Lakemba    | Overhead booking office/footbridge with concourse     | <p>The existing overhead booking office, footbridge and concourse will be retained with some minor expansion. Earlier options sought removal of these elements..</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Station    | Heritage Elements Directly Impacted                                              | Comment/Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wiley Park | Overhead booking office/footbridge<br>Platform 1 Building<br>Platform 2 Building | <p>The impact on the overhead booking office and footbridge is associated with the close proximity of the existing station entry to King Georges Road and the poor customer amenity and experience that results from this location. A new entry and concourse is proposed to be constructed requiring the removal of both the existing overhead booking office/footbridge and platform buildings.</p> <p>The existing platform buildings are locally significant from a heritage perspective however their location and size would compromise the new station operation and customer requirements.</p> <p>Retention of the overhead booking office would have significant cost, program and constructability implications. Given it would no longer function for rail purposes, a decision was made to remove this building as it was not in the public interest.</p>                                                                                                     |
| Punchbowl  | Overhead booking office/footbridge<br>Platform 1 and 2 Buildings                 | <p>The tracks are required to be relocated to fit straight platform requirements. This has resulted in a new location for Punchbowl Station slightly to the east of the existing station. This provides a far better relationship with the existing town centre and provides improved accessibility across the rail corridor, supporting future growth of the centre.</p> <p>This outcome results in the removal of all existing heritage elements. If the overhead booking office were to be retained, it would be isolated from the existing station and would not have a rail purpose. It is noted that the existing overhead booking office currently has a poor relationship with Punchbowl Road.</p> <p>Retention of the overhead booking office would have significant cost, program and constructability implications. Given it would no longer function for rail purposes, a decision was made to remove this building as it was not in the public interest.</p> |
| Bankstown  | Platform impacts only                                                            | <p>Given it is proposed to introduce new Sydney Metro infrastructure alongside the existing station, there is limited impact on heritage elements at Bankstown Station, involving the straightening and reconstruction of platforms.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |