

Redfern Station Upgrade – New Southern Concourse

Appendix B: Project Description as clarified in this Response to Submissions Report



Artist's impression of the proposed Redfern Station Upgrade - New Southern Concourse. Indicative only, subject to detailed design.

Redfern Station Upgrade - Environmental Impact Statement

Chapter 5 - Project description

Quality Information

Document Redfern Station Upgrade - Environmental Impact Statement


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Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
11	10-Sept-2020	Revised for RtS	Rachel O'Hara Principal Environmental Scientist, CEnvP	

5 Project description

Chapter 5 describes the Project and summarises key design parameters and construction methodology. The SEARs (Item 2, SEAR 1(b)) relating to the description of the Project, including key components and activities required to construct and operate the Project is provided in this chapter. The description of the Project is based on the concept design and understanding of current construction approach and is subject to further detailing which would incorporate construction innovations, stakeholder input and improvements to enhance social and economic benefits.

5.1 Overview and key components

The Project involves the upgrade of Redfern Station through the construction of a new concourse at the southern end of the station platforms, providing both lift and stair access to Platforms 1 to 10. The new concourse would extend between Marian Street and Little Eveleigh Street and include associated interchange upgrades of Little Eveleigh Street, Marian Street, and parts of Cornwallis Street and Rosehill Street.

The Project forms part of the TAP. The TAP has the objective of providing a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure.

All Project components described are subject to further design. Changes may be made during the ongoing design development and community consultation processes. The Project area (i.e. the area within which the construction and operation of the Project would be contained) is presented in **Figure 5-1**.

The key Project components are shown **Figure 5-2** and include:

- a six metre wide concourse between Little Eveleigh Street and Marian Street
- new stair and lift access from the concourse to Platforms 1 to 10
- an upgraded station entrance at Marian Street including station services and customer amenities
- a new station entrance at Little Eveleigh Street including station services and customer amenities
- formalisation of a shared zone on Little Eveleigh Street, including:
 - safety improvements to vehicle, cyclist and pedestrian interactions
 - improvements to streetscape such as landscaping, lighting, drainage and pavements
 - relocation of approximately 20 parking spaces (including 18 resident/restricted parking spaces, one accessible parking space and one car share scheme parking space)
 - utility adjustments.
- upgrade of Marian Street/Cornwallis Street/Rosehill Street area
 - extension of existing shared zone including part of Rosehill Street
 - safety improvements to vehicle, cyclist and pedestrian interactions including footpath widening
 - improvements to streetscape such as lighting, drainage, landscaping and pavements as well as utility adjustments
 - changes to street parking arrangements including removal of approximately 16 parking spaces (including relocation of one car share scheme parking space).
- operation of the Project

Other components of the Project include:

- relocation of the shuttle bus zone from Little Eveleigh Street to Lawson Street
- kiss and ride on Lawson Street, and associated footpath upgrade

- kiss and ride on Gibbons Street, and associated footpath upgrade
- footpath widening on Ivy Street
- relocation of a building on Platform 1 to accommodate the concourse
- repurposing, relocations and alterations to platform building features and other platform features, including privacy walls, doors, screens and roofing, platform seats and electrical equipment
- addition of platform canopies
- platform resurfacing on all platforms and associated drainage alterations
- installation of station operational components and infrastructure including:
 - wayfinding and signage
 - tactile ground surface indicators (TGSi)
 - rubbish bins
 - CCTV
 - passenger information system (e.g. passenger information display, public address and hearing loops)
 - emergency equipment (e.g. for fire and life safety).
- service relocations and upgrades including:
 - relocation of overhead wiring structures
 - installation of a new rail signal between Platforms 1 and 2.

Early works (such as alterations and relocations to utilities, power and signalling, communications systems, hazardous material removal works, addressing of existing safety issues/non-conformances and associated site offices/laydown areas) would not form part of the Project and would be subject to a separate environmental assessment and approval process.

5.1.1 Concourse and new station entrances

The proposed new concourse and new station entrances would provide a direct connection between Little Eveleigh Street to the north-west of the station, and Marian Street to the south-east.

The concourse would include six new steel and glass lifts and covered stairways connecting the concourse to each of the 10 platforms. The concourse itself would be approximately six metres wide and span approximately 80 metres between the new station entrances on Little Eveleigh Street and Marian Street. The bottom of the concourse would provide the required clearance for overhead wiring and ongoing train operations. Rainwater would be collected from the roof of the concourse and directed into tanks for reuse in flushing toilets and other non-potable uses at the station.

Access to the platforms would be closed after hours. Concourse and station entrances are proposed to remain open, where possible. Consultation with key stakeholders is ongoing to confirm out-of-hours access arrangements.

The Little Eveleigh Street station entrance would be located at the existing location of 125-127 Little Eveleigh Street, owned by the NSW Government. As a contributory item in the Darlington Heritage Conservation Area (refer to **Chapter 14**), it is proposed to retain as much as possible of 125-127 Little Eveleigh Street, including incorporating the building's exterior and elements of the interior into the design of the Little Eveleigh Street station entrance (refer to **Section 5.2.6**).

The Little Eveleigh Street station entrance and surrounding area would include the following customer facilities:

- ambulant toilet and family accessible toilet
- approximately 60 bicycle parking spaces on Little Eveleigh Street

- station operational components and infrastructure including:
 - wayfinding and signage
 - Opal card readers and top up machines
 - ticket gates
 - CCTV
 - emergency equipment (e.g. for fire and life safety)
 - passenger information systems (e.g. passenger information display, public address and hearing loops).
- heritage interpretation and/or public art.

The Marian Street station entrance would be located on land currently consisting of a Sydney Trains car park and fenced vegetated area adjacent to Marian Street. The entrance would include the following customer facilities:

- approximately 20 new bicycle parking spaces
- a family accessible toilet
- services building
- station operational components including:
 - wayfinding and signage
 - Opal card readers and top up machines
 - ticket gates
 - CCTV
 - emergency equipment (e.g. for fire and life safety)
 - passenger information systems (e.g. passenger information display, public address and hearing loops).
- heritage interpretation and/or public art.

The Marian Street station entrance would occupy a small section of the existing Sydney Trains car park, resulting in a loss of up to 16 car parking spaces within this area.

The concourse and station entrances have been designed not to preclude future development.

5.1.2 Formalisation of Shared Zone at Little Eveleigh Street, footpath widening on Ivy Street, and associated works

It is proposed to create a shared zone at Little Eveleigh Street in order to improve connectivity and address increased foot traffic between Redfern Station and key precincts to the west, including Carriageworks and surrounding education and health precincts. This would require several changes to Little Eveleigh Street, including the relocation of approximately 20 restricted car parking spaces (including 18 resident/restricted parking spaces, one accessible parking space and one car share scheme parking space from Little Eveleigh Street) to a new car park within existing railway corridor land at the western end of Little Eveleigh Street (refer to **Figure 5-2**). The establishment of the new car park would require some tree trimming and removal of approximately 18 trees.

It is noted that the location of the new car park is within the Redfern North Eveleigh precinct. Planning for the urban renewal of this precinct is underway, and the car park location may therefore be an interim measure. In the event that the car park would be affected by this process, any proposed reconfiguration or relocation of the offset parking arrangements would be undertaken in consultation with relevant stakeholders, and in a manner which ensures that the principle of offset parking is provided in perpetuity, and remains within reasonable walking distance of Little Eveleigh Street.

A new kiss and ride area would also be provided nearby on Lawson Street. The kiss and ride would require three existing parking spaces to be removed (currently permitting two hour restricted/permit

holder unrestricted parking). A new bus zone would also be established in an existing restricted parking area on Lawson Street, near the intersection of Little Eveleigh Street. These works would require footpath upgrades from Little Eveleigh Street, along Lawson Street.

Pavement resurfacing and drainage works would be required to establish the shared zone and accessible station entrance. The shared zone would include cars, cyclists and pedestrians sharing the new pavement on Little Eveleigh Street. The roadway would be able to be safely used by service vehicles up to 8.8 metres in length. Traffic signage and traffic calming devices (such as speed humps) may also be installed.

In addition to the shared zone, footpath widening works would occur within Ivy Street to improve pedestrian safety and connectivity with Abercrombie Street, as well as to the education and health precincts to the west of the station. No parking spaces would be removed to facilitate the widening of the footpath.

Some vegetation may require trimming or removal. Landscaping and street lighting adjustments would be undertaken along the extent of the shared zone and comply with safety in design principles. This would include ensuring entry to residences are not blocked, and would also include space for residential wheelie bins adjacent to each residence. Improvements to drainage would be undertaken and would require connection to existing storm water drainage infrastructure at Little Eveleigh Street and Ivy Lane. Adjustment to underground utilities may also be required to ensure continuity of services to the local area.

5.1.3 Upgrade of Marian/Cornwallis/Rosehill Street and associated works

To improve pedestrian and vehicle safety in the vicinity of the proposed Marian Street entrance, it is proposed to extend the existing shared zoned on Marian Street along sections of Cornwallis Street and Rosehill Street (refer to **Figure 5-2**).

This would require changes to sections of Marian Street, Cornwallis Street and Rosehill Street including drainage works and the permanent removal of approximately 16 car parking spaces including five unrestricted parking spaces and eleven restricted parking spaces (currently permitting two-hour restricted/permit holders unrestricted parking). One car share scheme parking space would be relocated to a new location further south along Rosehill Street. Adjustments to footpaths, drainage and street lighting would also be required.

Pavement works would be undertaken as part of the shared zone upgrade, including installation of a traffic calming device (speed hump or equivalent). The roadway would be able to be safely used by service vehicles up to 8.8 metres in length. Approximately 17 trees would require trimming or removal to accommodate the works.

A new kiss and ride would also be located on nearby Gibbons Street, which would require the removal of approximately three restricted car parking spaces. The existing footpath along Gibbons Street would also be upgraded to connect to the existing footpath providing access to the station entrance.

5.1.4 Platform and platform building alterations

The Project would include the releveling and resurfacing of sections of Platforms 1 to 10 to achieve DSAPT compliance.

External brick privacy screens and walls would be removed from the heritage platform buildings on Platforms 4 to 9 to provide space for efficient and safe pedestrian movement at the base of the new stairways. In addition, the existing office building at the southern end of Platform 1 would require relocation to the west along the platform, to facilitate construction of the proposed concourse. This would also result in the removal or trimming of approximately 7 trees on or adjacent to Platform 1.

Existing services would need to be relocated in and around platforms. New or relocated wayfinding signage and customer infrastructure including seating, rubbish bins, lighting, CCTV, passenger information systems, emergency equipment (for fire and life safety) and tactile ground surface indicators (TGSIs) would be included on platforms and platform access points, reflecting the revised operational layout of the station.

5.1.5 Changes/additions to rail infrastructure

A new signal structure would be required between Platforms 1 and 2, approximately 50 metres towards the city from the current signal structure (which would be retained).

The position of the concourse would require some of the existing overhead wiring (OHW) structures to be adjusted/upgraded. This includes relocation of the OHW that would be attached to the underside of the new concourse as well as the OHW structures either side of the concourse. Relocation of OHW structures would involve installing piles for new footings, steelwork and lowering of wires. OHW works are anticipated to extend approximately 200 metres north of the station and 450 metres south of station (refer to **Figure 5-1**).

5.1.6 Services upgrades

The new services building proposed near the Marian Street entrance would contain condensers, a store room, toilets (including a family accessible toilet), a communications room (containing racks/equipment), transformers and a low voltage (LV) switch room.

5.1.7 Materials and finishes

Materials and finishes for the Project have been selected based on the criteria of durability, low maintenance, cost effectiveness, lifecycle impacts, to minimise visual impacts on the heritage precinct, support sustainable outcomes, and to be aesthetically pleasing.

Materials proposed to be used for the Project include:

1. concrete for the concourse deck, supports, lift base and stairs
2. concrete finish for the concourse deck
3. asphalt for platform regrading and resurfacing
4. brickwork or cladding with anti-graffiti surface on communications and services building
5. pavers or concrete for forecourt areas and shared zones
6. prefinished metal sheet roofing for platform canopies, concourse, station entrances, services building and lift roofing
7. painted cladding for walls at entrances
8. aluminium battens to concourse ceiling
9. aluminium panels to stair ceiling panels
10. painted structural steel elements to concourse, entrances, lifts and stairs
11. perforated aluminium screens to the concourse façade and platform stairs
12. fully framed glazed panels to areas of the concourse facade
13. fully framed glazed panels to the lift shaft.

Opportunities and allowance would be made for artwork and heritage interpretation to be incorporated into the Project. This is discussed further in **Chapter 14**.

The design would be submitted to an independent Design Review Panel at various stages for independent peer review before being accepted by TfNSW. An Urban Design and Public Domain Plan has also been prepared (refer to **Appendix C**). The Urban Design and Public Domain Plan communicates the public domain design arising from a robust urban design analysis and consultation with key stakeholders. This is discussed further in **Chapter 8**.

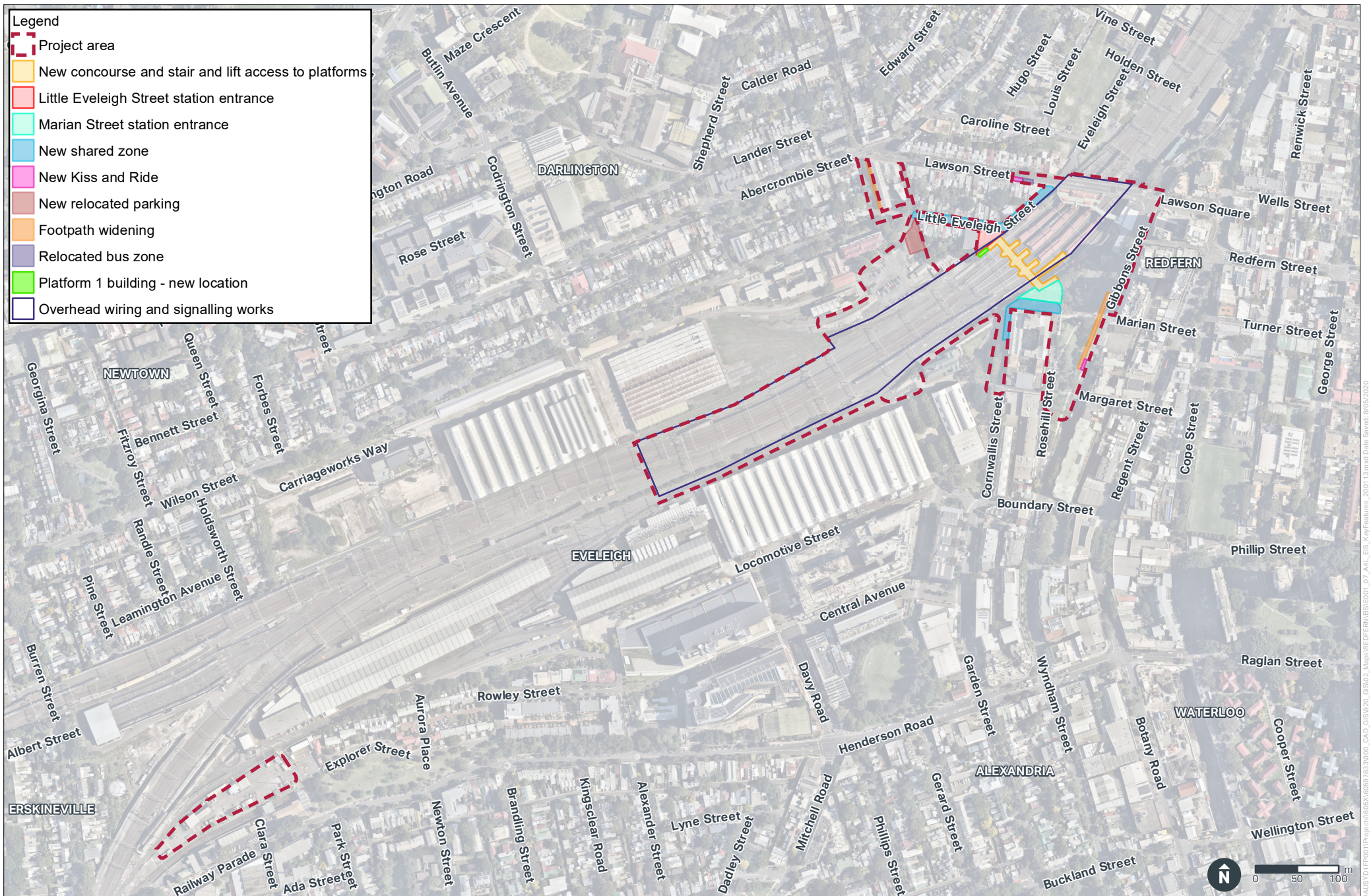


FIGURE 5-1: PROJECT AREA AND OVERVIEW OF KEY FEATURES

Indicative and subject to detailed design.

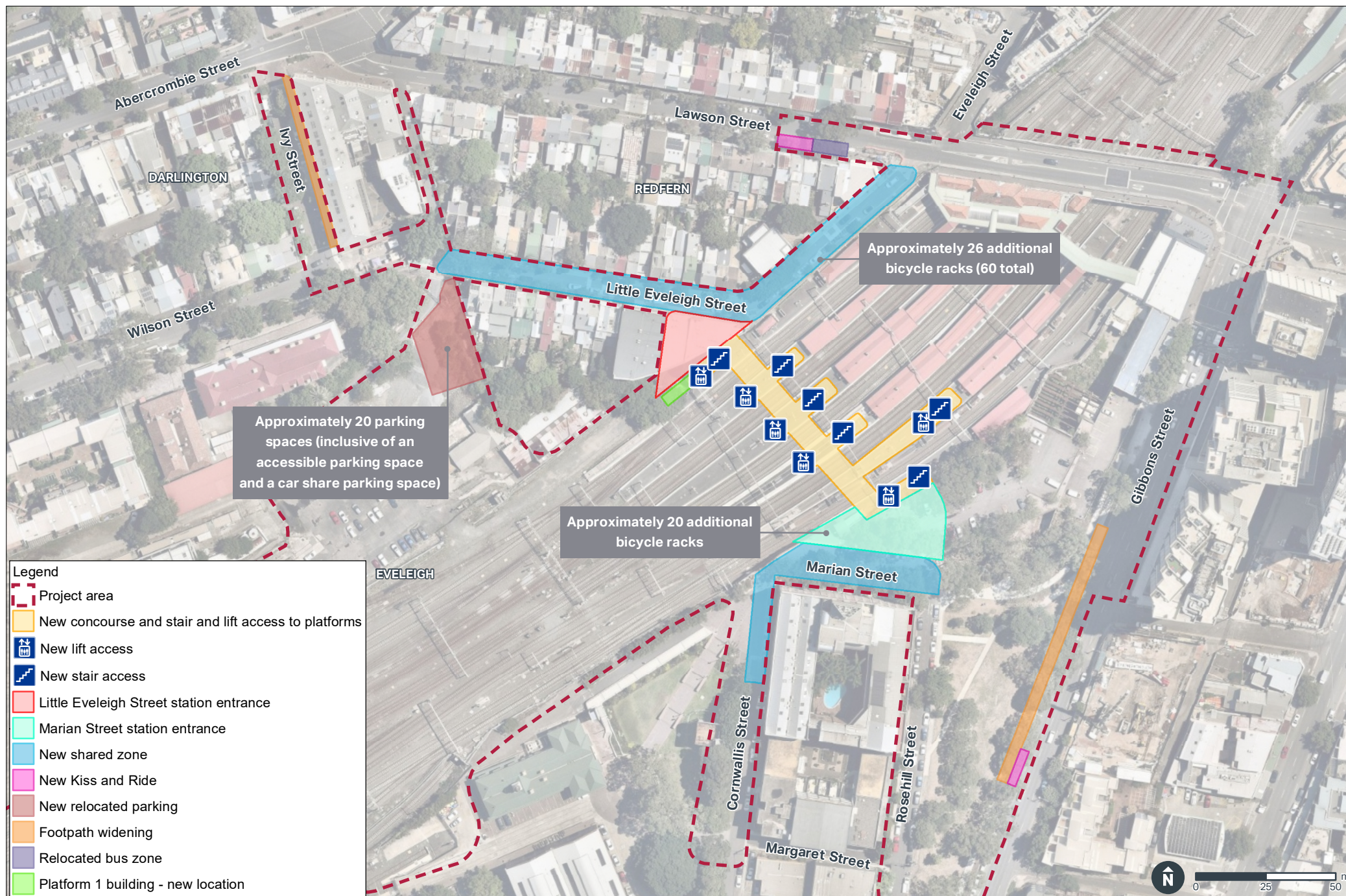


FIGURE 5-2: KEY FEATURES OF THE PROJECT

Indicative and subject to detailed design.

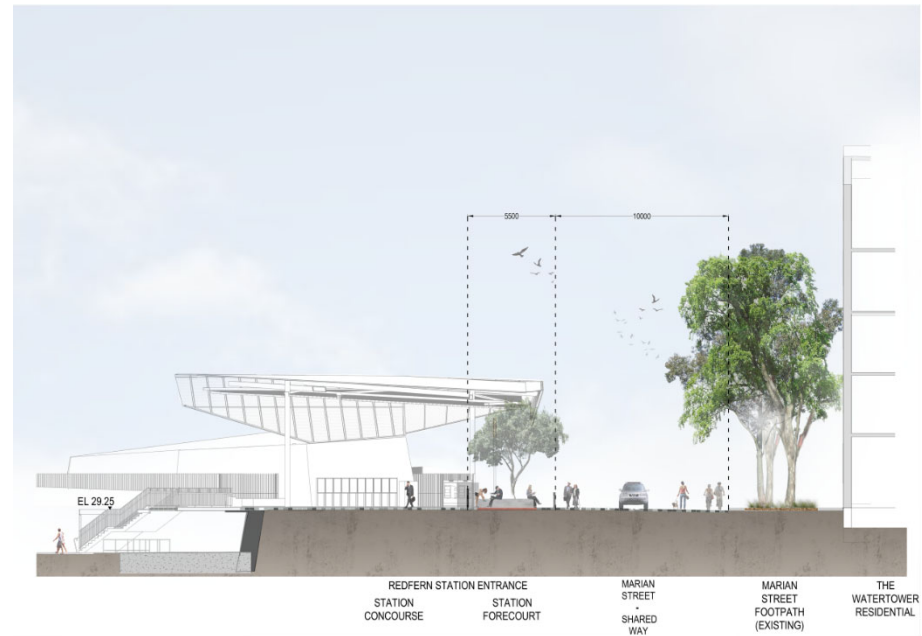
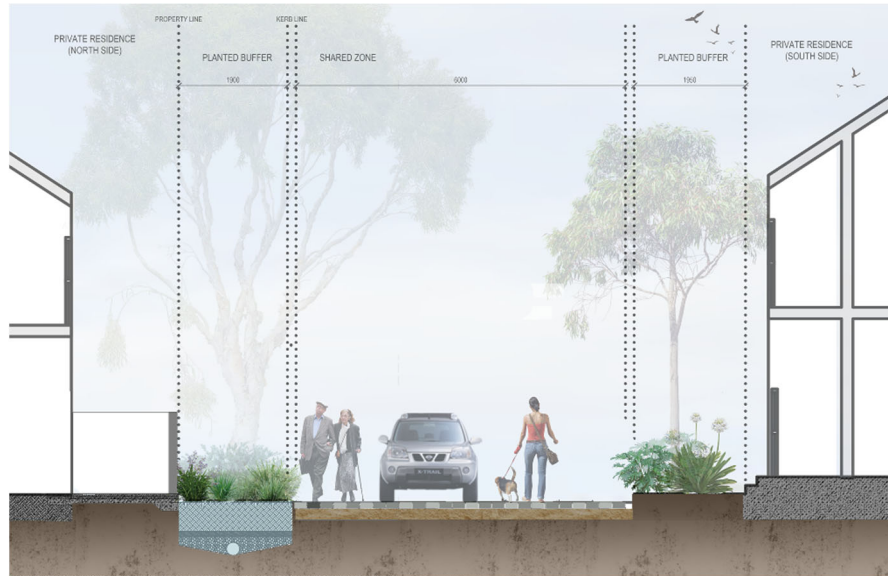


Figure 5-3 Indicative cross section – Little Eveleigh Street and Marian Street shared zones

5.2 Construction of the Project

5.2.1 Overview

Construction of the Project would broadly involve the following key stages:

1. site establishment and enabling works
2. building modification works
3. overhead wiring relocations/adjustments
4. main construction works, including platform preparation works, installation of the concourse and station entrances
5. Little Eveleigh Street/Ivy Street, Marian Street/Cornwallis Street/Rosehill Street, Lawson Street and Gibbons Street road works.

These stages are described in more detail below.

The construction methodology presented in this section is indicative and would continue to be refined as the design process continues. A final construction methodology and program would be developed by the Construction Contractor.

Key construction areas, including the proposed ancillary facilities (i.e. construction compounds) and haul routes proposed for use during construction, are shown in **Figure 5-4**.

Construction of the Project is proposed to commence in late 2020/early 2021 once all necessary approvals (as relevant) are obtained and continue for approximately 18 months.

5.2.2 Site establishment and enabling works

Site establishment and enabling works would include:

- clearing of ancillary facility/construction areas
- removal of hazardous materials (as required)
- installation of temporary accessways and wayfinding signage
- installation of site offices including minor modifications as required, utility connections within the ancillary facility areas and temporary access ways to the site office location
- establishment of temporary waste and stockpile areas
- erection of hoarding and fencing including the integration of physical acoustic measures as required
- installation of construction environmental management measures such as tree protection and sediment and erosion controls
- undertrack crossing pipes for concrete supply
- possession related works.

Site establishment and enabling works would occur over approximately eight-twelve weeks at the beginning of the construction program.

5.2.3 Building modification works

Building modification works would be undertaken over various stages of the Project including the various components outlined in **Table 5-1**.

Table 5-1 Modification works

Component	Work proposed
125-127 Little Eveleigh Street	<ul style="list-style-type: none"> removal of hazardous materials (as required) clear out and backfill of basement vegetation removal enlargement of openings for the station entrance and concourse connection installation of foundations for the new concourse partial demolition of interior features (including walls and doors) ancillary works and services - fittings and fixtures (cladding, painting, light fixtures, electrical, mechanical, hydraulic and fire life safety services and/or similar) façade restoration space for the future provision of an internal lift.
Marian Street entrance	<ul style="list-style-type: none"> removal of hazardous materials (as required) demolition of part of the existing car park vegetation removal demolition of existing stairway (after opening of the new concourse).
Platform privacy screens and walls, and seats	<ul style="list-style-type: none"> removal of hazardous materials (as required) demolition of privacy screens at the western end of heritage buildings on Platforms 4 to 9 relocation of platform seats adjacent to heritage platform buildings.
OHW structures	<ul style="list-style-type: none"> removal of hazardous materials (as required) demolition of OHW structure between Platforms 7 and 10 demolition of OHW structures between Platforms 1 and 10 to the west of existing heritage platform buildings.
Platform 1 building	<ul style="list-style-type: none"> removal of hazardous materials (as required) demolition of the existing timber walls and roof of associated annex structure relocation of the remaining structure approximately 10 metres west along the platform (to allow for the installation of the concourse and associated lift and stairs to Platform 1). Works would include removal of existing services, micro-piling (if required), excavation.

5.2.4 Overhead wiring relocations/adjustments

The OHW are described in **Section 5.1.5**.

OHW would occur over approximately 10 months during rail possession periods and not as continuous work.

5.2.5 Main construction works

Station entrances

The main construction works would commence with the re-purposing of 125-127 Little Eveleigh Street as described in **Section 5.2.3**. A new car park would be constructed within the existing railway corridor land at the western end of Little Eveleigh Street prior to the removal of the parking spaces on Little Eveleigh Street. Fit out of the Little Eveleigh Street station entrance would include the installation of

electrical and mechanical components including lighting, Opal card readers and signage. Operational infrastructure to be installed is described in **Section 5.1.1**. This stage may require temporary traffic control and diversions on Little Eveleigh Street and nearby roads, as required. The Little Eveleigh Street station entrance works would occur over approximately eight months throughout the 18 month construction period.

Construction of the Marian Street station entrance would commence with the clearing of existing vegetation (approximately 17 trees) and levelling of the site with engineered fill. Piling would then be undertaken to allow the station entrance infrastructure to be built, including construction of a station services building.

Fit out of the Marian Street station entrance would include the installation of customer amenities and station operational infrastructure including lighting, Opal card readers and wayfinding signage. Operational infrastructure to be installed is described in **Section 5.1.1**. This stage may require temporary traffic control and diversions on Marian Street and nearby roads, as required. The Marian Street station entrance works would occur over approximately eight months throughout the 18 month construction period.

Installation of concourse

Construction of the new concourse would be undertaken over a period of approximately 18 months. Construction of the support structures for the concourse would require excavation and installation of reinforced concrete piles, concrete foundations and support structures. These would be constructed behind enclosed safe work areas that would allow for commuter use of platforms while the works proceed.

Once complete, the installation of the concourse would be undertaken. Concourse construction would include lifting pre-cast concrete sections into place by crane. Once the key structural elements are lifted into place, work on the concourse would be able to continue during standard construction hours.

Access for delivery of equipment and material to the various platforms is possible by crossing the railway tracks outside of train operational hours. Concrete would be delivered in through pipes installed under tracks.

5.2.6 Little Eveleigh Street/Ivy Street, Marian Street/Cornwallis Street/Rosehill Street, Lawson Street and Gibbons Street roadworks

Roadworks in the Little Eveleigh Street area would generally be undertaken concurrently with the station upgrade works over a period of approximately nine months. They would be undertaken with the aim of minimising disruption to residents and the community in line with mitigation measures (refer to **Chapter 13**), including temporary closures and diversions as outlined in **Chapter 12**. Access would be maintained for vehicles, pedestrians and cyclists throughout construction, however some diversions may be required.

During construction, some street parking would also be intermittently unavailable along Little Eveleigh Street and Marian Street, before the permanent loss or relocation of parking (refer to **Section 5.1.2** and **Section 5.1.3**). The works would involve excavation of existing road, installation of a new subgrade and paving of the new shared zone and roadways (refer to **Figure 5.1**). Removal and management of hazardous materials and relocating of services may also be required. Vegetation trimming and removal of a small number of trees (about two) would also be required along Little Eveleigh Street (refer to **Chapter 16**). The works on Ivy Street (footpath widening) and Lawson Street (new kiss and ride and bus zone) would also be undertaken.

Similarly, Marian Street and the northern portion of Rosehill Street would be subject to regrading and paving for the extended shared zone (refer to **Section 5.1.3**). Some street parking would be intermittently unavailable, before the permanent removal of approximately 16 parking spaces along Marian Street, Rosehill Street and Cornwallis Street (refer to **Section 5.1.3**). There would also be some kerb and gutter realignments, as well as the removal of some existing landscaping and relocation of lighting. The works on Gibbons Street (kiss and ride and footpath upgrade) would also be undertaken.

All vegetation removed would be subject to potential offset requirements under the *TfNSW Vegetation Offset Guide* (TfNSW, 2019b or current equivalent). Vegetation offsets and offset locations would be confirmed during detailed design.

5.2.7 Construction program and working hours

It is anticipated that the Project would be undertaken over an approximate period of 18 months commencing late 2020/early 2021, once all necessary approvals are obtained (as relevant). Construction stages may occur concurrently as construction progresses. The indicative program of works, showing the potential overlap of these stages is provided in **Table 5-2**. The impact assessment of noise impacts particularly impacts on sensitive receivers, is discussed in **Section 13.4.1 of Chapter 13** of this EIS).

Construction hours are defined in the *Interim Construction Noise Guideline* (DECC, 2009) and the *TfNSW Construction Noise and Vibration Strategy 2019* (**Appendix E**) as:

- Monday to Friday 7am to 6pm
- Saturday 8am to 1pm
- no work on Sundays or public holidays.

Work outside of the above hours will be required in some cases for the safety of rail workers and to minimise disruptions to customers, pedestrians and motorists. Some of the works would also need to be undertaken during standard rail possession periods (when trains are not running) to minimise disruption to rail operations and risk to rail worker safety. During some possessions, lines would remain live to enable the running of trains. Examples of works that would be required in possessions and may occur inside or outside standard construction hours include overhead wiring works, concourse and lift installation and some work on platforms.

It is anticipated that the works would be undertaken over approximately 20 standard rail possession periods with continual work from Friday evening to Monday morning. Approximately two additional (non-standard) rail possession periods are proposed including a possession across the 2020 Christmas period. During these possessions, standard mitigation and management measures would be implemented to minimise impacts to the community, including providing alternative transport arrangements and notifications. There is also the potential for mid-weeknight work to be required throughout various stages of the Project depending on the activity required.

The approach to out-of-hours work has been presented an Out-of-Hours Work Protocol to guide the assessment, management, and notification of works outside the recommended standard construction work hours. The protocol, outlined in the CEMF refer to **Appendix D**, ensures that out-of-hours works are managed effectively during construction, to reduce incidents and minimise impacts on the community.

The protocol is:

- consistent with the *TfNSW Construction Noise and Vibration Strategy* (TfNSW, 2019)
- takes into account the results of the construction noise assessment for the Project
- documents procedures to control potential impacts
- identifies responsibilities for implementation and management including managing complaints.

The CEMF would be updated in accordance with the conditions of approval for the Project, if the Project is approved.

Table 5-2 Indicative program of works

Construction	Month																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Stage 1: Site establishment and enabling works																		
Stage 2: Building modification works																		
Stage 3: Overhead wiring relocations/ adjustments																		
Stage 4.1: Main construction works – Station entrances																		
Stage 4.2: Main construction works – Installation of concourse																		
Stage 5: Roadworks (Little Eveleigh Street/Ivy Street, and Marian Street/Cornwallis Street/Rosehill Street, Lawson Street and Gibbons Street)																		

5.2.8 Construction plant and equipment

An indicative list of plant and equipment that would be required to construct the Project is provided below. Additional equipment that may be required would be identified during detailed design by the Construction Contractor. The indicative list includes:

- chipper/mulcher
- chainsaw
- compactor
- telehandlers
- trucks
- excavators
- hand tools
- cranes
- piling rigs
- scissor lifts
- road rail vehicles
- hydraulic jacks
- light vehicles
- vacuum sucker truck
- jackhammer
- plate compactors
- welding tools.
- site office modules
- generators
- temporary hoarding

- concrete pumps
- elevated work platforms
- mobile construction lighting
- mobile drilling equipment
- power tools.

5.2.9 Construction traffic

Construction traffic would generally not exceed 20 heavy vehicle movements per day at peak construction periods, with the most movements anticipated during the modification of 125-127 Little Eveleigh Street and during roadworks on Little Eveleigh Street and Marian Street. Additionally, up to 40 light vehicle movements per day are anticipated (not including worker transport to and from site). On average, approximately three heavy vehicle movements and 20 light vehicles movements can be expected on a typical day. The potential access locations and haulage routes to the ancillary facilities are shown on **Figure 5-4**. Where Council roads (non-classified) are affected consultation with City of Sydney Council would be undertaken. This is discussed further in **Chapter 10** of this EIS.

The Project would utilise existing hi-rail access points on the Sydney Trains network during possession periods, including those within the Project area and an additional access point adjacent to Macdonaldtown Station.

5.2.10 Construction ancillary facilities

Three construction ancillary facilities are proposed for the construction of the Project as outlined below. The proposed location of these facilities is shown on **Figure 5-4**.

Ancillary facility 1

The Eveleigh Maintenance Centre would be utilised as site offices, a waste storage facility, stockpile area (outside flood extents), designated area for fabrication activities and an administration centre for the Project. This would include the establishment of several site sheds and car parking facilities and stockpile area.

Ancillary facility 2

This area is currently owned by Sydney Trains and would be partly utilised as the site office compound and an administration centre for the Project. This would include the erection of several site sheds and car parking facilities. It would also be utilised as a construction laydown and temporary waste storage facility. This laydown area would be accessed from either Carriageworks Way or Little Eveleigh Street and would provide construction parking facilities and rail corridor access. It is anticipated that some components of the concourse would be assembled here prior to installation within the rail corridor.

Ancillary facility 3

Part of Gibbons Street Reserve would be used as a laydown area for construction equipment and infrastructure, a temporary waste storage facility and a designated area for fabrication activities. The facility would be accessed from Gibbons Street. Due to the existing slope of the reserve it may be necessary to temporarily level part of the Reserve to provide a safe work area. Up to two trees would also require removal, along with some tree trimming to establish this ancillary facility. This temporary levelling works would require approximately 200 tonnes of spoil to be removed.

Following completion of works at Redfern Station, the Gibbons Street Reserve would be returned to its current use (passive recreational) in consultation with City of Sydney Council.

The existing Sydney Trains car park on Marian Street would be utilised for a site office compound, site laydown areas and utilise the storage area underneath the existing car park on Marian Street for site facilities and the storage of construction equipment and materials.

Transport for NSW is investigating options for developing the land to the east of Redfern Station, above the underground T4 Eastern Suburbs and Illawarra Lines, including the site that is currently the car park off Marian Street. These investigations include improving access to the underground Platforms 11 and 12, which would make Redfern Station fully accessible. The temporary use of the site will not preclude plans to develop the site and provide improved access to Platforms 11 and 12.

The final arrangement and location(s) of ancillary facilities and site office compound may be subject to refinement as part of the confirmation of the construction methodology. The impacts of any such refinements would be subject to further assessment as part of the planning approvals process.

5.2.11 Temporary hoardings and impacts on pedestrians

Erection of site hoarding and fencing would be required to provide temporary enclosure of work sites and work areas to safely separate the public from the construction works and to facilitate the delivery of plant and materials. It is anticipated that during construction, access along Little Eveleigh Street and Marian Street would be maintained at all times for residents and where possible only single lane/partial road closures would be undertaken.

Hoarding/fencing would be required in areas of heavy pedestrian usage such as along Gibbons Street, Marian Street and Little Eveleigh Street, including the temporary closure and/or diversion of pedestrian thoroughfares as well as management of pedestrians around work sites and past work site access points. Hoarding/fencing may also be erected to protect buildings or structures and to provide protection from dust and debris generated during construction.

The type of hoarding or fencing used would be confirmed during detailed design and would consider the following principles:

- reflect the context within which the construction sites are located and are sensitive to existing visual characteristics of neighbouring areas
- include artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations
- provide community information, including contact numbers for enquiries, compliments or complaints
- ensure safety for vehicles and pedestrians is not compromised, with the principles of Crime Prevention through Environmental Design to be applied in the design of hoarding and/or fencing
- minimise impacts to the visibility of businesses in the vicinity, and where this is not possible signage would be provided to direct people to any obscured businesses
- be regularly inspected and kept clean and free of dust build up. Graffiti would be covered through suitable means or removed or painted over promptly
- consider use of chain-link or similar style of steel fencing in areas with limited public interface (i.e. away from stations and public streets).

5.2.12 Construction workforce

A typical construction workforce would consist of approximately 110 workers, including management, design and construction workers.

Workers would be encouraged to travel to the site utilising public transport. If this is not possible, workers would be required to park a pre-determined distance away from the station and/or within pre-defined areas (e.g. potential additional parking area within the current Sydney Trains car park on the north side of the rail corridor). This is in order to minimise impacts to local residents, businesses and station customers. A Green Travel Plan would be prepared for the construction phase of the project.

Approximately 20 light vehicle spaces would be made available for work vehicles within the existing Sydney Trains car park on Marian Street for the duration of the Project.

5.2.13 Earthworks and waste

Construction works would involve the following earthworks:

- excavation for foundations to a maximum depth of 18 metres (e.g. for concourse works), and to shallower depths for other rail corridor works and overhead wiring footings
- excavation for roadworks/footpath upgrades at Little Eveleigh Street/Ivy Street and Marian Street/Rosehill Street roadworks (to a depth of approximately 2.5 metres)
- excavation within the Gibbons Street reserve

- excavation for proposed car park (to a depth of approximately two metres).

Various components of construction works would generate spoil and waste volumes. **Table 5-3** provides an estimate of waste and spoil volumes during construction and **Chapter 21** describes waste and resource management.

Table 5-3 Estimated spoil and waste volumes

Component	Spoil/waste volumes (approximate)
Site establishment and enabling works	200 tonnes (Gibbons Street Reserve)
Utility and overhead wiring relocations/adjustments	150 tonnes
Main construction works	250 tonnes from demolition and 1920 tonnes from piling and foundations (at 125-127 Little Eveleigh Street) 1,200 tonnes (Marian Street entrance) 320 tonnes (drainage works)
Little Eveleigh Street and Ivy Street works	2,500 tonnes
Marian Street roadworks	550 tonnes
Total	7,090 tonnes

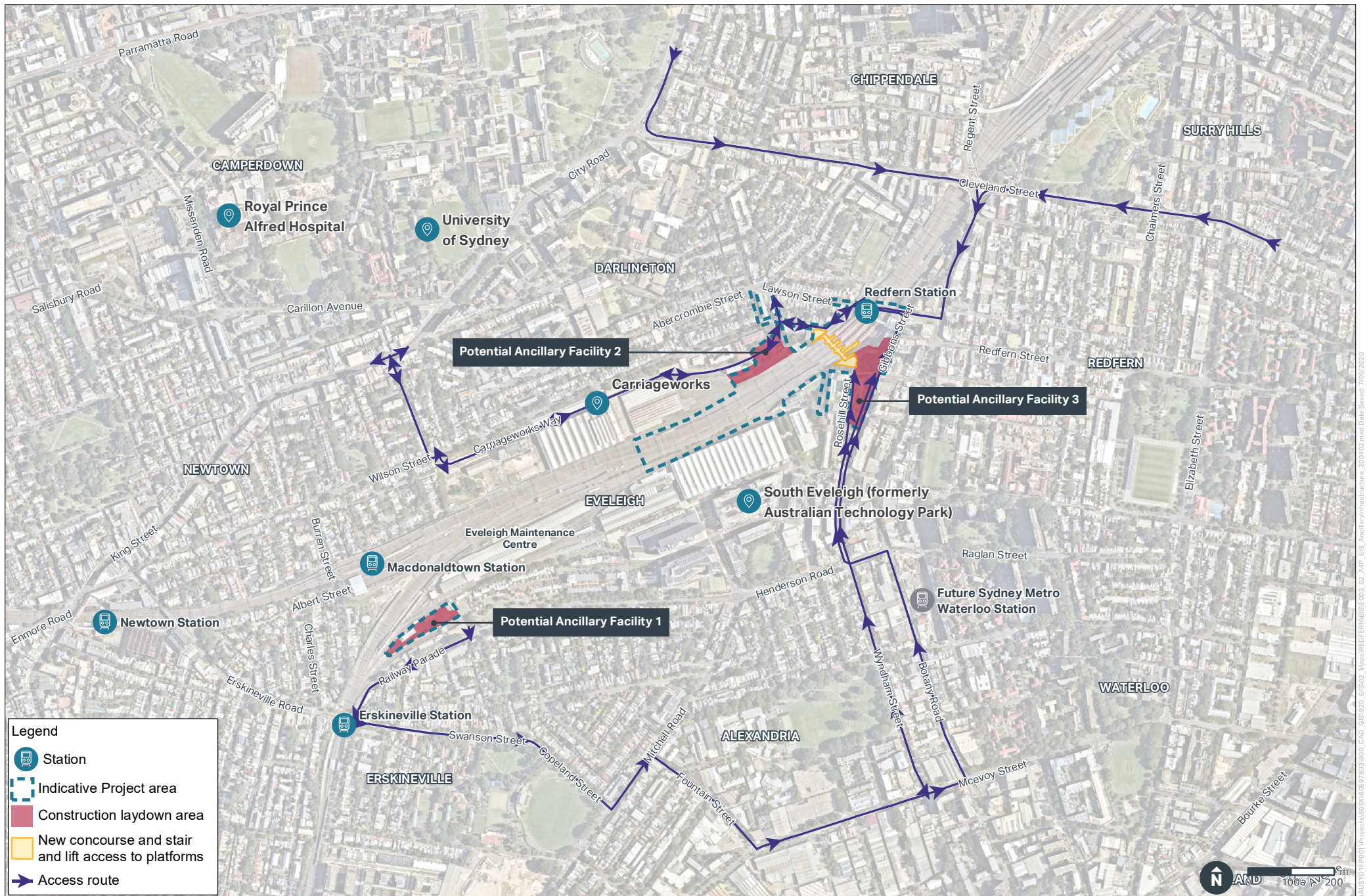


FIGURE 5-4: ANCILLARY FACILITIES

5.3 Property requirements

The Project would mainly be located on land that forms part of the existing rail corridor and adjacent land owned by the NSW Government or the Council. The design of the Project has avoided the need to permanently acquire private land and properties. Construction of the Project would require the temporary use of NSW Government and Council owned land.

5.3.1 Permanent use of NSW Government owned land outside the rail corridor

TfNSW does not propose to acquire any property as part of the Project. Existing properties and land directly impacted by the Project are owned by the NSW Government. The Project would require relocation of the tenants of 125-127 Little Eveleigh Street, which is currently under lease from the NSW Government.

5.3.2 Temporary use of property

Some areas of land would need to be temporarily occupied for construction compounds and other work sites during construction of the Project (refer to **Section 5.2.11**). These areas are generally located within road reserves or other Council owned land adjacent to the rail corridor. Following further design development, consultation would be undertaken with the relevant landowners.

5.4 Operation of the Project

Following construction of the Project, Redfern Station would continue to operate as a major transportation hub with trains arriving and departing throughout the day and night. Key operational components of the Project directly related to customer experience include the following elements:

- new southern covered concourse
- six lifts and stairways providing access to Platforms 1-10
- family accessible toilets and public toilets
- passenger information systems
- kiss and rides
- Opal card readers and top up machines
- bicycle spaces
- Little Eveleigh Street station entrance
- Marian Street station entrance
- introduction of a formalised shared zone along Little Eveleigh Street, and extension of the shared zone at Marian Street.

Once commissioned, the proposed services building at the Marian Street station entrance would become an integral part of the station where most of the electrical, mechanical and communications, and wastewater management infrastructure would be controlled and managed. Periodic maintenance including inspections and repairs would take place inside and outside of the building to ensure continuous operation of the station. The services building would also house cleaning and storage areas for station staff.

During operation, ongoing maintenance would be required for key operational components. This would be undertaken by Sydney Trains in line with standard maintenance policies. These standard policies would also include incident and emergency management procedures.

It is estimated that approximately 100,000 pedestrians would use the new concourse each day by 2036, including exit/entry, transfers and cross corridor usage.