Safe Accessible Transport program

Macquarie Fields – Landscape Character and Visual Impact Assessment

Transport for NSW

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Definitions

Term	Definition
CCTV	Closed-circuit television – a system of surveillance cameras that are connected to a private network, allowing video monitoring and recording of a specific area or location typically for security purposes.
CEMP	Construction Environmental Management Plan
CHMP	Cultural Heritage Management Plan
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DDA	*Disability Discrimination Act 1992*
DSAPT	*Disability Standards for Accessible Public Transport 2002*
DPE	Department of Planning and Environment (NSW)
Dwelling	A structure for residential use
EP &A Act	*NSW Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2021 (NSW)*
EPBC Act	*Environment Protection Biodiversity Conservation Act 1999*
HO	Heritage Overlay
IBRA	Interim Biogeographic Regionalisation for Australia.
km	kilometre
Landscape	Its constituent elements, its character and the way this varies spatially, its geographic extent, its condition, the way the landscape is experienced, and the value attached to it.
LCVIA	Landscape Character and Visual Impact Assessment: The assessment of the impacts of the proposal on landscape and visual values.
LCZ	Landscape Character Zone
LEP	Local Environmental Plan
LGA	Local Government Area
LPPF	Local planning policy framework: Local planning policies are tools used to implement the objectives and strategies of the Municipal Strategic Statement.
LSPS	Local Strategic Planning Statement
m	metre
Magnitude	The apparent size of a proposed modification in the landscape or when viewed from a given viewpoint.
PCT	Plant Community Type: identified using the PCT classification system described in the BioNet Vegetation information system Classification
Private receiver	A privately owned or used viewpoint type
Public viewpoint	A publicly owned or used viewpoint type
REF	Review of Environmental Factors
SEPP	State Environmental Planning Policies
Study Area	The area designated relevant for assessment of the Proposal
the Proposal	Macquarie Fields Station Safe Accessible Transport program upgrade
Proposal site	Proposed construction and operational area for the Proposal
Sensitive receiver	Those visual receivers within the Study Area that are likely to view the Proposal from their dwelling, a popular or significant viewing location (such as a lookout).
Transport	Transport for New South Wales (TfNSW)
Viewpoint	Moderate or high sensitivity location from which views to the construction process or components of the Proposal may be possible.
Viewshed	The area visible from a particular viewing location.
Visual amenity	The qualities of a landscape setting that are appreciated and valued by a viewer.
Visual impact	The result of assessing the sensitivity level of a viewer and the modification level of a development.
Visual sensitivity	The degree to which various user groups would respond to change based on their expectation of a particular experience in each setting for example the expectation of a high level of visual amenity in a national park.

Executive Summary

The Landscape Character and Visual Impact Assessment (LCVIA) supports the Macquarie Fields Station upgrade (the Proposal), which is being delivered as part of the Safe Accessible Transport program.

The purpose of this assessment is to consider the factors and inputs related to the construction, operation, and maintenance of the Proposal, and how it would affect the current and future environment in terms of urban design and visual amenity. Additionally, it aims to evaluate and identify opportunities for better integrating the design for users and for the surrounding environment.

The LCVIA considers impacts of the Proposal against both local planning objectives and project design objectives, including:

- Visual amenity
- Urban landscape character, including:
  - Urban form
  - Connectivity and perceptions of safety

This assessment should be read in conjunction with the Review of Environmental Factors (REF), which provides additional information about the background and context of the Proposal. The REF also offers a comprehensive description of the proposed works for the Proposal.

Existing urban and visual environment

This assessment examines the existing landscape and visual conditions of the Study Area (both physical and statutory) to establish a baseline against which potential effects of the Proposal can be assessed.

The Study Area has been defined within a radius of 200 metres from the location of the Macquarie Fields Station. This area captures the surrounding context where the Proposal is potentially observable and is more at risk of adverse visual and urban design impacts.

Relevant planning policies and legislation have been reviewed to understand any specific landscape or visual conditions relating to the Study Area, as well as a desktop study to understand the various physical elements that combine to create landscape and visual character.

The Proposal is within an existing railway corridor zoned SP2 Rail Corridor, adjacent a residential street to the south and a private golf course to the north.

The landscape character zones (LCZ) identified within the Study Area include:

- LCZ 1 Transport corridor
- LCZ 2 Residential
- LCZ 3 Parks and recreation

There were four viewpoints assessed within the Study Area which were deemed representative of sensitive visual receivers. These receivers included adjacent residents and train commuters. There are no significant views or heritage elements within the Study Area.

Summary of findings

The assessment of impacts is based on the Macquarie Fields Station Upgrade Concept Design Architectural package (31.07.2023), Macquarie Fields Station Urban Design Plan (rev. F, 31.07.2023), and on the bulk, scale and finishes of key assets.

The Proposal has an overall minimal potential adverse impact on the existing LCZs. The station upgrade proposes a new footbridge and lift structures which are commensurate with the existing station facilities, improving accessibility with the addition of lifts, improved access ramps, forecourt entry and building facilities

Additionally, at the station entrance, a new bus zone and shelter is proposed comprising a widened upgrade pavement, furniture, signage and pedestrian crossing.

The construction works are anticipated to have moderate to moderate-low adverse visual impacts on nearby residents in close proximity to the station. These impacts are temporary and would be managed through a Construction Environmental Management Plan (CEMP). Residents adjacent to the station are already accustomed to a modified urban environment with heavy vehicle movement due to their proximity to the railway.

The operational visual impacts are assessed as moderate adverse for some residents to the north-east of Railway Parade, where the new footbridge is in closer proximity to dwellings. The station has minimal changes to the layout, with upgrades providing contemporary design, clean lines and improved streetscape amenity, which are assessed as having beneficial low impacts to urban landscape character and visual amenity.

Mitigation and design opportunities

The following mitigation measures are recommended to be considered during the detailed design phase to enhance beneficial impacts and address potential adverse effects:

- Incorporate public art into the Proposal to enhance community engagement, cultural connections and character.
- Provide visual screening and an improved streetscape to Railway Parade by the provision of new street trees and landscaped areas.
- Enhance passive surveillance between the street and platforms by clearing or trimming some of the existing mass planting near Platform 2 to the south-west of the station. This would improve visibility and contribute to a safer environment for commuters.

1 Introduction

1.1 The Proposal

The NSW Government is improving accessibility at Macquarie Fields Station. This Proposal is being delivered as part of the Safe Accessible Transport program, which aims to make public transport safe, inclusive and easy to use for all passengers, especially people with disability, older people, people with prams or luggage and others who may be experiencing mobility problems.

The program would upgrade stations and wharves to achieve Disability Standards for Accessible Public Transport (DSAPT) compliance, improving amenity, access and safety and acknowledging the important role these locations have to the communities they serve.

1.2 Assessment scope

This LCVIA has been prepared to determine the extent of visual, urban and landscape impacts the Proposal may have on the locality, including residential properties and recreational assets. This would inform potential visual mitigation such as re-vegetation and landscaping works that could be carried out around the facility's perimeter to reduce the visual impact on the properties adjacent to the Site.

The LCVIA forms part of the REF which has been prepared having regard to sections 5.5 and 5.7 of the *Environmental Planning and Assessment Act 1979 (*EP&A Act), and section 171 of the *Environmental Planning and Assessment Regulation 2021 (NSW)* (EP&A Regulation), to ensure that Transport for NSW (Transport) takes into account to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the proposal.

Report Objectives

The objectives of this report are to:

- Understand the existing conditions at the subject site and assess the potential impacts of the proposed change on the visual amenity of the surrounding area and sensitive residential dwellings;
- Identify sensitive receivers and provide a rating as to the visual impact of the Proposal on sensitive receptors;
- Undertake an assessment of urban landscape character considering:
  - local planning objectives in relation to urban design, and
  - assess the proposal against urban design and landscape character objectives.
- Recommend mitigation strategies to be implemented, including use of vegetation or other screening solutions such as finishes and materials where practical.

2 Methodology and Relevant Guidelines

The LCVIA is based on the following best-practice guidelines:

- Guideline for Landscape Character and Visual Assessment - Environmental Impact Assessment Practice Note EIA-NO4, TfNSW, 2020.
- Guidelines for Landscape and Visual Impact Assessment (third edition), Landscape Institute of Environment Management and Assessment (IEMA), 2013.
- Guidance Note for Landscape and Visual Assessment, Australian Institute of Landscape Architects, June 2018.

The assessment considered whether the design made consideration of Transport design guides including:

- Better Placed, Government Architect New South Wales (2023) – an integrated design policy for the built environment in NSW, to promote well designed public places and environments.
- Planning and designing for better places, NSW Government (December 2021) – a planning circular providing advice on respecting and enhancing local character.
- Beyond the Pavement – urban design principles and objectives to guide public realm design, TfNSW, 2010
- Around the Tracks: Urban design for heavy and light rail, TfNSW, December 2016 – Interim issue

Transport Design Guidance

Transport has developed a suite of documents that provide guidance for project teams in terms of design objectives and principles. These documents are grounded in evidence and provide best practice examples for infrastructure projects.

The incorporation of this guidance is vital for the effective execution of the Safe Accessible Transport program. The primary guideline provided by Transport, known as "Around the Tracks, 2016," outlines the planning, design, construction, and operation of enhancements to both heavy and light rail systems in NSW. This document establishes eight principles that govern the planning and design of rail infrastructure, as well as the urban design process required to achieve safe, efficient, and high-quality outcomes.

The objective of the design services is to improve the access of the station for all sections of the community, including people with a disability, carers with prams, older persons, children, students and commuters. The design aims to achieve the following:

- Provide facilities that:
  - Are inviting and safe for customers to use
  - Comply with the *Disability Standards for Accessible Public Transport 2002 (DSAPT)* to contribute to the Commonwealth *Disability Discrimination Act 1992* (DDA) targets
  - Are compliant with the current standards of safety, access, and amenity
  - Easily maintained and operated by the Maintainer/Operator.
- Provide safe, accessible paths between transportation mode change locations, accessible parking, passenger boarding points and other key facilities.

2.1 Assessment tasks

The LCVIA report has been conducted following the assessment tasks listed below:

1. Desktop analysis of the existing environment including identifying sensitive locations and receivers, understanding current and future land uses in the area, and determining the value of the built and natural environment through strategic plans, character statements, and aesthetic considerations.
2. Identify key viewpoints for assessment that encapsulate potential impacts on sensitive receptors.
3. Conduct a field survey (13 June 2024) to ground truth desktop findings and capture viewpoint photographs.
4. Preparation of photomontages based on the concept design to demonstrate the effect of the Proposal assets on key views.
5. Assess the urban landscape and visual impacts during construction at Year 1 of operation, based on industry guidelines as outlined in Section 2.3.
6. Outline the mitigation strategy to manage and minimise adverse visual impacts as a result of the Proposal assets.

2.2 Study Area

This assessment has adopted a study area of 200 metres around the Proposal (see Figure 3-9). The Study Area is determined by the distance at which it is considered that Proposal components would become either difficult to distinguish to the human eye or would occupy such a small proportion of the visual field of view that impacts could be considered negligible. This distance is related to the scale and height of the Proposal components, intervening topography, buildings or vegetation; and the viewing properties of the typical human eye.

During the site visit, this distance was tested, with the station not discernible any further than adjacent streets.

2.3 Visual Impact Assessment

Following a thorough desktop study and site visit, viewpoints were selected to represent key views of sensitive receivers in the area. Each viewpoint was selected as representative views of key receivers surrounding the Proposal. Viewpoints are selected to illustrate:

- receptor-types including public and private domain views.
- view-types including elevated, panoramic, filtered views and viewing distances.
- consideration of main or protected views in the Study Area.

Some views were ruled out during site visit as vegetation, topography or existing buildings would fully screen views toward the Proposal.

Sensitivity

Viewer sensitivity is a measure of how critically a change to the existing landscape setting would be regarded based on the land use of the area and the distance from where it is viewed.

Various landscape settings have differing indexes to the relative importance the viewer places on them. For example, individuals would view changes to the visual setting of their residence more critically than changes to the visual setting in which they travel or work.

As such, levels of viewer sensitivity are based on land use because this largely defines a viewer's expectation of what they would typically expect within a particular setting. This approach is consistent with the visual management system (*Landscape Aesthetics – A Handbook for Scenery Management*, United States Department of Agriculture & Forest Service, 1995).

Viewpoint sensitivity is dependent on:

- Importance (scenic quality) of the view.
- Duration of viewer activity.
- Number of viewers exposed to the Proposal.
- Nature of the visual receptor (type and volume of sensitive receptors or viewers) experiencing the view.

Table 2-1 describes the sensitivity aspects used in the assessment.

Table 2-1 Viewpoint Sensitivity ratings

Sensitivity	Description
High	**Large number** of viewers, or those with **proprietary interest and prolonged viewing opportunities** such as residents and users of attractive and/or well-used recreational facilities.
	Views from a regionally or locally important location such as a scenic lookout whose interest is specifically focussed on the landscape. ■ Residential properties. ■ Users of community facilities and open spaces, where the purpose of that recreation is the enjoyment of the landscape. ■ Key tourist areas.
Moderate	**Medium number** of residents and **moderate numbers** of visitors with an interest in their environment.
	Larger number of travellers with an interest in their surroundings. ■ Outdoor workers ■ Recreational parks within urban environments ■ Schools and other institutional buildings, and their outdoor areas.
Low	**Small number** of visitors with a passing interest in their surroundings.
	Viewers whose interest is not specifically focussed on the landscape. ■ Indoor workers. ■ Local centre users ■ Users of main roads or arterial roads. ■ Users of recreational facilities where the purpose of that recreation is not related to the views. ■ Commuters.

Magnitude of change

Magnitude refers to the scale, size and character of the Proposal and its proximity to the viewer, and the degree to which its affect has been mitigated. For example, a development situated one kilometre from the viewpoint, would have a much-reduced visual effect than one 100 metres away[1]. All elements of the Proposal are to be considered including changes to landform, urban structure, vegetation patterns, as well as the nature, scale and density of the Proposal within the landscape.

Magnitude is dependent on:

- Scale, regarding the loss or addition of features in the view and changes in its composition.
- Degree of contrast or integration based on scale and form, height, colour, and texture.
- Nature of view in relation to the Proposal accounting for angle, distance, and extent.
- Mitigation, accounting for its effectiveness at reducing impacts over time.

Table 2-2 below describes the magnitude aspects used in the assessment.

[1] Guideline for Landscape Character and Visual Assessment - Environmental Impact Assessment Practice Note EIA-NO4, Transport for New South Wales, 2020. pg9

Table 2-2 Viewpoint magnitude ratings

Magnitude	Description
High	The Proposal, or part of it, would become the dominant feature or focal point of the view.
Moderate	The Proposal, or part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor.
Low	The Proposal, or part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Negligible	Only a very small part of the Proposal would be discernible, or it is at such a distance that it would form a barely noticeable feature or element of the view.

Overall Impact

With all factors considered, an assessment was made on each landscape character and representative viewpoint against the known extent of the Proposal. Table 2-3 presents the matrix of how the sensitivity and magnitude of impacts combines to provide an impact rating.

By applying the matrix, an assessment of the Proposal may have low, moderate-low, moderate, high-moderate or high impacts, depending on the level of visual modification and viewer sensitivity from the location at which the Proposal can be viewed. Impacts can be beneficial where the modification improves visual amenity or enhances landscape character, however the introduction of built form within the environment is typically considered to have an adverse effect. Where the Proposal is visible and fits into the surrounding environment, and there is no overall improvement of the visual amenity, the impact is considered neutral. If the Proposal is not visible, there is negligible impact. The following Table 2-3 shows how the level of impact is determined through the matrix.

Table 2-3 Visual Impact Rating Matrix[2]

		Magnitude of Impact			
		High	**Moderate**	**Low**	**Negligible**
Sensitivity	**High**	**High**	**High-Moderate**	**Moderate**	**Negligible**
	Moderate	**High-Moderate**	**Moderate**	**Moderate-Low**	**Negligible**
	Low	**Moderate**	**Moderate-Low**	**Low**	**Negligible**
	Negligible	**Negligible**	**Negligible**	**Negligible**	**Negligible**

2.4 Assumptions and Limitations

This report is subject to the following limitations:

- The LCVIA has been prepared with Architectural concept design (July 2023) documentation. Further changes to the detailed design would not be captured in this assessment.
- Photomontages are based on the Architectural concept design (July 2023) which illustrates the nature and extent of the Proposal.
- All viewpoints have been photographed from publicly accessible locations to demonstrate and reflect as closely as possible; the potential visual impacts likely to be from a sample of sensitive receivers such as residents.
- Access to sensitive viewpoints on private land, such as residences, were not undertaken for this LCVIA, however impacts from private properties were considered in the assessment.

[2] Guideline for Landscape Character and Visual Assessment - Environmental Impact Assessment Practice Note EIA-NO4, Transport for New South Wales, 2020

- The methodology adopted for this visual impact assessment assumes that if the works would not be seen, there is no impact.
- For the purpose of the assessment, unobstructed viewpoints from publicly accessible locations have been used as a worst-case scenario of potential visual impacts.

2.5 Photomontages

A photomontage is a technique whereby an image of the proposed development is produced using an existing photograph, overlayed with a render of the key Proposal elements, to provide an indicative representation of the scheme. The process entails inserting a computer–generated model of the Proposal into a photograph taken from a geographically referenced viewpoint, using existing elements of a known size, location, and scale to suitably locate the digital representation within the photograph. Objects, such as buildings in the existing view have been modelled to create a reference point to match in the photos.

Rendered photomontages are indicative of the Proposal at Day 1 of operation based on the baseline concept design and do not indicate any potential changes through detailed design or design mitigation measures.

The following steps were taken to produce the photomontages:

- Viewpoints were selected based on representation of different angles and from different visual receivers towards the Proposal.
- Each selected viewpoint is then re-created ‘virtually’ in software using 3d design models and reviewed to ensure the view is ‘viable’. This document is then used as a ‘shoot plan’ for site photography capture.
- On site, photography is taken matching the viewpoints locations and orientation selected. A DSLR Canon 7D camera and 17mm lens (27.5mm full frame sensor equivalent) is used to capture the base imagery.
- Using the site photography as a base image each ‘virtual’ camera is then positioned, in software, using existing survey features to precisely register the 3d design into view.
- 3d federated design models received June 2024 are then rendered with basic materials, and lighting.
- Finally, Adobe Photoshop is used to overlay the 3d rendered design on top of the base image. Final adjustments are ‘painted’ to occlude design details in front or behind existing structures. Each ‘artists impressions’ is saved as a JPG uncropped and free of distortion.
- Our method of production is accurate and repeatable using a scientific method.

Selected viewpoint photomontages

The viewpoints selected to produce photomontages are based on those views that are likely to have the highest adverse effects to the most sensitive visual receivers. For the purpose of this assessment, photomontages were produced for three of the four viewpoints including:

- MF01 – representative of residential receivers
- MF02 - representative of residential receivers
- MF04 – representative of train commuters.

3 Existing Environment

3.1 Location

The Proposal site is located along Railway Parade in Macquarie Fields, approximately 33 kilometres south-west of Sydney's city centre. Macquarie Fields is part of the Macarthur region and falls within the Campbelltown City Council Local Government Area (LGA).

The site is situated adjacent to low-density residential housing to the south-east. A Council commuter car park accommodating around 140 vehicles, is located around 100 metres south of the station entrance.

The broader area consists of various educational institutions to the east of the station including Glenfield TAFE, James Meehan High School, Macquarie Fields Public School and Guise Public School; along with Glenquarie Shopping Centre that serves as the primary retail attractor for the catchment. To the south, along Railway Parade, there are recreational zones, including the Milton Rugby League Complex and Milton Park Softball Complex.

To the north of the station, the Macquarie Links International Golf Club borders the rail corridor, with the Bunbury Curran Creek channel running through it. The Golf Club is privately owned and not accessible to the public.

The station is on the Main Southern Line and is served by the T8 Airport and South Line via two platforms. Additionally, Transdev NSW operates three bus routes that service the station to surrounding suburbs.

Heathcote National Park is located approximately three kilometres to the east, with the Georges River at its western base. This is a densely vegetated range, which also serves as a military training area (Holsworthy military base and airport), with limited public access.

3.2 Strategic Planning Context

A number of existing National/Commonwealth, State, Regional and Local strategic planning legislation and policies relevant to landscape and visual aspects of the Proposal site are discussed below.

National level

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) - The Site is located within the Illawarra Coastal Interim Biogeographic Regionalisation for Australia (IBRA) subregion in the Sydney Basin Biogeographic Region. The EPBC Act lists a number of threatened flora and fauna and ecological communities that need to be protected within this subregion.

State level - New South Wales

Environmental Planning and Assessment Act 1979 (EP&A Act) - The EP&A Act sets out the NSW planning framework, including the management, conservation, and development of land. The EP&A Act is aimed at ensuring that development is both economical and ecologically sustainable by providing for State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs) to be made.

Local planning policy analysis

A number of local planning instruments apply to the subject sites which contain aims and objectives for the protection of landscape and scenic values. The following local plans are relevant to the Proposal and are further detailed in Table 3-1.

- Campbelltown LEP 2015
- Campbelltown DCP 2015

Table 3-1 Local Planning Policies and Plans

Provisions	Objectives	Relevance to the study
Campbelltown LEP 2015		
1.**2 Aims of Plan**	(f) to optimise the integration of land use and transport and encourage safe, diverse and efficient means of transport throughout Campbelltown	There are no changes to the station location or land zoning.
	(g) to encourage high-quality, well-designed development, that is of an appropriate design and scale to complement its setting and that enhances and encourages a safe and healthy environment	The design is in accordance with Transport Urban Design Plan objectives (refer Transport Design Guidance section 2).
	(l) to conserve and enhance the environmental, scenic and landscape values of land in Campbelltown	The station is not obscuring views towards and landscapes of scenic significance.
4.3 Height of buildings	(b) to ensure that the heights of buildings reflect the intended scale of development appropriate to the locality and the proximity to employment centres and transport facilities	In views from adjacent residences the Proposal would be seen in the context of the existing station and separated from residences by adjacent streets, reducing the potential for an adverse visual impact.
	(d) to assist in the minimisation of opportunities for undesirable visual impact, disruption to views, loss of privacy and loss of solar access to existing and future development and to the public domain.	The station upgrade remains within land zoned SP2 Railway Corridor, with a road in between station structures and residential lots, minimising modification.
Campbelltown DCP 2015		
Part 11. Vegetation	Preserve the biodiversity, ecology, microclimate and landscape amenity of the City of Campbelltown through the conservation of trees and other vegetation.	There are some planted trees being removed at the station entrance, to be replaced with other vegetation.

3.3 Landscape and visual context

3.3.1 Land zoning

The Proposal is located on land zoned as SP2 Railway Corridor (Infrastructure) within the Campbelltown LEP 2015. The following are the objectives of land zones (as detailed in Part 2 of the LEP) within and surrounding the Proposal that are relevant to urban design and visual amenity:

- SP2: Infrastructure objectives:
  - To provide for infrastructure and related uses.
  - To prevent development that is not compatible with or that may detract from the provision of infrastructure.
- RE2 (Private Recreation) - including the Macquarie Links International Golf Course:
  - To enable land to be used for private open space or recreational purposes.
  - To provide a range of recreational settings and activities and compatible land uses.
  - To protect and enhance the natural environment for recreational purposes.
  - To protect and enhance areas of scenic value and the visual amenity of prominent ridgelines.
  - To protect bushland, wildlife corridors and natural habitat.
  - To ensure the preservation and maintenance of environmentally significant and environmentally sensitive land.
  - To maximise public transport patronage and encourage walking and cycling.

- R2 (Low Density Residential)
  - To provide for the housing needs of the community within a low-density residential environment.
  - To enable other land uses that provide facilities or services to meet the day to day needs of residents.
  - To enable development for purposes other than residential only if that development is compatible with the character of the living area and is of a domestic scale.
  - To minimise overshadowing and ensure a desired level of solar access to all properties.
  - To facilitate diverse and sustainable means of access and movement.

3.3.2 Heritage

There are no heritage items within the Study Area. However, there is a memorial plaque located at the station entrance which has local social connections to the community, though is not of landscape or visual relevance.

Meehan's Castle or Macquarie Field House is the closest historic structure, around 700 metres to the north. The sandstone homestead, built circa 1810, is associated with early agricultural settlement in the area.

3.3.3 Vegetation

The site is within the Cumberland subregion of the Sydney Basin Biogeographic area. Eucalyptus forest and woodland are the dominant vegetation communities in the Sydney bioregion occupying more than 50% of the area with 26% of the bioregion modified (including for intensive and agricultural uses) and 6% covered by heath.[3]

The dominant vegetation community within the area surrounding the site is non-indigenous with the exception of remnant patches of Cumberland Blue Box Riverflat and the Coastal Valleys Riparian Forest found adjacent to the station in the north and south.

The area surrounding the station is leafy, comprising mainly native species. There is a large grove of mature trees (primarily weed species; *Olea* europaea subsp. *cuspidata*) along the rail corridor fence line to the south-west of the station (Figure 3-1). To the north of the rail corridor, are tall native trees that span throughout the Macquarie Links International Golf Club (Figure 3-4). Also, to the north-east of the station, a cluster of trees surrounds the creek through to Bingara Reserve (Figure 3-3). Additionally, along the south side of Railway Parade, small to medium trees are planted in the front yards of residential properties (Figure 3-2).

Figure 3-1 Cluster of trees lined against fencing along to southwest of station

Figure 3-2 Cluster of trees located in front yard of residential property along Railway parade

[3] Australian Government – Bioregional Assessments: Terrestrial species and communities

Figure 3-3 Vegetation surrounding creek to northeast of station

Figure 3-4 Golf course vegetation to left of image

3.3.4 Visual context

The surrounding visual character of the station comprises a suburban streetscape to the south and private open space to the north. The topography around the station and rail corridor is fairly flat, rising slightly to the south-west, therefore there are no vantage points from or towards the station; with the exception of the platform footbridge.

Adjacent to the site in the north is the Macquarie Links International Golf Club with the Bunbury Curran Creek flowing through it. This area has mature planted trees and areas of open golf fairways. There are limited views between the rail corridor and the golf course, with trees screening views along the boundary.

To the south side of the station, along Railway Parade, there are large evergreen trees along the fence line, creating a screen between the rail corridor and the road (Figure 3-5) along with the station canopies.

Directly across from the station to the south, along Railway Parade, is a row of nine residential properties (272-288 Railway Parade). These dwellings are typically detached and are one or two storeys high (Figure 3-6). The houses in this area are typically made of timber or bricks, with most set back from the road and with vegetation screening the roadside.

The station is visible from Railway Parade; however views of the station are blocked in adjacent streets due to intervening houses and vegetation. Views from the north of the station within Macquarie Links International Golf Club are unlikely due to intervening trees directly adjacent the station platform.

Figure 3-5 View from platform footbridge towards the southwest

Figure 3-6 View from platform footbridge towards house to the northeast

Figure 3-7 View looking north from Railway Parade of Council commuter car park (right) and train (left)

Figure 3-8 View southwest from Platform 1

3.4 Urban landscape character

There are three identified LCZs within the Study Area as described below and shown in Figure 3-9, including:

- LCZ 1 Transport corridor (SP2 Rail corridor and Carpark)
- LCZ 2 Residential (R2)
- LCZ 3 Parks and recreation (RE1, RE2 and SP2 Drainage - Bunbury Curran Creek)

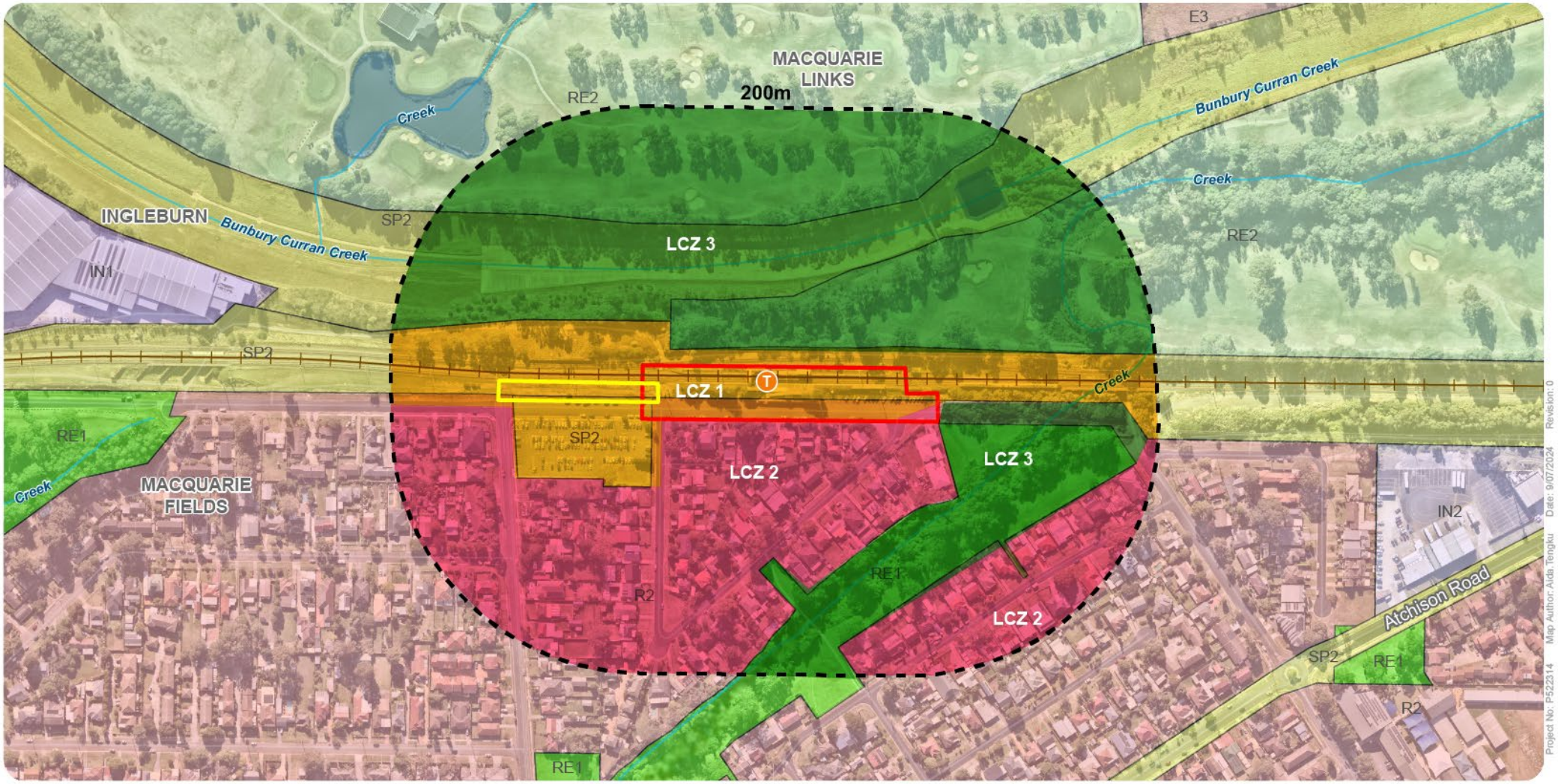


Figure 3-9: Landscape character zones

LCZ 1 Transport corridor

The urban character comprises land zoned SP2 Railway Corridor and SP2 Carpark. The rail station is set adjacent to residential dwellings to the south and east and Macquarie Links International Golf Course to the west. Access to the station is via Railway Parade, with no connection to the golf course. The rail line rises above the level of Railway Parade at the north end of the station, with a grassed embankment facing the residential street.

The covered walkways, bus shelter and footbridge connecting the two platforms (Figure 3-10), are prominent. The footbridge height is equivalent to a three-storey building, in a suburban area with single and double storey houses.

The rail line connects commuters between the city and Macarthur along the T8 Airport and South Line, and there is one bus zone connecting to three bus routes. The bus zone is at the station entrance, where there is a widened pavement, bus shelters and seating (Figure 3-11).

Additional facilities associated with the station include toilets within the existing station building, kiss and ride parking bays and bike parking. Angled on-street commuter parking is provided to the north and south of Railway Parade, with an additional Council commuter car park located around 100 metres to the south between Alexander Crescent and Saywell Road. The rail corridor has wire mesh security fencing adjacent to the rail embankment.

There is landscape amenity afforded in this highly modified environment, to the edge of the railway corridor within Macquarie Links International Gold Course (LCZ 3).

Figure 3-10 Station platforms and footbridge, trees screening Railway Parade to the right

Figure 3-11 Station entrance and bus zone with platform footbridge behind

LCZ 2 Residential

Residential dwellings near to the station comprise one and two-storey dwellings with fenced and landscaped yards and private driveways (Figure 3-12 and Figure 3-13). The front fencing is lower and is predominantly visually permeable, allowing vegetation to merge between the private and public boundary. There are concrete footpaths and narrow grassed nature strips, with few native trees in the streetscape.

Dwellings are of mixed styles and built approximately from the 1960s to the 1990s. Houses to the south end of Railway Parade are more contemporary, with large two-storey dwellings on smaller sub-divided lots and less garden space.

Figure 3-12 View looking south-east towards residential properties along Railway Parade

Figure 3-13 Houses on Railway Parade opposite station

LCZ 3 Parks and recreation

The urban character comprises land zoned RE2 – Macquarie Links, SP2 Drainage (Bunbury Curran Creek) and RE1 creek corridor.

To the station's northeast, an unnamed tributary of Bunbury Curran Creek flows southwards through Bingara Reserve (Figure 3-14). Alongside the creek, there are informal open spaces and some paths that cross the creek. The dense vegetation and trees that line the creek corridor provide visual amenity for the residential area. However, it should be noted that there are areas within the creek that are overgrown with weeds, creating hiding places and perception of potential insecurity.

Macquarie Links is to the west of the station and is not publicly accessible (Figure 3-15). It is a highly maintained landscape with cultivated grassed fairways, putting greens, sand pits and small lakes, with rows of planted native trees. The Bunbury Curran Creek traverses through the south area of the golf course and is typically a grassed swale and culvert, though is a wider concrete channel nearest the station.

Figure 3-14 Native bush surrounding creek at the north end of Railway Parade

Figure 3-15 Macquarie Links International Golf Course (image: Sydney.com)

4 Proposal design

The assessment of impacts is based on the following description of the Proposal and construction provided in the Macquarie Fields Station Upgrade REF, Macquarie Fields Station Upgrade Concept Design Architectural package (31.07.2023), Macquarie Fields Station Urban Design Plan (rev. F 31.07.2023), and based on the bulk, scale and finishes of key assets. Refer to Figure 4-1 for the layout of the Proposal.

Key features of the proposal would include:

- construction of a new pedestrian footbridge featuring weather protection canopies, and new stairs to provide access to the station platforms, with subsequent removal of the existing footbridge (following completion of the new footbridge)
- installation of a three-stop lift connecting Railway Parade, Platform 2 and the new pedestrian footbridge, and installation of a two-stop lift connecting Platform 1 and the new pedestrian footbridge
- upgrade of the station entry from Railway Parade, including a new compliant accessible ramp and stairs, and a new second set of stairs near the new footbridge to Platform 2
- upgrade to the station forecourt to include:
  - six accessible parking spaces (including one longer accessible parking space to accommodate accessible community transport vehicles)
  - two accessible kiss and ride spaces
  - a new pedestrian crossing across Railway Parade to the station entrance
  - bus zone relocation on Railway Parade
  - additional bicycle parking
  - associated footpath and kerb ramp upgrades and new lighting
- modifications to the existing station building on Platform 2 to provide a new unisex ambulant toilet, a family accessible toilet, an electrical services enclosure and station storage facilities
- upgrade of the existing platform surfaces (through platform regrading and localised platform widening), new boarding assistance zone on Platform 1 and relocation of the boarding assistance zone on Platform 2, installation of tactile ground surface indicators (TGSIs) and provision of new canopies over the platforms near the new footbridge and boarding assistance zones
- provision of an accessible water refill station adjacent to the new family accessible toilet
- relocation of the memorial plaque adjacent to the main entrance stairs, subject to further stakeholder consultation during detailed design
- upgrades of other facilities and station services to make them accessible including wayfinding signage, hearing augmentation, Opal card readers, help points and public phone as well as improvement to landscaping, lighting and CCTV.

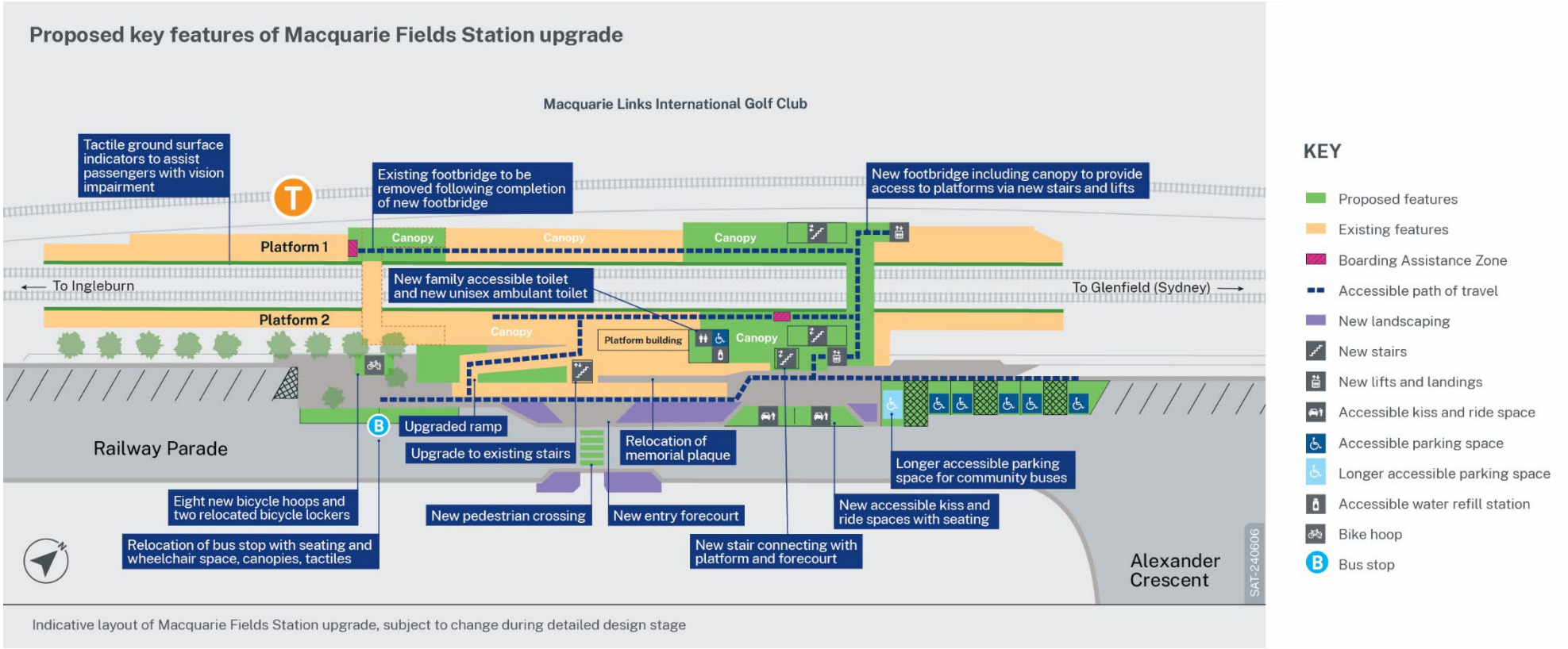


Figure 4-1: Key features of the Proposal, indicative only, subject to detailed design

Figure 4-2: 3D impression of Macquarie Fields Station – facing north, indicative only, subject to detailed design

Figure 4-3 3D impression of Macquarie Fields Station – facing southwest, indicative only, subject to detailed design

4.1.1 Landscaping, materials and finishes

The new facilities would be constructed from a range of different materials and is subject to detailed design. The Proposal would include the following:

- lift shafts – concrete and glass
- pedestrian footbridge – concrete structure with steel frames, screens and canopy
- platform stairs – concrete structure with steel frames, screens and canopy
- platform and footbridge canopies – steel structure with canopy
- extension to the existing building – to integrate with the existing façade.

The design would be submitted to Transport's Design Review Panel at various stages for comment before being accepted by Transport. An Urban Design and Landscape Plan would also be prepared by the Contractor, prior to finalisation of detailed design for endorsement by Transport.

4.2 Construction and site establishment

Subject to approval, early construction activities are expected to commence in late 2024, with main construction commencing early 2025 and taking around 18 months to complete. Timeframes are subject to detailed design and final construction methodology. The staging is also dependent on the Contractor's preferred methodology, program and sequencing of work, and stages may be carried out at the same time.

The below is a summary of the key construction works relevant to this assessment. Refer to the REF for further detail.

- Establish ancillary facilities (including erection of fencing, site offices, amenities and plant and material storage areas). Site compound area proposed within the rail corridor opposite the Council car park on Railway Parade.
- Install safety barriers, lighting and hoarding around the nominated work zones, including any areas of the platform used for temporary laydown/storage of plant, material and spoil for the duration of the construction
- Construction of new footbridge (including stairs and lifts)
- Demolition and removal of:
  - existing footbridge and stairs (following commissioning of the new footbridge)
  - existing vegetation at front of station
- Station access, forecourt and interchange work including bus zone, shelters, furniture and bike parking
  - Upgrade existing ramp and stairs providing access from the station forecourt, including new bus zone canopy
- Platform works including new station platform canopies, lighting, surface regrading and finishing
- Station building extension and modifications
- Electrical upgrades
- Finishing works including:
  - Landscaping and planting within the station precinct and forecourt
  - Install new wayfinding and other station signage
  - Line-marking of on-street commuter car parks
- Site demobilisation.

5 Visual Impact Assessment

5.1 Key Viewpoints

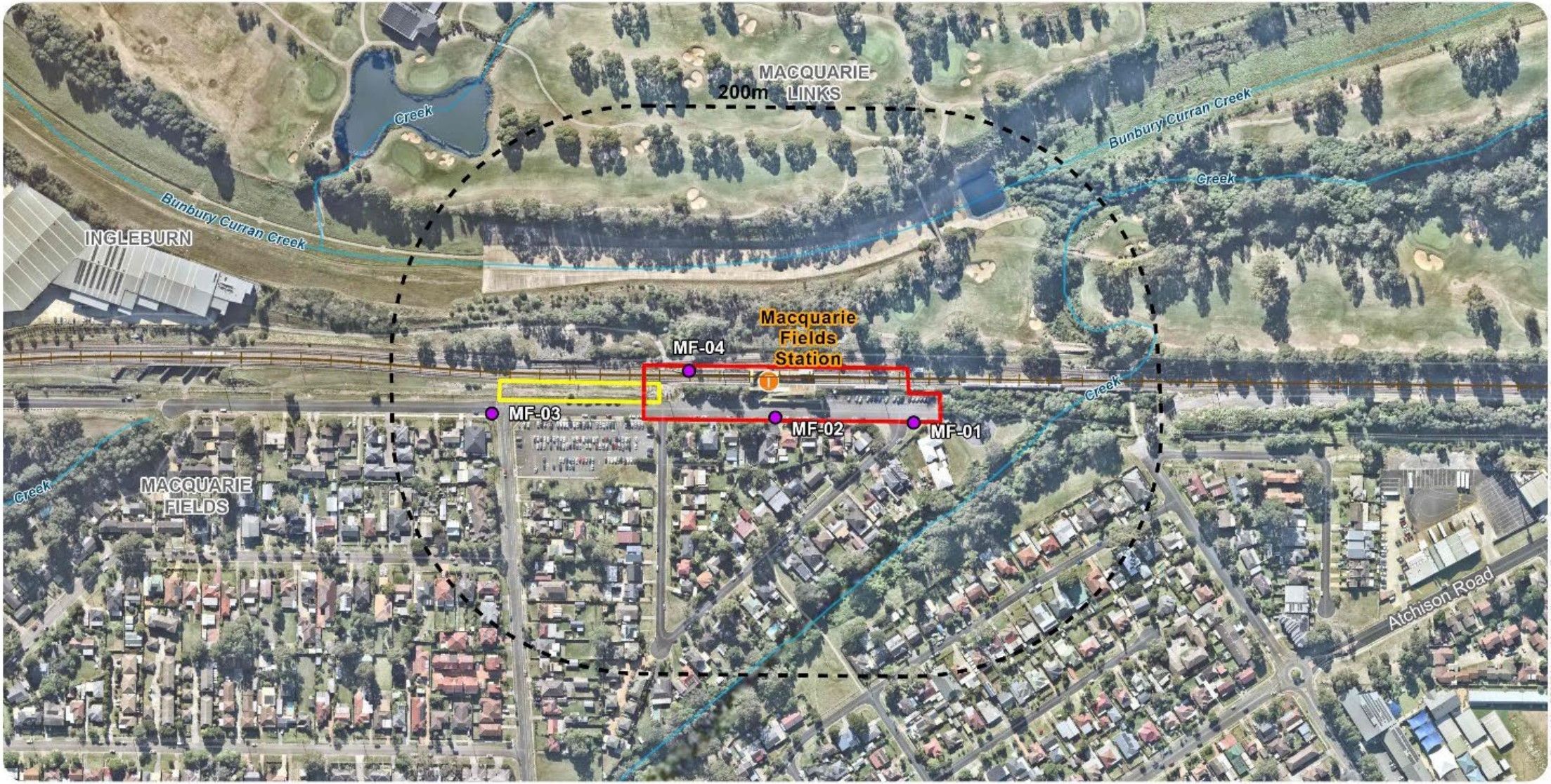
A total of four viewpoints (VPs) have been identified within the Study Area, as listed in Table 5-1 and shown in Figure 5-1. The viewpoints were selected based upon a two-stage process involving a preliminary desktop study and a site visit.

The desktop study included an assessment of potential sensitive viewpoints representative of residential properties within the Study Area. The site visit was undertaken by Aurecon on 13 June 2024, during which the representative viewpoints were confirmed and an assessment was made of each potential representative viewpoint against the known extent of the Proposal. An illustrative photomontage was produced for three of the VPs, demonstrating the most noticeable impacts.

Viewpoints were selected based on topography, vegetation and existing infrastructure around the Proposal where the key assets would be visible.

Table 5-1 Key Viewpoints

Viewpoint	Location	Visual receivers
MF01	59 Railway Parade, north of station	Residential dwellings
MF02	276 Railway Parade, opposite station entrance	Residential dwellings
MF03	302 Railway Parade, south of station	Residential dwellings
MF04	From station Platform 1	Train commuters



Source: Aurecon, TfNSW, NSW Spatial Services (DCS), ESRI

1:4,500 @ A4

0 0 0 km

Projection: GDA2020 MGA Zone 56

Safe Accessible Transport Program - Macquarie Fields Landscape and Visual Impact Assessment

Figure 5-1: Viewpoint locations

Project No: P522314 Map Author: Aida Tengku Date: 9/07/2024 Revision: 0

MF01	**Location: 59 Alexander Crescent** Proposal: 100 metres to the southwest View experienced by residents
Existing Setting	See Figure 5-2 MF01: Existing view looking southwest from 59 Railway Parade . The residential dwellings to the north end corner of Railway Parade/Alexander Crescent have views towards the rail corridor, trains passing regularly and partial views towards the station in the peripheral view. The rail line is elevated by approximately two metres above the level of the road, with passing trains highly visible in the foreground. Ancillary rail infrastructure is noticeable including visually permeable fencing, gantries and overhead lines, a substation, platform and lighting. Overhead power lines and station carparking is also visible to the foreground view. The station entry and elevated walkway are mostly screened by intervening trees. Mature scattered native trees are visible behind the rail corridor.
Sensitivity	Moderate – viewpoint representative of low number of residential dwellings
Magnitude of change	
Construction	The construction works would be noticeable to the residents, including demolition works, station building extension and installation of the new footbridge and lifts. The works are within foreground peripheral views towards the rail corridor. The site compound located to the south of the station, is unlikely to be visible from this location. Background landscape amenity is retained. The magnitude of change is considered moderate adverse.
Operational (year 1)	See Figure 5-3 MF01 Proposal at day 1 of operation. The new footbridge and lifts would be prominent, though in the resident's peripheral view. The Proposal introduces a structure of closer proximity to the existing view, though in the existing rail corridor which is a highly modified environment. The station entrance would also be more visible, with large trees removed to the foreground of the existing entrance, though the structure would be commensurate in scale and form. The magnitude of change is considered moderate adverse.
Key mitigation measures	Street trees to the north side of Railway Parade would provide improved streetscape amenity, shading of parked cars and screen some of the rail corridor elements.
Visual impact ratings	
Construction	Moderate sensitivity + moderate magnitude of change = **moderate visual impact (adverse)**
Operational (year 1)	Moderate sensitivity + moderate magnitude of change = **moderate visual impact (adverse)**

Figure 5-2 MF01: Existing view looking southwest from 59 Railway Parade

Figure 5-3 MF01 Proposal at day 1 of operation (photomontage). Indicative only, subject to detailed design

MF02	**Location: 276 Railway Parade** Proposal: 20 metres to the west View experienced by residents opposite station entrance
Existing Setting	The viewpoint is representative of the nine residential dwellings on Railway Parade, opposite Macquarie Fields Station. Most of these dwellings have landscaped front yards, with trees that partially obscure views of the station. As the viewpoint in Figure 5-4 shows, the entrance of the station comprised a covered bus zone with some furniture (benches and bins), a concrete retaining wall and stairs up to the station platform. There are long spans of canopies with corrugated steel roofing and metal structure covered stairway which crosses over the rail line (to a central platform). There is some planted vegetation, though this provides little landscape amenity, with the canopy structure more prominent.
Sensitivity	Moderate – viewpoint representative of low number of residential dwellings
Magnitude of change	
Construction	During construction, temporary access would be constructed to continue to provide access to the station platforms, established at the existing station entrance. The existing bus zone, platform canopies, footbridge, forecourt and some vegetation would be removed during the construction works and replaced with upgrades including a new footbridge and lifts further to the right of the view. Works would be partially visible to adjacent residents, behind site hoarding and existing landscape screening at front of properties. The magnitude of change is considered moderate adverse.
Stage 1 Operational (year 1)	See Figure 5-5 MF02: Proposal at day 1 of operation. The station forecourt including bus shelters and walkway canopies would be commensurate with the existing, though of more contemporary and open appearance, enhanced with landscape planting within retained garden beds. The new footbridge (right of this view) would be noticeable due to the slightly taller structure. The upgrade, whilst providing a slightly larger structure is of an improved design aesthetic which is considered a low beneficial improvement. The foreground view would remain to be dominated by the station structures and is considered a low magnitude of change.
Key mitigation measures	No mitigation
Visual impact ratings	
Construction	Moderate sensitivity + moderate magnitude of change = **moderate visual impact (adverse)**
Operational (year 1)	Moderate sensitivity + low magnitude of change = **moderate-low visual impact (beneficial)**

Figure 5-4 MF02: Existing view looking west from outside 276 Railway Parade

Figure 5-5 MF02: Proposal at day 1 of operation (photomontage). Indicative only, subject to detailed design

MF03	**Location: 302 Railway Parade** Proposal: 200 metres to the northwest View experienced by residents
Existing Setting	The residential dwelling at 302 Railway Parade, on corner of Saywell Parade, is a two-storey building, with open views to the north and west. As shown in Figure 5-6, across Saywell Road to the north is the Council commuter car park – a paved area with light poles and grassed nature strips to the perimeter. Overhead powerline are in the foreground, running parallel to Railway Parade and Saywell Road. The rail corridor is to the west, behind secure wire fencing, and the rail line is slightly lower than the level of the road. The stations elevated walkway is partially visible between trees to the northwest. Mature scattered native trees are visible behind the rail corridor, within Macquarie Links International Golf Club.
Sensitivity	Moderate – viewpoint representative of low number of residential dwellings
Magnitude of change	
Construction	The site compound would be located to the west of Railway Parade, opposite the Council commuter car park, within the foreground view. This would comprise temporary work sheds, vehicles and equipment, surrounding by site hoarding. There would be an increase in activity due to the works. This is considered a temporary moderate adverse magnitude of change for residents.
Operational (year 1)	The site compound would be removed with the nature strip reinstated. Station upgrades including the footbridge would be barely noticeable at this distance, commensurate with existing views towards the station. The magnitude of change is considered negligible.
Key mitigation measures	No mitigation
Visual impact ratings	
Construction	Moderate sensitivity + moderate magnitude of change = **moderate adverse visual impact**
Operational (year 1)	Moderate sensitivity + negligible magnitude of change = **negligible visual impact**

Figure 5-6 View from Railway Parade/Saywell Road looking north towards station

MF04	**Location: Station platform** Proposal: foreground View experienced by commuters
Existing Setting	The existing view from Platform 1 (Figure 5-7) comprises two concrete platforms, with fencing to either side and light poles. A further rail line (for passing trains) is visible and located to the northwest side, however it is not accessible via the platform. An elevated walkway links the platforms over the rail line, accessible by stairs. The elevated walkway has an undistinguished aesthetic, made from a steel structure, visually permeable safety screens and corrugated steel roof. Tree planting to the east of the platform screens the southwest end of platform from Railway Parade. Scattered native trees are visible to the west within Macquarie Links International Golf Club with golf fairways not visible from the platform.
Sensitivity	Low – commuters temporarily waiting on platform
Magnitude of change	
Construction	Platform works and footbridge installation and demolition would be visible in the foreground by train commuters on the platform. A temporary station access would be installed to ensure that commuters are safely distanced from works. The magnitude of change is considered moderate adverse, experienced temporarily by commuters.
Stage 1 Operational (year 1)	See Figure 5-5 MF02: Proposal at day 1 of operation. The station upgrades visible from the platform comprising new footbridge, building extensions, as well as new canopies; with platform resurfacing and new lighting less noticeable. The upgrade is commensurate with the existing rail infrastructure, at a slightly larger scale due to the lift shafts. The design is of a more contemporary aesthetic, including use of brick, steel and glass materials. The magnitude of change is considered low – beneficial.
Key mitigation measures	Clearing or trimming some of the existing mass planting to the southwest of the station beside Platform 2 (far right of image), to improve passive surveillance between the street and platforms.
Visual impact ratings	
Construction	Low sensitivity + moderate magnitude of change = **moderate-low visual impact (adverse)**
Operational (year 1)	Low sensitivity + low magnitude of change = **low visual impact (beneficial)**

Figure 5-7 MF04: View from the south end of the station platform

Figure 5-8 MF04: Proposal at day 1 of operation (photomontage). Indicative only, subject to detailed design

5.2 Visual Impact Assessment Summary

The four viewpoint assessment ratings are summarised in the below table, for construction and operational visual impacts.

Table 5-2 Summary of visual impacts

			Construction		Operational	
Viewpoint number and location		**Receiver sensitivity**	**Magnitude of Change**	**Visual impact**	**Magnitude of Change**	**Visual impact**
MF01	59 Alexander Crescent, north of station	Moderate	Moderate adverse	**Moderate (adverse)**	Moderate adverse	**Moderate (adverse)**
MF02	276 Railway Parade, opposite station entrance	Moderate	Moderate adverse	**Moderate (adverse)**	Low beneficial	**Moderate-low (beneficial)**
MF03	302 Railway Parade, south of station	Moderate	Moderate adverse	**Moderate (adverse)**	Negligible	**Negligible**
MF04	South end of station platform	Low	Moderate adverse	**Moderate-low (adverse)**	Low beneficial	**Low (beneficial)**

6 Urban landscape character assessment

The assessment of urban landscape character impacts considers impacts of the Proposal against both local planning objectives and project design objectives, including:

- Landscape character
- Urban form
- Connectivity and perceptions of safety

The impacts are assessed during the construction phase and day one of operation.

6.1 Urban landscape character impacts

6.1.1 Construction

Landscape character

The construction and demolition works are being undertaken within the existing rail corridor (LCZ 1) with some works to the streetscape at the front of the station. There are no direct impacts to character zones LCZ 2 Residential or LCZ 3 Parks and recreation.

Urban form

There are limited changes to the urban form during construction, with works being within the land zoned rail corridor and smaller changes made to the street, with pavement and kerb updates to the bus stop and station entrance. During construction, existing canopies and the footbridge are to be removed and then replaced, with structures of commensurate scale.

Connectivity and perceptions of safety

Temporary access would be provided during construction to retain platform access from Railway Parade.

A construction management plan would incorporate safety and surveillance; therefore perceptions of safety would not be reduced for any of the character zones.

Summary of construction impacts

Overall, there would be a temporary, minimal reduction in the landscape and urban design functionality and landscape character of the station precinct during construction. The Transport corridor (LCZ 1) would be subject to temporary high adverse magnitude of change, resulting in a moderate urban and landscape character impact. The changes would have minimum impact on the pedestrian accessibility and a low magnitude of change to the residential street (LCZ 2), already influenced by commuters accessing the rail corridor. There are no impacts to the urban and landscape character of the adjacent residential parks and recreation (LCZ 3).

6.1.2 Operational

Landscape character

There are minimum impacts to the LCZs, with the Proposal upgrading existing public transport elements in a highly modified environment.

In response to landscape objectives, the design plan includes:

- new paving and updated bus zone, including shelter and furniture at the station entry, to provide enhanced local transport connections.
- minimal impact on local vegetation. This is achieved through improved streetscape to Railway Parade by the provision of new street trees and soft landscaping at the station entrance. Trees proposed for removal (including five trees within raised planters at the station entry), are proposed to be replaced with tree species appropriate for their space, to minimise adverse impacts. Tree replacement is to be in accordance with the Transport Tree and hollow replacement guideline (Transport, 2023).
- Inclusion of creative initiatives into the design to enhance community engagement, cultural connections and character. Public art could be applied to the footbridge/lift structure façade, station entry retaining walls or screens; being further developed in the detailed design phase and involve consultation with community stakeholders.

The Proposal aligns with the objective of respecting and enhancing the existing local character of the area. While the specific future character is not stipulated in the LSPS, the design makes provisions to enhance qualities and characteristics of the locality. Overall, the Proposal seeks to carefully consider landscape character and urban design principles to create a harmonious and connected environment that respects the local context. The Proposal has no direct impacts on the residential (LCZ 2) and park (LCZ 3) character zones.

Urban form

The Proposal upgrades existing public transport facilities and there are limited changes to the existing layout; responding to design objectives including:

- Height requirements: The height of the footbridge roof matches the existing, with the top of the lift shafts 2.5 metres taller, however remains in the context of the existing station and separated from the adjacent residential form.
- The station entrance is framed by bus shelters to either side and a widened footpath and pedestrian crossing.
- The use of contemporary materials including visually permeable screens, encourages high-quality outcomes that are of an appropriate design and scale to complement its setting and that enhances and encourages a safe and healthy environment.

The proposed urban form impacts consider the existing context of the station, separate from adjacent residential areas (LCZ 2), while incorporating features such as framed entrances, widened footpaths, contemporary materials, and appropriate design to enhance the environment and providing necessary improvements to the overall pedestrian experience.

Connectivity and perceptions of safety

The Proposal has little impact on pedestrian connectivity to and from the station, only to improve accessibility for people with disability, older people, people with prams or luggage and others who may be experiencing mobility problems. In addition, the new pedestrian crossing at the station entry across Railway Parade, would provide improved safe crossing and help define the entrance location.

- The station entry, platforms and car park are generally lit at night. The new lighting within the covered walkway is set to improve lighting levels. Increased lighting along with closed circuit television (CCTV) would have a beneficial impact on perceptions of safety for night-time users.
- There are pockets of poor visibility that hinder passive surveillance, such as between the north-west end of the platform and Railway Parade, which is screened by vegetation. There are no changes proposed to this.
- The Proposal for the station upgrade is intended to support urban growth and renewal. By improving the station's access, updating canopies, and implementing a new lift shaft, the design aims to contribute to increased public transport patronage and accessibility for all. This is expected to bring greater value to the neighbourhood and contribute to its overall improvement and development.

- The station entrance has improved wayfinding through signage, use of feature materials, widening of path to improve pedestrian access and providing a pedestrian crossing at Railway Parade.

Overall, there would be a low improvement to the urban design functionality and landscape character of the station precinct (LCZ 1), resulting in a low beneficial urban and landscape impact during operation. The Proposal has no direct impacts on the residential (LCA 2) and park (LCZ 3) character zones.

6.1.3 Summary of urban landscape character impacts

The urban landscape character assessment ratings are summarised in the below table, for construction and operational impacts.

Table 6-1 Summary of Landscape and urban impacts

			Construction		Operational	
Viewpoint number and location		**Sensitivity**	**Magnitude of Change**	**Urban and landscape impact**	**Magnitude of Change**	**Urban and landscape impact**
LCZ 1	Transport corridor	Low	High	**Moderate adverse**	Low beneficial	**Low (beneficial)**
LCZ 2	Residential	High	Low	**Moderate adverse**	Negligible	**Negligible**
LCZ 3	Parks and recreation	High	Negligible	**Negligible**	Negligible	**Negligible**

7 Summary and recommendations

7.1 Landscape and Visual mitigation

Construction

Construction impacts are difficult to avoid, with mitigation covered by the CEMP. The key urban design, landscape and visual elements to consider during construction include:

- Consolidate construction elements within a site compound and provide screening of site compound from public areas.
  - Consider public art and or heritage information on site hoarding to provide visual interest to mitigate adverse effects of the works, for the community.
- Minimise impact on sensitive receivers such as residential properties through careful consideration of interface between station and work zones.
- Limit tree removal and protection of existing trees, tree root and landscaped zones.

Operational

There are low to negligible landscape, urban design and visual impacts. The following recommended mitigation measures provide further beneficial impacts and mitigate some potential adverse impacts to be considered in the detailed design phase.

- Incorporate creative initiatives into the Proposal to enhance community engagement, cultural connections and character.
- Investigate space to plant street trees to the north side of Railway Parade would provide improved streetscape amenity, shading of parked cars and screen some of the rail corridor elements. This would result in some screening of the footbridge for residents to the east of the station.
- Improvement to passive surveillance between the street and platforms would be achieved through clearing or trimming some of the existing mass planting to the south-west of the station beside Platform 2.

7.2 Conclusion

The station is adjacent a low-density residential area in which a low number of residents would be sensitive to change. The Proposal comprises structural and surface upgrades to improve accessibility within the rail corridor, with some updates to the bus zone and station facilities adjacent Railway Parade.

During construction the Proposal is likely to have temporary moderate to moderate-low adverse landscape character and visual impacts, experienced by visual receivers close to the works. These urban and visual impacts can be managed by measures stipulated within the CEMP.

The most significant modification that the Proposal makes is the change in position (80 metres down line) for the footbridge, its shape and the lift shafts which are 2.5 metres taller than the existing footbridge. These changes have minimal impact on the urban landscape character, being that the Proposal is an upgrade of the existing station facilities and the position and layout remains in the rail corridor. The change in position has a moderate adverse visual impact on those residents to 59 Alexander Parade (as assessed in MF01) and closer to the footbridge.

Low beneficial impacts result from improved pedestrian functionality and contemporary design for other residential receivers.

The Proposal achieves local planning and design objectives, including:

- Landscape character – the station has the potential to enhance the character of the area with the use of contemporary materials and use of artwork to facades. Vegetation removal is limited to near the station

entrance, where new planting including trees and groundcovers would provide improved landscape amenity.

- Urban form – there is limited changes to the existing urban layout, with the scale and form compatible with a station in a residential area.
- Connectivity and perceptions of safety – improved lighting, and visual permeability provided through design of structures and materials, create a more open area with improved visual surveillance.

In considering the overall potential impacts and proposed mitigation measures outlined in this LCVIA, the Proposal is **unlikely to significantly affect the environment** including urban and landscape character; or visual amenity.

References

Australian Institute of Landscape Architects, Guidance Note for Landscape and Visual Assessment, June 2018.

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