LEVEL CROSSING REMOVAL PROJECT

LEVEL CROSSING REMOVAL AUTHORITY

STATION STREET/BONDI ROAD, BONBEACH

URBAN DESIGN GUIDELINES

27/02/2018

VERSION C

AECOM GHD JOINT VENTURE

VICTORIA State Government

LXRA-LX31-46-UD-RPT-1001

DRAFT

#	ROLES AND RESPONSIBILITIES		STATUS	DATE	NOTES
1	PROJECT DIRECTOR	A			
2	DIRECTOR - ENGINEERING AND PROGRAM SERVICES	C			
3	SENIOR PROJECT MANAGER (FOR SITE)	R			
4	UDAP WORKING GROUP	E			
5	MANAGER - TECHNICAL SERVICES	C			
6	PROGRAM WIDE PLANNING AND ENVIRONMENT SPECIALIST	C			
7	ACTIVE TRANSPORT - TRAFFIC ENGINEER	C			
8	DEVELOPMENT MANAGER	C			

Roles and Accountability

RACI MATRIX	
Responsible (R)	The individual(s) who perform(s) an activity - responsible for action / implementation.
Consulted (C)	The individual(s) to be consulted prior to a final decision or action being taken.
Endorse (E)	The individual(s) who need(s) to endorse key decisions, actions or deliverables.
Accountable (A)	The individual who is ultimately accountable, including yes/no authority and power of veto.
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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

1.2 PROJECT SUMMARY

1.3 DOCUMENT PURPOSE

1.4 DOCUMENT STRUCTURE

1.5 METHODOLOGY

1.6 URBAN DESIGN FRAMEWORK

1. INTRODUCTION

1.1 PROJECT SUMMARY

By 2020, the Level Crossing Removal Authority (LXRA) will oversee the removal of 50 dangerous and congested level crossings across Melbourne and perform vital rail corridor upgrades, including rail extensions and duplication works (refer to Figure 1).

The Level Crossing Removal Program is designed to:

- Improve the reliability and efficiency of transportation networks, through reducing overall congestion;
- Enhance the urban amenity of local areas; and
- Create safer, better connected, liveable and thriving communities.

The LXRA was formed in May 2015 to oversee the delivery of the project and to ensure that level crossings are removed in a coordinated and efficient manner. LXRA's vision is *'delivering great change, by transforming the way Victorians live, work and travel'*. This vision is underpinned by 5 strategic objectives, including a commitment to creating great places.

LXRA and the AECOM-GHD Joint Venture (Technical Advisor), have led site investigations, functional and reference design packages, and the preparation of associated requirements and guidelines, to support the removal of level crossings at each nominated location. Stakeholder engagement and community consultation is an important part of this process, to ensure that stakeholder and community considerations are suitably addressed in the design and delivery of the project.

Further design development, construction and delivery works are now being delivered by LXRA through Program Alliance partnerships with leading industry specialists. Design and construction works for each site have been prioritised and staged to ensure that critical crossings are addressed as a priority and transport route delays and other impacts are minimised.

This project has the potential to set strong benchmarks and act as a catalyst for positive urban renewal that reinvigorates and reconnects communities. In order to create a lasting legacy, innovative and high quality urban design is key to the success of the project.

ALTONA LOOP
30 Kororoit Creek Road, Williamstown North

BELGRAVE
38 Mountain Highway, Bayswater
42 Scoresby Road, Bayswater

CRAIGIEBURN
7 Buckley Street, Essendon
22 Glenroy Road, Glenroy

CRANBOURNE
1 Abbotts Road, Dandenong South
48 Thompsons Road, Lyndhurst

FRANKSTON
40 North Road, Ormond
3 Balcombe Road, Mentone
10 Centre Road, Bentleigh
13 Charman Road, Cheltenham
18 **Edithvale Road, Edithvale**
19 Eel Race Road, Carrum
35 McKinnon Road, McKinnon
43 Seaford Road, Seaford
44 Skye Road, Frankston
46 Station Street, Bonbeach
47 Station Street, Carrum

GLEN WAVERLEY
8 Burke Road, Glen Iris
49 Toorak Road, Kooyong

HURSTBRIDGE
23 Grange Road, Alphington
31 Lower Plenty Road, Rosanna

LILYDALE
6 Blackburn Road, Blackburn
26 Heatherdale Road, Ringwood
33 Manchester Road, Mooroolbark
34 Maroondah Highway, Lilydale

PAKENHAM
11 Centre Road, Clayton
15 Clayton Road, Clayton
29 Koornang Road, Carnegie
39 Murrumbeena Road, Murrumbeena
12 Chandler Road, Noble Park
17 Corrigan Road, Noble Park
24 Grange Road, Carnegie
27 Heatherton Road, Noble Park
41 Poath Road, Hughesdale
16 Clyde Road, Berwick
25 Hallam Road South, Hallam
45 South Gippsland Highway, Dandenong

SOUTH MORANG
5 Bell Street, Preston
28 High Street, Reservoir

SUNBURY
32 Main Road, St Albans
21 Furlong Road, St Albans
36 Melton Highway, Sydenham

UPFIELD
4 Bell Street, Coburg
9 Camp Road, Campbellfield
37 Moreland Road, Brunswick

WERRIBEE
2 Aviation Road, Laverton
14 Cherry Street, Werribee
50 Werribee Street, Werribee

WILLIAMSTOWN
20 Ferguson Street, Williamstown

*Not in priority order

Disclaimer: Sites are numbered for identification purposes only. Numbering does not indicate order of removal.

Figure 1: Level Crossing Removal - Project Map

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1.2 SITE OVERVIEW

This Urban Design Guidelines Report has been prepared for the Station Street/Bondi Road Level Crossing Removal Project in Bonbeach.

The level crossing is located approximately 80 metres south of Bonbeach Station on the Frankston rail line. The station sits within the Bonbeach Neighbourhood Centre. The broader area is predominantly residential and within the vicinity of the Port Phillip Bay foreshore.

The boom gates at Station Street/Bondi Road level crossing are down for an average of 45 minutes during the weekday peak (between 7:00am and 9:00am), impacting travel times for approximately 4,400 motorists who travel over this crossing each day. The existing level crossing also poses a danger to pedestrians moving along and through Bondi Road.

The Station Street/Bondi Road Level Crossing Removal project will be delivered by the Southern Program Alliance.

1.3 DOCUMENT PURPOSE

The purpose of this Urban Design Guidelines (UDGs) document is to illustrate and describe the key urban design objectives and outcomes sought for the Station Street/Bondi Road Level Crossing Removal Project.

The Urban Design Guidelines have been prepared to build on the principles, objectives, measures and benchmarks of the LXRA Urban Design Framework (UDF). It outlines site specific urban design requirements the design is to achieve by:

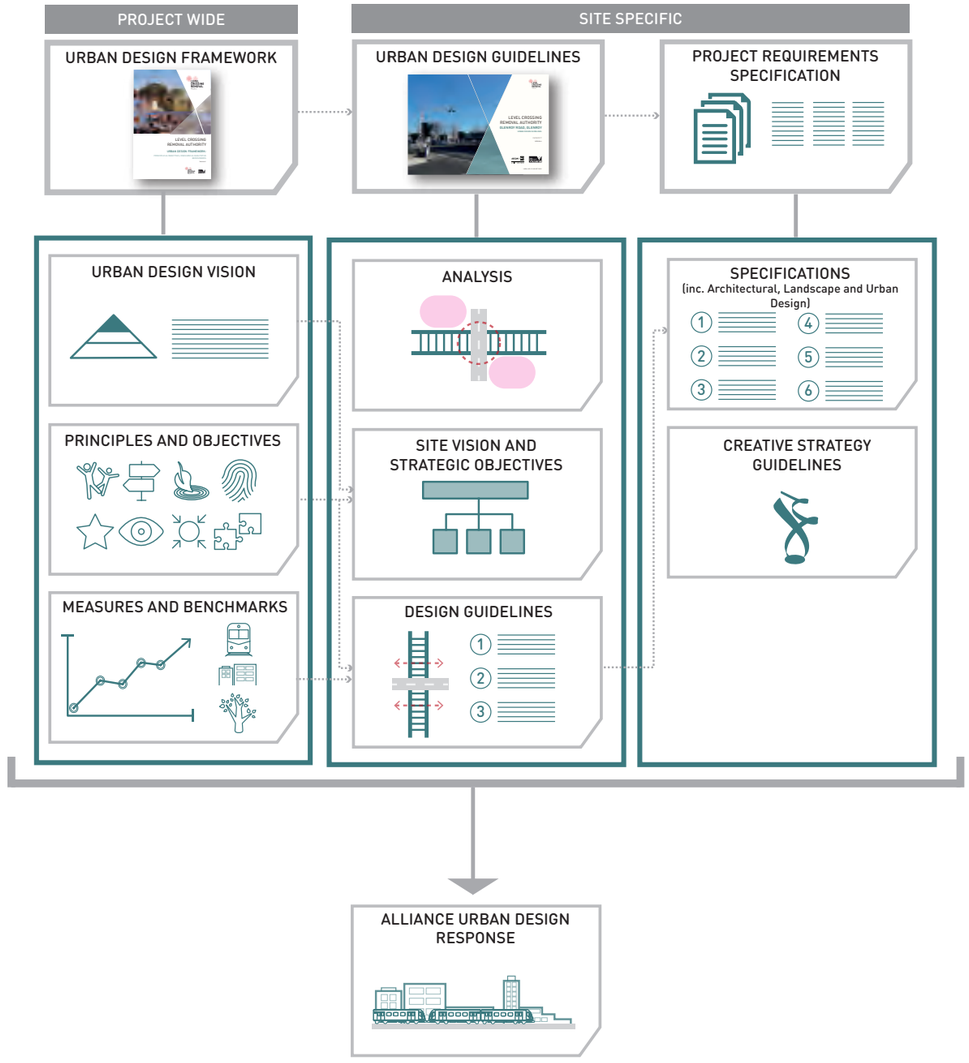
- Identifying key issues and opportunities for improving connectivity, amenity, functionality and place-making for the site and surrounding precinct;
- Articulating the broader urban design vision and strategic objectives for the site; and
- Establishing guidelines for the project, according to the urban design principles.

Further detailed urban design specifications also form part of the Project Requirements Specification (PRS).

The strategic objectives and guidelines set out by this document consider the management and mitigation of project risks that have been identified as part of the Environmental Effects Statement (EES) process for the Edithvale and Bonbeach sites. As such, the UDGs have been incorporated into the Environmental Performance Requirements (EPRs).

The analysis of policy and the existing context areas contained within this document should be read in conjunction with other relevant EES reports.

Figure 2: Urban Design Requirements



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1.4 DOCUMENT STRUCTURE

The Urban Design Guidelines document is structured in six (6) main parts, as outlined below:

SECTION 1: INTRODUCTION

Section 1 provides a summary of background information about the Level Crossing Removal Project and site.

SECTION 2: STRATEGIC PLANNING AND POLICY ANALYSIS

Section 2 identifies relevant state, local and project specific plans, policies and strategies, noting relevant implications for the site.

SECTION 3: CONTEXT ANALYSIS

Section 3 examines the existing site conditions, at a local and regional level and why this is important for the project.

SECTION 4: COMMUNITY AND STAKEHOLDER ENGAGEMENT

Section 4 presents the key considerations and themes that have emerged from stakeholder engagement and community consultation.

SECTION 5: ISSUES AND OPPORTUNITIES

Section 5 summarises issues and opportunities for the site and precinct, based on the preceding analysis and consultation outcomes.

SECTION 6: DESIGN GUIDELINES

Section 6 outlines the overall vision, strategic objectives and design guidelines for the project site which are site specific requirements that Alliance teams must address as part of their design response.

1.5 METHODOLOGY

The methodology and approach that has been taken in preparing the following guidelines, is illustrated in Figure 3.

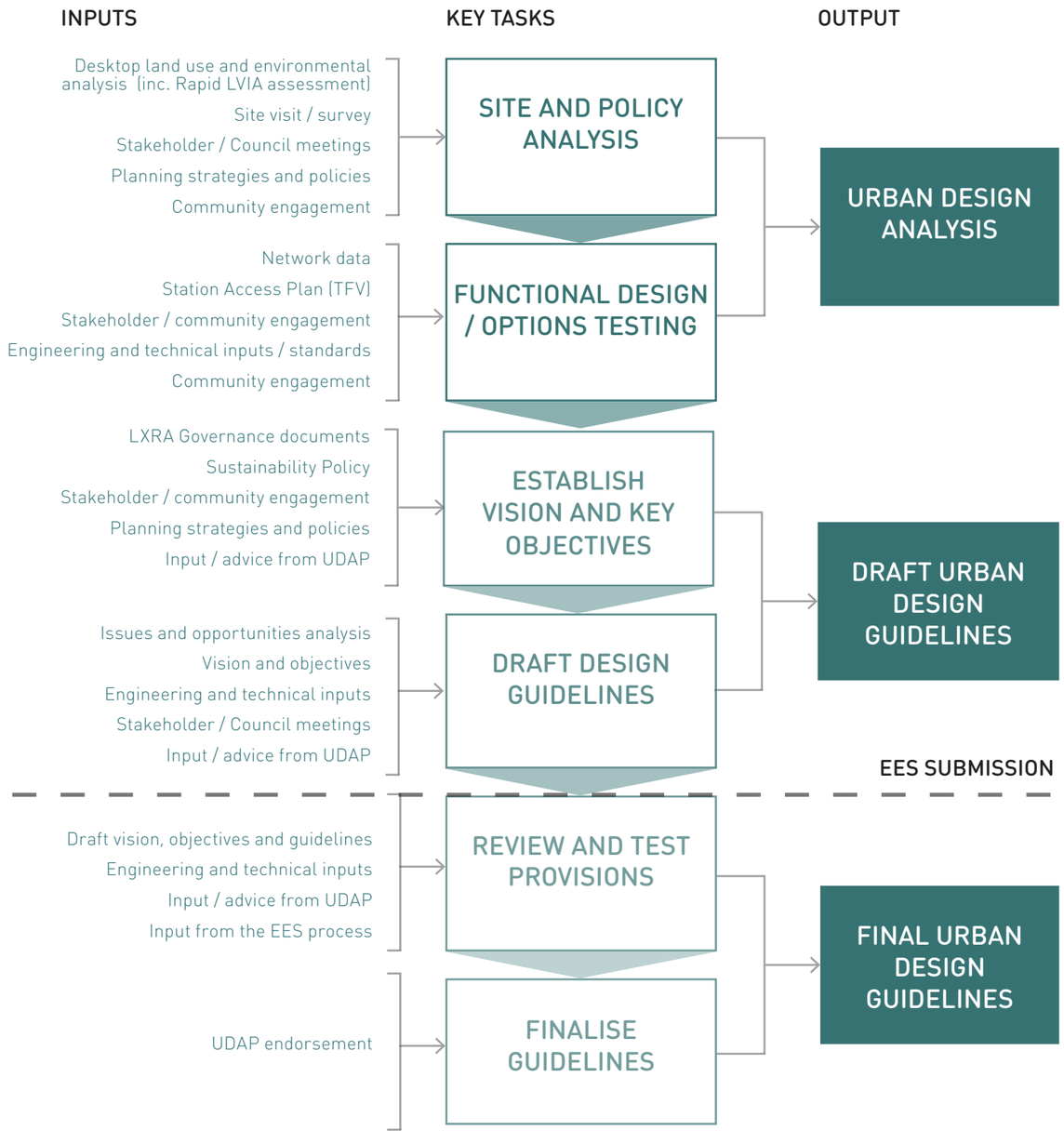
A number of workshops, technical inputs and data sources have been used to inform the guidelines, including:

- Urban Design Advisory Panel (UDAP) and working group sessions;
- Council and key stakeholder workshops;
- Landscape and visual impact assessment (LVIA)
- Civil and transport engineering inputs, including traffic and movement analysis;
- Rail and structural engineering advice;
- Ground engineering and geotechnical engineering;
- Planning and environmental analysis; and
- Advice in relation to utility engineering, fire life safety and building services. station

Periodic review and input from UDAP has been obtained throughout the development of the guidelines, to ensure the provisions satisfy the objectives and interests of the State.

This document has been prepared in conjunction with the LXRA Urban Design Advisory Panel (UDAP). UDAP comprises members from across government with specific professional expertise in architecture, urban design, strategic planning, transport planning and landscape architecture.

Figure 3: Methodology



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1.6 URBAN DESIGN FRAMEWORK

The LXRA Urban Design Framework outlines the expectations for achieving high quality, context sensitive urban design outcomes for each project. The document plays a dual role by informing the design process as well as providing a basis for the evaluation of design solutions.

The Framework identifies eight key principles inherent to successful major infrastructure projects (see Figure 4). Stemming from these principles are the urban design objectives which outline what the project should achieve in relation to the broader principles.

Performance measures and benchmarks are also identified in the Framework. They describe more specific requirements that the design must meet and include qualitative benchmark examples that illustrate the level of quality, materials and finishes that are expected.

The measures and benchmarks section of the Framework shall apply in addition to requirements set out in this guidelines document.

Principle 1
IDENTITY
A well defined identity and sense of place are key to creating strong and vibrant communities.

Principle 2
CONNECTIVITY & WAYFINDING
Well connected and legible places contribute significantly to strong economies and healthy, inclusive communities.

Principle 3
URBAN INTEGRATION
Well-integrated environments provide a sound framework for the successful development of great places.

Principle 4
RESILIENCE & SUSTAINABILITY
Places must be sustainable, enduring and resilient in order to support and nurture current and future generations.

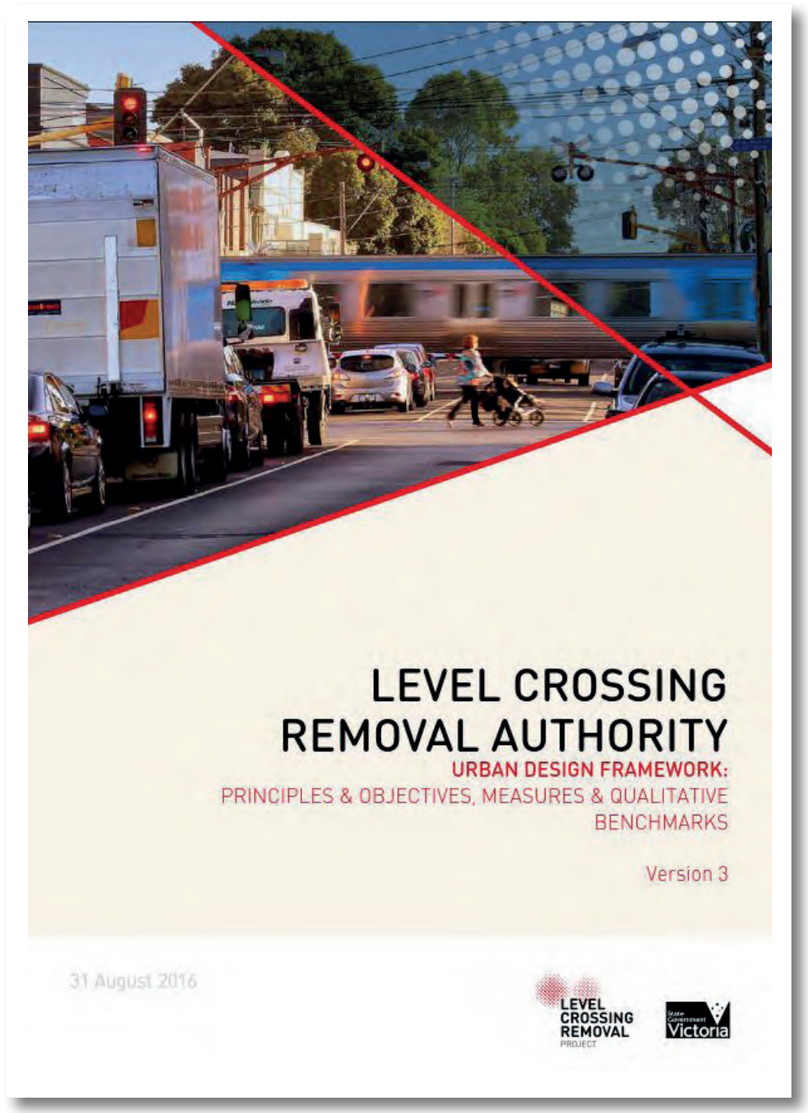
Principle 5
AMENITY
High quality urban amenity associated with access to services and the experience of great public places contributes to successful, equitable and prosperous communities.

Principle 6
VIBRANCY
Animation of key civic spaces, and diversity in the experience of urban places support prosperous and healthy communities.

Principle 7
SAFETY
Safe environments are essential for strong, connected and happy communities

Principle 8
ACCESSIBILITY
Highly accessible and inclusive environments encourage positive activation and contribute to prosperity, well being and the perception of care within communities.

Figure 4: Urban Design Framework



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2.0 CONTEXT ANALYSIS

2.1 REGIONAL CONTEXT

2.2 HISTORICAL CONTEXT

2.3 LOCAL CONTEXT

2.4 DEMOGRAPHICS

2.5 PHOTOGRAPHIC SURVEY

2. CONTEXT

2.1 GEOGRAPHIC CONTEXT

The Station Street/Bondi Road site sits within the City of Kingston, approximately 33 kilometres south-east of Melbourne's CBD along the Frankston Rail Corridor. Travel time via rail from Bonbeach Station is approximately 55 minutes to the city, and 12 minutes to Frankston Station. The rail corridor runs parallel to Nepean Highway from Mordialloc to Carrum, creating a barrier for east-west movement. A number of arterial roads intersect the corridor providing road access to surrounding residential areas, and key employment destinations via the Mornington Peninsula Freeway and Eastlink.

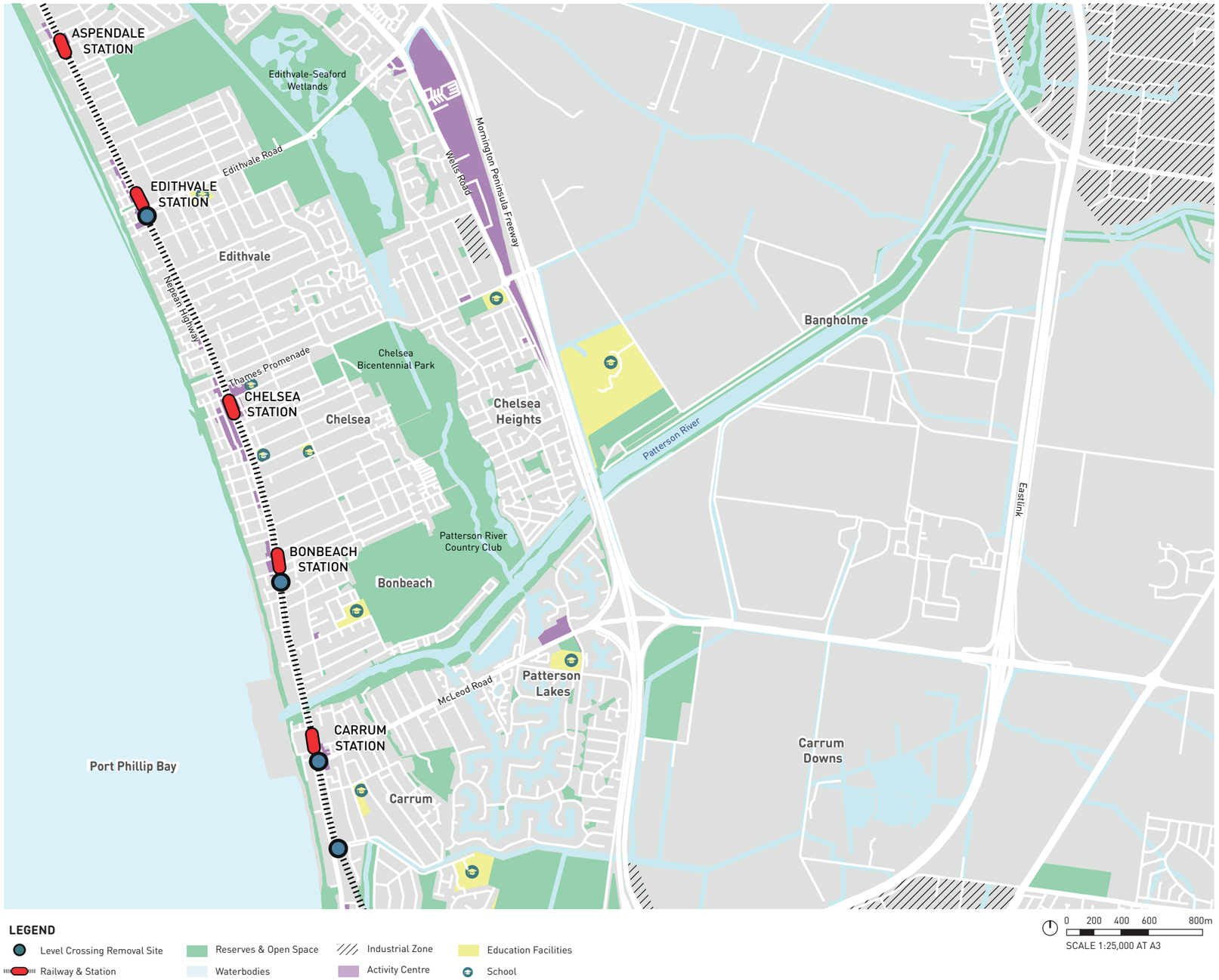
The Frankston Rail Corridor runs through an urbanised area with a mix of building types varying in height and setbacks. The area saw an increase in development during and after the Second World War. Buildings are typically of a suburban scale and style with recent infill redevelopment introducing sub-divided properties, town-houses, and small apartment buildings.

The southern end of the Frankston Rail Corridor predominantly comprises of residential housing and industrial estates. The Edithvale-Seaford Wetlands are located to the east of the rail corridor and are listed as internationally important. There are over 100 different species of birds regularly spotted in the wetland systems, including species of migratory birds from the northern hemisphere.

The corridor traverses a mix of open space amenities including parklands, narrow linear reserves, sport fields, playgrounds, and golf courses. Vegetation mitigates visual impacts and provides green links along most of the rail corridor contributing to the local landscape character. From Mordialloc, the rail corridor is located within close proximity to the coast line, where topography is flat and views to the beach are prominent. Shrubby, low lying coastal vegetation is predominant in the area.

The southern end of the Frankston Rail Corridor predominantly comprises of residential housing and industrial estates. The Edithvale-Seaford Wetlands are located to the east of the rail corridor and are listed as internationally important. There are over 100 different species of birds regularly spotted in the wetland systems, including species of migratory birds from the northern hemisphere.

Figure 5: Regional Context Map



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2.2 HISTORICAL CONTEXT

Figure 6: Historical Timeline

1879 — PATTERSON RIVER CHANNEL
Artificial channel cut to release water from wetlands.

1926 — BONBEACH RAILWAY STATION
Bonbeach station opened in 1926 to improve accessibility from Melbourne to the beach.

1938 — PATTERSON RIVER BRIDGE
Collapsed wooden bridge replaced with a concrete bridge to improve northern commutes.

1950 — RESIDENTIAL GROWTH
Population increase post WWII and subsequent opening of local schools.

1950 — RECREATIONAL FACILITIES
Establishment of four ovals, golf course, and the Patterson River Country Club, providing a number of recreational facilites to locals and Melbourne residents.

2016 — BONBEACH LEVEL CROSSING
Commencement of project to remove the level crossing at Bondi Road /Station Street and create a new station at Bonbeach.

The traditional owners and custodians of the land in and around Bonbeach are the Bunurong people, members of the Kulin Nation. Europeans began farming the area in the 19th century and displaced local inhabitants. The land was used by holiday-makers settling in tents or shacks, before gradually being occupied by more permanent residents.

From 1906 until the late 1940s sand was quarried on the east side of the railway line and used in the manufacture of glass. This land was sold in 1948 and developed into residential blocks, spreading Bonbeach's permanent population from the coastal strip across to the other side of the railway line.

Image 1: Edithvale-Seaford Wetlands

Prior to European settlement in the 19th century the geography of the area consisted of large sand dune complexes on the coast, and wetland areas inland.

Image 2: Patterson River Artificial Channel

In 1879 a channel was created, later called Patterson RIver, cutting the Point Nepean Road to allow trapped water to escape from the swamp, marking the southern boundary of Bonbeach. A wooden passenger and rail bridge was constructed to connect north and south of the channel.

Image 3: Bonbeach Station

The station at Bonbeach opened in 1926, the last to be opened in the group from Aspendale to Carrum. The new station improved accessibility to the beach at Bonbeach, a popular destination for Melbourne beach-goers and people with holiday houses.

Image 4: Patterson River Bridge Upgrade

In 1938 a concrete bridge was constructed to replace the collapsed wooden bridge. This improved transport connections and removed the necessity to travel north via Dandenong.

Image 5: Residential Growth

The population in Bonbeach grew considerably post WWII leading to the opening of primary and high schools, as well as the expansion of the Patterson River Country Club and recreational facilities in the 1950s.

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2.3 LOCAL CONTEXT

LAND USE AND ACTIVITY

RESIDENTIAL

The land use immediately surrounding the Station Street/ Bondi Road level crossing site is predominantly residential land. Lots are generally 500-700 square metres in size, developed in the post war era (1960s).

There has been limited recent redevelopment and no significant intensification of housing in the area, which retains a predominantly low lying coastal residential character.

COMMERCIAL / MIXED USE

The Bonbeach Neighbourhood Centre sits in close proximity to the larger Chelsea Activity Centre to the north and the Carrum Activity Centre and the Frankston Metropolitan Activity Centre to the south. The Neighbourhood Centre is located along Nepean Highway with a few retail shops, comprising exclusively of small tenancies. Locals services and uses range from cafes, small shops, and personal and professional services, however many shop fronts are currently vacant.

Nepean Highway forms a continuous 'high street' environment for the small Neighbourhood Centre with active street frontages of retail shops and overhead canopies.

COMMUNITY FACILITIES

There are a number of community facilities located in the local area. Approximately 450 metres south of the station, along Station Street, is Bonbeach Residential Care and Nursing Home. There are two local schools south-east of the station, Bonbeach Primary and Bonbeach Pre-School. The Bonbeach Life Saving Club is a key community focal point, located approximately 300 metres south-west of the station, and includes a community room and cafe.

OPEN SPACE AND RECREATION

The level crossing site is located within close proximity to a suite of regional recreational destinations including the Port Phillip Foreshore and Patterson River Country Club (part of the Edithvale-Seaford Wetlands open spaces). The Bonbeach Sports Reserve is also in close proximity to the station and provides passive and formal sporting facilities. The area has few smaller, local level open spaces.

A number of beaches are within immediate walking distance of the station, to the west.

Image 6: Bonbeach Life Saving Club

Image 7: Existing Cafés and Retail on Nepean Highway

Image 8: Bonbeach Residential Care and Nursing Home

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Figure 7 - Land Use Analysis Plan

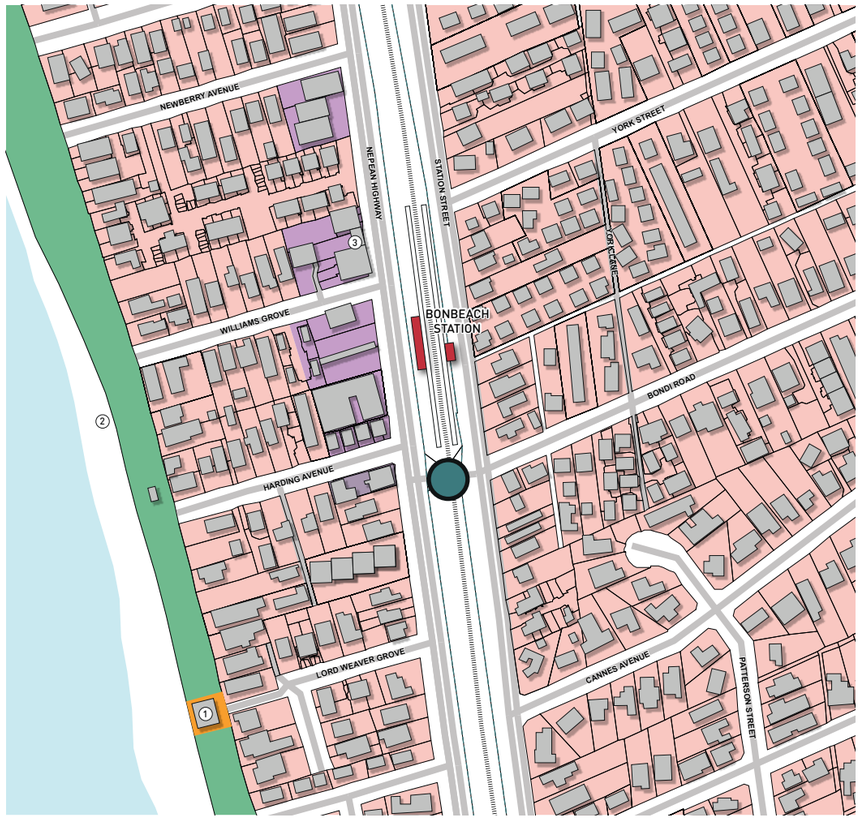
LEGEND

- Level Crossing Removal Site
- Railway & Station
- Victrack Boundary
- Major Roads
- Waterbodies
- Conservation Reserves
- Public Open Space & Recreation
- Community Uses - General
- Residential Area
- Neighbourhood Retail
- Education Facilities
- School
- Religious Facilities
- Sporting Facilities
- Petrol Station

0 40 80 160 240m

SCALE 1:8,000 AT A3

Figure 8 - Land Use Analysis Enlargement



LEGEND

- Level Crossing Removal Site
- Railway & Station
- Built Form
- Platform

SPECIFIC LAND USES

1. Bonbeach Lifesaving Club
2. Bonbeach Beach
3. Bonbeach Shopping Strip

0 20 40 90 120m

SCALE 1:4,000 AT A3

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BUILT FORM AND HERITAGE

BUILT FORM CHARACTER

Retail and commercial development is clustered to the west of Bonbeach Station along the Nepean Highway. Built form is generally single or double storey in height and built to the front boundary.

Existing zones and overlays maintain a maximum building height of two storeys between the railway line and the foreshore. The Kingston Planning Scheme does not specify a maximum building height for land east of the railway line. Nepean Highway and Station Street are predominantly one and two storey built form.

Residential housing predominately interfaces the rail corridor at Bonbeach. Constructed during the 1950s-1960s, dwellings are generally detached and single or double storey in height, even where redevelopment has occurred. Side and front built form setbacks create a well-landscaped coastal suburban character.

Residential interfaces with the railway are exclusively indirect (facing a street that interfaces with the railway line). Nepean Highway is lined with residential frontages that largely address the road with high front fences.

The existing Bonbeach Railway Station building is functional in form. While the station is a local landmark along the Nepean Highway, the building itself is not identified as being of architectural or historical significance.

Small boat sheds and bathing boxes, that have existed since the suburbs earliest days line the nearby beach. While modest in scale, and not directly adjacent to the rail corridor, they are an integral part of the neighbourhood identity.

HERITAGE

There are few sites of local heritage significance within Bonbeach. This includes a residential property at 3 Lord Weaver Grove, the clubhouse at Patterson River Country Club and a Primary School and St Joseph's Roman Catholic Church in Chelsea, north of the site.

It is noted that the above buildings and sites are protected by Heritage Overlays and are not listed on the Victorian Heritage Register.

ABORIGINAL CULTURAL HERITAGE

There are two extensive areas of cultural heritage sensitivity in Bonbeach. This includes coastal land within 200m of the high water mark, as well as the declared Ramsar Edithvale wetlands and 200m surrounds buffer area.

Image 9: 3 Lord Weaver Grove

Image 10: Patterson River Country Club

Image 11: Bonbeach Boat Sheds

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Figure 9 - Built Form and Heritage Analysis Plan

LEGEND

- Level Crossing Removal Site
- Railway & Station
- Victrack Boundary
- Major Roads
- Waterbodies
- Conservation Reserves
- Local Activity Centre
- Heritage Listed Sites
- Area of Cultural Heritage Sensitivity

0 40 80 160 240m

SCALE 1:8,000 AT A3

Figure 10 - Built Form and Heritage Analysis Enlargement

LEGEND

- Level Crossing Removal Site
- Railway & Station
- Platform
- Low Scale Built Form (1-2 storeys)

SPECIFIC LAND USES

1. House - 3 Lord Weaver Grove

0 20 40 90 120m

SCALE 1:4,000 AT A3

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TRANSPORT NETWORK AND ACCESS

STATION ACCESS

Bonbeach Station is an unstaffed station on the Frankston railway line and connects to Melbourne CBD and other activity, employment, and education centres, including Caulfield and Frankston. Services run at approximately 4-16 minute intervals during the AM peak period and at approximately 5-22 minute intervals during the PM peak period. Travel time from Bonbeach to the CBD is approximately 54 minutes.

In 2012, the average weekday patronage at Bonbeach Station was 1,162 passengers. Of these passengers 64.8% walk to the station, 34.2% travel by car, and 1.0% by bicycle.

BUS MOVEMENTS

Bonbeach Station has no connecting bus services; however, the 857 metropolitan bus service stops at the adjacent Chelsea Station and Carrum Station. There are single rail replacement bus stops (both north and south-bound) on Station Street.

VEHICULAR MOVEMENTS AND PARKING

Station Street is a major road with a single traffic lane running in each direction. It runs parallel to the Nepean Highway, north-south from Mordialloc to Carrum and provides a localised connection for cars, buses, and cyclists. It is bisected by Patterson River to the south. Bondi Road is a local traffic street that intersects west at Station Street and Nepean Highway.

The station currently accommodates 35 commuter car spaces to the east of the rail reserve. There are more informal car park spaces on the east and west side of the rail reserve on surrounding roads and streets. Car parking for the Neighbourhood Centre is on-road along Nepean Highway.

ACTIVE TRANSPORT

VicRoads' Principal Bicycle Network (PBN) is designated along Nepean Highway. The PBN connects the site to the Dandenong Creek Trail and runs alongside the Patterson River. Nepean Highway is used by cyclists even though there are no dedicated bicycle lanes.

Currently there is no dedicated Shared Use Path located within the rail corridor. Station Street has some painted on-road cycling/parking lanes and no dedicated cycling space is provided along Nepean Highway.

The rail corridor is bisected by a series of pedestrian crossings. These are located at The Glade and Broadway. Mernda Avenue also provides pedestrian and vehicle crossing access. These crossings are at grade with the railway line and are predominately aligned with existing beach access points.

There are existing pedestrian crossings associated with the Bondi Road, Nepean Highway and Station Street intersections on the north side only.

VicRoads designates Nepean Highway, between Newberry Avenue and Harding Avenue as a pedestrian priority route.

Image 12: Station Street/Bondi Road Level Crossing

Image 13: Existing Station Platforms

Image 14: Bonbeach Station Nepean Highway Access

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Figure 11 - Transport Networks and Access Analysis Plan

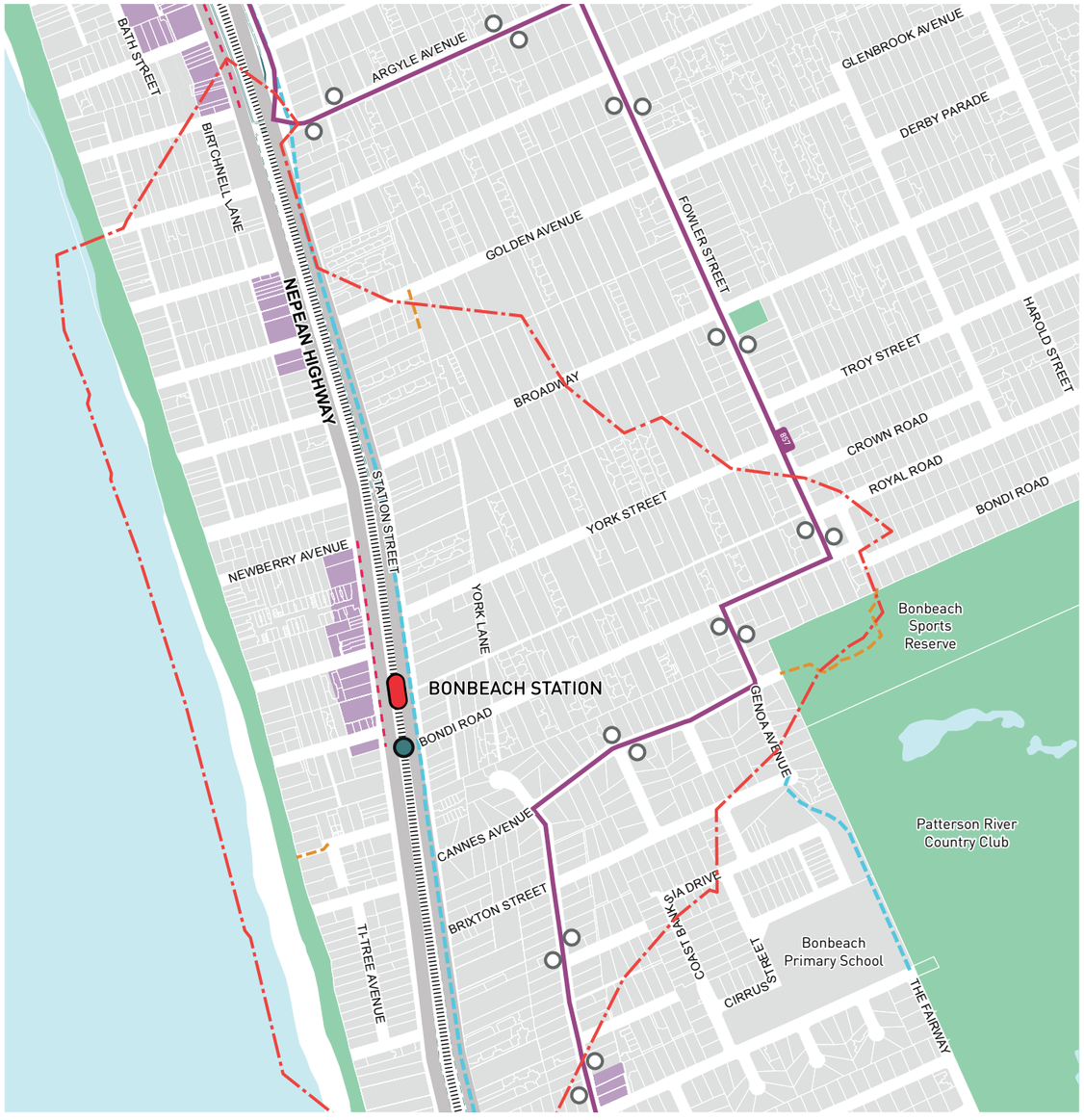
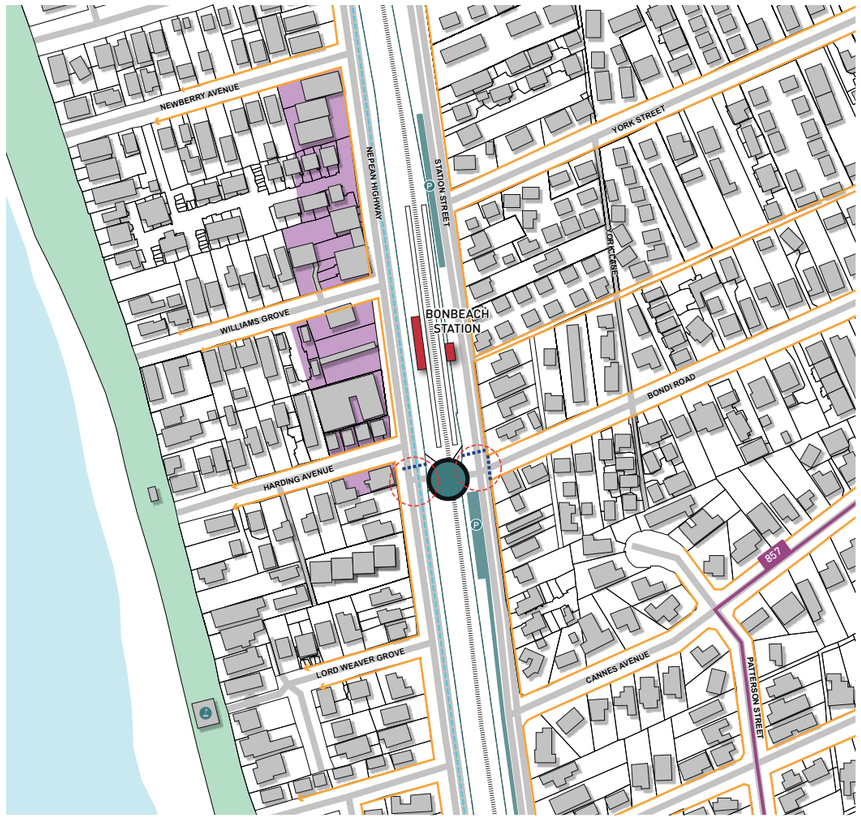


Figure 12 - Transport Networks and Access Analysis Enlargement



LEGEND

- Level Crossing Removal Site
- Railway & Station
- Victrack Boundary
- Major Roads
- Waterbodies
- Reserves & Open Space
- Local Activity Centre
- 10 min walk catchment
- Bus Routes
- Bus Stop
- Principal Bicycle Network (PBN)
- Pedestrian/Shared Use Paths
- Pedestrian Priority Area
- Signalised Pedestrian Crossing
- Pedestrian Level Crossing
- Pedestrian Circulation
- Signalised Intersection
- Principal Bicycle Network (PBN)
- Sporting Facilities
- Station Car Parking

0 40 80 160 240m
SCALE 1:8,000 AT A3

0 20 40 90 120m
SCALE 1:4,000 AT A3

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LANDSCAPE AND PUBLIC REALM

GEOMORPHOLOGY

The geomorphology along the railway line at Station Street/ Bondi Road features Coastal Dune Deposits consisting of sand and silt. Dune blowouts are eroding a series of low unconsolidated ridges along the coast, remnant of a large barrier wetland complex. Drainage schemes and residential development have greatly modified the wetland and barrier terrain. This is the second largest barrier system in Victoria and is an important area for studies of dune, barrier and bar morphology and evolution.

TOPOGRAPHY

The topography is generally flat within the local area and along the rail corridor, which is characteristic of the coastal character of the area. Bonbeach Station sits 5 metres above sea level. The area gradually slopes down east and west of the rail corridor to Port Philip Bay.

LANDSCAPE CHARACTER

The project would have direct and permanent interactions with the low-lying coastal landscape, potentially emphasising the existing line of separation between the beach side western area and the main eastern area of Bonbeach. Vegetation entails a significant landscape value for the project area in that it reflects the broader low, endemic coastal landscape character associated with the Frankston rail line.

For a more detailed analysis of the landscape character of the site, refer to the Landscape and Visual Impact Assessment prepared as part of the EES.

OPEN SPACE NETWORK

Existing local public space is limited to the Bonbeach Sports Reserve which provides for some passive recreation opportunities and facilities for organised sport. Public space within the Bonbeach Neighbourhood Centre is limited to footpaths used by retail/commercial built form. Bonbeach Beach/Port Phillip Foreshore provides passive recreation opportunities for the local community and broader public.

There is no station forecourt at Bonbeach Station and there is limited circulation space around the station entry. Some landscaping is present along Nepean Highway.

NATURAL ENVIRONMENT

The rail corridor is intermittently planted with canopy tree vegetation and under-storey planting, screening views of the corridor from residential and retail/commercial interfaces. The streetscape of the local area has limited canopy vegetation.

Located within the Gippsland Plains Bioregion, established planting and vegetation along nature strips and within the railway corridor provides a green buffer to adjacent residential streets.

There is no ecological vegetation system at the Station Street/Bondi Road, Bonbeach level crossing site. Within the local area, Coastal Dune Scrub can be found predominantly along the foreshore of Bonbeach. The Patterson River Country Club contains Plains Grassy Wetland and Damp Sands Herb-rich Woodland vegetation provide open-grassland/herbland of up to 1m in height along the rail corridor to the north and south.

The Edithvale-Seaford Wetlands are located to the east of the rail corridor. Listed as a Wetland of International Importance under the Ramsar Convention, it is recognised as an important natural habitat for a range of flora and fauna species. This includes over 190 bird species and 14 plant communities, with many of these being of State and regional significance.

Coastal Dune Scrub is predominant along the foreshore of Bonbeach Beach. This indicates deep, uniform textured siliceous and calcareous sands subject to high levels of saltspray, wave action and disturbance from onshore winds, with a structure that is comprised of scrub up to 5 metres in height. Coast Banksia Woodland, also listed as vulnerable, can be found throughout the Edithvale-Seaford Wetlands.

Image 15: Patterson River Country Club Golf Course

Image 16: Edithvale - Seaford Wetlands

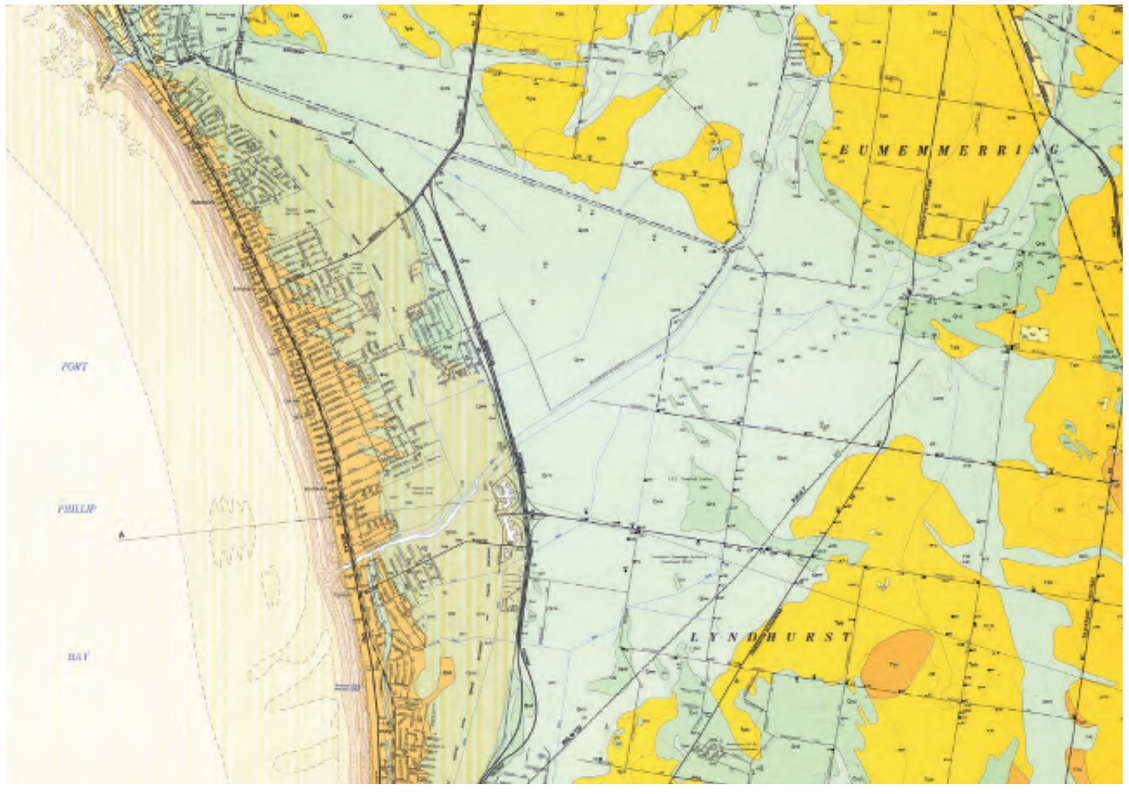

Figure 13: Geomorphological map of area

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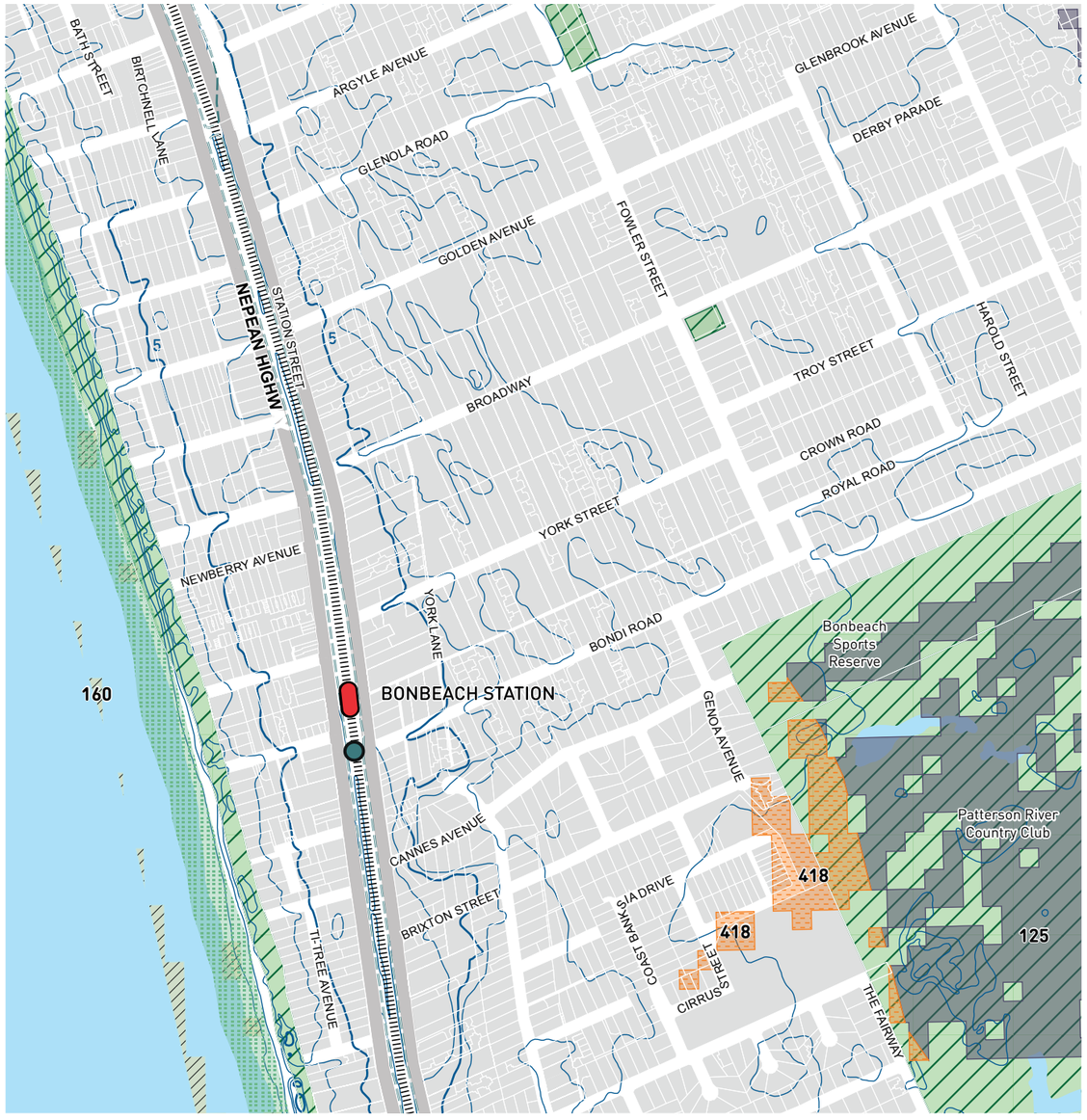
Figure 14 - Landscape and Public Realm Analysis Plan



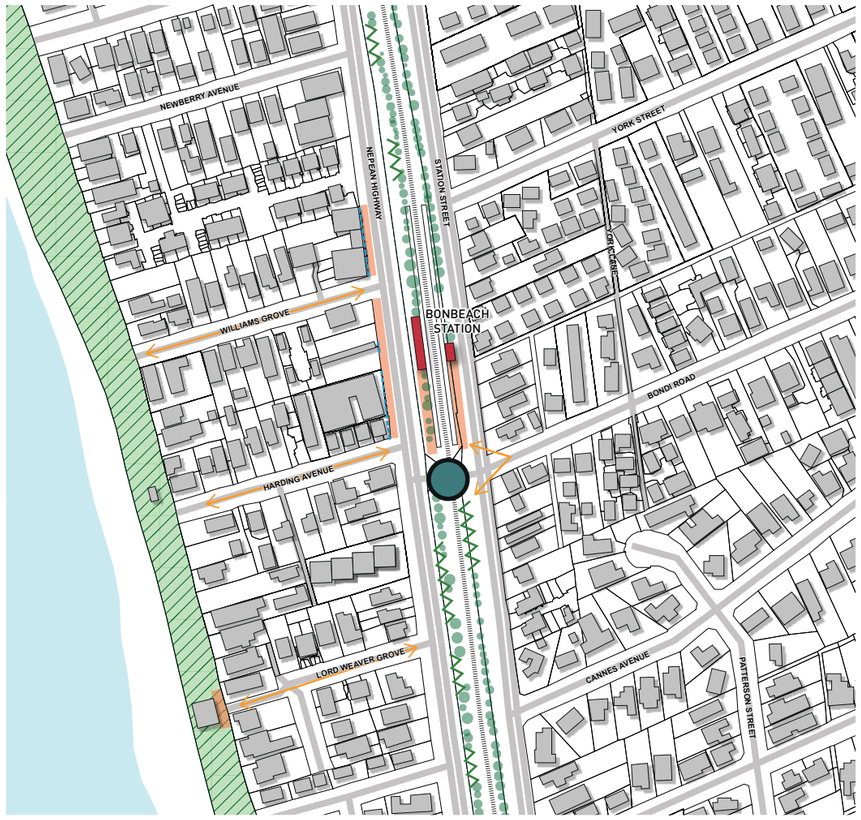
LEGEND

- Level Crossing Removal Site
- Railway & Station
- Victrack Boundary
- Major Roads
- Waterbodies
- Reserves & Open Space
- Conservation Reserves
- 5m Contour Line
- 1m Contour Line
- Coastal Dune Scrub
- Plains Grassy Wetland
- Damp Sands Herb-rich Woodland

0 40 80 160 240m

SCALE 1:8,000 AT A3

Figure 15 - Landscape and Public Realm Enlargement



LEGEND

- Level Crossing Removal Site
- Railway & Station
- Built Form
- Platform
- Public Realm
- Active Frontages & Interfaces
- Key Sightlines
- Mature Vegetation
- Vegetation Buffer Zones
- Streetscape and Corridor Landscape & Vegetation

0 20 40 90 120m

SCALE 1:4,000 AT A3

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2.4 DEMOGRAPHICS

Figure 16 - Key Map - Bonbeach Statistical Area

The following infographics represent a summary of the demographic characteristics for the Bonbeach Statistical Area (SSC20277). The data has been derived from the 2011 and 2016 Australian Bureau of Statistic, Quick Stats and future population forecast data from the City of Kingston Profile id.

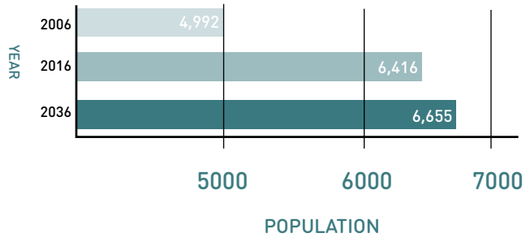
POPULATION PROFILE

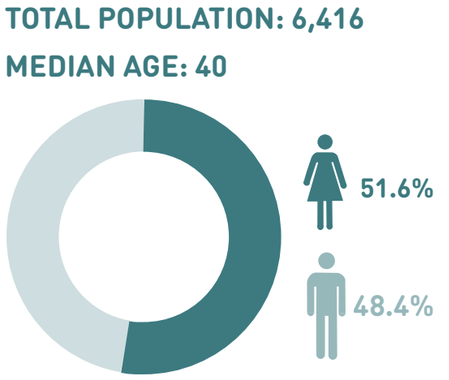
At the time of the 2016 Census, Bonbeach had a population of 6,416 people. The area has recorded a consistent increase in population from 2006 to 2016. While the area is predicted to continue growing up to and past 2036, the rate of growth is lower than present.

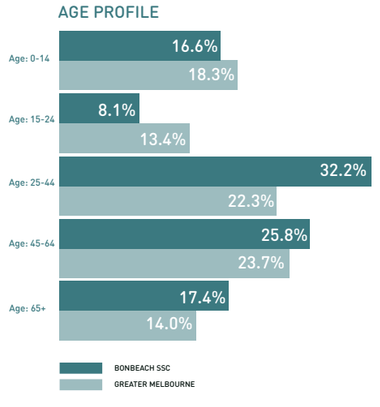
In 2016, the population had a relatively even proportion between male (48.4%) and females (51.6%). The median age was 40, corresponding to the largest age group of 25 - 44 year olds. In comparison to Greater Melbourne, Bonbeach has a smaller portion of younger populations within the 0 - 14 and 15 - 24 year old age groups. Other age groups are larger than Greater Melbourne, with the biggest difference occurring in the 25 - 44 year old age group of 9.9%. Suggesting that Bonbeach has a slightly higher proportion of older individuals than is seen throughout Melbourne.

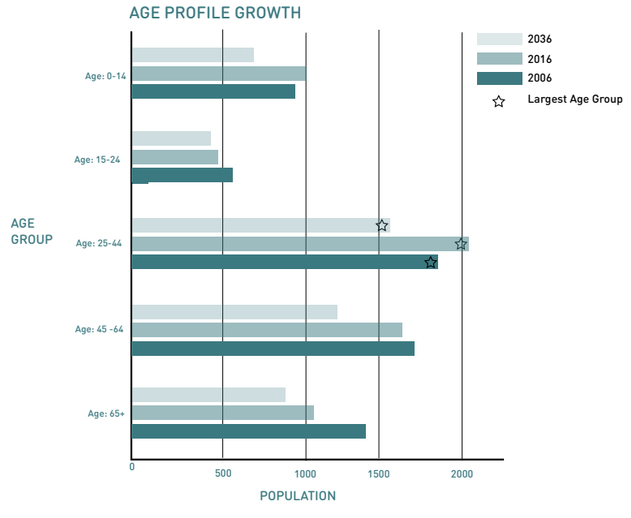
Between 2006 and 2016 all age cohorts increased at a relatively similar rate. However, the 0 - 14 and 25 - 44 year old age groups are predicted to represent a lower prop future population estimates in 2036. All other age groups are slowly increasing in relative share, with a larger jump in population above 65 years old from 2016 to 2036.

Figure 17 - Population Profile and Growth Projections









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DWELLING CHARACTERISTICS

A high percentage of private dwellings within the Bonbeach Statistical Area are occupied (90.7%). The number of dwellings has increased by 335 from 2006 to 2016. While dwelling growth is predicted to increase by 2036, the rate is much lower with only 304 new dwellings over the 20 year period.

Of the occupied private dwellings within Bonbeach, 37.4% of dwelling structure were separate houses, 148.3% were semi-detached terrace houses or town-houses, and 8.3% we flats, units or apartments, with 5.7% classified as other dwellings. This has shown a significant change in dwelling types with dense low storey built form increasing. The volume of separate houses from 2011 decreased by 12.6% (from 50.0%) and flats, units or apartments decreased by 13.6% (from 21.9%), while semi-detached, terrace or town-houses saw a considerable increase of 26.7% (from 21.6%).

The dwelling profile of Bonbeach differs from Greater Melbourne, with semi-detached, terrace, or town-houses having the largest volume. In comparison to Greater Melbourne, Bonbeach has smaller differentiations between volumes of dwelling profiles. Bonbeach has a smaller distribution of separate houses. Within Greater Melbourne the volume of semi-detached terrace or town-house, and flat, unit, or apartments are much closer at 16.8% and 14.7% respectively.

Figure 18 - Dwelling Profile and Growth Projections

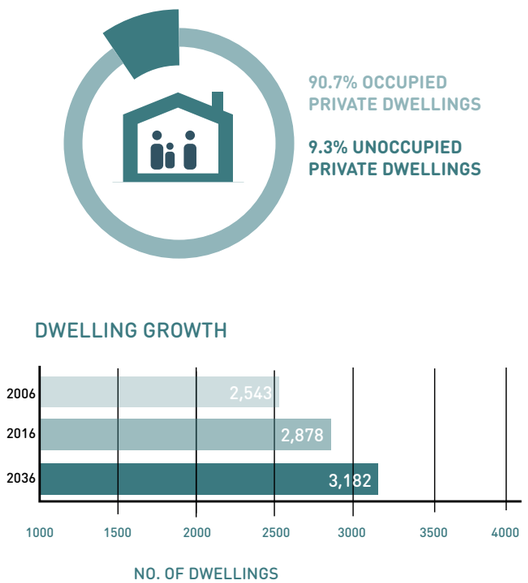
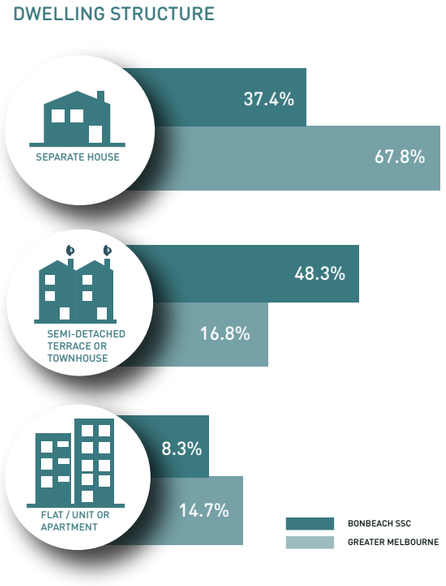


Figure 19 - Dwelling Profile Comparative Analysis

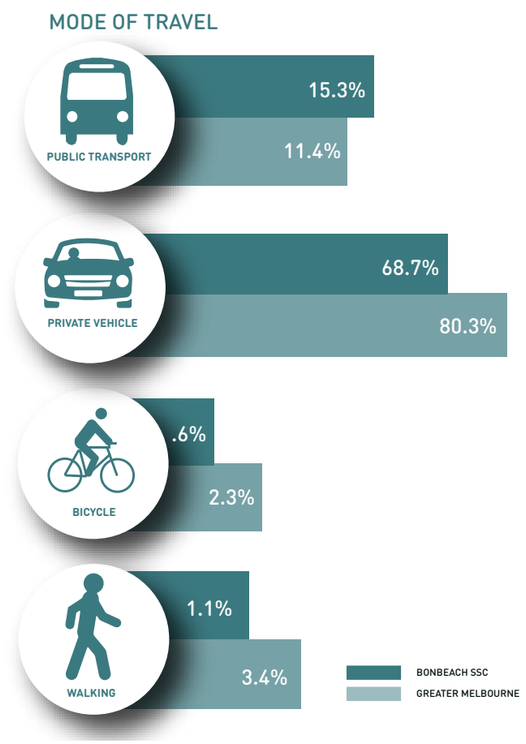


MODE OF TRAVEL

Of the population within Bonbeach, 68.7% of people on an average weekday drive to work. Of these, 3.2% are passengers suggesting that the majority of vehicles are solo-occupied. A further 15.3% travel by public transport, including train, bus, and taxis, while only 0.6% cycled, and 1.1% walked as their only mode of travel.

In comparison to Greater Melbourne, a larger proportion of people catch public transport to work. While slightly smaller proportions drive, it is still significantly the largest mode of transport. Less people use active modes of travel with under 2% cycling and walking in Bonbeach, while percentages are 2 to 3 times higher in Greater Melbourne.

Figure 20 - Modal Share Comparative Analysis



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2.5 PHOTOGRAPHIC SURVEY

Figure 21 - Key Map - Bonbeach Photographic Survey

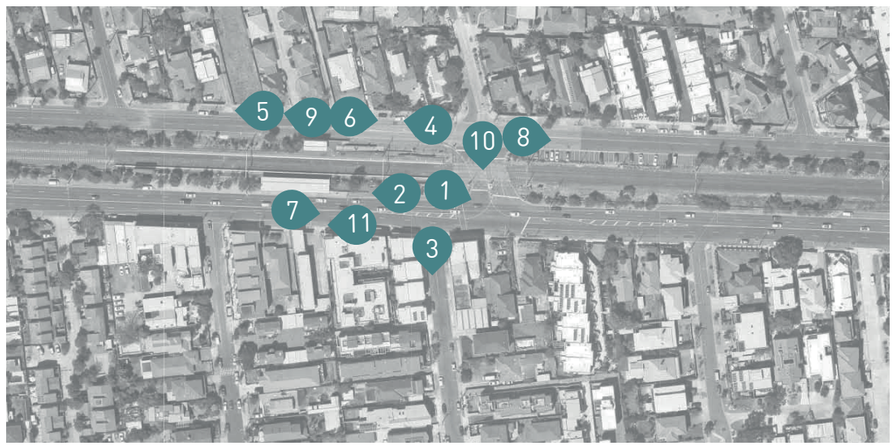

Image 17: Nepean Highway Looking South

Image 18: Nepean Highway Looking North

Image 19: Harding Avenue towards Port Phillip Bay

Image 20: Station Street Looking North

Image 21: Station Street Looking North

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Image 22: Bonbeach Station pedestrian ramp, Station Street looking south

7

Image 23: Bonbeach Station, Nepean Highway Looking South

8

Image 24: Station Street Looking South at Level Crossing

9

Image 25: Station Street looking north from station

10

Image 26: Existing Level Crossing, Looking East

11

Image 27: Commercial Development along Nepean Highway

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3.0 STRATEGIC PLANNING AND POLICY ANALYSIS

3.1 STATE PLANNING POLICY

3.2 LOCAL PLANNING POLICY

3.3 OTHER STRATEGIES

3.4 RELEVANT PROJECTS

3. STRATEGIC PLANNING AND POLICY ANALYSIS

3.1 STATE PLANNING POLICY

PLAN MELBOURNE

Plan Melbourne 2017-2050 sets out the Victorian Government's strategy to manage the long term growth of metropolitan Melbourne and its population. The strategy identifies the infrastructure, services and major projects that are required to support growth, including the level crossing removal project.

Plan Melbourne recognises that the level crossing removal project will improve the efficiency and safety of the arterial road network across Melbourne and will better connect people to job opportunities in key areas, particularly in Melbourne's west and south-east. It is also identified that the project will create opportunities for urban renewal and development

The Station Street/Bondi Road, Bonbeach level crossing is located within Melbourne's Southern Subregion, as identified in Map 13 of Plan Melbourne. The Southern Subregion contains some of Melbourne's most important activity, economic and employment centres, including the Frankston and Dandenong Metropolitan Activity Centres, the Dandenong National Employment and Innovation Cluster.

The population within the Southern Subregion is expected to increase from 1,140,000 people in 2014 to approximately 1,540,000 in 2031.

SOUTH EAST GROWTH CORRIDOR PLAN

The South East Growth Corridor is identified as a substantial economic region in Melbourne that will eventually accommodate a population of 230,000 or more people and has the capacity to provide for at least 86,000 jobs. The South East Growth Corridor Plan recognises the need to enable improved access to important activity and employment areas within the region and to central Melbourne by improving arterial road and public transport connections.

The level crossing removal at Station Street/Bondi Road, Bonbeach will support the South East Growth Corridor Plan by improving the road, public transport and freight network.

STATE PLANNING POLICY FRAMEWORK

The State Planning Policy Framework (SPPF), contained at Clause 9 to Clause 19 of all Victorian Planning Schemes seek to ensure that land use and development policies in Victoria meet the objectives of planning as set out in the State's Planning and Environment Act 1987. The SPPF provides direction on matters to be considered in all planning decisions and seeks to ensure that the needs of existing and future communities are properly planned having regard to a range of factors

The Clauses which are considered to be relevant to the level crossing removal at Station Street/Bondi Road, Bonbeach include Clause 9 (Plan Melbourne), Clause 11 (Settlement), Clause 11.06 (Metropolitan Melbourne), Clause 15 (Built Environment and Heritage), Clause 17 (Economic Development) and Clause 18 (Transport).

3.2 LOCAL PLANNING POLICY

KINGSTON PLANNING SCHEME

The policies and controls contained in the Kingston Planning Scheme apply to the Station Street/Bondi Road level crossing removal.

Clause 21.02 – Location

Clause 21.02 recognises that Kingston is one of the most diverse municipalities in Melbourne that combines substantial residential areas with activity centres, agricultural and non-urban uses, as well as an industrial sector which forms one of the largest and most concentrated manufacturing regions in Melbourne. Transport corridors in Kingston, including the Frankston railway line and important north-south and east-west arterial routes are recognised as important connections to the regions industrial and commercial areas to local, interstate and international markets.

Clause 21.03 – Land Use Challenges for the New Millennium

Clause 21.03 recognises key land use issues which Council has identified which are likely to challenge the future growth and development within Kingston, including protecting and enhancing ecological values.

Clause 21.04-2 – Key Land Use Themes

Clause 21.04 recognises that Kingston's vision for future land use planning and development is expressed around a number of key land use themes, including retail and commercial land use, environment, wetlands and waterways, transport, movement and access and heritage.

Clause 21.06 – Retail and Commercial Land Use

Clause 21.06 seeks to protect and strengthen the hierarchy of activity centres and their different built form character and function by creating opportunities to strengthen the role of public transport, walking and cycling as a means of accessing centres. Bonbeach is not recognised as a activity centre within the Retail and Commercial Land Use Framework Plan. The closest recognised activity centres are located at Chelsea and Carrum.

Clause 21.08 – Foreshore

Clause 21.08 establishes Council's commitment to the ongoing protection of the social, ecological and environmental values of the Kingston foreshore. A key strategy identified by the policy is to provide fair and equitable access to coastal areas by encouraging a range of transport and access options, such as public transport, cycling and walking. This may be supported by pedestrian and cycling trails along the coast and to inland areas including public transport nodes.

Clause 21.09 Environment Wetlands and Waterways

Clause 21.09 acknowledges that the environmental landscape of the City of Kingston is recognised for its diversity and significance in both a local and regional context. It specifically recognises the role of the Edithvale-Seaford wetlands as an internationally significant wetland area and seeks to protect the physical and habitat diversity of the wetlands and maintain the diversity of flora and fauna habitats within Kingston.

Clause 21.12 – Transport, Movement and Access

Clause 21.12 seeks to create a safe, convenient and efficient road network which meets the transport and freight needs of Kingston's residents, businesses, and through traffic. In addition, it aims to integrate public transport, road, pedestrian and cycle systems with activity centres and social and community infrastructure, as a means of providing equitable and safe vehicular, pedestrian and cyclist movement and access for the community.

It recognises the existing road capacity issues causing conflicts between high traffic volumes, activity centres and residential areas in the City of Kingston. Strategies to address this include the establishment of a functional hierarchy of local and regional road networks to improve efficiency and safety; the integration of public transport, road, pedestrian and cycle networks with activity centres, schools, and community facilities to provide equitable access for the community; and the protection and enhancement of amenity of sensitive areas through the appropriate management of transport networks.

Clause 21.13 – Heritage Policy

Clause 21.16 seeks to identify, protect, conserve and manage places or elements of cultural heritage significance within Kingston.

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ZONING AND OVERLAYS

Planning Zones

A number of zones affect the area surrounding the project. These are identified below and the relevant zoning map is shown in Appendix C.

The Bonbeach Railway Station and the rail corridor are affected by the Public Use Zone 4 –Transport (PUZ4). The application of this zone recognises the use of this land for transport purposes.

Nepean Highway is affected by the Road Zone Category 1 (RDZ1). The zone identifies significant existing roads or land that has been acquired for a significant proposed road. Road reservation affected by this zone is managed by VicRoads, who are also the referral authority under the zone.

The land to the north-east, south-east and south-west of the level crossing removal site is located within the General Residential Zone – Schedule 2 (GRZ2). The GRZ2 provides for moderate housing growth up to a maximum of 11 metres, as well as educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.

The land to the immediate north-west of the level crossing removal site is located within the Commercial 1 Zone (C1Z). The C1Z seeks to create vibrant mixed use commercial centres for retail, office, business, entertainment and community uses by providing for a variety of retail, office, business, entertainment, education and community uses. Residential uses at densities complementary to the role and scale of the commercial centre are also encouraged.

A number of zones affect the land beyond the immediate surrounds of the level crossing removal site, including: General Residential Zone – Schedule 3 (GRZ3), Mixed Use Zone (MUZ), Neighbourhood Residential Zone (NRZ), Public Park and Recreation Zone (PPRZ), Public Use Zone – Service & Utility (PUZ1), Public Use Zone – Education (PUZ2), Road Zone Category 2 (RDZ2) and Special Use Zone (SUZ1).

A detailed analysis of the land use zones can be found in the Land Use report prepared as part of the EES.

Planning Overlays

A number of overlays affect the area surrounding the project. These are identified below.

Design and Development Overlay - Schedule 1 (DDO1) and Design and Development Overlay – Schedule 7 (DDO7) applies to land immediately north-west and south-west of the level crossing removal site, between Port Phillip and the Frankston rail corridor. DDO1 seeks to protect and enhance the visual and aesthetic appearance of the Port Phillip foreshore area by ensuring that building heights, bulk and setbacks are compatible with surrounding buildings and natural features, and are sympathetic to the surrounding natural landscape and environment. In addition to these objectives, DDO7 seeks to ensure that new buildings and works are appropriately setback from the Port Phillip foreshore reserve boundary.

A number of overlays affect the land beyond the land in the immediate surrounds of the level crossing removal site, including: Environmental Audit Overlay (EAO), Environmental Significance Overlay (ESO), Development Plan Overlay – Schedule 6 (DPO6), Heritage Overlay (HO), Land Subject to Inundation Overlay (LSIO) and Special Building Overlay (SBO).

3.3 OTHER STRATEGIES

SMARTROADS (VICROADS)

SmartRoads is a policy designed to manage the increasing number of trips taken on roads in Victoria. It aims to address the competing interests for limited road space by giving priority to certain transport modes at particular times of the day. SmartRoads recognises the increasing importance of public transport, walking and cycling as transport modes, and has therefore established a set of guiding principles for the priority use of roads by transport mode, time of day, and place of activity. This ensures that decisions about the operation of the road network support integrated land use and transport planning. Nepean Highway is identified within the policy as an existing arterial traffic route.

PRINCIPAL BICYCLE NETWORK (VICROADS)

The Principal Bicycle Network (PBN) is a network of existing and proposed bicycle routes identified to help people ride to major destinations around metropolitan Melbourne. First developed in 1994, it was recently reviewed to focus more on getting people into activity centres and to make more use of local roads and off-road paths. The current plan was released in 2012. Nepean Highway, the Patterson River shared use trail and the Edithvale-Seaford Wetlands shared use trail is identified within the policy as part of the PBN.

NETWORK DEVELOPMENT PLAN (PTV)

The Network Development Plan is a strategy to address the rapid growth in train patronage across Melbourne's metropolitan network forecast for the next 20 years and beyond. Key strategies of the plan include expanding the capacity of the existing network; the redesign of train services to maximise opportunities for the seamless coordination with buses and trains; and to extend the network into new growth areas. The strategy includes the introduction of a metro-style train system for Melbourne to provide more high capacity and high frequency services.

FRANKSTON CORRIDOR URBAN DESIGN STRATEGY

An Urban Design Strategy for the Frankston Railway Line corridor is currently being prepared by the LXRA. The purpose of the strategy is to identify the urban design opportunities for all level crossing projects undertaken along the Frankston Railway Line by the LXRA and ensure a coordinated approach to the design of the level crossing removal projects.

The Strategy identifies potential actions across State government departments, authorities, agencies, and local government that impact upon or should be considered in the planning and implementation of level crossing removals.

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4.0

COMMUNITY AND STAKEHOLDER ENGAGEMENT

4.1 OVERVIEW

4.2 STAKEHOLDER ENGAGEMENT

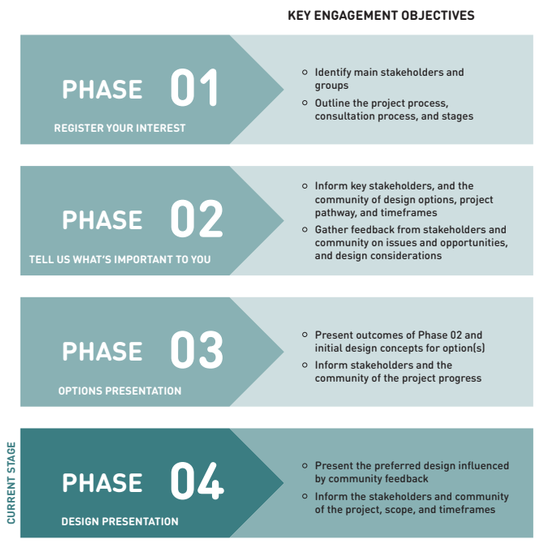
4.3 COMMUNITY CONSULTATION

4. COMMUNITY AND STAKEHOLDER ENGAGEMENT

4.1 OVERVIEW

Community and stakeholder engagement plays an important role in developing and shaping the Station Street/Bondi Road, Bonbeach level crossing removal project. The LXRA has undertaken an extensive engagement program to ensure the Bonbeach community and stakeholders are informed, involved and are able to actively contribute to the development of the level crossing removal project.

Figure 22 - Engagement Phases



4.2 STAKEHOLDER ENGAGEMENT

KINGSTON CITY COUNCIL

Kingston City Council was directly engaged by the LXRA consultation program in meetings, briefings, attendance at information sessions and representation on the Technical Reference Group (TRG). The TRG was formed for the purposes of the EES

Kingston City Council maintains an interest in supporting and promoting a wider mix of commercial, residential and retail uses in Bonbeach Neighbourhood Centre and encourages a consistent built form as the centre develops.

Council have been engaged throughout the development of the station and have been a strong advocate for prioritising and promoting walking and cycling through the provision of safe, attractive and functional infrastructure for active transport users.

METRO TRAINS MELBOURNE AND PUBLIC TRANSPORT VICTORIA

MTM and PTV are responsible for rail infrastructure in metropolitan Melbourne and have developed preliminary patronage forecasts and a range of policies that influence design of the station and the wider station precinct. These include vertical transportation, station layout, car parking provision and service vehicle standards.

Other elements that affect the urban design quality of the project include landscape guidelines, fence and barrier and other safety requirements along the rail corridor developed by MTM. Both MTM and PTV have been actively involved in the development of Bonbeach Station and have provided advice throughout its development.

VICROADS

VicRoads is responsible for the management of the metropolitan road network, with specific responsibility for Nepean Highway as an arterial road and any associated road signals. Strict standards exist for road alignment design, maximum gradients, traffic visibility and height clearances.

Standards that strongly influence the urban design opportunities include minimum clearances between the traffic lanes and roadside hazards, traffic barrier requirements, and the separation of intersections and signals along arterial routes. VicRoads has been actively engaged throughout the design process.

OTHER STAKEHOLDERS

Other key stakeholder groups, whose particular interests and needs have been considered in the development of options, include:

- Chelsea and Bonbeach Station Group;
- Local residents;
- Local traders;
- Local schools;
- Service Authorities;
- Pacific National (freight rail operator),
- Department of Environment, Land, Water, and Planning (DELWP);
- Victorian Planning Authority (VPA); and
- Office of the Victorian Government Architect (OVGA).

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4.3 COMMUNITY CONSULTATION

CONSULTATION PROCESS

Community members have been invited throughout the project to review, discuss and share their feedback in relation to the level crossing removal project. Four phases of engagement have been undertaken to date.

From February 2016 to June 2016, awareness-raising and feedback gathering activities created opportunities for local communities to learn about the level crossing removal project and to share what is important to them in their local area.

During this period, nine community information sessions were held with 500 community feedback forms, 4,500 pieces of online feedback and over 200 phone/email enquiries received from local residents, community groups and traders.

The initial feedback, alongside the technical investigations, helped to identify two viable options for the level crossing removals – a rail bridge under Station Street/Bondi Road and a rail bridge over Station Street/Bondi Road. Community feedback on the two options was sought through the next phase of consultation, which was carried out in September/ October 2016.

In November 2016, the recommended rail under road option was presented to the community. Further feedback and local knowledge was also sought to shape the details of the option ahead of the tender process. This included a community workshop to capture local ideas and views about the project, undertaken in September 2017.

In addition to the formal engagement activity, LXRA staff spoke with concerned residents to discuss the project design solution, answer questions, hear concerns and capture views on the detailed aspects of the projects at Bonbeach.

EMERGING THEMES

A number of themes have emerged from the community consultation exercises undertaken to date. These include:

- Importance and value of the landscape character and further enhancement along the whole of the rail corridor;
- Desire to balance user needs so that all users and all transport modes are catered for equitably to ensure that the solution benefits a broad cross section of the community; and
- The need for the design and materials to respond to and reflect the valued natural coastal setting and emerging architecture.

Community and stakeholder feedback will be used as part of the EES process. It will also be used during the project's tender and detailed design phase to further shape the project and deliver positive outcomes for the Bonbeach community.

Figure 23 - Community Consultation Snapshot

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5.0 ISSUES AND OPPORTUNITIES

5. ISSUES AND OPPORTUNITIES

Figure 24 - Issues and Opportunities Analysis

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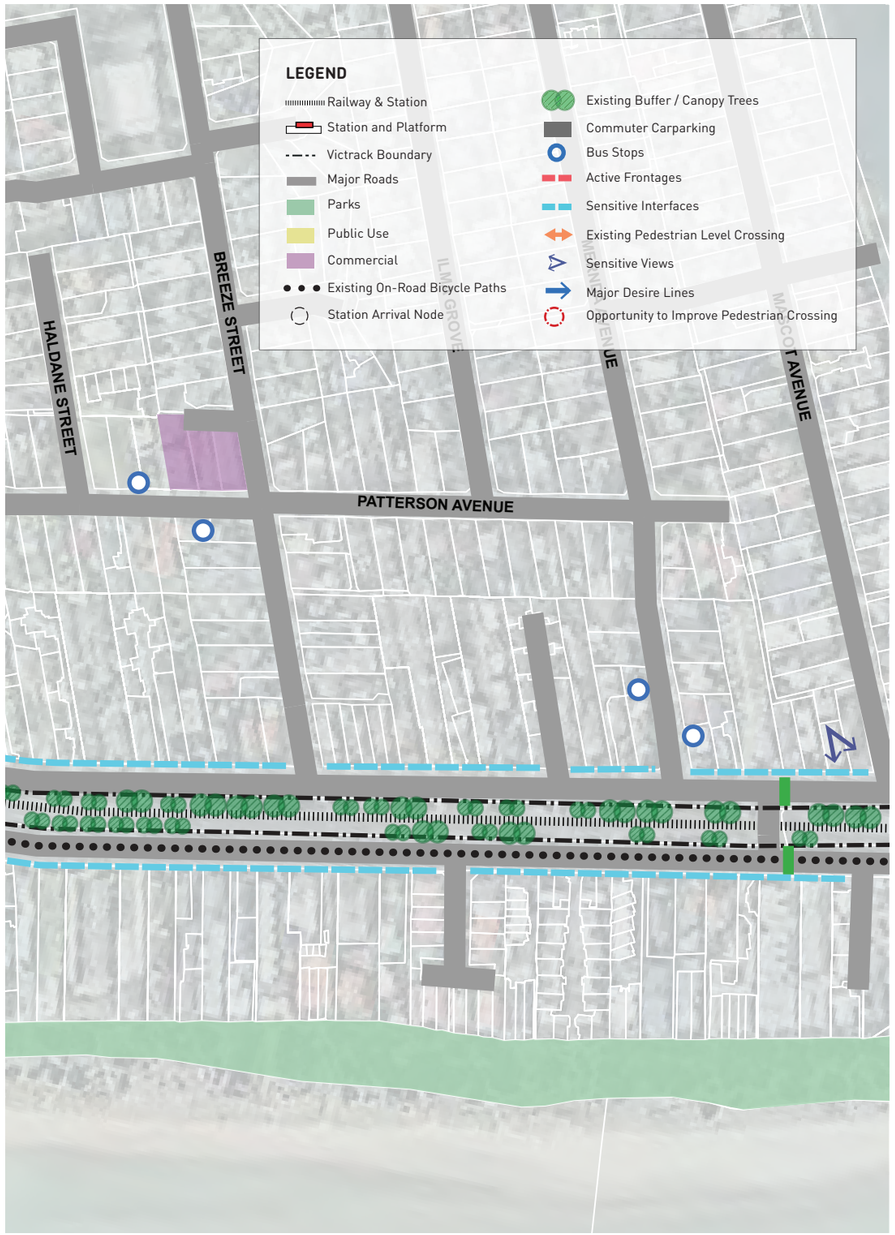

Based on the preceding analysis presented in this document, a number of issues and opportunities for the project site have been identified that the guidelines address. It is expected that design teams may identify further issues and opportunities through their analysis. These are summarised below:

ISSUES

1. Proximity of residential uses along the length of the rail corridor, which may be sensitive to visual and noise impacts.
2. The narrow configuration of Station Street and Nepean Highway either side of the rail line which restrict the amount of space available for all modes of transport, particularly pedestrians.
3. Limited pedestrian access between residential housing tothe east of the rail corridor and local destinations to the west.
4. Poor pedestrian crossing amenity and safety at existing road intersections.
5. Limited space available within the rail corridor to accommodate significant planting.
6. Discontinuous and low grade planting along the rail corridor.
7. Operational and design standards of road and rail infrastructure that may limit additional planting opportunities.
8. Protection of landscape values related to the Edithvale-Seaford Wetlands.
9. Unsafe car parking along Nepean Highway which encourages pedestrians to informally cross the road.

OPPORTUNITIES

1. Provision of better local access to the Neighbourhood Centre along Nepean Highway and recreational and foreshore spaces opposite the station.
2. Better visual and physical integration of the station precinct with the foreshore.
3. Enhancement of the existing streetscape and public realm character of the area that is considerate of the existing built form and streetscape of the Neighbourhood Centre.
4. Opportunity to provide a built form outcome that responds to heritage and civic elements in the area and strengthens the quality of the local built form character.
5. Improved views towards the rail corridor from surrounding uses on parallel streets.
6. Provision of additional pedestrian crossing opportunities over the rail corridor.
7. Improvements to the Station Street/Bondi Road and Nepean Highway intersection to provide additional crossing opportunities.
8. Improvements to the customer and public transport facilities at Bonbeach Station.
9. Provision of safe and improved walking and cycling infrastructure along the length of the rail corridor.
10. Improvements to the safety, location, access and number of car parking spaces.
11. Enhance visual and physical links to open space and recreational amenities.
12. Provision of planting to support the landscape and character of the local area.
13. Provision of a localised bus route and services connecting at the station precinct.

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6.0

DESIGN GUIDELINES

6.1 GUIDELINES STRUCTURE

6.2 VISION

6.3 DESIGN GUIDELINES

6.4 DESIGN GUIDELINE PROJECT SECTIONS

6. DESIGN GUIDELINES

6.1 GUIDELINES STRUCTURE

There are three parts to the design guidance:

(1) VISION

The vision statement (set out in Section 6.2) puts forth the ambition of the level crossing removal for the Station Street/ Bondi Road level crossing site. It is site specific and has been developed based on advice and input from the Urban Design Advisory Panel (UDAP).

(2) STRATEGIC OBJECTIVES

The strategic objectives are high level performance outcomes underpinning the vision and drafted for each principle, which must be achieved through the design response.

(3) DESIGN GUIDELINES

The design guidelines are more targeted and outline how the design response should achieve the principles within the Urban Design Framework. The guidelines are not based on a reference design for a single preferred option, but rather are intended to apply to all options. Further design innovation is encouraged, to better achieve the project objectives and vision.

The design guidelines set out in this section, are structured in 3 main parts, as illustrated in Figure 25. The guidelines set out site specific performance outcomes and design requirements, that must be achieved for the Station Street/ Bondi Road, Bonbeach site.

ROLE OF GUIDELINES

While the guidelines have been prepared as a requirements document to direct the Alliance's design response, it is not intended to preclude further design innovation.

The guideline provisions address urban design matters, primarily built form, movement and landscaping elements. It covers requirements for three urban contexts, including the station precinct, the transition zone between the station and the wider precinct, and the corridor and wider precinct area (Refer to Figure 26). This concept has been adapted from the model established by VicRoads for some of the early level crossing removal projects.

The design guidelines have been shaped by the preceding analysis, community and stakeholder engagement, and broader urban design principles, objectives and standards set out in the Urban Design Framework.

The guideline provisions have been developed according to the overarching UDF principles, and design considerations noted in Table 1, for the different contexts.

Figure 25 - Urban Design Guidelines Structure

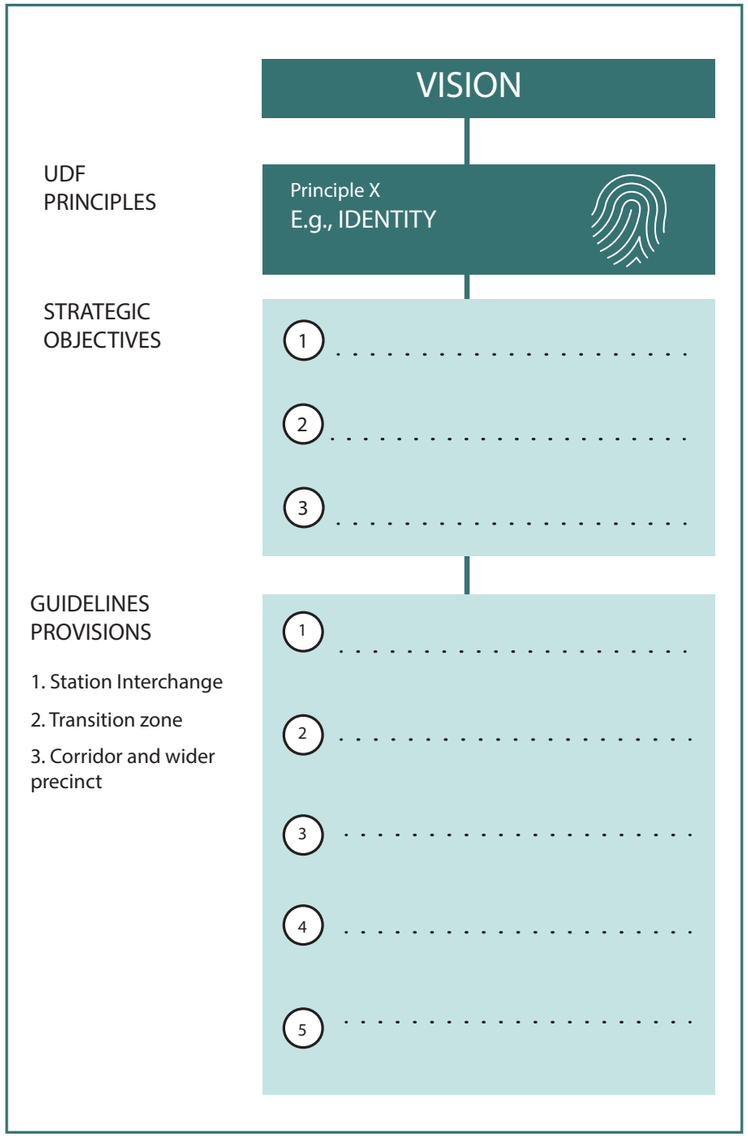
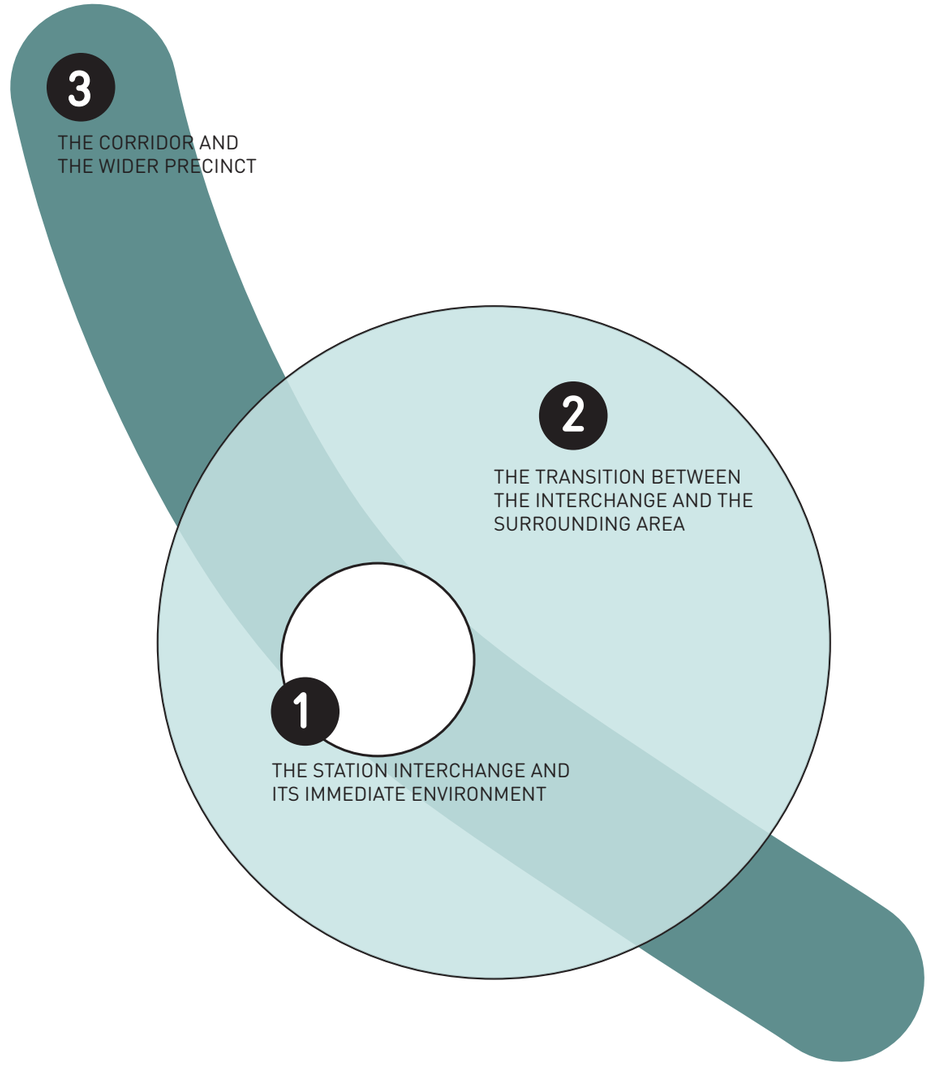


Figure 26 - Urban Contexts



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6.2 VISION

The Station Street/Bondi Road, Bonbeach Level Crossing Removal Project will create a high quality and lasting local landmark that will strengthens the landscape character of the rail corridor. Upon completion, the project will connect the surrounding public spaces, enhance the attractiveness of the Bonbeach Neighbourhood Centre, and improve transport access and amenity across Bonbeach.

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6.4 DESIGN GUIDELINES

PRINCIPLES 1 AND 3: IDENTITY + URBAN INTEGRATION

STRATEGIC OBJECTIVES

1. STRENGTHEN THE LOCAL NEIGHBOURHOOD CHARACTER

   The design response should respond to and complement the existing built form and public realm character of Bonbeach to create a cohesive neighbourhood centre.

2. PROTECT AND STRENGTHEN COASTAL LANDSCAPE

   The local landscape character should establish a sense of place that is specific to Bonbeach by referencing and integrating existing species found along the rail corridor and on the foreshore.

3. INTEGRATE THE STATION WITH THE NEIGHBOURHOOD CENTRE

   Create a cohesive station precinct and neighbourhood activity centre through design detail and visual cues.

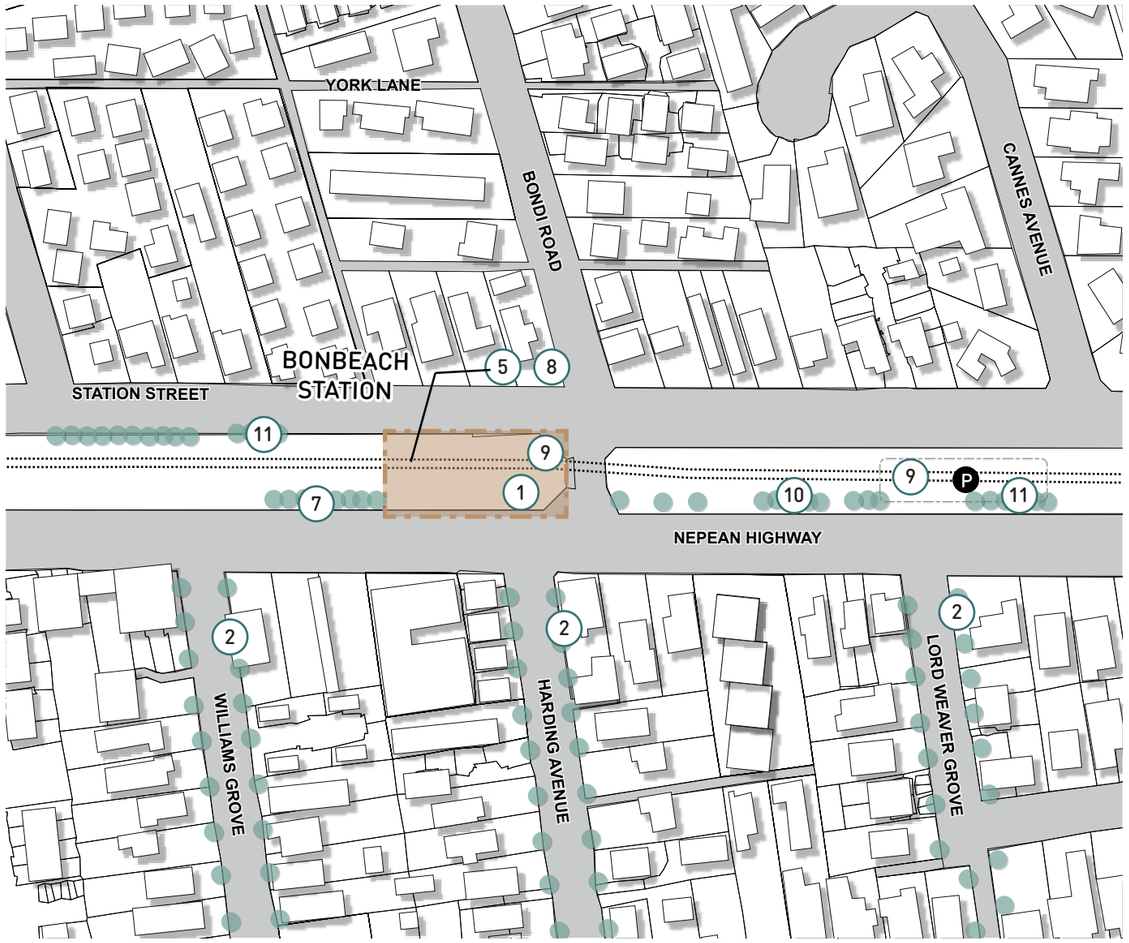
4. MINIMISE POTENTIAL VISUAL IMPACTS

   The design should minimise or address visual amenity impacts to sensitive interfaces along the rail corridor and ensure that the station design and landscaping maintain and enhance key viewlines from adjacent public places and from key streets.

GUIDELINES

1. The scale, materials, textures and colours of the station building must respond to and complement the prevailing low scale, modest, coastal character of the surrounding area. The use of natural materials, colours, and textures should be used prominently as appropriate.
2. Explore opportunities to extend elements of the project's public realm design into Williams Grove, Harding Avenue and/or Lord Weaver Grove that further integrates with the key elements of the coastal identity of Bonbeach (including the beach boxes and the Surf Life Saving Club).
3. Maintain some continuity of design detail, materials and forms used in other Frankston Railway Line projects, especially the Edithvale, Carrum and Seaford Level Crossing Removal projects.
4. Provide an integrated design response to fencing, barriers and pedestrian overpasses along the rail corridor that are consistent with the character and quality of the station building, and provides visual interest at both pedestrian and passing vehicle scales.
5. High quality public realm materials, details and landscaping should be incorporated into the design of the station plaza.
6. Provide a high quality terminus view of the rail corridor from local streets that intersect with Station Street and Nepean Highway through landscaping or public realm/built form detailing, particularly Broadway, Williams Grove, Harding Avenue, Bondi Road, Lord Weaver Grove, and Cannes Avenue.
7. Avoid additional road barriers through the considered location and specification of any built form and significant canopy trees outside of VicRoads prescribed clear zones along Nepean Highway and Station Street, or securing any possible waivers and exemptions.
8. Ensure any advertising signage within the rail corridor does not dominate the public realm or detract from the architectural design intent and landscaping of the station precincts and rail corridor, particularly at the terminus of views from local streets.
9. Minimise or manage light spill from station buildings and car parking to sensitive land uses adjacent to the rail corridor such as housing and retail within the Bonbeach neighbourhood centre.
10. Maximise opportunities to reinstate or establish coastal tree species, shrubs and other landscaping along Nepean Highway and Station Street to provide a visual buffer to the built form elements.
11. Provide an integrated landscape strategy that uses planting opportunities along both sides of Station Street and Nepean Highway as a way of strengthening the landscape character of the corridor and provide high quality and positive visual outcomes.
12. Minimise pavements along the Nepean Highway interface where continuous cycling and pedestrian movement is not required in order to maximise the landscape potential of this part of the corridor.
13. Provide indented roadside car parking arrangements along both Station Street and Nepean Highway kerbs where car parking is provided in order to accommodate street tree planting.

Figure 28 - Identity and Urban Integration Guidelines Enlargement



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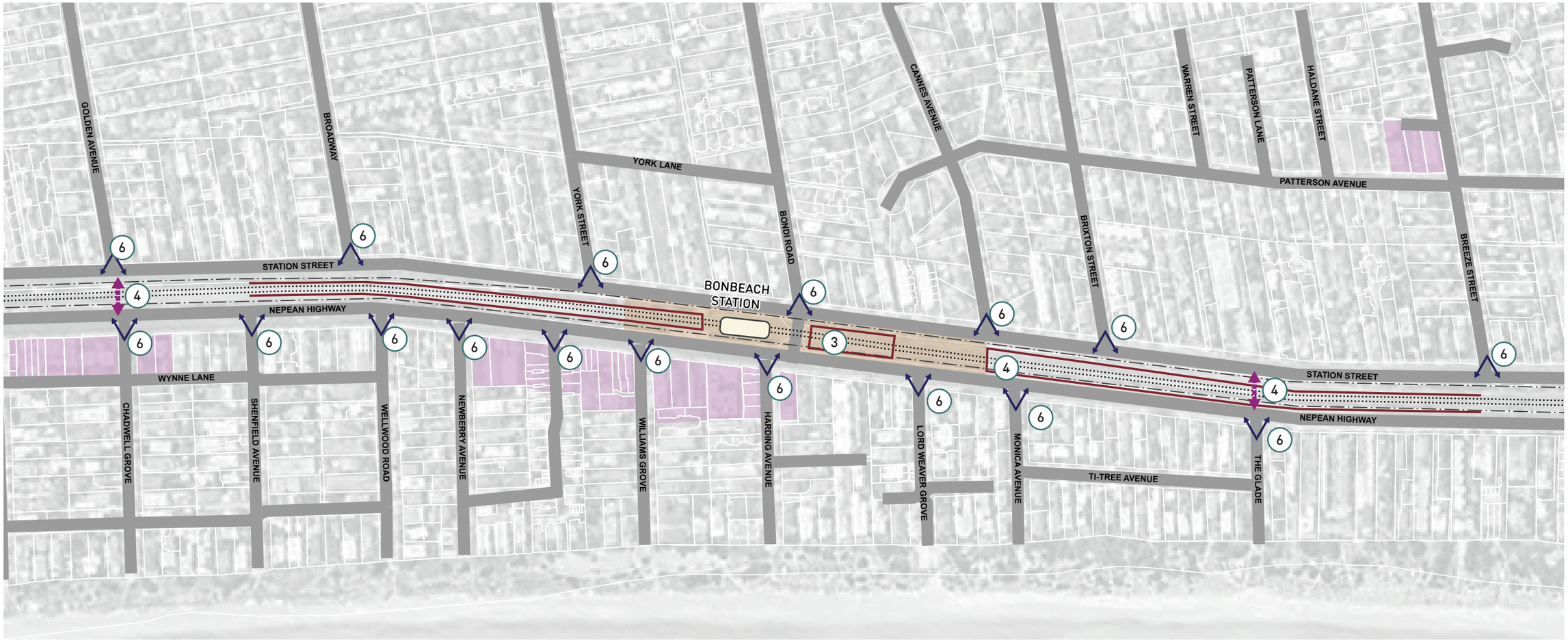
PRINCIPLES

IDENTITY
A well defined identity and sense of place are key to creating strong and vibrant communities.

URBAN INTEGRATION
Well-integrated environments provide a sound framework for the successful development of great places.

Figure 29 - Identity and Urban Integration Guidelines Plan



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6.4 DESIGN GUIDELINES

PRINCIPLES 2 AND 8: CONNECTIVITY AND WAYFINDING + ACCESSIBILITY

STRATEGIC OBJECTIVES

1. IMPROVE CONNECTIVITY TO THE STATION

   The design response should improve and establish connections that provide safe, direct movements to and from the station with the broader area from existing networks for all modes of transport establish safe and direct inter-modal connections.

2. PRIORITISE ACTIVE TRANSPORT MODES

   The design and arrangement of the precinct shall prioritise the safety and amenity of pedestrians and cyclists over private vehicles to encourage use of active transport modes to access the station.

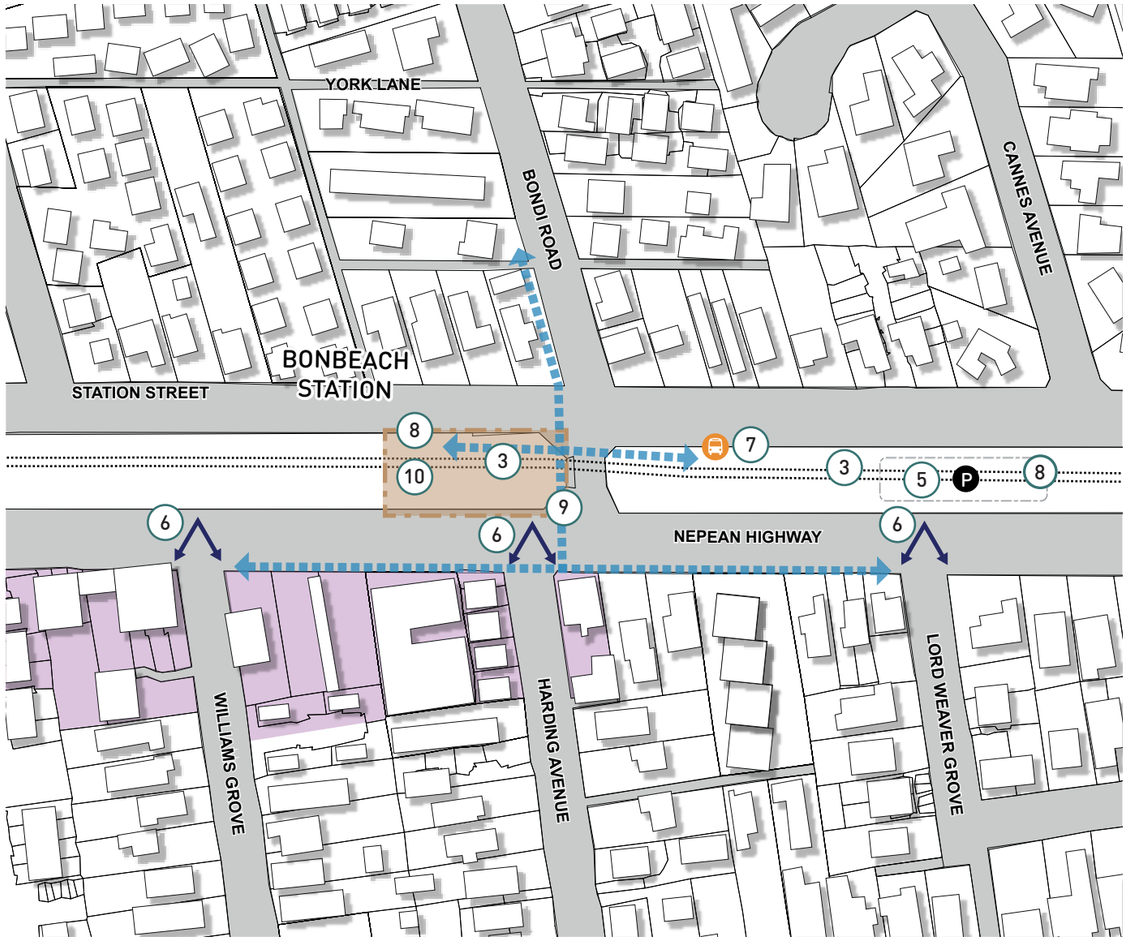
3. PROVIDE A UNIVERSALLY INCLUSIVE DESIGN

   Ensure the design provides universal access within the station and wider corridor and the station and promotes equity for all users.

GUIDELINES

1. Integrate the network plans for all modes of transport in the station precinct, with a priority for pedestrian movement in proximity to the station and the neighbourhood centre.
2. Provide dedicated walking and cycling infrastructure along the Station Street side of the rail corridor that provides for safe management of pedestrian and cycling movements along this corridor as well as to the station and the neighbourhood centre from the broader precinct.
3. Establish clear and direct pedestrian linkages between the station entrances to bus bays, commuter carparking, and bicycle storage locations.
4. Reinstate pedestrian crossings over the rail corridor with DDA compliant overpasses at Golden Avenue and The Glade and incorporate stair access where in order to maximise their accessibility from all directions.
5. Provide clear, intuitive and suitably wide paths at accessible slopes that allow for ease of movement for pedestrians around the station to car parking and pedestrian crossing/ overpass locations and provide an adequate clearance from traffic lanes.
6. Maintain and enhance sightlines to the foreshore from the station precinct to assist the orientation of users, particularly via Williams Grove, Harding Avenue and Lord Weaver Grove.
7. Allow for the future provision of bus bays on Station Street and locate these to be clearly visible and identifiable from both station entrances and the Bonbeach neighbourhood centre.
8. Locate commuter car parking and bus bays in close proximity to a station entrance.
9. Provide suitable wide and functional pedestrian and cycle pathways around the station precinct that address key desire lines to station amenities, local streets, and adjacent destinations.
10. Locate all bicycle parking to be visible and have direct access from the station entrance and cycling infrastructure along Station Street.
11. Orient and locate pedestrian overpasses to minimise impacts on existing pedestrian journey times to key local features.

Figure 30 - Accessibility, Connectivity and Wayfinding Guidelines Enlargement



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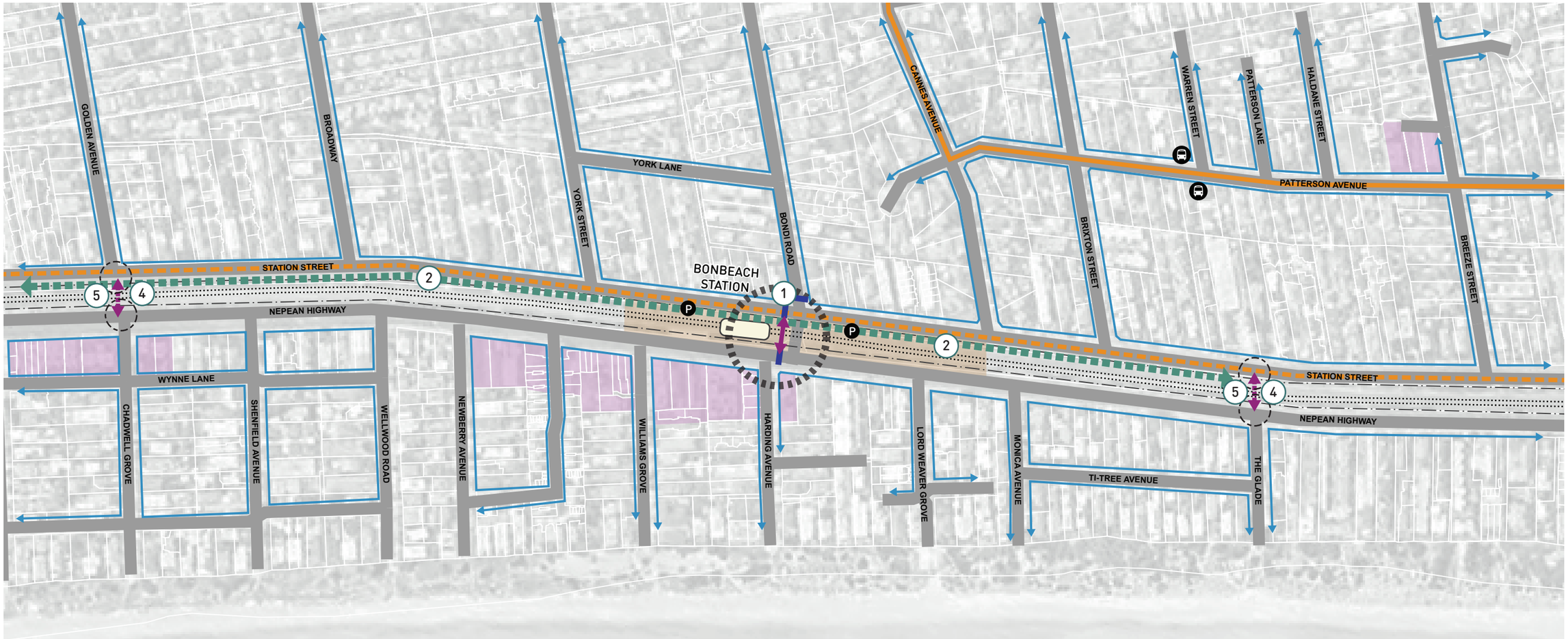
PRINCIPLES

CONNECTIVITY AND WAYFINDING
Well connected and legible places contribute significantly to strong economies and healthy, inclusive communities.

ACCESSIBILITY
Highly accessible and inclusive environments encourage positive activation and contribute to prosperity, well being and the perception of care within communities.

Figure 31 - Accessibility, Connectivity and Wayfinding Guidelines Plan



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6.4 DESIGN GUIDELINES

PRINCIPLES 5 AND 7: AMENITY + SAFETY

STRATEGIC OBJECTIVES

1. ESTABLISH A SENSE OF SAFETY

   Design the station precinct to feel safe through passive surveillance opportunities and eliminate of conflicts between modes and users.

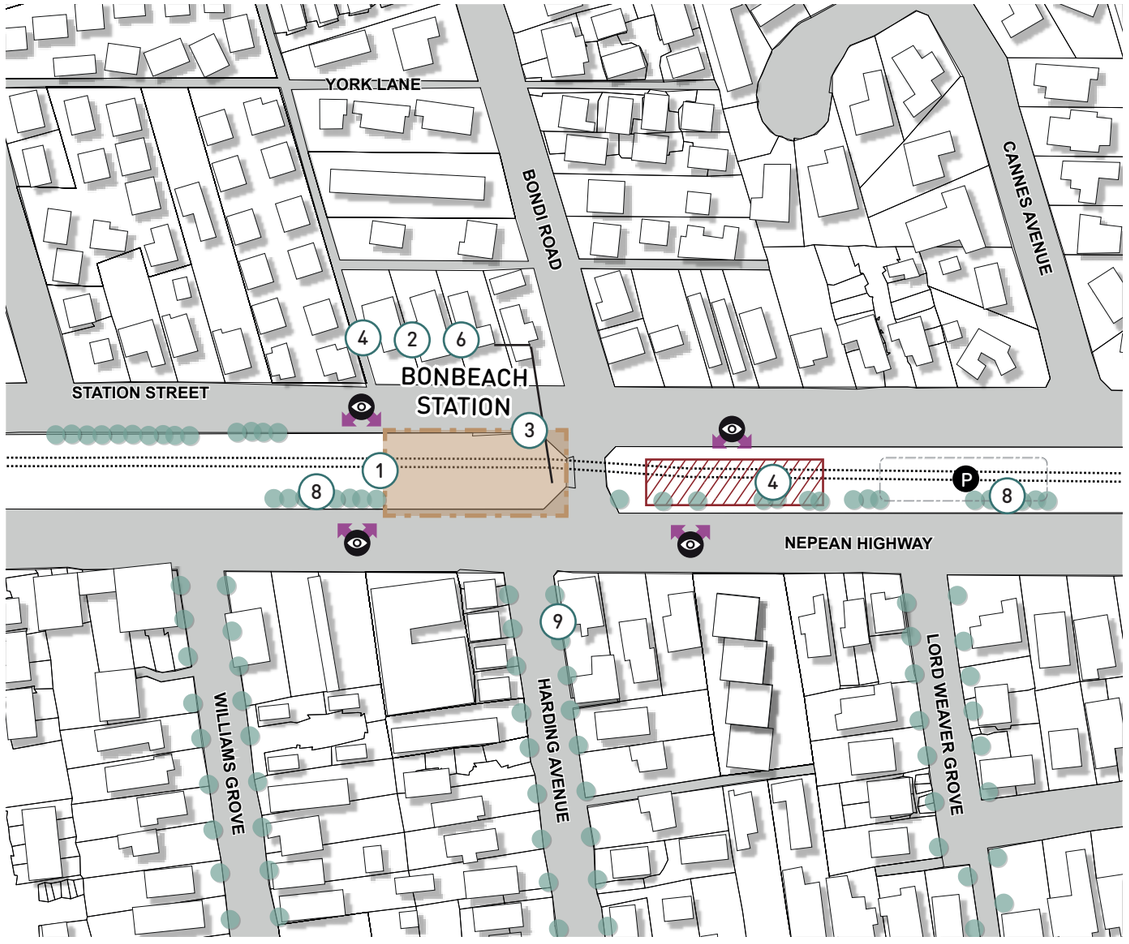
2. IMPROVE USER COMFORT

   Incorporate measures across the station precinct to enhance user enjoyment such as shade, wind protection, and public amenities in appropriate locations.

GUIDELINES

1. Maximise visual connections and transparency between the station platform to the station concourse and to pedestrian activity along Station Street and Nepean Highway.
2. Ensure a large proportion of the platform is open to the sky to provide natural sunlight and passive surveillance opportunities over the station platform from Station Street and Nepean Highway
3. Ensure well-lit platforms that provide high-levels of illumination and reduce the contrast between day-lit and artificially lit areas of the platform to assist visibility of users and improve the sense of safety.
4. Ensure walking and cycling infrastructure and any highly pedestrianised areas are designed to minimise conflicts issues between users through clear delineation of spaces and traffic management measures, particularly at the station entrance.
5. Ensure the platform environment is a comfortable, well-lit, and inviting space for users by eliminating concealed spaces and providing lighting, clear views and adequate shelter from weather conditions.
6. Provide light-reflective, high-quality materials on floor, wall and ceiling surfaces at the platform level that are commensurate with the quality of an internalised space.
7. Provide weather protection, lighting, comfortable seating and public amenities, such as waste bins and drinking fountains in appropriate locations in the station precinct.
8. Integrate generous shelters and awnings as part of the station building and entrances to provide weather protection for station users.
9. Provide treatments to the rail cutting that are high quality and visually interesting for rail passengers and station users, and establishes a positive sense of arrival into Bonbeach Station.
10. Use tree planting along the road and rail corridor to provide shade and shelter for pedestrian and cycling infrastructure, on both sides of both roads and to car parking.
11. Design and detail all pedestrian overpasses to maintain a high level of visibility of users from street level through transparent materials, wide pathways, and clear viewlines.
12. Maintain adequate clearances between pedestrian paths and overpasses to traffic lanes along Nepean Highway and provide landscaping and other treatments to provide users with a sense of safety.

Figure 32 - Amenity and Safety Guidelines Enlargement



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PRINCIPLES

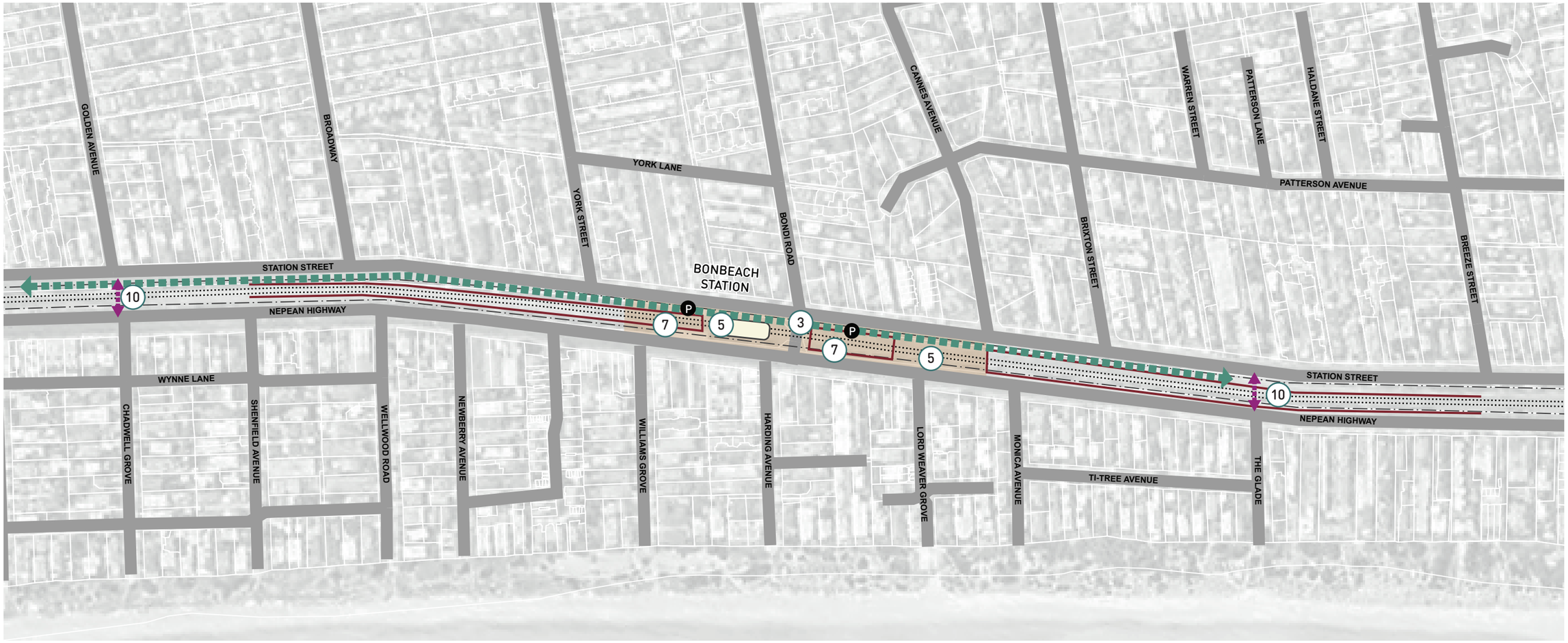
AMENITY

High quality urban amenity associated with access to services and the experience of great public places contributes to successful, equitable and prosperous communities.

SAFETY

Safe environments are essential for strong, connected and happy communities.

Figure 33 - Amenity and Safety Guidelines Plan



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6.4 DESIGN GUIDELINES

PRINCIPLE 6: VIBRANCY

STRATEGIC OBJECTIVES

1. LINK THE STATION WITH NEIGHBOURHOOD CENTRE USES

   Enhance the precinct by better integrating the station with the existing uses contained within the neighbourhood centre and to the recreational amenities in the area.

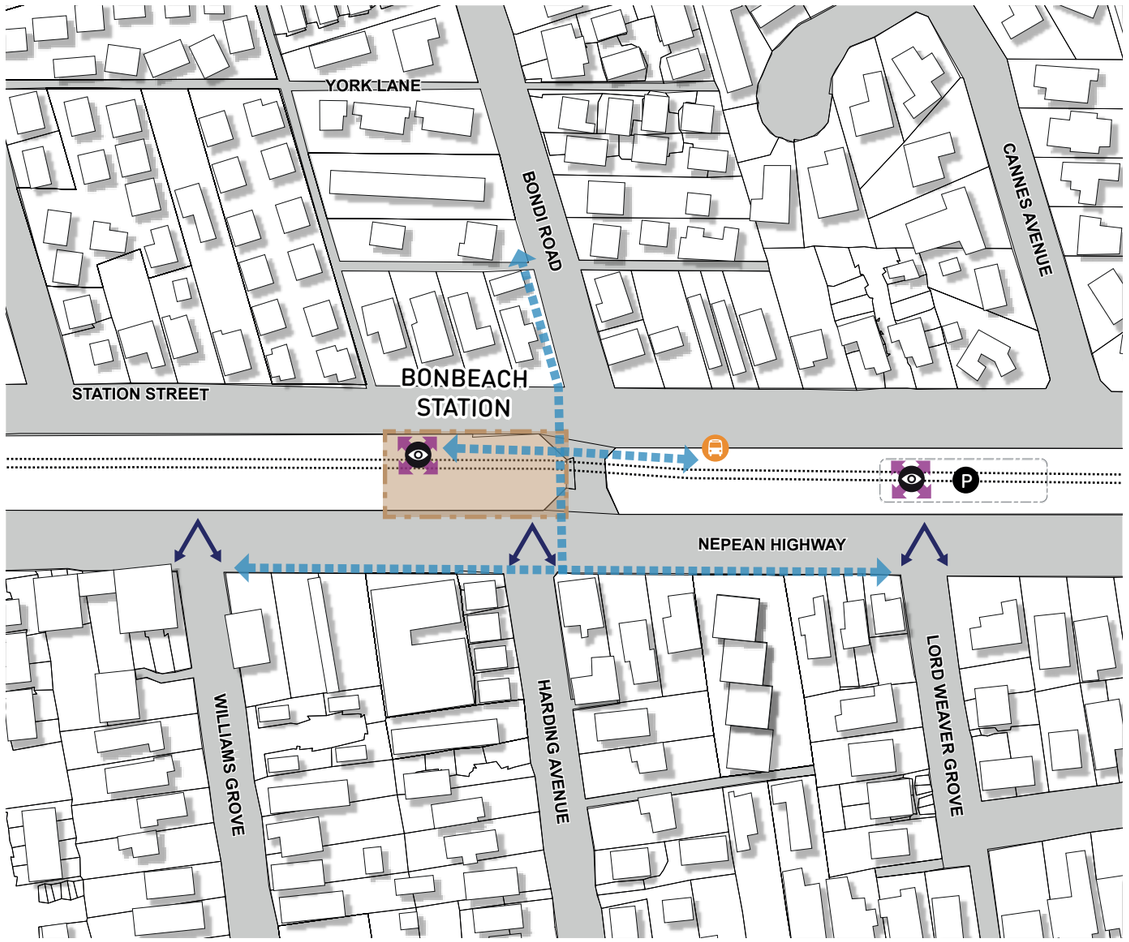
2. PROVIDE A HIGH QUALITY AND FUNCTIONAL PUBLIC REALM

   Create an inclusive and people oriented public realm at the station that supports social interaction and accommodates a range of uses and movements.

GUIDELINES

1. Maintain the main station entry in its current location north of Bondi Road to maintain physical and visual links with the existing neighbourhood centre and key beach access point.
2. Orient station entry points to Station Street, where key cycling and pedestrian links are provided and vehicle traffic is less predominant, whilst maintaining visual links to activities along Nepean Highway.
3. Enhance pedestrian connectivity and infrastructure between the station precinct and the Bonbeach neighbourhood centre and the foreshore.
4. Ensure that any built form provides a positive address to the Bonbeach neighbourhood activity centre along Nepean Highway, to strengthen the functioning of this local shopping and community hub.
5. Minimise inactive and blank walls adjacent to highly pedestrianised areas, including the station plaza and car parking, and to any built form visible from the Bonbeach neighbourhood centre.
6. Minimise the visibility of utilities, infrastructure and back of house functions from the Bonbeach neighbourhood centre, main pedestrian through-paths and gathering areas.
7. Provide a suitably generous station plaza space that accommodates public amenities such as seating, lighting, and furniture, in addition to space required for pedestrian and cycle through-paths.
8. Orient and design the station kiosk and any staff and customer amenities to maximise passive surveillance over the station plaza, future bus bays, and to pedestrian activity along Station Street.
9. Maximise activity at the station entrance by co-locating uses such as kiss and ride, future bus bays, and pedestrian crossings, with the station plaza along Station Street.

Figure 34 - Vibrancy Guidelines Enlargement



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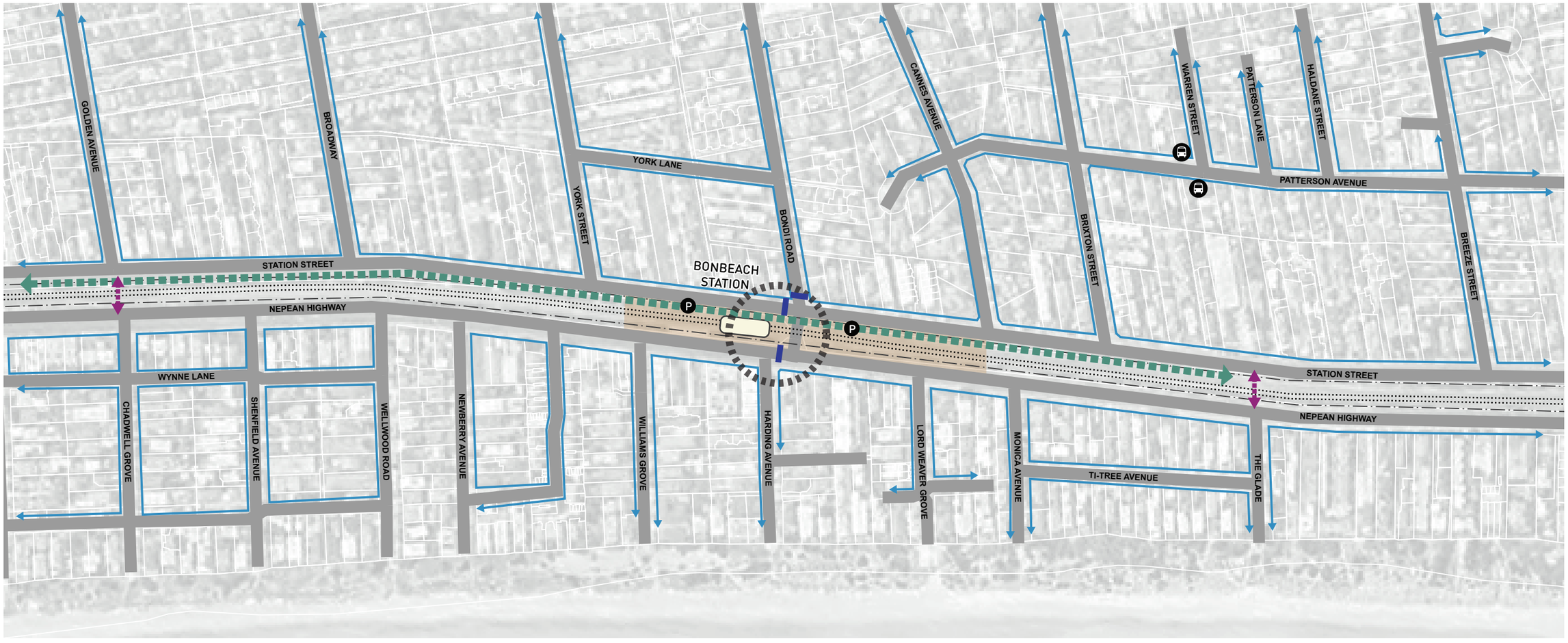
PRINCIPLE

VIBRANCY Animation of key civic spaces, and diversity in the experience of urban places support prosperous and healthy communities.

Figure 35 - Vibrancy Guidelines Plan



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6.4 DESIGN GUIDELINES

PRINCIPLE 4: RESILIENCE AND SUSTAINABILITY

STRATEGIC OBJECTIVES

1. PROMOTE SUSTAINABLE DESIGN

   Ensure the station building and landscaping integrates sustainable design concepts that allow for efficient water, waste and energy use, conservation and re-use.

2. CREATE A SITE RESPONSIVE DESIGN

   Draw on a comprehensive site and context analysis to inform the design of the precinct and landscaping and building details.

3. CREATE A LASTING STATION PRECINCT

   Provide a design that demonstrates a high standard of architectural design and addresses the current and future needs of all users.

GUIDELINES

1. Select or incorporate a material palette for the public realm hardscape (footpaths, fences, barriers, walls, paved areas) that is high quality, durable, low maintenance, and minimises opportunities for graffiti and is resilient in the coastal setting.
2. Use landscaping species that are appropriate for the specific climactic and environmental conditions of the area such as soil types, wind, temperature, and rain conditions, and the type of physical environment created by the rail infrastructure.
3. Integrate Water Sensitive Urban Design (WSUD) into the stormwater management of the station precinct to maximise the viability of landscape and mitigate heat island effects, and explore opportunities to supply stormwater to the broader precinct.
4. Provide permeable ground surfaces within the station precinct, where possible, for absorption of rainwater and reduction of stormwater run-off.
5. Maintain and establish mature and significant landscaping along the rail corridor and in the station plaza to provide shading opportunities and enhance the local habitat and microclimate.
6. Use plant species appropriate to the coastal climatic conditions of the area and the limited available root space along the rail.
7. Provide a high level of natural daylight to the platforms to minimise reliance on artificial lighting.
8. Ensure the design and treatment of the station, plaza area, and walking and cycling paths to allow for future growth in demand and patronage, and flexibility in the modes of transport that rail users will use to reach the station in the future.
9. Design for flexibility in the deck structures to accommodate potential changes to what they are used for in the future.

Figure 36 - Resilience and Sustainability Guidelines Enlargement

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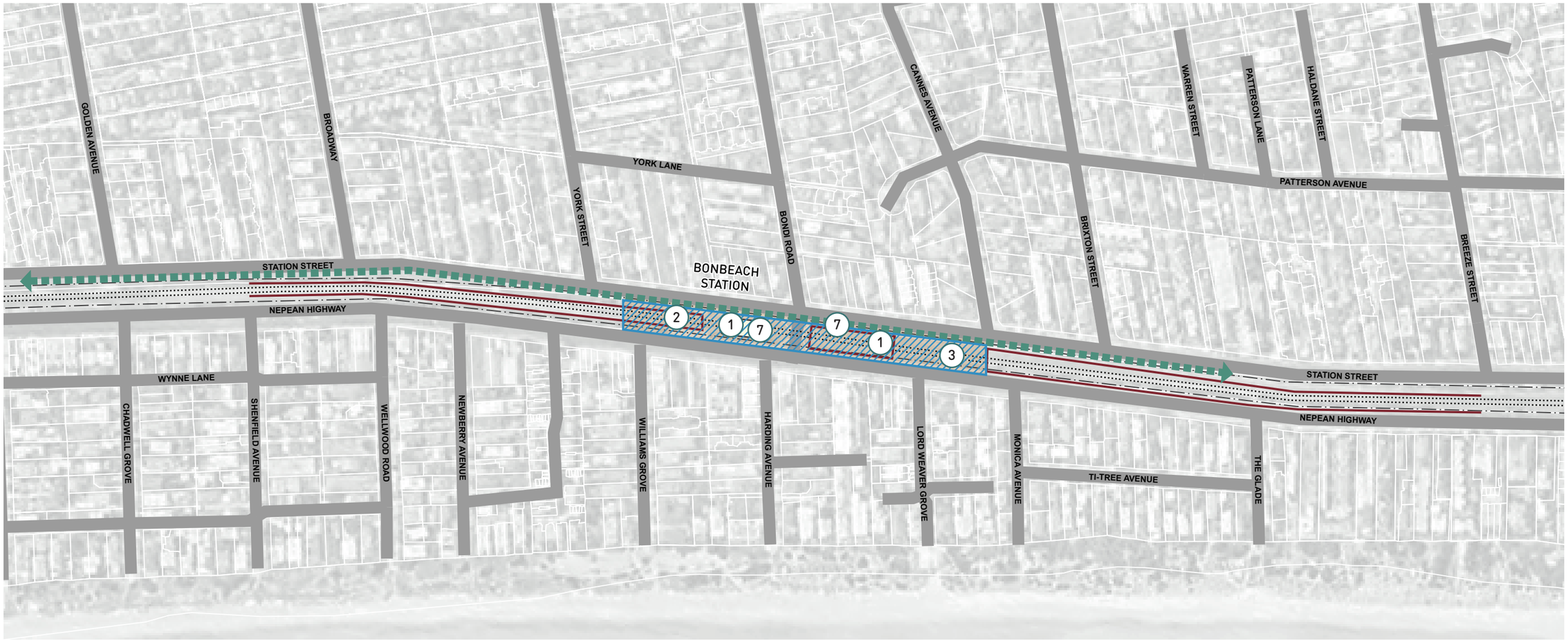
PRINCIPLE

RESILIENCE AND SUSTAINABILITY — Places must be sustainable, enduring and resilient in order to support and nurture current and future generations.

Figure 37 - Resilience and Sustainability Guidelines Plan



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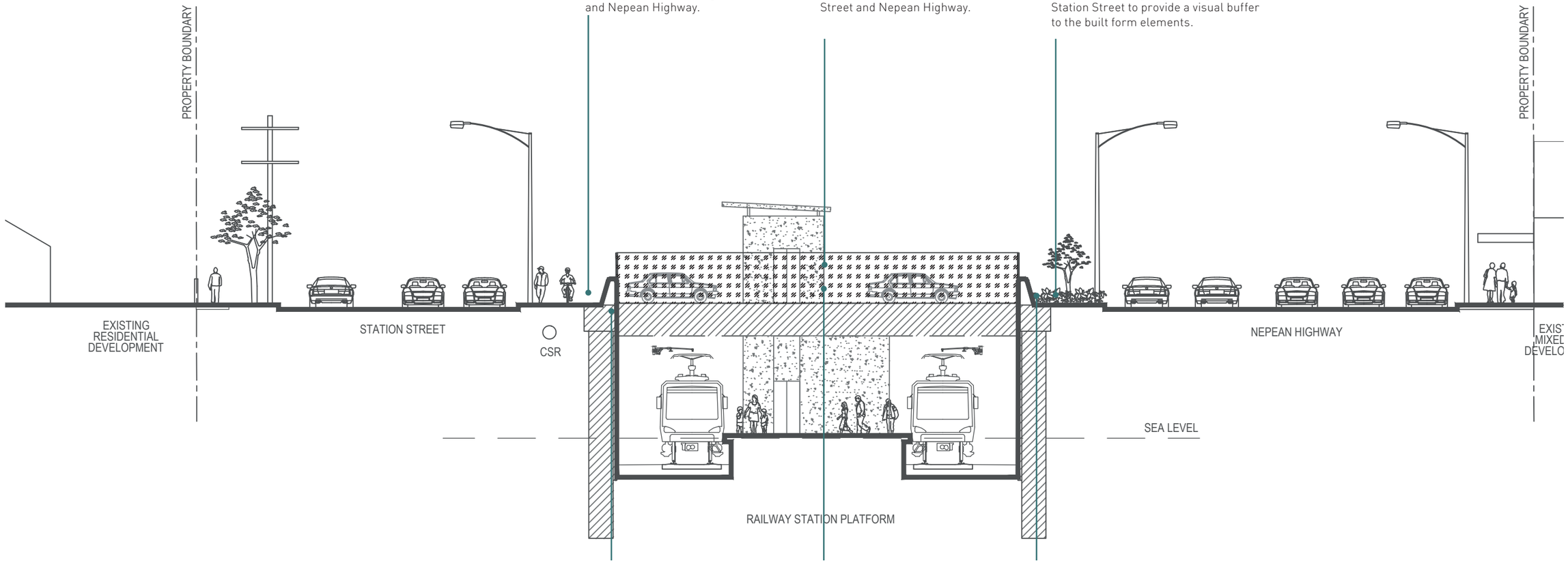
6.5 DESIGN GUIDELINE SECTIONS

A rail under road design solution has been selected for the Bonbeach level crossing removal project. The two cross sections below have been included to illustrate the spatial opportunities and constraints of the rail corridor and the potential interface with the immediately adjacent streets and features.

The cross sections also demonstrate how a rail under road solution can deliver on the design guidance provided in this document.

Figure 38 - Typical Station Platform Section Rail Under



High quality landscaping and fencing treatments can provide positive visual amenity outcomes along Station Street and Nepean Highway.

A large proportion of the platform can be open to the sky to provide passive surveillance opportunities from Station Street and Nepean Highway.

Coastal tree species, shrubs and other landscaping can be reinstated or established along Nepean Highway and Station Street to provide a visual buffer to the built form elements.

Visual connections and transparency between the station platform to the station concourse can be achieved.

The platform environment can be comfortable, well-lit, and inviting and commensurate with an internalised space with high-quality materials on floor, wall and ceiling surfaces.

Treatments to the rail cutting can be high quality and visually interesting for rail passengers and station users and establish a positive sense of arrival into Bonbeach Station.

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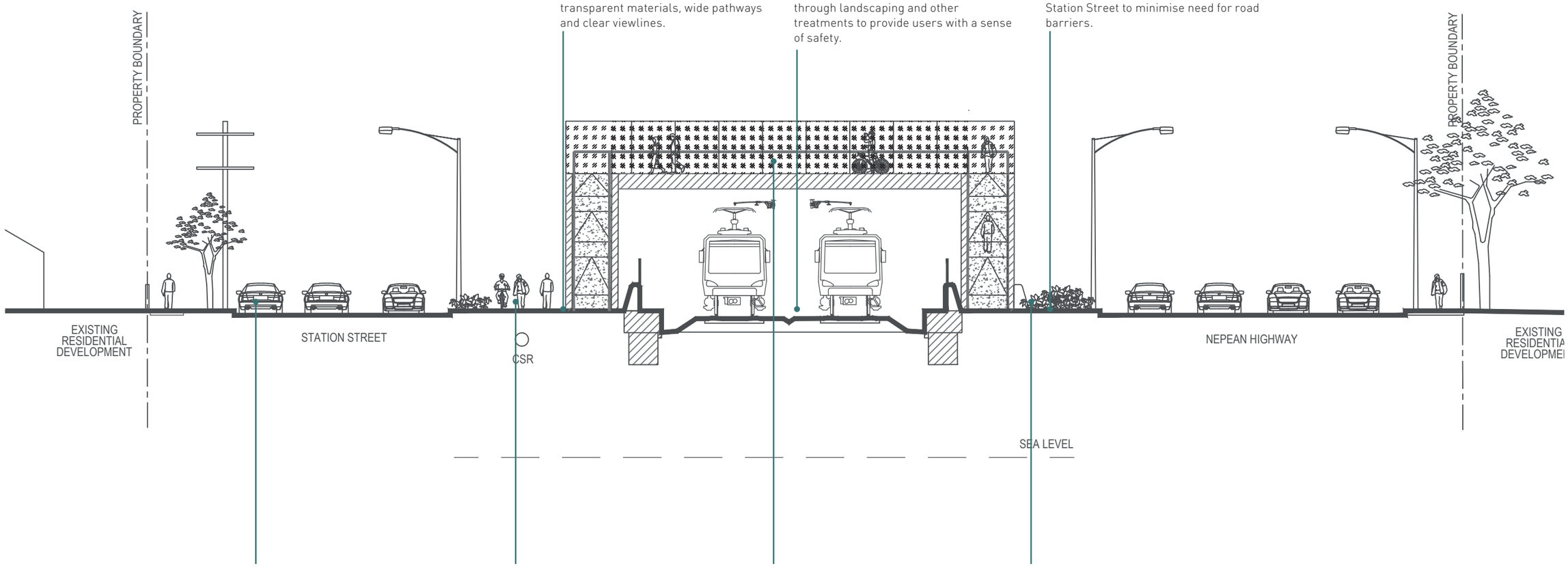
Figure 39 - Typical Overpass Section Rail Under



Indented roadside car parking arrangements along both and Nepean Highway can accommodate street tree planting.

The Station Street side of the corridor can accommodate safe and improved walking and cycling infrastructure along the length of the rail corridor

Pedestrian overpasses can be designed to maintain a high level of visibility of users from street level through transparent materials, wide pathways and clear viewlines.

Fencing, barriers and pedestrian overpasses located along the rail corridor can be designed to contribute to the character and quality of the station building.

Clearances between pedestrian paths and overpasses to traffic lanes along Nepean Highway can be provided through landscaping and other treatments to provide users with a sense of safety.

Landscaping along the corridor can provide shade and shelter to pedestrian and cycling infrastructure and to car parking.

Significant canopy trees can be located outside of VicRoads prescribed clear zones along Nepean Highway and Station Street to minimise need for road barriers.

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APPENDIX

A: GLOSSARY AND REFERENCE LIST

B: URBAN CONTEXT CONSIDERATIONS

C: STRATEGIC PLANNING BACKGROUND INFORMATION

D: DETAILED TRANSPORT PROJECT ANALYSIS

APPENDIX A: GLOSSARY AND REFERENCE LIST

7.1 GLOSSARY

BPR	Bicycle Priority Routes
CBD	Central Business District
DELWP	Department of Environment, Land, Water, and Planning
EES	Environmental Effects Statement
LXRA	Level Crossing Removal Authority
MTM	Metro Trains Melbourne
OVGA	Office of the Victorian Government Architect
PBN	Principal Bicycle Network
PPA	Pedestrian Priority Area
PRS	Project Requirements Specification
PTV	Public Transport Victoria
SPPF	State Planning Policy Framework
SUP	Shared Use Path
TFV	Transport for Victoria
UDAP	Urban Design Advisory Panel
UDF	Urban Design Framework
UDG	Urban Design Guideline
VPA	Victorian Planning Authority
WSUD	Water Sensitive Urban Design

7.2 REFERENCES

AECOM - GHD Joint Venture (2017), Frankston Corridor Urban Design Strategy, Level Crossing Removal Project

AECOM - GHD Joint Venture (August 2016), Urban Design Framework, Level Crossing Removal Project, Version 3

Australian Bureau of Statistics (2011 and 2016), Census QuickStats

Chief Parliamentary Counsel (July 2017) Planning and Environment Act 1987, Version 130

City of Kingston (October 2017), Kingston Planning Scheme, Clause 21, Planning Zones, and Planning Overlays

City of Kingston (2016), Prosperous Kingston: A Framework for Economic Sustainability

City of Kingston (2014), Kingston Residential Strategy Update

City of Kingston (2007), Kingston Neighbourhood Character Guidelines

City of Kingston (2009), Kingston Cycling and Walking Plan

City of Kingston (2006), City of Kingston Retail/Commercial Development Strategy

Public Transport Victoria (2012), Network Development Plan - Metropolitan Rail

The State Government of Victoria: Department of Environment, Land, Water, and Planning (2017), Plan Melbourne 2017 - 2050

The State Government of Victoria: Department of Environment, Land, Water, and Planning (2017), State Planning Policy Framework, Clause 9 to Clause 19

VicRoads (2012), Principal Bicycle Network (PBN) and Bicycle Priority Routes (BPR)

Public Transport Precincts, Design Requirements and Guidance, PTV

Sustainability Policy, Level Crossing Removal Authority

Transport Integration Act 2010

Urban Design Framework, Level Crossing Removal Authority

Victorian Urban Design Charter 2009

Creating Places for People, Australian National Urban Design Protocol

Creative Strategy Guidelines, Level Crossing Removal Authority

Good Design and Transport, Issue 05, Office of the Victorian Government of Architects

VicRoads (July 2011), SmartRoads: Connecting Communities

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7.3 FIGURE SOURCES

#	FIGURE	REFERENCE
1	Level Crossing Removal - Project Map	Level Crossing Removal Project
2	Urban Design Briefing Documents	AECOM - GHD Joint Venture (2017)
3	Methodology	AECOM - GHD Joint Venture (2017)
4	Urban Design Framework	AECOM - GHD Joint Venture (2017)
5	Regional Context Map	AECOM - GHD Joint Venture (2017)
6	Historical Timeline	AECOM - GHD Joint Venture (2017)
7	Land Use Analysis Plan	AECOM - GHD Joint Venture (2017)
8	Land Use Analysis Enlargement	AECOM - GHD Joint Venture (2017)
9	Built Form and Heritage Analysis Plan	AECOM - GHD Joint Venture (2017)
10	Built Form and Heritage Analysis Enlargement	AECOM - GHD Joint Venture (2017)
11	Transport Networks and Access Analysis Plan	AECOM - GHD Joint Venture (2017)
12	Transport Networks and Access Analysis Enlargement	AECOM - GHD Joint Venture (2017)
13	Geomorphological Map of Area	AECOM - GHD Joint Venture (2017)
14	Transport Networks and Access Analysis Plan	AECOM - GHD Joint Venture (2017)
15	Transport Networks and Access Analysis Plan	AECOM - GHD Joint Venture (2017)
16	Key Map - Bonbeach Statistical Area	AECOM - GHD Joint Venture (2017)
17	Population Profile and Growth Projections	AECOM - GHD Joint Venture (2017)
18	Dwelling Profile and Growth Projections	AECOM - GHD Joint Venture (2017)
19	Dwelling Profile Comparative Analysis	AECOM - GHD Joint Venture (2017)
20	Modal Share Comparative Analysis	AECOM - GHD Joint Venture (2017)
21	Key Map - Bonbeach Photographic Survey	AECOM - GHD Joint Venture (2017)
22	Engagement Phases	AECOM - GHD Joint Venture (2017)
23	Community Consultation Snapshot	AECOM - GHD Joint Venture (2017)
24	Issues and Opportunities Analysis	AECOM - GHD Joint Venture (2017)
25	Urban Design Guidelines Structure	AECOM - GHD Joint Venture (2017)
26	Urban Contexts	AECOM - GHD Joint Venture (2017)
27	Bonbeach Strategic Objectives Overview	AECOM - GHD Joint Venture (2017)
28	Identity and Urban Integration Guideline Enlargement	AECOM - GHD Joint Venture (2017)
29	Identity and Urban Integration Guideline Plan	AECOM - GHD Joint Venture (2017)
30	Accessibility, Connectivity and Wayfinding Guideline Enlargement	AECOM - GHD Joint Venture (2017)
31	Accessibility, Connectivity and Wayfinding Guideline Plan	AECOM - GHD Joint Venture (2017)
32	Safety and Amenity Guideline Enlargement	AECOM - GHD Joint Venture (2017)
33	Safety and Amenity Guideline Plan	AECOM - GHD Joint Venture (2017)
34	Vibrancy Guideline Enlargement	AECOM - GHD Joint Venture (2017)
35	Vibrancy Guideline Plan	AECOM - GHD Joint Venture (2017)
36	Resilience and Sustainability Guideline Enlargement	AECOM - GHD Joint Venture (2017)
37	Resilience and Sustainability Guideline Plan	AECOM - GHD Joint Venture (2017)
38	Typical Station Platform Section Pail Under	AECOM - GHD Joint Venture (2017)
39	Typical Overpass Section Rail Under	AECOM - GHD Joint Venture (2017)
40	Regional Planning Zones	AECOM - GHD Joint Venture (2017)
41	Regional Planning Overlays	AECOM - GHD Joint Venture (2017)
42	Proposed Pedestrian Circulation	AECOM - GHD Joint Venture (2017)
43	Proposed Cyclist Circulation	AECOM - GHD Joint Venture (2017)
44	Bonbeach Road Proposed Road Layout	AECOM - GHD Joint Venture (2017)

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7.4 IMAGE SOURCES

#	IMAGE	REFERENCE
1	Edithvale - Seaford Wetlands	Frankston City Libraries (1866) Carrum Swamp in the County of Mornington map, Accessed October 13, 2017 < https://www.flickr.com/photos/39368267@N02/8743824436>
2	Patterson River Artificial Channel	Wayne Knoll (2015) The in-train from Frankston heading for Black's Crossing & Chelsea as it crosses the Patteron River, Accessed October 13, 2017 <http://unkalfredhenryhollisdiary1935.blogspot.com.au/>
3	Bonbeach Station	Vic Rail Stations (2016) Down platform station building, Accessed October 13, 2017 <http://www.vicrailstations.com/Stony_Point/Bonbeach/Bonbeach.html>
4	Patterson River Bridge Upgrade	Victorian Places (2015) Patterson River Bridge, Bonbeach, 1938, Accessed October 13, 2017 <http://www.vicrailstations.com/Stony_Point/Bonbeach/Bonbeach.html>
5	Residential Growth	Victorian Places (2015) Patterson River Golf Links, Club House, Bonbeach, 1938, Accessed October 13, 2017 <http://www.victorianplaces.com.au/node/64520>
6	Bonbeach Life Saving Club	Bonbeach Life Saving Club Inc. (2017) Bonbeach Life Saving Club, Accessed October 13, 2017 <http://bonbeachlsc.com.au/>
7	Existing Cafés and Retail on Nepean Highway	Weekend Notes (2013), Bonbeach Cafe, Accessed October 13, 2017 <https://www.weekendnotes.com/bonbeach-cafe/>
8	Bonbeach Residential Care and Nursing Home	ACSA Group (2016), Bonbeach Nursing Home, Accessed October 12, 2017 <http://www.acsagroup.com.au/facilities/our-aged-care-facilities/bonbeach>
9	3 Lord Weaver Grove	Google Streetview (2015) 3 Lord Weaver Grove, Accessed October 13, 2017 <https://www.google.com.au/maps/@-38.0647127,145.119088,3a,75y,322.83h,89.07t/data=!3m6!1e1!3m4!1sz5mORyimSLE7Nj9XzP7PDg!2e0!7i13312!8i6656?hl=en-AU>
10	Patterson River Country Club	Visit Victoria (2017), Patterson River Golf Club, Accessed October 13, 2017 <http://nepeancountryclub.com.au/>
11	Bonbeach Boat Sheds	Weekend Notes (2013), Boat Houses on the Bonbeach foreshore, Access October 13, 2017 <https://www.weekendnotes.com/williams-grove-carpark-bonbeach/>
12	Station Street/Bondi Road Level Crossing	Urban Analyst (2017) The existing level crossing at Bondi Road, Bonbeach/Level Crossing Removal Authority, Accessed October 13, 2017 < http://www.urbanalyst.com/in-the-news/victoria/4368-environmental-effects-statement-required-for-level-crossing-removals-at-edithvale-and-bonbeach.html>
13	Existing Station Platforms	Mapio (2017) Bonbeach, Accessed October 13, 2017 <http://mapio.net/pic/p-17878150/>
14	Bonbeach Station Nepean Highway Access	AECOM - GHD Joint Venture (2016)
15	Patterson River Country Club Golf Course	Pacific Coast Design (2017) Patterson River Country Club - Bonbeach, Melbourne, Accessed October 13, 2017 <http://golf-designers.com/pcd/patterson-river-country-club-bonbeac-victoria>
16	Edithvale - Seaford Wetlands	Visit Victoria (2017), Patterson River Golf Club, Accessed October 13, 2017 <http://nepeancountryclub.com.au/>
17	Nepean Highway Looking South	AECOM - GHD Joint Venture (2016)
18	Nepean Highway Looking North	AECOM - GHD Joint Venture (2016)
19	Harding Avenue towards Port Phillip Bay	AECOM - GHD Joint Venture (2016)
20	Station Street Looking North	AECOM - GHD Joint Venture (2016)
21	Station Street Looking North	AECOM - GHD Joint Venture (2016)
22	Bonbeach Station Pedestrian Ramp, Station Street Looking South	AECOM - GHD Joint Venture (2016)
23	Bonbeach Station, Nepean Highway Looking South	AECOM - GHD Joint Venture (2016)
24	Station Street Looking South at Level Crossing	AECOM - GHD Joint Venture (2016)
25	Station Street Looking North from Station	AECOM - GHD Joint Venture (2016)
26	Existing Level Crossing, Looking East	AECOM - GHD Joint Venture (2016)
27	Commercial Development along Nepean HIghway	AECOM - GHD Joint Venture (2016)

7.5 TABLE SOURCES

#	TABLE	REFERENCE
1	Urban Design Considerations for Different Urban Contexts	AECOM - GHD Joint Venture (2017)

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APPENDIX B: URBAN CONTEXT CONSIDERATIONS

Table 1: Urban Design Considerations for Different Urban Contexts

URBAN DESIGN PRINCIPLES	1. IDENTITY	2. URBAN INTEGRATION	3. ACCESSIBILITY	4. CONNECTIVITY & WAYFINDING	5. SAFETY	6. AMENITY	7. VIBRANCY	8. RESILIENCE & SUSTINABILITY
1. STATION PRECINCT	• Station built form design • Functional station design • Forecourt and entry • Public art and creative works • Landscape design • Heritage	• Station facility integration	• Suitable accessibility for all modes based on modal hierarchy • Equitable / universal access • Service and emergency access	• Station facilities (park'n'ride, kiss'n'ride, taxi access) • Intermodal connectivity • Bus interchange • Pedestrian and cycle routes • Vehicular access • Fences and barriers	• Safety in design requirements (CPTED) • Sight lines • Passive surveillance of station and station facilities	• Visual amenity – built form and landscape quality and character • User comfort (shelters, station access) • Station forecourt or plaza spaces. • Fences and barriers	• Station forecourt or plaza • Station facilities and non-transit land uses • Public art and creative works	• Sustainable built form and landscape design • Sustainability certification (green star rating) • Water sensitive urban design • Lighting design • Material durability and maintenance requirements • Vegetation loss and environmental impact
2. TRANSITION ZONE	• Interfaces with station precinct • Visual integration • Streetscape design • Public realm / public spaces • Built form character and heritage	• Development potential surrounding station • Urban renewal opportunities • Future proofing considerations • Integration between station and activity centre	• Pedestrian and cycle routes • Local road movements and impact on property and/or business access	• Development potential surrounding station • Urban renewal opportunities • Future proofing considerations • Integration between station and activity centre	• Visual connectivity and passive surveillance • Sight lines and safety in design for key movement routes	• Built form and landscape quality and character • Streetscape amenity • Fences and barriers	• Relationship with nearby activities / activity centre • Activation of spaces adjacent to station • Streetscapes	• Water sensitive urban design • Lighting design • Vegetation loss and environmental impact • Pollution mitigation
3. CORRIDOR AND THE WIDER PRECINCT	• Interfaces with corridor • Built form and corridor landscape character • Heritage	• Future road / rail network upgrades	• Access and connectivity within and across the corridor	• Future road/rail network upgrades	• Promote active transport and safe places	• Built form and corridor landscape character	• Key local activities and connectivity	• Natural heritage and biodiversity

(adapted from VicRoads Framework)

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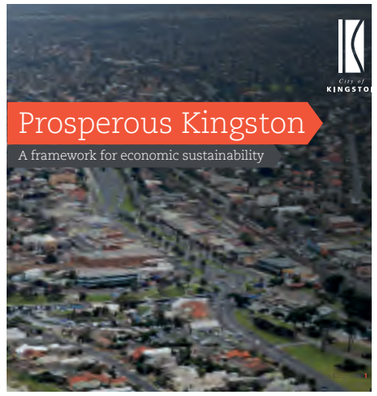
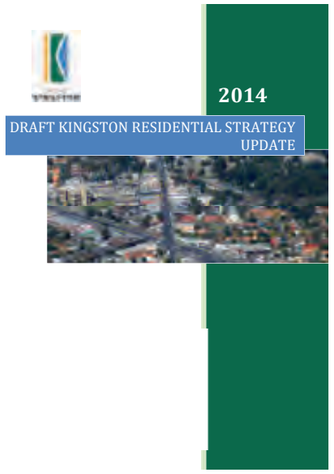
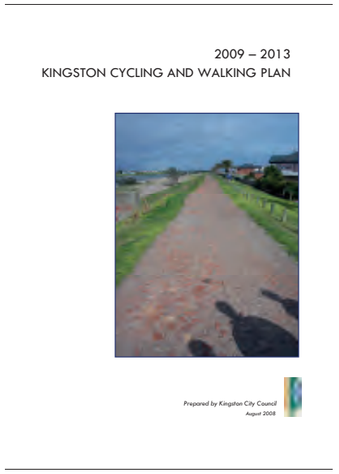
APPENDIX C: STRATEGIC PLANNING BACKGROUND INFORMATION







TITLE	City of Kingston Retail/Commercial Development Strategy	Prosperous Kingston – A Framework for Economic Sustainability	Kingston Residential Strategy Update	Kingston Neighbourhood Character Guidelines	Kingston Cycling and Walking Plan
YEAR	2006		2014	2000, revised August 2007	2008
SUMMARY	This policy was developed to help guide future direction of retail, commercial and office investment in the City of Kingston. The policy identifies public transport access and quality as an important factor in commercial area development and that where possible, opportunities to increase public transport mode share should be maximised.	This policy recognises that the prosperity of the Kingston community is tied to the ability of the local economy to prosper and generate sustainable development. Access to a high quality integrated transport system that meets the needs of businesses and residents is seen as vital in maintaining and improving the economic prosperity of the municipality.	The policy is an update to the Kingston Residential Strategy 2000 which was prepared to address residential development within Kingston. The strategy proposes that there will be residential consolidation and increased densities along major arterial roads such as Nepean Highway and close to public transportation (close to Bonbeach Railway Station).	The Kingston Neighbourhood Character Guidelines have been designed to identify different neighbourhood characters found within the diverse residential areas in Kingston and to provide guidance for residential development relevant to the neighbourhood character of each area. The typical neighbourhood characteristics found in Landscape Character Areas relevant to the Bondi Road, Bonbeach level crossing are of one to two storey, detached dwellings.	This policy recognises the importance of walking and cycling in Kingston and advocates for increased pedestrian and cycling infrastructure, including dedicated paths or lanes and improved signage in order to meet local needs and demands.
KEY SECTIONS	Whole document	Whole document	Planning Area Residential Frameworks within the strategy address residential land use issues at localised sites. The Bondi Road, Bonbeach level crossing is located within Planning Area 9 of this policy.	Whole document	Whole document

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Figure 40 - Regional Planning Zones

Figure 41 - Regional Planning Overlays

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AECOM GHD JOINT VENTURE

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