AECOM GHD JOINT VENTURE

EDITHVALE AND BONBEACH LEVEL CROSSING REMOVAL PROJECTS

ENVIRONMENT EFFECTS STATEMENT

EES TECHNICAL REPORT F
Land Use Impact Assessment

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Executive summary

The Victorian Government is removing 50 of Melbourne's most dangerous and congested level crossings. The Edithvale Road, Edithvale and Station Street/Bondi Road, Bonbeach level crossing removal projects were referred to the Minister for Planning who decided an Environment Effects Statement was required.

The report addresses the potential impacts to land use resulting from the construction or operation of the project. Other potential impacts including visual, social and business related aspects are covered in other impact assessments, in particular:

- EES Technical Report G *Traffic*
- EES Technical Report H *Noise and Vibration*
- EES Technical Report I *Air Quality*
- EES Technical Report J *Landscape and Visual*
- EES Technical Report K *Business*
- EES Technical Report L *Social*

Land use context

The projects are proposed to be constructed within a well-established part of metropolitan Melbourne that includes the Frankston rail line, long-established residential areas, shopping and commercial centres, parks and reserves, and community and recreational facilities.

The proposed construction of rail trenches, the redevelopment of two train stations together with associated infrastructure required for the removal of the Edithvale and Bonbeach level crossings would be undertaken primarily within the existing rail corridor.

Existing conditions

The study areas for this assessment have considered the Edithvale Road, Edithvale Level Crossing Removal Project and the Station Street/Bondi Road, Bonbeach Level Crossing Removal Project separately, and have considered land use within 500 metres of major civil works associated with each project.

Similar to other middle-ring suburban areas in metropolitan Melbourne, land use within the study areas are established and predominantly residential areas developed in the post war era (1950s-60s onwards) that are now subject to varying degrees of infill development, tending towards higher residential densities along arterial and major roads.

Residential land use within the study areas is generally within the General Residential 2 Zone and General Residential 3 Zone, however some mixed use developments and residential land uses exist within the Commercial 1 Zone.

The study areas also include commercial and retail premises that largely front Nepean Highway, and include cafés, small shops, and personal and professional services. Primarily, commercial and retail uses are contained within land zoned Commercial 1 Zone, however there is a small area of land within the Mixed Use Zone.

There are a number of schools which are located within the study areas, primarily zoned Public Use Zone 2 – Education, with the exception of one school zoned which is within the General Residential 2 Zone. Community facilities are generally zoned General Residential Zone 2 within the study area, with the exception of the Bonbeach Life Saving Club and the facilities located within Regents Park, which are all located within the Public Park and Recreation Zone.

The study areas also include public open space and recreation facilities, generally zoned Public Park and Recreation Zone. These areas include the Port Phillip foreshore and part of Port Phillip Bay, but exclude Beeson Reserve, which is zoned General Residential Zone 2 and the Rossdale Golf Club, which is zoned Special Use Zone 1 – Golf Courses.

Land within the Frankston rail corridor is zoned Public Use Zone 4 – Transport, except for where it crosses Edithvale Road, where it is zoned Road Zone Category 1.

The project areas are wholly located within the municipality of Kingston.

Method

The method for undertaking the land use impact assessment includes:

- Review of the relevant legislative and policy framework for the study areas, including the Kingston Planning Scheme.
- Site inspections of the study areas.
- Consultation with the City of Kingston to inform the assessment of existing conditions, future strategic directions and likely future land uses within the study areas.
- An assessment of the planned (known) land use impacts together with the risk of additional (uncertain) land use impacts that the project would or may have on land use within the study areas.
- The identification of relevant measures to avoid or manage potential impacts on land use.

Impact assessment

Land use impacts for temporary construction and laydown sites have not been assessed as these sites are yet to be identified. General principles to be observed to aid the selection of suitable sites have, however, been proposed.

Elsewhere the land use impacts identified in association with the construction of the projects were considered to be negligible and temporary in duration.

The project does not propose the acquisition of private land.

Land use impacts arising from construction would be addressed through implementing relevant Environmental Performance Requirements and through standard construction management practices, an environmental management plan and compliance with industry standards.

Land use impacts during operation of the project were considered to be negligible and accordingly no project specific management and mitigation measures were recommended beyond standard compliance with regulatory requirements.

The proposed grade separations are consistent with, supported by and implement relevant State and Local Government planning policy.

Environmental Performance Requirements

The following Environmental Performance Requirements are recommended for the Edithvale and Bonbeach projects:

EPR ID	Environmental Performance Requirement	Stage
EPR_LP1	**Land use (construction)** The construction approach should: a. avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable b. reduce the disruption to the extent practicable to current users of public and council land resulting from temporary occupation c. include opportunities to implement landscaping enhancement.	Construction
EPR_UD1	**Urban Design Guidelines** Design projects in accordance with the LXRA Urban Design Framework and project specific Urban Design Guidelines. The Urban Design Guidelines must consider: a. identity b. connectivity and wayfinding c. urban integration d. resilience and sustainability e. amenity f. vibrancy g. safety h. accessibility Seek the advice of the LXRA Urban Design Advisory Panel (chaired by the Office of the Victorian Government Architect, and includes officers of Kingston City Council) during the preparation of detailed design to ensure an appropriate response to the LXRA Urban Design Framework.	Construction

Refer to Section 8 of this report and Chapter 12 of the *Environmental Management Framework* for further information.

Abbreviations

Term	Definition
CBD	Central Business District
CHMP	Cultural Heritage Management Plan
CZ	Commercial Zone
DDO	Design and Development Overlay
EAO	Environmental Audit Overlay
EES	Environment Effects Statement
EMF	Environmental Management Framework
EPR	Environmental Performance Requirement
GRZ	General Residential Zone
HO	Heritage Overlay
JV	AECOM-GHD Joint Venture
LPPF	Local Planning Policy Framework
LXRA	Level Crossing Removal Authority
MSS	Municipal Strategic Statement
MUZ	Mixed Use Zone
RDZ	Road Zone
P&E Act	*Planning and Environment Act 1987*
PPRZ	Public Park and Recreation Zone
PSA	Planning Scheme Amendment
PTV	Public Transport Victoria
PUZ	Public Use Zone
SBO	Special Building Overlay
SPPF	State Planning Policy Framework
SUZ	Special Use Zone

1 Introduction

1.1 Purpose

The Victorian Government is removing 50 of Melbourne's most dangerous and congested level crossings, including the level crossings at Edithvale Road, Edithvale (Edithvale) and Station Street/Bondi Road, Bonbeach (Bonbeach).

The level crossing removal projects have three core objectives. To provide:

- improved productivity from more reliable and efficient transport networks
- better connected, liveable and thriving communities
- safer communities.

The Edithvale and Bonbeach level crossing removal projects were referred to the Minister for Planning on 9 March 2017. On 5 April 2017, the Minister issued a decision determining that an Environment Effects Statement (EES) is required for the projects due to the potential for a range of significant environmental effects.

The purpose of this report is to provide a land use impact assessment and to develop management measures for potential impacts to inform the development of a robust environmental management framework for the projects.

1.2 Why understanding land use is important

Land use impacts occur when a project has an effect on the form, function, amenity or appearance of the existing urban environment and/or the character of a place or location. Land use impacts may include:

- a permanent use inconsistent with existing or future land uses or land use policies
- a temporary use inconsistent with existing or future land uses or land use policies.

1.3 Project description

1.3.1 Overview

Edithvale

The Level Crossing Removal Authority (LXRA) proposes to remove the level crossing by lowering the Frankston railway line into a trench under Edithvale Road while maintaining Edithvale Road at the current road level. The trench would be located between Lochiel Avenue and Berry Avenue. It would be up to 1300 metres in length and 14 metres wide at its narrowest point, widening to up to 24 metres (including pile widths) at the new Edithvale station platforms.

The rail track would be approximately eight metres below ground level, and sit above the trench base slab and infrastructure to collect and divert rain water from the trench. The maximum depth of the excavation would be 15 metres. Pile depths would be a maximum of 24 metres at the deepest point of the trench.

Barriers, fencing and screening would be erected along the trench at road level to prevent unauthorised access by vehicles or people. Decking above the rail trench would provide for the new station building, car parking and a new substation required to ensure sufficient power is available for passenger services on the Frankston railway line. New pedestrian bridges would be constructed to retain pedestrian access across the railway line. A new station is to be constructed with lift, ramp and stair access to the below-ground train platforms.

Bonbeach

LXRA proposes to remove the level crossing by lowering the Frankston railway line into a trench under Bondi Road while maintaining Bondi Road at the current road level. The trench would be located between Golden Avenue and The Glade. It would be up to 1200 metres in length and 14 metres wide at its narrowest point, widening to up to 24 metres (including pile widths) at the new Bonbeach station platforms.

The rail track would be approximately eight metres below ground level, and sit above the trench base slab and infrastructure to collect and divert rain water from the trench. The maximum depth of the excavation would be 15 metres. Pile depths would be a maximum of 24 metres at the deepest point of the trench.

Barriers, fencing and screening would be erected along the trench at road level to prevent access by vehicles or people. Decking above the rail trench would provide for the new station building and car parking. New pedestrian bridges would be constructed to retain pedestrian access across the railway line. A new station building would be constructed with lift, ramp and stair access to the below-ground train platforms.

1.3.2 Construction

The key construction activities for the project include:

- site establishment including:
  - clearing of vegetation and ground levelling
  - establishment of site fencing, staff facilities and temporary construction areas
- protection and/or relocation of utility services
- excavation for piling, foundations and the rail trench
- on site waste management including removal, management and appropriate disposal of excavated soil, rock, stormwater and groundwater
- transport of spoil, excavated material and groundwater offsite
- demolition of existing stations and removal of existing rail and road infrastructure
- construction of bridge/deck structures to support Edithvale Road and Station Street/Bondi Road where they cross the railway line
- construction of base slab and waterproofing, including stormwater tanks
- construction of new station infrastructure including platforms and buildings
- construction of pedestrian overpasses and decking over the rail trench
- installation and commissioning of new rail infrastructure including ballast, overhead line equipment and rail.

Construction is expected to be completed within an 18 month period.

1.3.3 Operations and maintenance

Following the construction of each project, the key operation and maintenance phase activities would include:

- operation – monitoring, controlling and operation of the projects in accordance with the rail and road network requirements
- maintenance – routine inspection and monitoring of the condition of the projects, planned routine maintenance and refurbishment work, and unplanned intervention and repair of any assets.

Operation and maintenance activities would be undertaken by the relevant network operator and would be consistent with existing practices and subject to the evolving operational demands of the road and rail networks.

1.4 Project areas

1.4.1 Edithvale

The Edithvale Road, Edithvale level crossing project area (the Edithvale project area) extends from Lincoln Parade, Aspendale to Chelsea Road, Chelsea. It includes the rail corridor and all of Station Street and Nepean Highway to the east and west of the rail corridor, and small sections of adjacent road reserves. Refer to Figure 1.

1.4.2 Bonbeach

The Station Street/Bondi Road, Bonbeach level crossing removal project area (the Bonbeach project area) extends from Chelsea Road, Chelsea to Patterson River, Bonbeach. It includes the rail corridor and all of Station Street and Nepean Highway located to the east and west of the rail corridor, and small sections of adjacent road reserves. Refer to Figure 2.

1.4.3 Temporary construction areas

Specific and temporary construction areas are likely to be required however are still being explored with relevant parties.

These areas would be used for site offices, storing materials, plant and equipment, parking for construction works and construction traffic standby.

1.4.4 Study area

For the purpose of this assessment, study areas were defined as land within 500 metres of the limit of major civil works for both the Edithvale project and the Bonbeach project, and includes:

- Edithvale Study Area (refer Figure 3).
- Bonbeach Study Area (refer Figure 4).

Beyond these study areas, it is anticipated that the effect of the projects on land use will be negligible.

Figure 1 Edithvale project area

Figure 2 Bonbeach project area

Figure 3 Edithvale – Study area and land use map

Figure 4 Bonbeach – Study area and land use map

2 Scoping Requirements

In order to meet statutory requirements, protect environmental values and sustain stakeholder confidence, the EES would include an Environmental Management Framework (EMF). The EMF would provide a transparent framework with clear accountabilities for managing and monitoring environmental effects and hazards associated with the construction and operational phases of the projects.

Section 3.3 states 'the project description should canvass:

- 'contextual information on the project, including its relationship to statutory policies, plans and strategies; and
- existing and planned land uses within and in the vicinity of the proposed project'.

Section 3.5 of the Scoping Requirements (issued September 2017), states 'Environmental Performance Requirements (EPRs) should be clearly described in the EMF' and that 'the EMF must outline how potential adverse effects on…land uses,…open space, built form and neighbourhood character will be avoided, minimised or mitigated'.

3 Legislation, policy and guidelines

3.1 Relevant legislation

Table 1 summarises the relevant primary legislation that applies to the project as well as the implications and required approvals.

Table 1 Primary legislation and associated information

Legislation/policy	Purpose	Implications for this project	Approvals required
State			
Coastal Management Act 1995	Establishes a framework for the strategic management and planning of the Victorian coast and coastal crown land.	Use and development of Crown Land within 200 metres of the high water mark will require a permit under the Act.	Yes
Environment Effects Act 1978	Establishes an administrative process under which the Minister for Planning may require the proponent of a project to prepare an EES.	The Minister considers that the projects 'could reasonably be considered to have or to be capable of having a significant effect on the environment', and has therefore requested that an EES be prepared.	N/A
Major Transport Projects Facilitation Act 2009	Provides an assessment framework and facilitates the delivery of major transport projects in Victoria.	The Edithvale project and the Bonbeach project have been individually declared under the Act, which will facilitate the delivery of the projects.	N/A
Planning and Environment Act 1987	Establishes the legislative framework for the use and development of land in Victoria. The Act is the primary mechanism by which land use and development is permitted, controlled or prohibited, and it sets out the structure and administration of the planning system in Victoria.	The land in the project areas are subject to the requirements of the Kingston Planning Scheme. Ordinarily, some aspects of the use and development of the project would require planning permits. The projects will be regulated by the Act via Incorporated Documents, which will be inserted into the Kingston Planning Scheme via a Planning Scheme Amendment. The Incorporated Documents for each project would make the Minister for Planning the Responsible Authority for the purpose of the projects, and will allow the use and development of the projects without needing to seek planning permits.	Yes

Legislation/policy	Purpose	Implications for this project	Approvals required
Transport Integration Act 2010	Provides a legislative framework for transport in Victoria. The Act seeks to integrate land use and transport planning and decision-making by applying the framework to land use agencies whose decisions can significantly impact on transport. The Act requires agencies, including the Department of Economic Development, Jobs, Transport and Resources and planning authorities, to consider the potential impact of land use planning proposals on transport.	The Act sets out the objectives and principles for decision making where proposals are likely to significantly impact transport. These objectives and principles include integrated decision making, transparency, the precautionary principle and consideration of the transport system user perspective. The projects address the key transport system objectives and decision making principles and will have a positive impact on the transport system.	No

3.2 Planning schemes

The *Planning and Environment Act 1987* (P&E Act) is the primary legislative framework for the regulation of land use and development in Victoria.

The P&E Act provides the framework for planning schemes, which contain State and Local Government policy together with a suite of zone, overlay and particular provisions that apply to each municipal area in Victoria. The projects are affected by the provisions of the Kingston Planning Scheme (the Scheme) which controls the use and development of land within the municipality. Relevant sections of the Scheme are identified below.

3.2.1 State Planning Policy Framework

The State Planning Policy Framework (SPPF) seeks to ensure that planning decisions in Victoria are consistent with, and are supported by, the objectives of planning in Victoria as set out in Section 4 of the P&E Act. The SPPF sets out Victorian State policy which needs to be considered by all planning authorities, and are fostered through appropriate land use and development planning policies and provides a context for spatial planning and decision making in Victoria.

Policies contained within the SPPF apply to all land in Victoria and must be taken into account by planning authorities when preparing planning scheme amendments, or considering applications to use and develop land. Key State policy areas applicable to the projects include:

- Clause 11 – Settlement
- Clause 12 – Environment and landscape values
- Clause 13 – Environmental risks
- Clause 14 – Natural resource management
- Clause 15 – Built environment and heritage
- Clause 18 – Transport.

A summary of the relevant policies is provided below.

3.2.1.1 Clause 11 – Settlement

Clause 11 (Settlement) recognises that the role of planning is to anticipate and respond to the needs of existing and future communities through the provision of zoned and serviced land for housing, employment, recreation and open space, commercial and community facilities and infrastructure and, as far as practicable, contribute towards liveability, accessibility, safety, economic viability and the integration of land use and transport. Planning should also facilitate sustainable development that takes full advantage of existing settlement patterns, activity centres and investment in transport.

Clause 11.06 (Metropolitan Melbourne) policy guidelines stipulates that in considering the policy objectives and strategies for metropolitan Melbourne, planning must consider Plan Melbourne 2017-2050: Metropolitan Planning Strategy.

3.2.1.2 Clause 12 – Environmental and Landscape Values

Clause 12 (Environmental and Landscape Values) recognises that planning should help to protect the health of ecological systems and the biodiversity they support and conserve areas with identified environmental and landscape values. Planning must implement the environmental principles of ecologically sustainable development and should protect sites and features of nature conservation, biodiversity, geological or landscape value. Planning must consider and properly manage impacts on and the potential removal of native vegetation, and sites of particular environmental significance (e.g. Ramsar wetlands).

3.2.1.3 Clause 13 – Environmental Risks

Clause 13 (Environmental Risks) recognises that planning should adopt a best practice environmental management and risk management approach which aims to avoid or minimise environmental degradation and hazards. Planning should identify and manage the potential for the environment, an environmental changes, to impact upon the economic, environmental or social well-being of society. This includes floodplain management, noise abatement and air quality.

3.2.1.4 Clause 15 – Built Environment and Heritage

Clause 15 (Built Environment and Heritage) recognises that planning should ensure all new land use and development appropriately responds to its landscape, valued built form and cultural context, and protect places and sites with significant heritage, architectural, aesthetic, scientific and cultural value. This includes matters of safety, functionality, urban character, sustainability, heritage and Aboriginal cultural heritage.

3.2.1.5 Clause 18 – Transport

Clause 18 (Transport) recognises that planning should ensure an integrated and sustainable transport system that provides access to social and economic opportunities, facilitates economic prosperity, contributes to environmental sustainability, coordinates reliable and efficient movements of people and goods, and is safe.

3.2.2 Local Planning Policy Framework

The Local Planning Policy Framework (LPPF) of the Scheme provides the local context and planning policies specific to the City of Kingston, and is comprised of two components, the Municipal Strategic Statement (MSS) and local planning policies. The MSS provides the context, policies and strategic basis for the application of planning controls (for example, zones and overlays) and the local policies provide policy statements of intent or expectation for an area outlines how land use and development within the municipality of the City of Kingston are to be considered.

The following clauses within the LPPF for the City of Kingston are relevant to the projects.

3.2.2.1 Land use

- Clause 21 (MSS) seeks to provide a clear vision and direction for what land use planning should achieve in the City of Kingston.
- Clause 21.03 (Land Use Challenges for the New Millennium) recognises key land use issues which are likely to challenge Kingston's future growth and development, including protecting and enhancing ecological values.
- Clause 21.04 (Vision) 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
    - heritage.

The Strategic Land Use Framework Plan (Figure 5) identifies the areas surrounding the projects as areas of incremental and increased housing diversity within a foreshore/residential environs area. Chelsea is identified as areas for promotion of residential renewal and increased housing diversity.

Figure 5 City of Kingston Strategic Land Use Framework Plan

- Clause 21.05 (Residential Land Use)

  As identified in Figure 5, the following housing areas are relevant to the projects:

  - **Activity Centres**

    Edithvale is identified as a Neighbourhood Activity Centre and Chelsea is identified as a Major Activity Centre in the City of Kingston Strategic Land Use Framework Plan. Activity centres have been identified as providing opportunities for higher densities, particularly in the form of shop-top housing and mixed used development.

  - **Increased housing diversity areas**

    The intention within these areas is to promote new medium density housing comprising a variety of housing types and layouts while responding to the established but evolving urban character. Because these are already established as residential areas, the design of new medium density housing proposals will need to display some sensitivity to the existing residential context and amenity standards in these areas.

  - **Incremental housing change areas**

    The type of housing change anticipated in these areas will take the form of extensions to existing houses, new single dwellings or the equivalent of new two dwelling developments on average sized lots. The existing single dwelling character of these areas is to be retained.

- Clause 21.06 (Retail and Commercial Land Use) 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. The interface between Bonbeach and Chelsea is identified as an area for potential gateway treatments.

3.2.2.2 Environment

- Clause 21.08 (Foreshore) recognises the importance of the Port Phillip coastline to recreation, scenic and coastal experiences. It seeks to optimise community enjoyment of the foreshore, to protect and minimise adverse environmental impacts on the coastal and marine environment, and to promote opportunities for development in activity nodes which is sensitive to natural coastal systems and which are compatible with the character and scale of the surrounding landscape. Edithvale and Chelsea are recognised as secondary activity nodes which have key linkages to hinterland open space, and have been identified as having opportunities to strengthen visual and physical linkages between railway station environs, commercial centre and foreshore activities. Key pedestrian and cycling trails are identified north to the south along the Nepean Highway as shown in Figure 6.

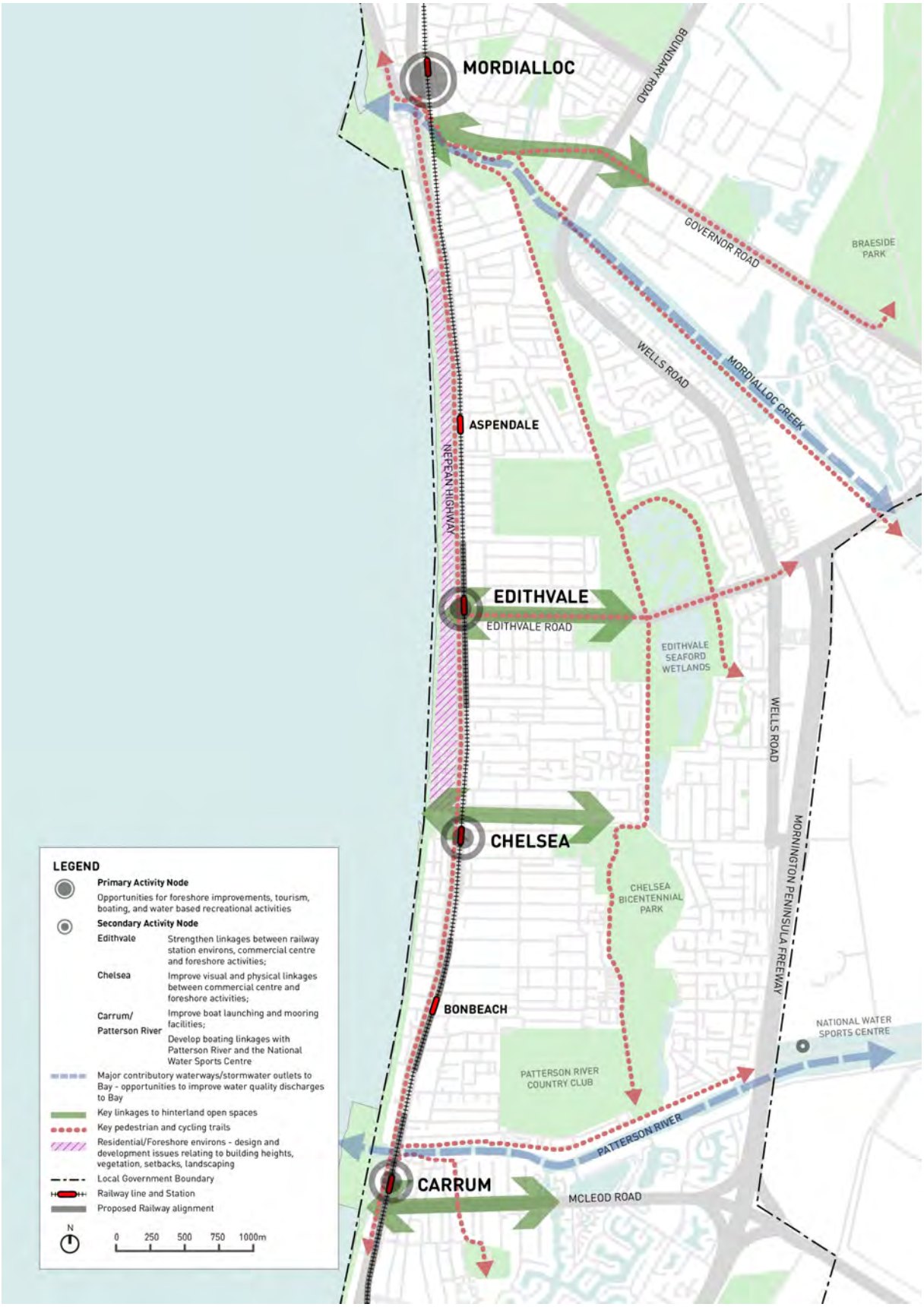

Figure 6 City of Kingston Foreshore Framework Plan

- Clause 21.09 (Environment Wetlands and Waterways) acknowledges that the environmental landscape of the City of Kingston is recognised for its diversity and significance in both a local and regional context, and specifically seeks to protect the physical and habitat diversity of the Edithvale-Seaford wetlands to recognise its role as an internationally significant wetland area and to maintain the diversity of flora and fauna habitats within Kingston. The Environment, Wetlands and Waterways Framework Plan (Figure 7) identifies the Edithvale-Seaford Wetlands as a site of identified environmental significance and identifies the foreshore between the Nepean Highway and Port Phillip Bay as an area for indigenous vegetation enhancement adjacent to the foreshore. The Patterson River is identified as an area for the potential creation of habitat corridors, improvements to natural landscapes and the protection of significant remnant vegetation.

3.2.2.3 Transport

- Clause 21.12 (Transport, Movement and Access) recognises the importance of a balanced transport network based on public transport, road, pedestrian and cycle systems in providing access for people to jobs and services, and goods to market. The Transport and Access Framework Plan (Figure 8) identifies Edithvale Road as a freight capacity route with highest priority for improvement and the Nepean Highway as a Declared Main Road with capacity deficiencies.

3.2.2.4 Built environment and heritage

- Clause 21.13 (Heritage) recognises the wide ranging heritage assets found within Kingston and seeks to identify, protect and enhance places of cultural heritage value.
- Clause 22.16 (Heritage Policy) seeks to identify, protect, conserve and manage places or elements of cultural heritage significance within Kingston.

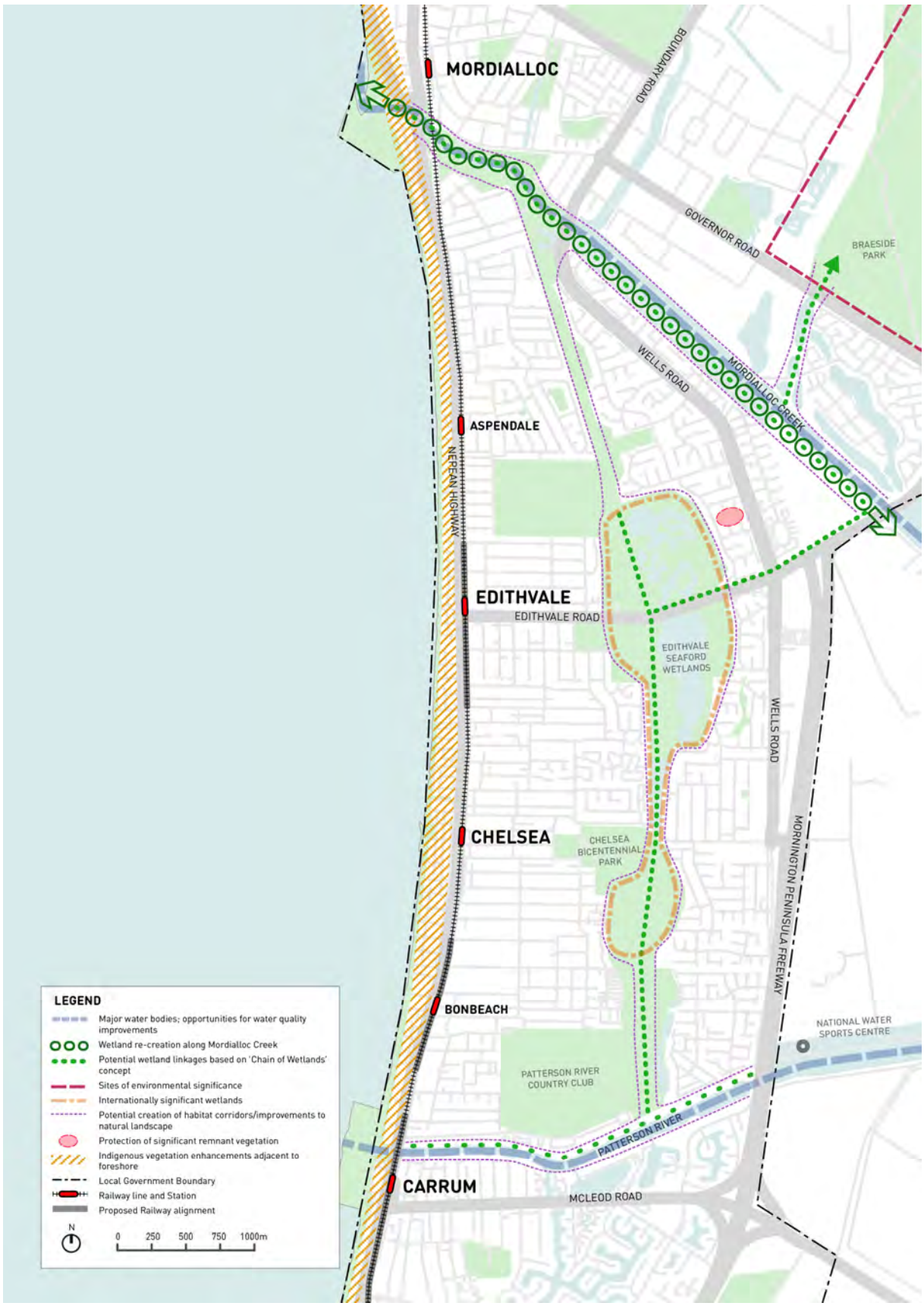

Figure 7 City of Kingston Environment, Wetlands and Waterways Framework Plan

Figure 8 City of Kingston Transport and Access Framework Plan

3.2.3 Planning approval

The P&E Act establishes a framework for the use, development and conservation of land in Victoria. This Act provides for the preparation and administration of planning schemes which control the use and development of land, and the process of considering land use and development proposals.

It is envisioned that the development and use of land for both the Edithvale project and Bonbeach project would be facilitated by separate Incorporated Documents within the Scheme. The Incorporated Document for each project would be inserted into the Scheme by the Minister for Planning via separate Planning Scheme Amendments (PSAs).

The effect of the Incorporated Documents would be to remove the requirement for the projects to seek planning permits, subject to various requirements, including matters to be undertaken to the satisfaction of either the Minister for Planning or other approving authorities, contained within the relevant Incorporated Document.

Draft PSAs will be exhibited with the EES to allow the community to provide submissions and feedback. The Minister's assessment of the EES report will inform the consideration of the PSAs.

3.2.4 Land use definitions

The projects are comprised of a number of land use and development components, some of which ordinarily would require a planning permit under the Scheme.

The activities included in the projects are defined as 'Minor Utility Installation', 'Railway', 'Railway Station' and 'Road.' The following land use definitions are relevant to the projects:

Minor Utility Installation is a land use defined in the Scheme as *'land used for a utility installation comprising any of the following: a) sewerage or water mains; b) storm or flood water drains or retarding basins; d) gas mains providing gas directly to consumers; e) power lines designed to operate at less than 220,000 volts; f) a sewage treatment plant, and any associated disposal works, required to serve a neighbourhood; g) a pumping station required to serve a neighbourhood; or h) an electrical sub-station designed to operate at no more than 66,000 volts. It includes any associated flow measurement device or a structure to gauge waterway flow*.'

Railway is a land use that is not defined in the Scheme, the *P&E Act* or the *Interpretation of Legislation Act 1984*, accordingly, the term has its ordinary meaning.

Dictionary definitions of 'Railway' include associated infrastructure (e.g. 'the entire equipment, rolling stock, buildings, property, and system of tracks').

The meaning of railway and rail infrastructure in the *Rail Management Act 1996* provides some guidance as it includes *'railway track, railway track sidings, associated track structures and works (such as cuttings, tunnels, bridges, stations, platforms, excavations, land fill, track support earthworks and drainage works), over-track structures, under-track structures, service roads, signalling systems, rolling stock control systems, communications systems, notices and signs, overhead electrical power supply systems and associated buildings, depots, yards, plant, machinery and equipment.*'

Railway Station is a land use defined in the Scheme as '*land used to assemble and distribute goods or passengers and includes facilities to park and manoeuvre vehicles. It may include the selling of good, drinks and other convenience goods and services.*'

Road is a land use defined in the *P&E Act* and includes *'highway, street, lane, footway, square, court, alley or right of way, whether a thoroughfare or not and whether accessible to the public generally or not.*'

3.2.5 Planning zones

The project areas encompass a range of zones as shown in the project area zoning maps at Appendix A. An analysis of the zoning requirements are found in Sections 3.2.7 and 3.2.8 of this report.

As identified in these sections, the projects require a number of planning approvals.

3.2.6 Planning overlays

The project areas encompass a range of overlays as shown in the project area overlay maps at Appendix B. An analysis of the overlay requirements are found in Sections 3.2.7 and 3.2.8.

As identified in these sections, the projects require a number of planning approvals.

3.2.7 Planning controls – Edithvale project area

The following zone and overlay controls within the Scheme apply to the Edithvale project area.

3.2.7.1 Zones

Table 2 below outlines the relevant zones within the Edithvale project area, together with an analysis of permit requirements.

Table 2 Edithvale zone requirements

Zone	Land use	Permit requirements
Public Use Zone 4 (PUZ4)	Railway, Railway Station, Road, Minor Utility Installation	× No permit required for land use × No permit required for buildings and works
Road Zone (RDZ1 and RDZ2)	Railway, Road, Minor Utility Installation	× No permit required for land use × No permit required for buildings and works
General Residential Zone – Schedule 2 and 3 (GRZ2 and GRZ3)	Road	× No permit required for land use × No permit required for buildings and works
	Minor Utility Installation	× No permit required for land use × No permit required for buildings and works
Commercial 1 Zone (C1Z)	Road	× No permit required for land use × No permit required for buildings and works
	Minor Utility Installation	× No permit required for land use × Buildings and works exempt per cl. 62.02-1
Mixed Use Zone (MUZ)	Road	× No permit required for land use × No permit required for buildings and works
	Minor Utility Installation	× No permit required for land use × No permit required for buildings and works

3.2.7.2 Overlays

Table 3 below outlines the relevant overlays within the Edithvale project area, together with an analysis of permit requirements.

Table 3 Edithvale overlay requirements

Overlays	Development	Permit requirements
Design and Development Overlay – Schedule 1 (DDO1)	Road, Minor Utility Installation	× No permit required for buildings and works
Design and Development Overlay – Schedule 7 (DDO7)	Railway	✓ Permit required for buildings and works
	Road, Minor Utility Installation	× No permit required per Clause 62.02-1 and Clause 62.02
Special Building Overlay (SBO)	Road	✓ Permit required for buildings and works
	Minor Utility Installation	× No permit required per Clause 62.02
Environment Audit Overlay (EAO)	Railway, Road, Minor Utility Installation	× No permit required
Heritage Overlay (HO28) – Chelsea Clock Tower	Railway, Minor Utility Installation	✓ Permit required for buildings and works ✓ Permit required for demolition

3.2.8 Planning controls – Bonbeach project area

The following zoning and overlay controls within the Scheme apply to the Bonbeach project area.

3.2.8.1 Zones

Table 4 below outlines the relevant zones within the Bonbeach project area, together with an analysis of permit requirements.

Table 4 Bonbeach zone requirements

Zones	Land use	Permit requirements
Public Use Zone 4 (PUZ4)	Railway, Railway Station, Minor Utility Installation	× No permit required for land use × No permit required for buildings and works
Road Zone (RDZ1 and RDZ2)	Railway, Railway Station, Road, Minor Utility Installation	× No permit required for land use × No permit required for buildings and works
General Residential Zone – Schedule 2 and 3 (GRZ2 and GRZ3)	Road	× No permit required for land use × No permit required for buildings and works
	Minor Utility Installation	× No permit required for land use × No permit required for buildings and works
Commercial 1 Zone (C1Z)	Road	× No permit required for land use × No permit required for buildings and works
	Minor Utility Installation	× No permit required for land use

Zones	Land use	Permit requirements
		× Buildings and works exempt per cl. 62.02-1

3.2.8.2 Overlays

Table 5 below outlines the relevant overlays within the Bonbeach project area, together with an analysis of permit requirements.

Table 5 Bonbeach overlay requirements

Overlays	Development	Permit requirements
Design and Development Overlay – Schedule 1 (DDO1)	Road, Minor Utility Installation	× No permit required for buildings and works
Design and Development Overlay – Schedule 7 (DDO7)	Railway	✓ Permit required for buildings and works
	Road, Minor Utility Installation	× No permit required per Clause 62.02-1 and Clause 62.02
Design and Development Overlay – Schedule 8 (DDO8)	Road	× No permit required per Clause 62.02-1
Heritage Overlay (HO31) – Chelsea Station and Signal Box	Railway, Minor Utility Installation	✓ Permit required for buildings and works ✓ Permit required for demolition

3.2.9 Particular Provisions

Particular provisions of the Scheme also apply to the Edithvale project and Bonbeach project in addition to the zone and overlay controls as described above. The following particular provisions are relevant to the projects:

3.2.9.1 Clause 52.05 – Advertising Signs

Any advertising sign to be erected within the project areas would need to meet the requirements of Clause 52.05.

For the project areas that falls within the PUZ4, the category of advertising control which applies is the category which applies to the adjoining zone nearest to the land. If land is equidistant from two or more adjoining zones, the least restrictive category applies.

Where the RDZ1 is the nearest adjoining zone, a permit is required to display a sign.

The project areas also traverse a number of other zones which fall into different categories for the purpose of advertising signage.

3.2.9.2 Clause 52.06 – Car Parking

Railway Station is an unspecified land use for the purpose of Table 1 of Clause 52.06. Ordinarily, prior to the commencement of a new use, car parking must be provided to the satisfaction of the Responsible Authority.

3.2.9.3 Clause 52.17 – Native Vegetation

A permit is required to remove, destroy or lop native vegetation, including dead native vegetation. An application to remove, destroy or lop native vegetation must be classified as one of the following risk-based pathways: low, moderate or high, as defined in the Permitted clearing of native vegetation - Biodiversity assessment guidelines. This does not apply:

- if the table to Clause 52.17-7 specifically states that a permit is not required
- to the removal, destruction or lopping of native vegetation specified in the schedule to this clause
- to an area specified in the schedule to this clause.

3.2.9.4 Clause 52.29 – Land Adjacent to a Road Zone Category 1, or a Public Acquisition Overlay for a Category 1 Road

The project area includes various roads zoned RDZ1. Where the project proposes the creation or alteration of access to a RDZ1, a planning permit would ordinarily be required for the creation and alteration of access pursuant to Clause 52.29 and would ordinarily be referred to the Roads Corporation (VicRoads) as a determining Referral Authority.

3.2.9.5 Clause 52.36 – Integrated Public Transport Planning

A planning permit application must be referred to Public Transport Victoria (PTV) for comment if the proposal includes any alteration or development of public transport infrastructure.

The projects involve the alteration and development of public transport infrastructure and would ordinarily be referred to PTV.

3.3 Planning scheme amendments

The Scheme is able to be amended by way of a Planning Scheme Amendment (PSA).
A Scheme can only be changed with the approval of the Minister for Planning.

Relevant PSAs that may impact on the projects have been identified and the impact discussed below.

3.3.1 Recent amendments to the Scheme

3.3.1.1 Amendment C147 – Rossdale Golf Course (part)

This amendment rezoned a small portion of land at the south eastern corner of that site from a Special Use Zone 1 – Golf Course to a General Residential 3 Zone to allow for residential use. The Amendment also applied an Environmental Audit Overlay to the subject land.

Concurrent to the amendment was a planning permit application (permit application number KP15/480) for the subdivision of the land into two lots and the removal of native vegetation.

This amendment reflects a small change in land use within the study area from recreation to residential. The amendment was gazetted on 24 January 2017 and forms part of the Scheme.

3.3.2 Proposed amendments to the Scheme

3.3.2.1 Amendment C132 – Implementation of part of the recommendation of the Kingston Planning Scheme Review 2012

Amendment C132 seeks to replace the existing Municipal Strategic Statement (MSS) at Clause 21 of the Scheme with a new format MSS and seeks to amend Clause 22 of the LPPF, in accordance with part of the recommendations of the Kingston Planning Scheme Review 2012. The proposed changes are generally policy neutral and relate to the removal, rewording and revising of existing content.

Clause 21 of the Scheme will be updated to draw upon and provide consistency with the SPPF. Additionally, the MSS and LPPF will be updated to remove redundant references currently in the Scheme, including the removal of Clause 22.02 (Springvale Industrial Park Area Policy), Clause 22.06 (South Road Industrial Gateway) and Clause 22.08 (Park View Industrial Estate). The proposed Amendment also updates policy references, overviews, data and content within the LPPF that have been identified in the Kingston Planning Scheme Review 2012 as requiring revision or removal. These changes have been made to ensure that the Scheme is clearly worded and concise and will reflect the most up to date statistics for the municipality.

Clause 21.12 (Transport Movement and Access) is relevant to the project and proposed to be deleted from the Scheme by Amendment C132.

The changes proposed by Amendment C132 do not materially change the analysis of the relevant local policy framework as set out in 3.2.2 of this report.

Amendment C132 has been adopted by Council and was submitted to the Minister for Planning for approval on 28 July 2017.

4 Method

This section describes the method that was used to assess the potential impacts of the Edithvale and Bonbeach level crossing removal projects.

A systematic risk based approach was applied to understand the existing environment, potential impacts of the projects and how to avoid, minimise or manage the risk of impact.

The iterative nature of the assessment is illustrated in Figure 9.

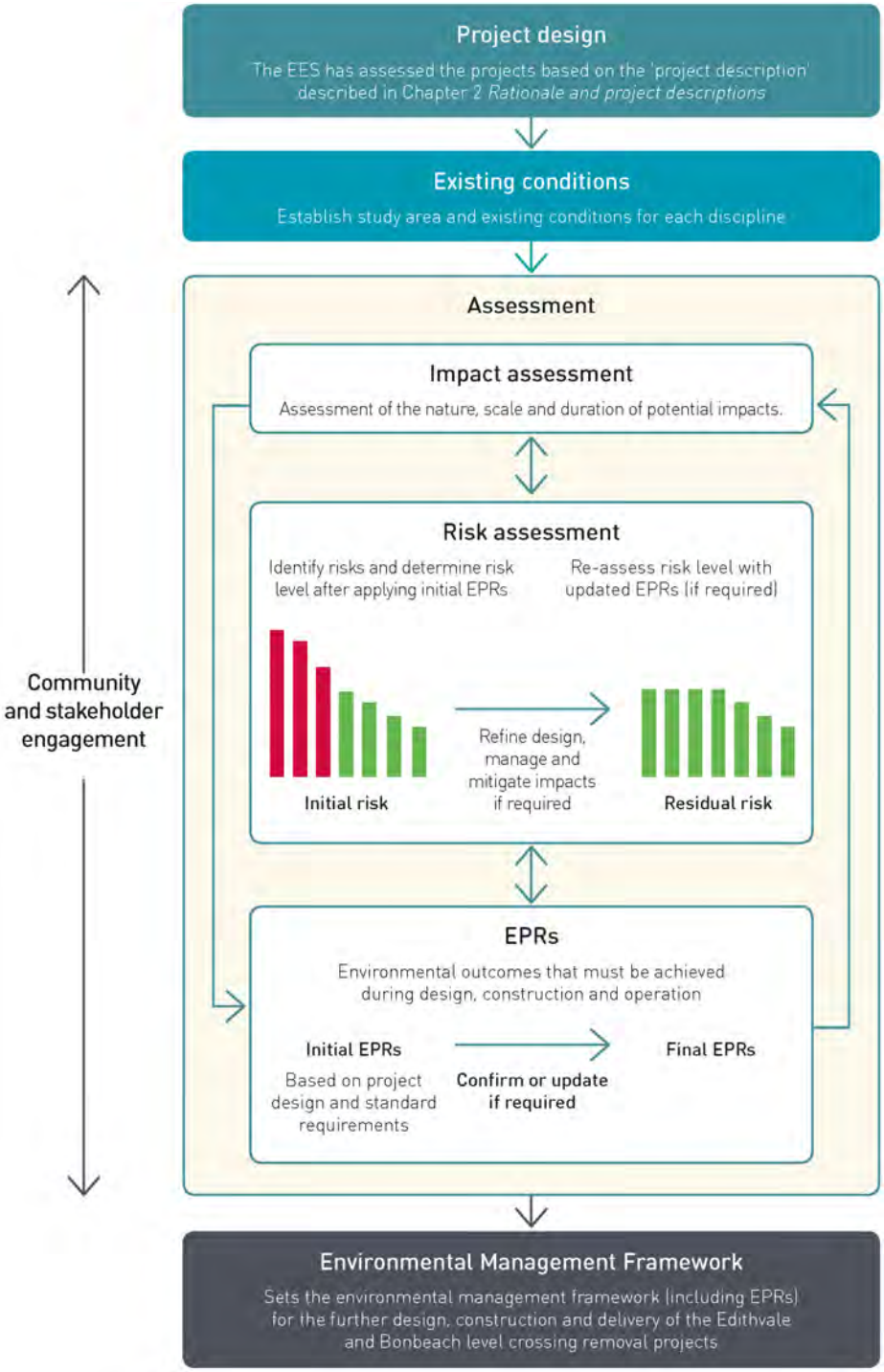

Figure 9 Overview of impact and risk assessment process

The following sections outline the methodology for the land use impact assessment.

4.1 Existing conditions assessment

This existing conditions assessment sets a baseline of current land use within the study areas, and provides for the assessment of any potential impacts of the projects to land use.

4.1.1 Establish existing conditions

The study areas (refer to Figure 3 and Figure 4) include a summary of existing conditions. The purpose of the existing conditions review is to identify and describe current land uses in and around the study areas.

4.1.2 Desktop assessment and baseline data review

A detailed desktop assessment was undertaken drawing from various publicly available state and local government reports and literature, land use planning databases to understand the existing conditions within the study areas. The following baseline data was reviewed as part of the desktop assessment:

- the legislative framework which applies to land contained in and around the study area, including:
  - Plan Melbourne 2017-2050.
  - State and local government strategic planning policy to identify where the proposed works would impact on strategic plans and land use plans identified by the City of Kingston.
- the Scheme, and particularly:
  - the SPPF and LPPF.
  - zones, overlays and relevant particular provisions.
- current strategic planning work and future PSA amendments being considered by the State and the City of Kingston.
- publicly accessible aerial imagery.

4.1.3 Site visit and consultation

In addition, the following activities were undertaken:

- site visits were conducted on 28 June 2017 and 29 August 2017 to observe and identify existing and proposed land uses and development within the Study Areas. The site visit was conducted on foot and by car.
- consultation with relevant State and local government agencies was also undertaken for this assessment. The outcomes of this consultation informed the assessment of existing and likely future land use in the study areas.

4.2 Risk assessment

A risk-based approach is integral to the EES as required by Section 3 of the Scoping Requirements for the EES.

The risk management approach adopted for the Edithvale and Bonbeach EES is consistent with AS/NZS ISO 31000:2009 Risk Management Process and involves the following steps:

- establishment of the context of the risk assessment – this identifies the boundaries of the projects including the project definition, the duration of construction and operation, the design and environmental controls that would be in place (initial Environmental Performance Requirements (EPRs) – refer to Section 8), and the location of the projects
- risk identification – identification of risk pathways by specialists in each relevant discipline area
- risk analysis – assessment of risk for each risk pathway, whereby risk is a combination of:
    - the likelihood of an event and its associated consequences occurring
    - the magnitude of potential consequences of the event.
- risk evaluation – review key risks posed by the projects to focus effort in terms of impact assessment and mitigation.
- risk treatment – identification of additional management and mitigation where required to reduce risk levels where possible.

An initial risk assessment was undertaken to assess potential risks to the environment arising from the implementation of the projects. Where risks were minor or above, further mitigation was explored. Risks were re-assessed to determine the residual risk based on further mitigation.

A more detailed description of each step in the risk assessment process is provided in EES Attachment II *Environmental Risk Report*.

This technical report describes the risks associated with the projects on land use.

4.3 Impact assessment

The impact assessment has assessed the planned (known) land use impacts and the risk of additional (uncertain) land use impacts that the projects would or may have on land use within the study areas.

In order to provide an assessment of the potential impact of the projects on the land use within the study areas, the following tasks have been undertaken:

- assessment of the potential implications for existing and likely future land uses, as a result of the projects, including consideration of:
    - land use requirements during the construction of the projects
    - land use requirements during the operation of the projects
    - consistency with existing or future land use policy and planning framework (such as zonings, overlays or structure plans)
    - potential constraints on or changes to existing or likely future land use on adjacent sites
    - amenity impacts of the construction or operation of the projects where they relate to land use
- identification of measures to avoid or manage potential impacts on land use.

4.4 Environmental Performance Requirements

The environmental outcomes that must be achieved during design, construction and operation of the projects are referred to throughout the EES as Environmental Performance Requirements (EPRs). EPRs must be achieved regardless of the construction methodology or design solutions adopted. Measures identified in this EES to avoid or minimise environmental impacts have formed part of the recommended EPRs for the projects.

The development of a final set of EPRs for the project has been iterative.

4.4.1 Initial EPRs

Environmental performance requirements were identified to inform the assessment of initial risk ratings (where appropriate). These initial EPRs were based on compliance with legislation and standard requirements that are typically incorporated into the delivery of construction contracts for rail projects.

4.4.2 Confirm or update EPRs

The risk assessment either confirmed that these EPRs were adequate or identified the need for further refinement.

EPRs were updated or new EPRs were developed for any initial risk that could not be appropriately managed by standard requirements. The risk and impact assessment processes confirmed the effectiveness of new or updated EPRs to determine the residual risk rating.

4.4.3 Final EPRs

The EPRs recommended for the projects are outlined in Section 8 of this report and are included in the EES Environmental Management Framework.

The EPRs are applicable to the final design, construction approach and operation and provide certainty regarding the environmental performance of the projects.

4.5 Linkage to other technical reports

The land use impact assessment should be read in conjunction with other relevant technical reports forming part of the EES. Other impacts relating to amenity, noise, air quality, vibration and visual impact have been considered in detail in other technical reports.

The outcomes of the land use impact assessment were used as inputs to:

- EES Technical Report L *Social*

This report also considered:

- EES Technical Report G *Traffic*
- EES Technical Report H *Noise and Vibration*
- EES Technical Report I *Air Quality*
- EES Technical Report J *Landscape and Visual*
- EES Technical Report K *Business*
- EES Technical Report L *Social*

Where relevant to land use, other technical reports are considered and referenced.

5 Existing conditions

5.1 Regional Context

This section describes the existing land use within the project study area and situates this description within a broader regional context.

5.1.1 Regional land use context

The projects are located wholly within the municipality of Kingston on the Frankston rail corridor. The projects are located south of the suburb of Aspendale and north of the suburb of Carrum, are separated from each other by the suburb of Chelsea. The projects are located proximate to the Port Phillip Bay foreshore.

A description of the regional land use context for the Frankston rail corridor is as follows:

5.1.1.1 Land use

The Frankston rail corridor is a rail transport corridor which contains the Frankston rail line and associated infrastructure. The railway provides passenger connectivity between Frankston and the Central Business District of Melbourne. It is collocated with the Pakenham and Cranbourne lines between Flinders Street Railway Station and Caulfield Railway Station. The Frankston rail line then branches southwards at Caulfield Junction (located immediately to the southeast of Caulfield Railway Station) where it continues within a separate alignment towards Frankston Railway Station.

The rail corridor also provides for occasional rail freight movements.

Commuter access to the Frankston rail line is provided via 32 railway stations interspersed along the rail line. The stations are located within the rail corridor and are characterised by commuter car parking, station buildings and facilities, and a range of service levels.

Rail infrastructure to provide for the safe and efficient operation of the railway is located within the rail corridor and includes electrical substations, signalling and power equipment, train stabling and maintenance facilities, maintenance and rail access points, staff and driver facilities.

The rail corridor also traverses Mordialloc Creek, Patterson River and Kananook Creek via a series of rail bridges. The rail corridor is also traversed by a number of roads and pedestrian and cyclist access points, which comprise the various level crossings along the Frankston rail line.

The zoning of the rail corridor is primarily Public Use Zone 4 – Transport (PUZ4) which is consistent with the historic and existing land use as a railway. Where the rail corridor traverses arterial roads the corridor is zoned Road Zone Category 1 (RDZ1); where the corridor traverses major local roads, the corridor is zoned Road Zone Category 2 (RDZ2); where the corridor traverses the Patterson River the corridor is zoned both PUZ4 and Public Park and Recreation Zone (PPRZ).

The rail corridor contains a variety of overlays that reflect more localised conditions and reflect, for example, the existence of buildings of heritage value within the rail corridor, local hydrological and cross-flow conditions, areas of environmental significance, wildfire sensitivity and building height controls.

Land uses adjacent and proximate to the Frankston rail corridor are varied and predominantly characterised by residential dwelling typologies and diverse retail and commercial uses. Major activity centres located along the corridor running north to south, include Caulfield, Glenhuntly,

Bentleigh, Moorabbin, Southland/Cheltenham, Mentone, Mordialloc, Chelsea and Frankston. A number of smaller Neighbourhood Activity Centres are located along the corridor and are generally clustered around train station precincts, while further mixed use and commercial centres are located along key arterial roads that intersect with the rail corridor.

Moorabbin Airport is located to the east of the rail corridor. The Monash and Dandenong National Employment and Innovation Clusters are major commercial and industrial employment nodes and are also located nearby.

The corridor traverses or runs proximate to a mix of informal public open spaces and recreational land uses including parklands, narrow linear reserves, sport fields, playgrounds, creek and riverine environs, golf courses, marinas, and the Port Phillip Bay and Port Phillip Bay foreshore.

5.1.2 Relevant State policies and strategies

5.1.2.1 Plan Melbourne 2017-2050

Plan Melbourne 2017-2050 (Plan Melbourne) is a State Government policy framework that sets out the long term strategic plan for metropolitan Melbourne. Plan Melbourne addresses some of the fundamental challenges that the city is facing and seeks to plan for and manage Melbourne's future growth in population and employment.

Plan Melbourne includes seven outcomes which aim to drive Melbourne as a competitive, liveable and sustainable city. The project is supported by, and is consistent with, Outcome 3: Melbourne has an integrated transport system that connects people to jobs and services and goods to market.

The project is also supported by, and is consistent with, the following policies which further develop Outcome 3:

- Policy 3.1.1: Create a metro-style rail system with 'turn up and go' frequency and reliability, which includes the delivery of separated road and rail crossings.
- Policy 3.1.2: Provide high-quality public transport access to job-rich areas by enhancing access to activity centres along the Frankston rail corridor, the Monash National Employment and Innovation Cluster, the Dandenong National Employment and Innovation Cluster, and to the wider metropolitan Melbourne.
- Policy 3.1.3: Improve arterial road connections across Melbourne for all road users, including by removal of level crossings.

5.1.2.2 Public Transport Victoria Network Development Plan (2012)

The PTV Network Development Plan is a development plan for Melbourne's train system needs to evolve to meet the needs of the city and of train passengers in the short, medium and long term. The Plan is intended to inform government in its process of policy formulation and PTV recognises that government will set its priorities accordingly.

The Plan is designed to:

- expand the capacity of the existing network to meet the growing needs of the city;
- redesign train services to maximise opportunities for seamless coordination with buses and trams, and
- extend the network to areas currently not served by metropolitan rail.

The Plan charts the way for transforming Melbourne's rail network into a metro-style system, which is characterised by a number items including grade separated crossings.

5.1.3 Relevant local policies and strategies

5.1.3.1 City of Kingston Retail/Commercial Development Strategy 2006

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. The Strategy supports the role and function of activity centres such as Edithvale.

5.1.3.2 Prosperous Kingston – A Framework for Economic Sustainability (2016)

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.

5.1.3.3 Kingston Housing Strategy (2000) and Kingston Neighbourhood Character Study (2000)

Kingston is currently preparing a new Kingston Housing Strategy and Kingston Neighbourhood Character Study. Consultation with Council's planning department has indicated that future policy for the study areas is likely to be consistent with current policy for the area, however studies are still ongoing.

The Kingston Residential Strategy Update 2014 policy is an update to the *Kingston Residential Strategy 2000* which was prepared to address residential development within Kingston. The Strategy update was prepared to assist in managing the planning and regulatory aspects of residential development in the municipality and aims '*to promote and facilitate increased local housing diversity to meet the changing housing needs of the community and increased liveability within an integrated planning framework'.*

The strategy proposes that *'in areas serviced by rail, opportunities exist to increase population density to maximise patronage levels and reduce potential environmental impacts'*.

The strategy proposes that there will be residential consolidation and increased densities within the Edithvale Neighbourhood Activity Centre, along major arterial roads such as Nepean Highway and close to public transportation (close to Edithvale and Bonbeach Train Stations).

Planning Area Residential Frameworks within the strategy address residential land use issues at localised sites.

The following 'Planning Areas' are relevant for the purpose of this report:

- *Planning Area 8* (Aspendale, Aspendale Gardens and Edithvale).
- *Planning Area 9 (*Chelsea, Chelsea Heights and Bonbeach).

Planning Areas 8 and 9 are shown on Figure 10 below.

The strategy has informed Clause 21.05 (Residential Land Use) of the Scheme which is discussed in Section 5.3.1.

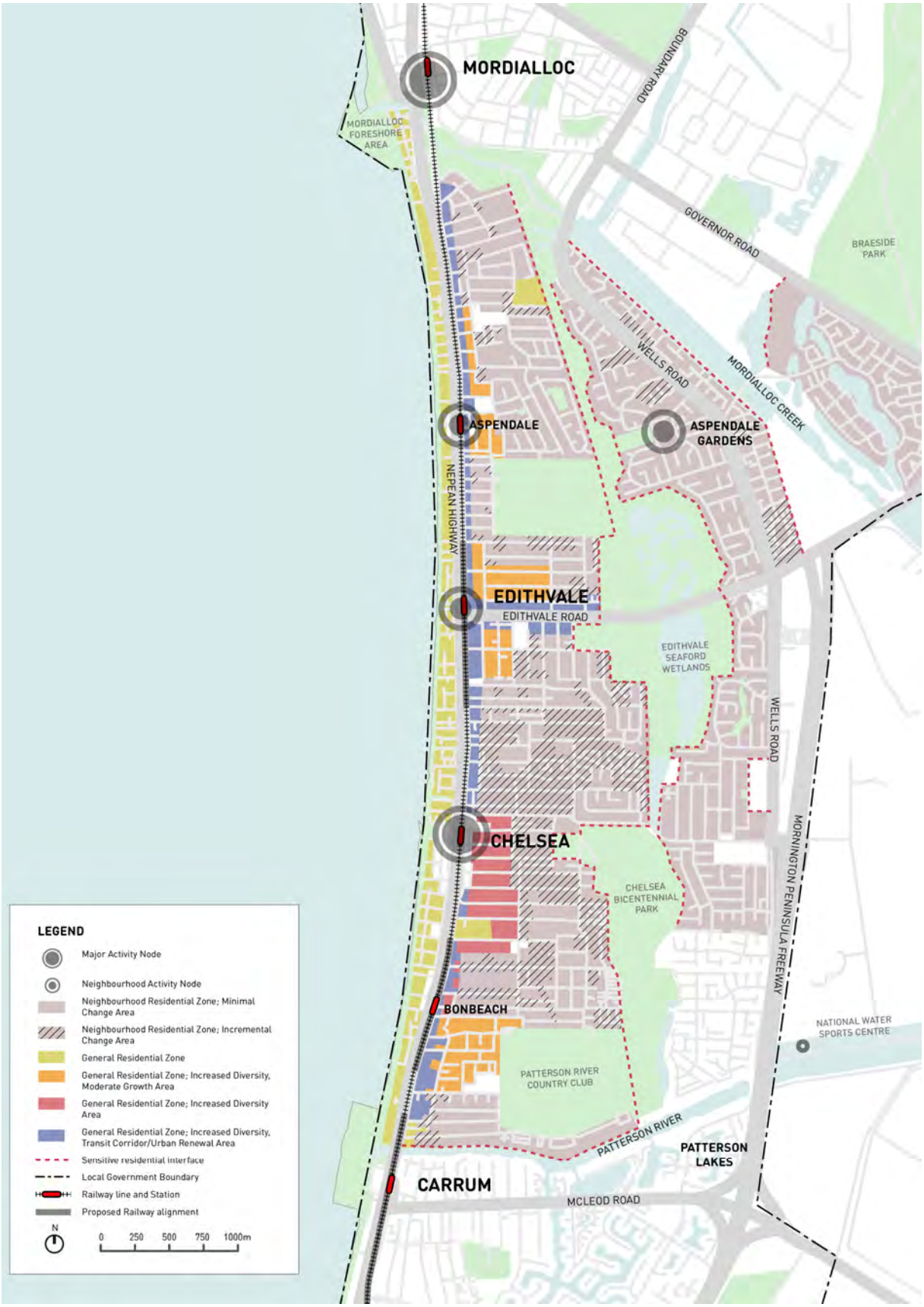

Figure 10 Kingston Residential Strategy Update 2014 – Residential Planning Framework Planning Area 8 and 9

5.1.3.4 Kingston Open Space Strategy (2012)

The Kingston Open Space Strategy (2012) provides an analysis of open space within the municipality of Kingston and provides recommendations in relation to the management and maintenance of the Kingston open space resource and the vision for the future of these areas. This strategy is relevant to recreation and open space land use.

5.2 Edithvale project

5.2.1 Land Use

Existing land use within the Edithvale study area is described below and shown in the Edithvale study area and land use map at Figure 3.

5.2.1.1 Railway

The Frankston rail line runs the full length of the Edithvale study area and is located between Nepean Highway (a major state arterial road) and Station Street. It has two tracks which run the full length and sits roughly at grade with the adjacent roads.

Edithvale Station is located to the north of Edithvale Road, it has side platforms which are accessed from Nepean Highway and Station Street and access between the platforms is by the pedestrian level crossing at Edithvale Road. The station contains 34 car parking spaces to the south of Edithvale Road and five bike racks.

There are eight pedestrian level crossings within the study area located at:

- Birdwood Street, Second Avenue, Lochiel Avenue, Aspendale
- Edithvale shops (Between Denman and Sinclair Avenue)
- Edithvale Station (Edithvale Road)
- Fraser and Berry Avenue, Edithvale
- Swanpool Avenue, Chelsea.

There are three level crossings within the study area are located at:

- Lochiel Avenue, Aspendale
- Edithvale Road, Edithvale
- Swanpool Avenue, Chelsea.

Land within the rail corridor is zoned PUZ4, except for where it crosses Edithvale Road, where it is zoned RDZ1.

5.2.1.2 Major roads

Major Roads within the study area include Nepean Highway and Edithvale Road, which are both arterial roads and zoned RDZ1.

More than 12,000 vehicles per day use the level crossing between Edithvale Road and Nepean Highway.

The Nepean Highway at Edithvale is an important arterial road forming part of the Nepean Corridor which runs from Frankston to St Kilda.

Edithvale Road runs from the Nepean Highway to Wells Road, where it becomes Springvale Road. It is a major east-west connector to employment and services for Edithvale and surrounding local areas.

5.2.1.3 Commercial

The Edithvale Neighbourhood Centre is located in the Edithvale study area and is anchored by the Edithvale Station. The Centre is located between larger activity centres including Chelsea to the south and Mordialloc to the north.

The west side of Nepean Highway forms a continuous, albeit one sided 'high street' environment for the Neighbourhood Centre, with active street frontages of retail shops and providing some overhead canopies and weather protection.

The Centre provides a local supermarket and smaller tenancies comprising cafés, small shops, and personal and professional services.

Commercial land use is generally contained within the Commercial 1 Zone (C1Z) and centred around but opposite Edithvale Station. Out of centre commercial development within the study area includes a small strip of shops on Nepean Highway within the C1Z, north of Kelvin Grove and a service station within the General Residential Zone 2 (GRZ2), on the corner of Station Street and Lochiel Avenue.

5.2.1.4 Residential

Residential lands uses are located east of the railway line, west of the railway line between the commercial strip and the beach and further north and south along the western side of the Nepean Highway.

Lots are generally between 500-700 square metres in size, developed in the post war era (1950's to 1960's). There has been some recent subdivision and redevelopment of up to four storey, especially along Station Street and Nepean Highway, increasing the amount of medium density housing in the area. Beyond this, the study area retains a predominantly low rise and low density residential character.

Residential land use within the study area is largely found within the GRZ2, however some mixed use developments and residential exist within the C1Z.

5.2.1.5 Education

Edithvale Primary School sits approximately 500 metres east of Edithvale Station and services a local catchment. The school is zoned Public Use Zone 2 – Education (PUZ2).

A local preschool is located within the GRZ2 on Fraser Avenue.

5.2.1.6 Open space

The study area includes a number open space and recreational amenities, including Edithvale Beach and the Port Phillip foreshore. Approximately 600metres north-east of the station, Regents Park provides passive and recreational facilities for the local area. Abutting Regents Park, the Rossdale Golf Club provides additional recreational facilities in the area. Beeson Reserve is located adjacent to Edithvale Station and forms an important open space link between the station and the foreshore and lifesaving club.

Parks and the Port Phillip foreshore within the study area are generally zoned PPRZ with the exception of Beeson Reserve which is zoned GRZ2. The Rossdale Golf Club is zoned Special Use Zone 1 - Golf Courses (SUZ1).

5.2.1.7 Community

The following community facilities are located with the study area:

- two aged care facilities (256-260 Station Street and 10-12 Northcliffe Road, Edithvale)
- facilities at Regents Park (600 metres north-east of Edithvale Station):
    - Aspendale Tennis club
    - sports pavilion
    - Edithvale Scout Group
- Edithvale preschool (29 Fraser Avenue, Edithvale)
- Chelsea Childcare Centre (10 Swanpool Avenue, Chelsea)
- Edithvale Life Saving Club – Including a community room and café (approximately 170 metres west of Edithvale Station)
- Uniting Church in Australia Chelsea (approximately 100 metres east of Edithvale Station).

Community facilities are generally zoned GRZ2 within the study area, with the exception of the Life Saving Club and the facilities located Regents Park which are located within the PPRZ.

5.2.2 Likely future development patterns

Consultation with the City of Kingston planning department has indicated that the current development trends within the Edithvale study area are likely to continue in to the future, that is, moderate increased density, particularly along arterial roads and close to public transport. Within the study area, updates to local planning strategies and the Kingston Planning Scheme are likely to be generally policy neutral.

5.3 Bonbeach project

5.3.1 Land Use

Existing land use within the Bonbeach study area is described below and shown in the Edithvale study area and land use map at Figure 4.

5.3.1.1 Railway

The Frankston rail line runs the full length of the Bonbeach study area and sits between Nepean Highway and Station Street It has two tracks which run the full length and sits roughly at grade with the adjacent roads.

Bonbeach Station is located to the north of Bondi Road, Bonbeach, it has side platforms which are accessed from Nepean Highway and Station Street and access between the platforms is by the pedestrian level crossing at Bondi Road. The station contains 35 car parking spaces to the south of Bondi Road along Station Street and 11 bicycle racks.

There are six pedestrian level crossings within the study area located at:

- Argyle Avenue, Chelsea
- Golden Avenue, Wellwood Road, Bondi Road, The Glade, Mascot Avenue, Bonbeach.

There are three level crossings within the study area located at:

- Argyle Avenue, Chelsea
- Station Street, Bonbeach
- Mascot Avenue, Bonbeach.

Land within the rail corridor is zoned PUZ4.

5.3.1.2 Major Roads

Nepean Highway is the only road within the study area which is VicRoads controlled and zoned RDZ1.

The Nepean Highway at Edithvale is an important arterial road forming part of the Nepean Corridor which runs from Frankston to St Kilda and carries over 135,000 people per day.

5.3.1.3 Commercial

A limited number of commercial uses sit opposite the Station on the western side of the Nepean Highway. Local services and uses include cafés, small shops, and personal and professional services. There are a number of vacant tenancies or commercial premises no longer being used for retail or services.

A small amount of retail activity exists within residential areas on the corner of Breese Street and Patterson Street, Bonbeach, however this is limited to corner store type shops.

Commercial land use within the study area is confined to the C1Z.

5.3.1.4 Residential

Other than the limited commercial land uses opposite the Station on the western side of the Nepean Highway, the land use within the study area is predominately residential.

Lots are a variety of sizes, and generally have been developed in the post war era (1950's to 1960's). There is a mix of low rise and low density housing and townhouse developments. There has been some recent subdivision and redevelopment and intensification of housing in the area, especially along Station Street and Nepean Highway, but a low lying coastal residential character is largely retained.

Residential land use within the study area is largely found within the GRZ2, however some mixed use developments exist within the C1Z.

5.3.1.1 Education

Three schools fall within the study area:

- Bonbeach Primary School (29-63 Breeze Street, Bonbeach)
- Chelsea Primary School (34-44 Argyle Street, Chelsea)
- St Joseph's School Chelsea (362 Station Street, Chelsea).

Bonbeach Primary and Chelsea Primary are located within the PUZ2 – Education whilst St Joseph's School is located within the GRZ2.

5.3.1.5 Open space

The study area includes the Port Phillip foreshore with a number of beaches within immediate walking distance of the Station. Additionally, the area has few smaller, local level open spaces.

Open space within the study area is generally zoned PPRZ.

There are a number of large open space areas close to Bonbeach, however they fall outside the study area to the east.

5.3.1.6 Community

There are a number of community facilities located in the local area. South of the station, along Station Street, is Bonbeach Residential Care and Nursing Home, located in the GRZ2.

Bonbeach Preschool is adjacent to the Bonbeach Primary School at 29-63 Breeze Street, Bonbeach and zoned PUZ 2 – Education.

Bonbeach Life Saving Club, south-west of the Station, is a key community focal point and includes a community room and café. The Club is located within the PPRZ.

5.3.2 Likely future development patterns

Consultation with the City of Kingston planning department has indicated that the current development trends within the Edithvale study area are likely to continue in to the future, that is, moderate increased density, particularly along arterial roads and close to public transport. Within the study area, updates to local planning strategies and the Kingston Planning Scheme are likely to be generally policy neutral.

5.4 Temporary construction and laydown areas

The construction of the projects would require the use of temporary construction and laydown areas. No sites have yet been identified and accordingly an assessment of relevant local existing conditions is not possible at this time.

6 Risk assessment

A risk assessment of project activities was performed in accordance with the methodology described in Section 4.2. Risks were assessed for the construction and design/operation phases (where relevant).

The residual land use risks associated with the projects are listed in Table 6. The likelihood and consequence ratings applied during the risk assessment process are provided in Appendix C. There was no change in the initial risk and final risk levels for land use.

Table 6 Construction and operation risks

Risk ID	Event name	Potential impact pathway	EPR ID	Risk level
Construction and operation risks				
LUP22	Inconsistent Land Use	The project is inconsistent with existing or future land use, including relevant land use policy.	EPR LP1 Land use (construction) EPR UD1 Urban Design Guidelines	Negligible

For further details refer to the EES Attachment II *Environmental Risk Report* which includes the full risk register, with initial EPRs and the final EPRs assigned to each risk.

7 Impact assessment

7.1 Edithvale project impact assessment

Land use impacts during construction are generally temporary in duration and limited in nature, and are associated with activities that can be inconsistent with established land use. Uses can relate to the temporary occupation of roads or land for the purpose of and during construction. Potential land use impacts during construction are identified in Section 7.1.1 below.

Land use impacts during the operation of the Edithvale project are considered to be negligible. The use and development of rail infrastructure within an established rail corridor, zoned for the purposes of transport infrastructure is consistent with the established land use and identified land use policies. Potential land use impacts during operation are discussed in Section 7.1.2 below.

Land use impacts for temporary construction and laydown sites have not been assessed as these sites are yet to be identified.

7.1.1 Construction impacts

7.1.1.1 Land Use

During construction, the Edithvale project is anticipated to result in a number of temporary changes to existing land uses, including:

- temporary occupation of road reserves for non-traffic purposes (construction)
- relocation and construction of minor utility installations
- temporary construction and laydown areas.

The construction of the Edithvale project would result in changes to existing land uses, which is temporarily inconsistent with the existing land use **(risk LUP22).** This impact is considered negligible and is discussed below.

Use of rail

During construction, rail services will be disrupted from time to time. This is not inconsistent with the land use of the rail corridor. Impacts of service disruption to the users of the passenger rail system has been considered in EES Technical Report L *Social*.

Use of roads

The primary purpose of a road is to provide for access for vehicles, pedestrians and cyclists. The construction methodology proposed for the project will require the temporary use of some road reserves. During periods of construction, the road will be used in manner inconsistent with the established land use and is a land use impact. As this occupancy is also temporary, and as alternate access will be made available, this impact is considered to be negligible.

The Edithvale project would also be constructed to:

- avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable
- reduce the disruption to the extent practicable to current users of public land resulting from temporary occupation
- include opportunities to implement landscaping enhancement

- ensure the projects and any associated development make a positive contribution to the structure and function of the adjoining land and local area and meet the requirements of LXRA's Urban Design Framework and Guidelines for the projects (**EPR_LP1 and EPR_UD1**).

These mitigations will maintain a negligible impact.

No further land use mitigation measures are considered required or recommended.

Utilities

The construction of the Edithvale project will require the relocation of existing utility services such as water, gas, sewerage and telecommunications. The relocation of utilities is required to allow the project to be constructed in a safe and efficient manner. The relocation of existing utility services is not generally inconsistent with existing land uses (either within or adjacent to the rail corridor). Utility services are commonly located underground within road reserves, the rail corridor and on occasion, private land. Carefully considered, the construction of the project need not result in a change to or an impact on a land use, and consequently its impact is considered to be negligible.

The Edithvale project would also be constructed to:

- avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable
- reduce the disruption to the extent practicable to current users of public land resulting from temporary occupation
- include opportunities to implement landscaping enhancement
- ensure the projects and any associated development make a positive contribution to the structure and function of the adjoining land and local area and meet the requirements of LXRA's Urban Design Framework and Guidelines for the projects (**EPR_LP1** and **EPR_UD1**).

These mitigations will maintain a negligible impact.

No other land use mitigation measures are considered required or recommended.

Temporary construction and laydown areas

Refer Section 7.3 of this Report.

Amenity Impacts

During the construction period there may be amenity impacts that include accessibility, air quality, noise and vibration and an increase in construction traffic. The detail of these potential amenity impacts together with any relevant mitigation measures have been assessed more specifically within the EES technical reports listed in Section 4.5.

The potential amenity impacts are not expected to impact on land uses and as such can be considered to be negligible.

No land use mitigation measures are considered required or recommended.

7.1.2 Operational impacts

7.1.2.1 Strategic planning policy

The land use of the Edithvale project is consistent with, and supported by, the SPPF and LPPF in the Scheme (**risk LUP22**), and particularly:

- Plan Melbourne - Policy 3.1.1 - The improved rail frequency and reliability resulting from the project is consistent with the policy of creating a metro-style rail system. The project is consistent with and supported by Policy 3.1.2 by enhancing access to activity centres along the Frankston rail corridor and Policy 3.1.3 by improving the efficiency and safety of the arterial road network.
- LPPF - Clause 21.05 Residential land use – The Scheme identifies Edithvale as a Neighbourhood Activity Centre and an area for promotion of increased housing diversity proximate to transport infrastructure. The improved rail, road, bicycle and pedestrian access resulting from the project would support increasing residential densities in this area and is consistent with the policy.
- LPPF - Clause 21.12 Transport, movement and access – The Scheme seeks to protect and enhance the amenity of Kingston's residential areas and other sensitive land uses though appropriate management of transport networks. The project supports this objective by the improving the efficiency of existing rail and road infrastructure on land that is dedicated for transport purposes.

The project is considered to be consistent with the intended and strategic directions considered for the land use in the Edithvale study area and implements the identified policies as above.

No mitigation measures are considered required or recommended.

7.1.2.2 Land Use

Rail corridor and infrastructure

The Edithvale project is consistent with, and supported by, existing and future land use **(risk LUP22)**.

The Edithvale project will operate within the Frankston rail corridor, which is consistent with the existing land use. The Edithvale project will operate within land zoned PUZ4 or RDZ1 and is wholly consistent with the purpose of the zones. The impact to existing land use is therefore considered negligible.

The Edithvale project would be designed and constructed to:

- avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable
- reduce the disruption to the extent practicable to current users of public resulting from temporary occupation
- include opportunities to implement landscaping enhancement
- ensure the projects and any associated development make a positive contribution to the structure and function of the adjoining land and local area and meet the requirements of LXRA's Urban Design Framework and Guidelines for the projects (**EPR_LP1** and **EPR_UD1**).

These mitigations will maintain a negligible impact.

No other mitigation measures are considered required or recommended.

Substation

The construction of the Edithvale project also requires the construction of a substation to support the safe and efficient operation of the rail service. The location of minor rail infrastructure utilities within the rail corridor is consistent with the existing and future land use of the rail corridor and its impact from a land use perspective is considered to be negligible.

The Edithvale project would also be constructed to:

- avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable
- reduce the disruption to the extent practicable to current users of public land resulting from temporary occupation
- include opportunities to implement landscaping enhancement
- ensure the projects and any associated development make a positive contribution to the structure and function of the adjoining land and local area and meet the requirements of LXRA's Urban Design Framework and Guidelines for the projects (**EPR_LP1** and **EPR_UD1**).

These mitigations will maintain a negligible impact.

No other land use mitigation measures are considered required or recommended.

Amenity Impacts

During the operation of the Edithvale project there may be amenity impacts that include air quality, noise and vibration. The detail of these potential amenity impacts together with any relevant mitigation measures have been assessed more specifically within the EES technical reports listed in Section 4.5.

Within this context, the potential amenity impacts are not expected to impact on land uses and as such can be considered to be negligible.

No land use mitigation measures are considered required or recommended.

7.2 Bonbeach project impact assessment

Land use impacts during construction are generally temporary in duration and limited in nature, and are associated with activities that can be inconsistent with established land use. Uses can relate to the temporary occupation of roads or land for the purpose of and during construction. Potential land use impacts during construction are identified in Section 7.2.1 below.

Land use impacts during the operation of the Bonbeach project are considered to be negligible. The use and development of rail infrastructure within an established rail corridor, zoned for the purposes of transport infrastructure is consistent with the established land use and identified land use policies. Potential land use impacts during operation are discussed in Section 7.2.2 below.

Land use impacts for temporary construction and laydown sites have not been assessed as these sites are yet to be identified.

7.2.1 Construction impacts

7.2.1.1 Land Use

During construction, the Bonbeach project is anticipated to result in a number of temporary changes to existing land uses, including:

- temporary occupation of road reserves for non-traffic purposes (construction)
- relocation and construction of minor utility installation
- temporary construction and laydown areas.

The construction of the Bonbeach project would result in changes to existing land uses, which is temporarily inconsistent with the existing land use **(risk LUP22).** This impact is considered negligible and is discussed below.

Use of rail

During construction, rail services will be disrupted from time to time. This is not inconsistent with the land use of the rail corridor.

Use of roads

The primary purpose of a road is to provide for access for vehicles, pedestrians and cyclists. The construction methodology proposed for the project will require the temporary use of some road reserves. During periods of construction, the road will be used in manner inconsistent with the established land use and is a land use impact. As this occupancy is also temporary, and as alternate access will be made available, this impact is considered to be negligible.

The Bonbeach project would also be constructed to:

- avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable
- reduce the disruption to the extent practicable to current users of public land resulting from temporary occupation
- include opportunities to implement landscaping enhancement
- ensure the projects and any associated development make a positive contribution to the structure and function of the adjoining land and local area and meet the requirements of LXRA's Urban Design Framework and Guidelines for the projects (**EPR_LP1** and **EPR_UD1**).

These mitigations will maintain a negligible impact.

No further land use mitigation measures are considered required or recommended.

Utilities

The construction of the Bonbeach project will require the relocation of existing utility services such as water, gas, sewerage and telecommunications. The relocation of utilities is required to allow the project to be constructed in a safe and efficient manner. The relocation of existing utility services is not generally inconsistent with existing land uses (either within or adjacent to the rail corridor). Utility services are commonly located underground within road reserves, the rail corridor and on occasion, private land. Carefully considered, the construction of the project need not result in a change to or an impact on a land use, and consequently its impact is considered to be negligible.

The Bonbeach project would also be constructed to:

- avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable
- reduce the disruption to the extent practicable to current users of public land resulting from temporary occupation
- include opportunities to implement landscaping enhancement
- ensure the projects and any associated development make a positive contribution to the structure and function of the adjoining land and local area and meet the requirements of LXRA's Urban Design Framework and Guidelines for the projects (**EPR_LP1** and **EPR_UD1**).

These mitigations will maintain a negligible impact.

No other land use mitigation measures are considered required or recommended.

Amenity Impacts

During the construction period there may be amenity impacts that include accessibility, air quality, noise and vibration and an increase in construction traffic. The detail of these potential amenity impacts together with any relevant mitigation measures have been assessed more specifically within the EES technical reports listed in Section 4.5.

The potential amenity impacts are not expected to impact on land uses and as such can be considered to be negligible.

No land use mitigation measures are considered required or recommended.

Temporary construction and laydown areas

Refer Section 7.3 of this Report.

7.2.2 Operational impacts

7.2.2.1 Strategic Planning Policy Support

The land use of the Bonbeach project is consistent with, and supported by, the SPPF and LPPF in the Scheme (**risk LUP22**), and particularly:

- Plan Melbourne (Policy 3.1.1) – The improved rail frequency and reliability resulting from the project is consistent with the policy of creating a metro-style rail system. The Bonbeach project is consistent with and supported by Policy 3.1.2 by enhancing access to activity centres along the Frankston rail corridor and Policy 3.1.3 by improving the efficiency and safety of the arterial road network.
- LPPF (Clause 21.05 Residential land use) – The Scheme identifies Bonbeach as an area for promotion of increased housing diversity proximate to transport infrastructure. The improved rail, road, bicycle and pedestrian access resulting from the project would support increasing residential densities in this area and is consistent with the policy.
- LPPF (Clause 21.12 Transport, movement and access) – The Scheme seeks to protect and enhance the amenity of Kingston's residential areas and other sensitive land uses though appropriate management of transport networks. The project supports this objective by the improving the efficiency of existing rail and road infrastructure on land that is dedicated for transport purposes.

The project is considered to be consistent with the intended and strategic directions considered for the land use in the Bonbeach study area.

No mitigation measures are considered required or recommended.

7.2.2.2 Land Use

The Bonbeach project is consistent with, and supported by, existing and future land use in the Scheme **(risk LUP22)**.

The Bonbeach project will operate within the Frankston rail corridor, which is consistent with the existing land use. The project will operate within land zoned PUZ 4 – Transport (the rail corridor) and is wholly consistent with the purpose of the zones. The impact to existing land use is therefore considered negligible as the project would be entirely consistent with existing land use.

Impacts resulting from the operation of the Bonbeach project unrelated to land use have been considered in the EES technical reports listed in Section 4.5.

The Bonbeach project would be designed and constructed to:

- avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable
- reduce the disruption to the extent practicable to current users of public land resulting from temporary occupation
- include opportunities to implement landscaping enhancement
- ensure the projects and any associated development make a positive contribution to the structure and function of the adjoining land and local area and meet the requirements of LXRA's Urban Design Framework and Guidelines for the projects (**EPR_LP1** and **EPR_UD1**).

These mitigations will maintain a negligible impact.

No other mitigation measures are considered required or recommended.

Amenity Impacts

During the operation of the Bonbeach project there may be amenity impacts that include air quality, noise and vibration. The detail of these potential amenity impacts together with any relevant mitigation measures have been assessed more specifically within the EES technical reports listed in Section 4.5.

Within this context, the potential amenity impacts are not expected to impact on land uses and as such can be considered to be negligible.

No land use mitigation measures are considered required or recommended.

7.3 Temporary construction and laydown areas impact assessment

The construction phase of the projects would require the temporary use of land for site offices and construction laydown areas. To date, no site offices and construction laydown areas have been identified.

Suitable sites are still being explored with relevant parties and accordingly site specific assessment of impacts is not possible at this time.

However, the following paragraphs discuss potential settings for these areas and matters likely to require consideration and management to minimise and manage impacts.

The following options are likely to exist for temporary site offices and construction laydown:

- existing industrial land in the area that would be leased for the duration of the construction of the projects
- rural land
- land used for existing passive or active recreational purposes.

If sites on land zoned for industrial purposes are identified, it is unlikely that the projects will result in an inconsistent land use, however LXRA may still need to seek planning approval to use the land.

The use of rural land, or land currently used as public open space for passive or active recreation could result in temporary land uses that are inconsistent with the land use policies and controls affecting the land. LXRA would seek planning approval for the temporary use of the land.

The sites considered for this purpose should be selected and managed to minimise land use conflict, site area, impact to existing land uses within and adjacent to the identified areas and be reinstated to enable previous land uses to recommence.

Planning approval under any scenario would require an assessment of the potential effects appropriate to the identified site, consultation with potentially affected parties including key stakeholders, landowners, land users and neighbouring/nearby residents, and include specific conditions that the project would need to meet to manage any potential impacts and with regard to reinstatement of the previous land use.

8 Environmental Performance Requirements

The EPRs required for the projects to achieve acceptable environmental outcomes are summarised in Table 7 below. The EPRs are applicable to the final design and construction approach and provide certainty regarding the environmental performance of the projects.

Table 7 Edithvale and Bonbeach Environmental Performance Requirements

EPR ID	Environmental Performance Requirement	Stage
EPR_LP1	**Land use (construction)** The construction approach should: a. avoid or minimise impacts to existing land uses on private and public land (including public open space) from temporary works and permanent structures as far as practicable b. reduce the disruption to the extent practicable to current users of public and council land resulting from temporary occupation c. include opportunities to implement landscaping enhancement.	Construction Operation
EPR_UD1	**Urban Design Guidelines** Design projects in accordance with the LXRA Urban Design Framework and project specific Urban Design Guidelines. The Urban Design Guidelines must consider: a. identity b. connectivity and wayfinding c. urban integration d. resilience and sustainability e. amenity f. vibrancy g. safety h. accessibility Seek the advice of the LXRA Urban Design Advisory Panel (chaired by the Office of the Victorian Government Architect, and includes officers of Kingston City Council) during the preparation of detailed design to ensure an appropriate response to the LXRA Urban Design Framework.	Construction

9 Conclusion

A land use impact assessment has been undertaken for the project to determine the impacts of the project on land use, and to identify management and mitigation options where appropriate in order to reduce potential risks of the project.

Existing conditions

The project is proposed to be constructed within the Frankston rail corridor, in established areas within Edithvale, Chelsea and Bonbeach. These areas contain well-established residential areas, shopping and commercial centres, parks and reserves, and community and recreational facilities.

Impact assessment

Land use impact has been assessed during both the construction and operation of the project. Land use impacts are primarily associated with the construction period and are temporary in duration, contained in effect and are considered negligible.

Land use impacts during construction would also be addressed through the identified EPRs, standard construction management practices, and compliance with statutory regulations and standards.

Land use impacts for temporary construction and laydown areas have not been assessed as these sites have yet to be identified. Land use impacts associated with the temporary construction and laydown areas would be addressed through the relevant EPR.

The project is consistent with the existing land use of the rail corridor, and is both consistent with, supported by and implements the identified State and local government land use policies. These policies support the current and future land use of the project area as a transport corridor. Land use impacts during operation of the project are considered negligible.

The impact assessment identified the following benefits for land use that may be associated with the chosen design solutions for the projects:

- no property acquisition is required to facilitate the design
- consistent with State and local planning policy
- complimentary to existing and potential future surrounding land uses.

Residual risk

This assessment has considered impacts of the project to land use within the study areas during construction and operation. Identified risks during construction are considered to be negligible and identified risks during operation are also considered to be negligible. The relevant EPRs set out parameters for construction methodology to reduce the identified impacts on land use. The residual risk is therefore considered to be negligible.

As noted above, land use impacts for temporary site office and construction laydown areas have not been assessed at this time, however an EPR has been developed to guide the selection and operation of temporary site and laydown areas.

10 References

Charter Keck Cramer, City of Kingston, Hansen Partnership (2006). Retail/Commercial Development Strategy

City of Kingston (2007). Kingston Neighbourhood Character Guidelines

City of Kingston (2012a). Kingston Planning Scheme Review 2010 - 2012

City of Kingston (2012b) Open Space Strategy

City of Kingston (2014). Draft Kingston Residential Strategy Update

City of Kingston (2016). Prosperous Kingston – A Framework for Economic Sustainability

DELWP Planning Maps online. Administered by the Department of Environment, Land, Water and Planning. Available at http://services.land.vic.gov.au/maps/pmo.jsp

DELWP Planning Schemes online. Administered by the Department of Environment, Land, Water and Planning. Available at http://planning-schemes.delwp.vic.gov.au/

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

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

Appendix A – Planning Zones

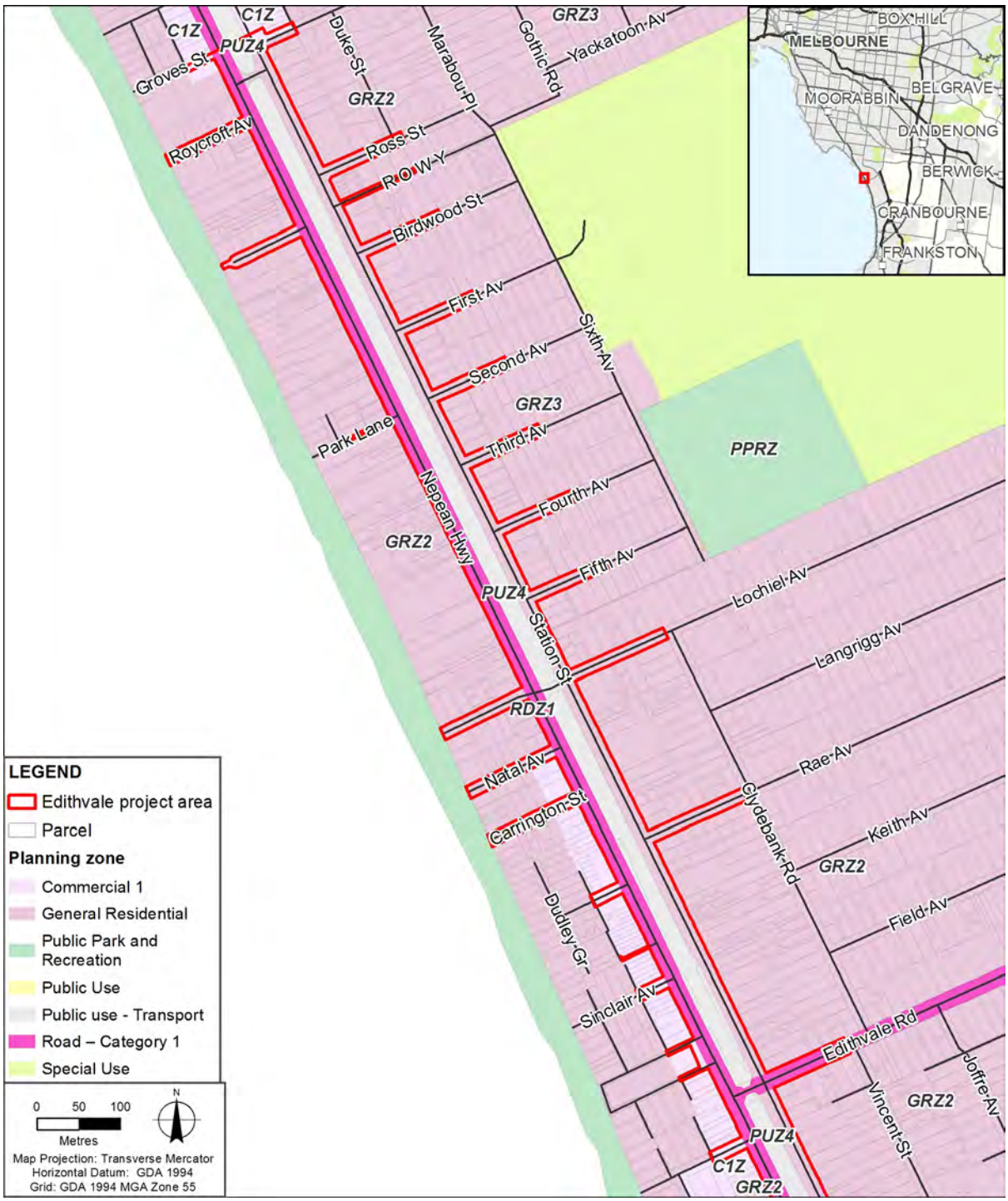

Figure 11 Edithvale planning zones (page 1 of 2)

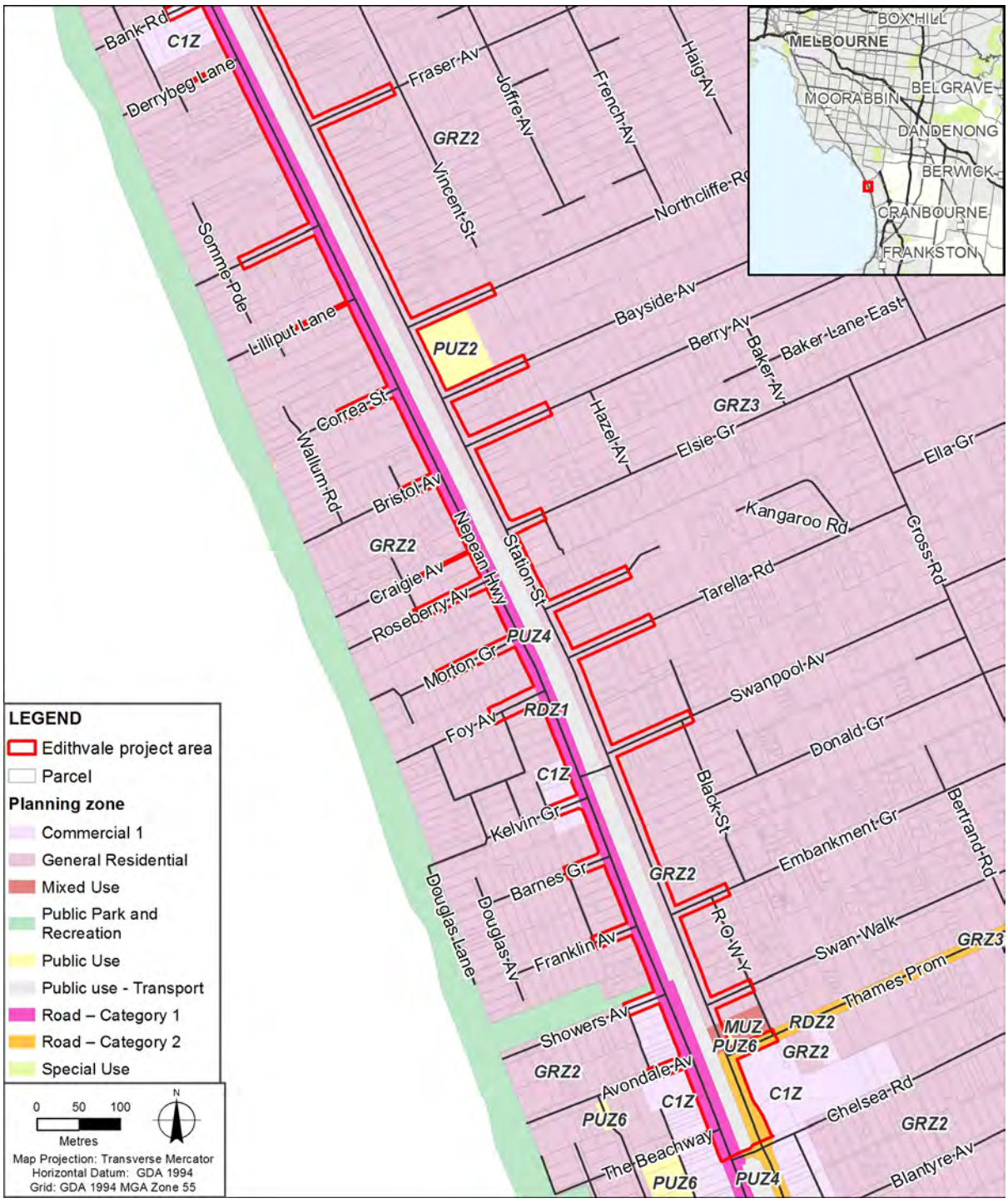

Figure 11 Edithvale planning zones (page 2 of 2)

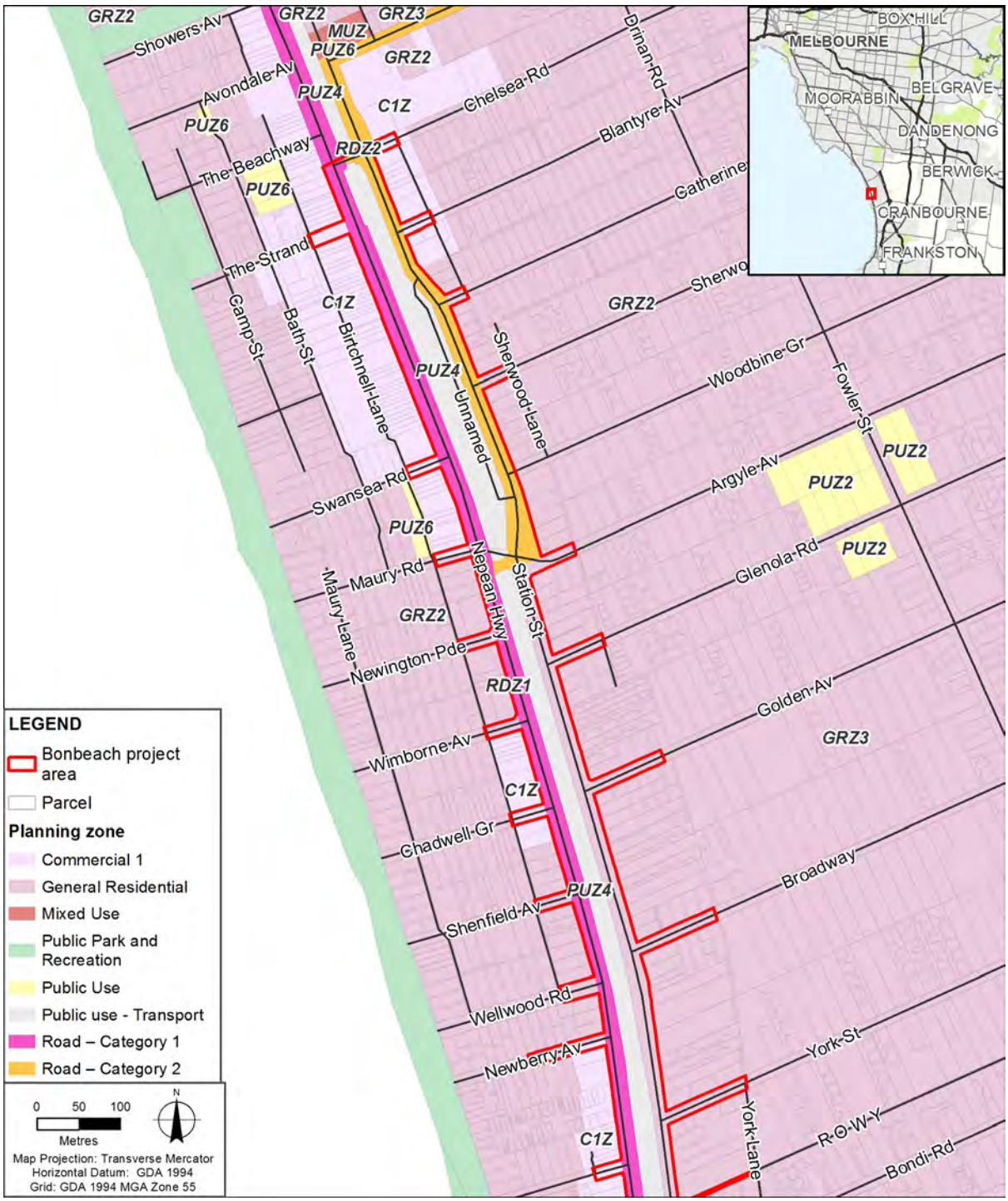

Figure 12 Bonbeach planning zones (page 1 of 2)

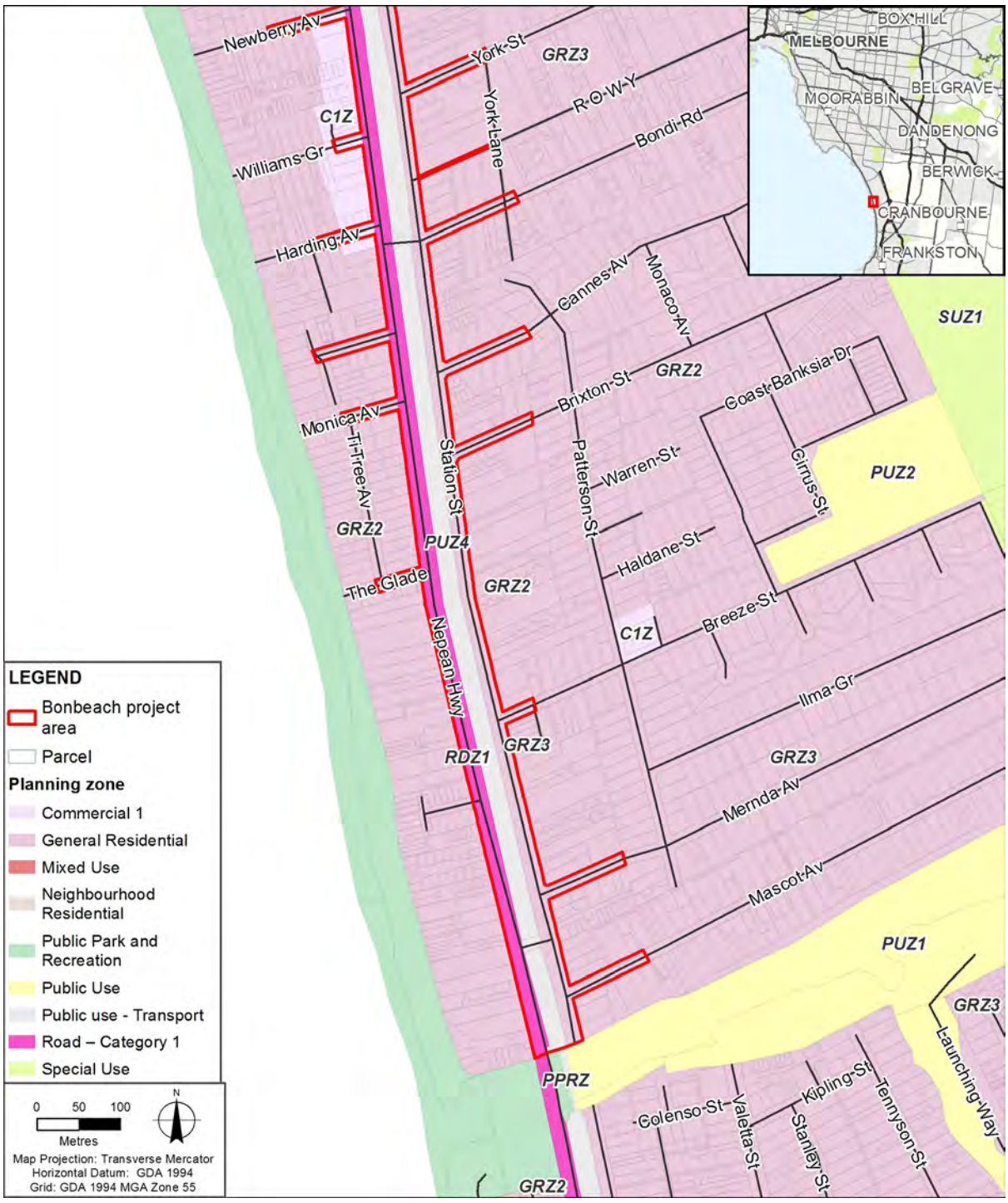

Figure 12 Bonbeach planning zones (page 2 of 2)

Appendix B – Planning Overlays

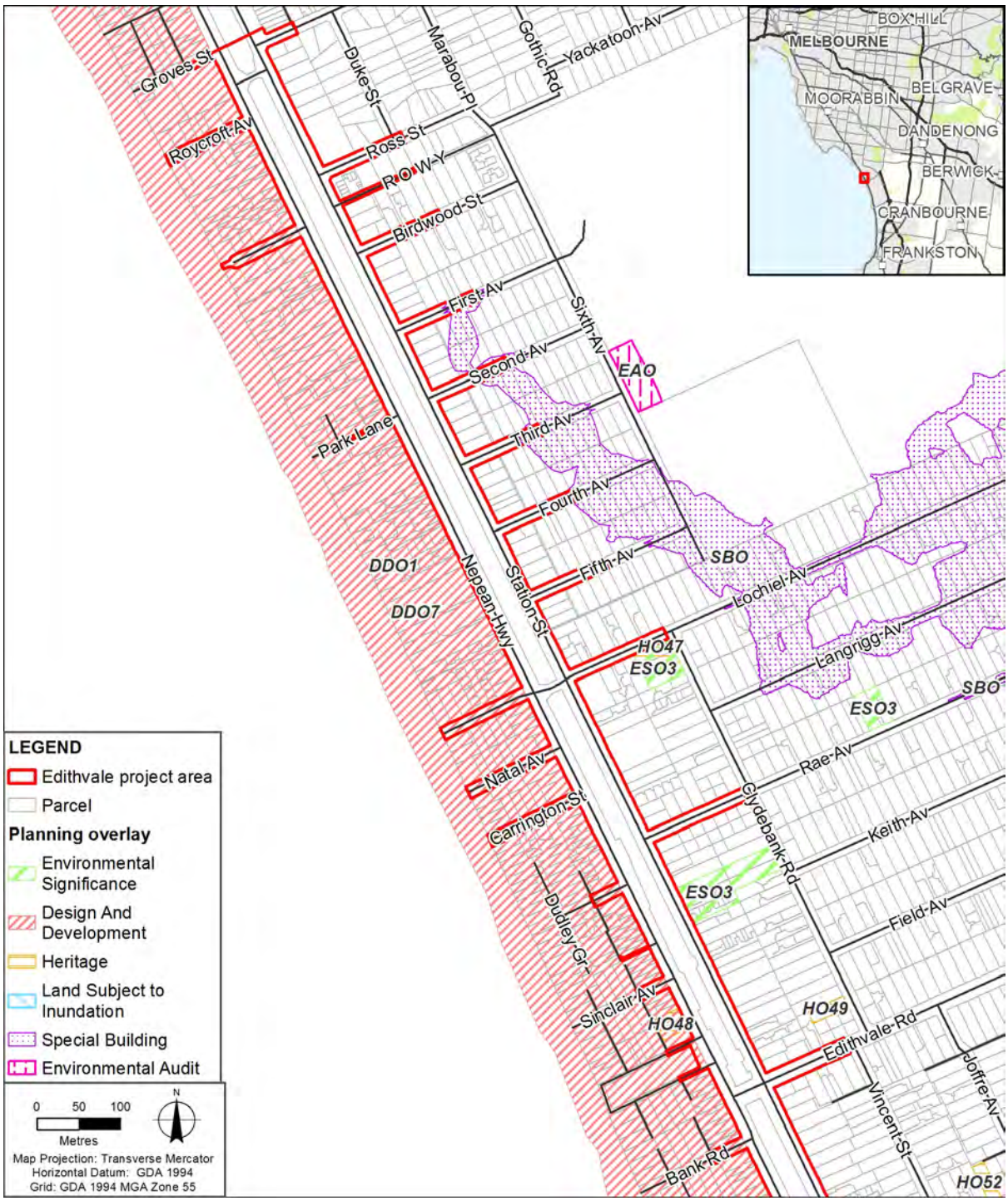

Figure 13 Edithvale planning overlays (page 1 of 2)

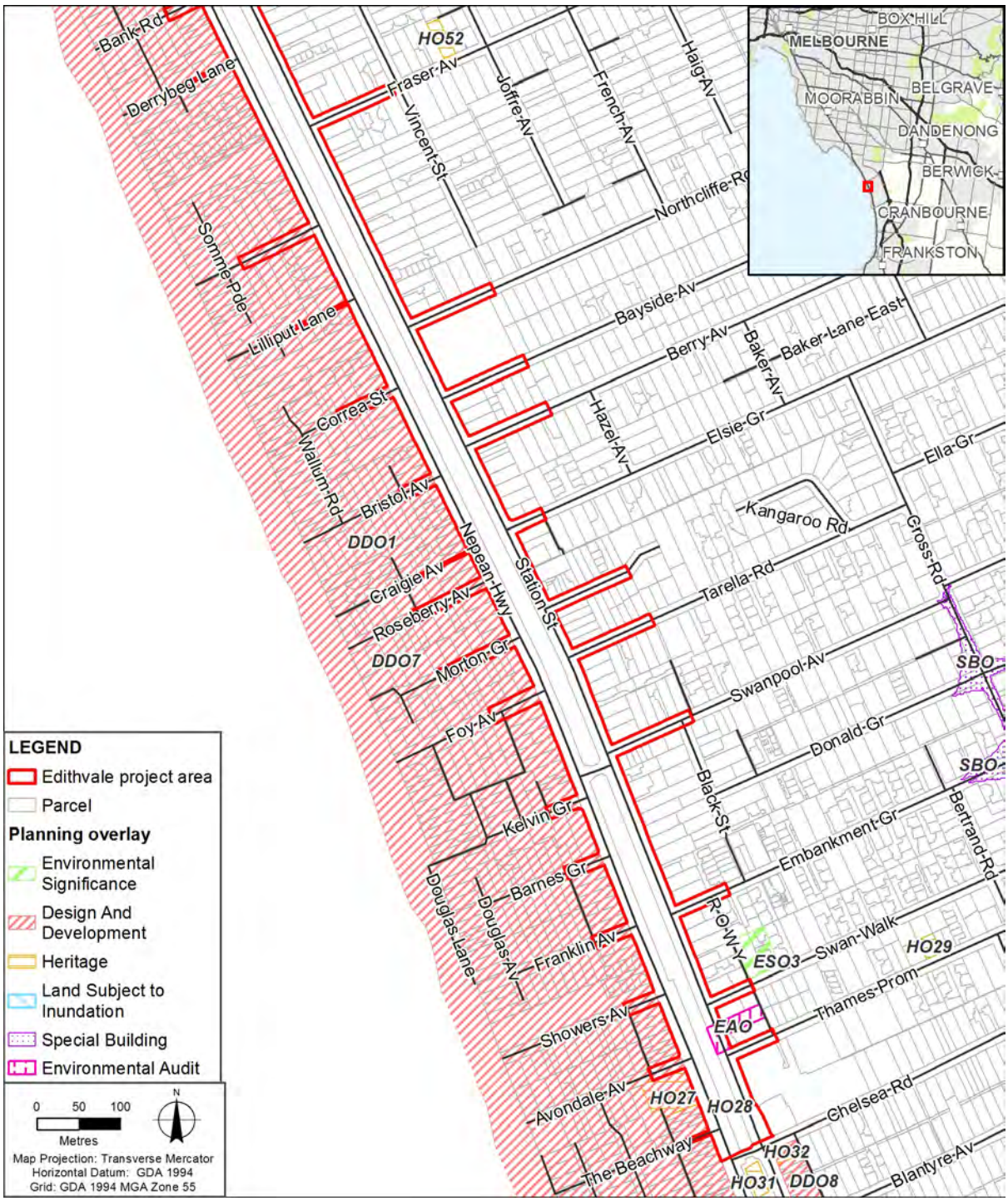

Figure 13 Edithvale planning overlays (page 2 of 2)

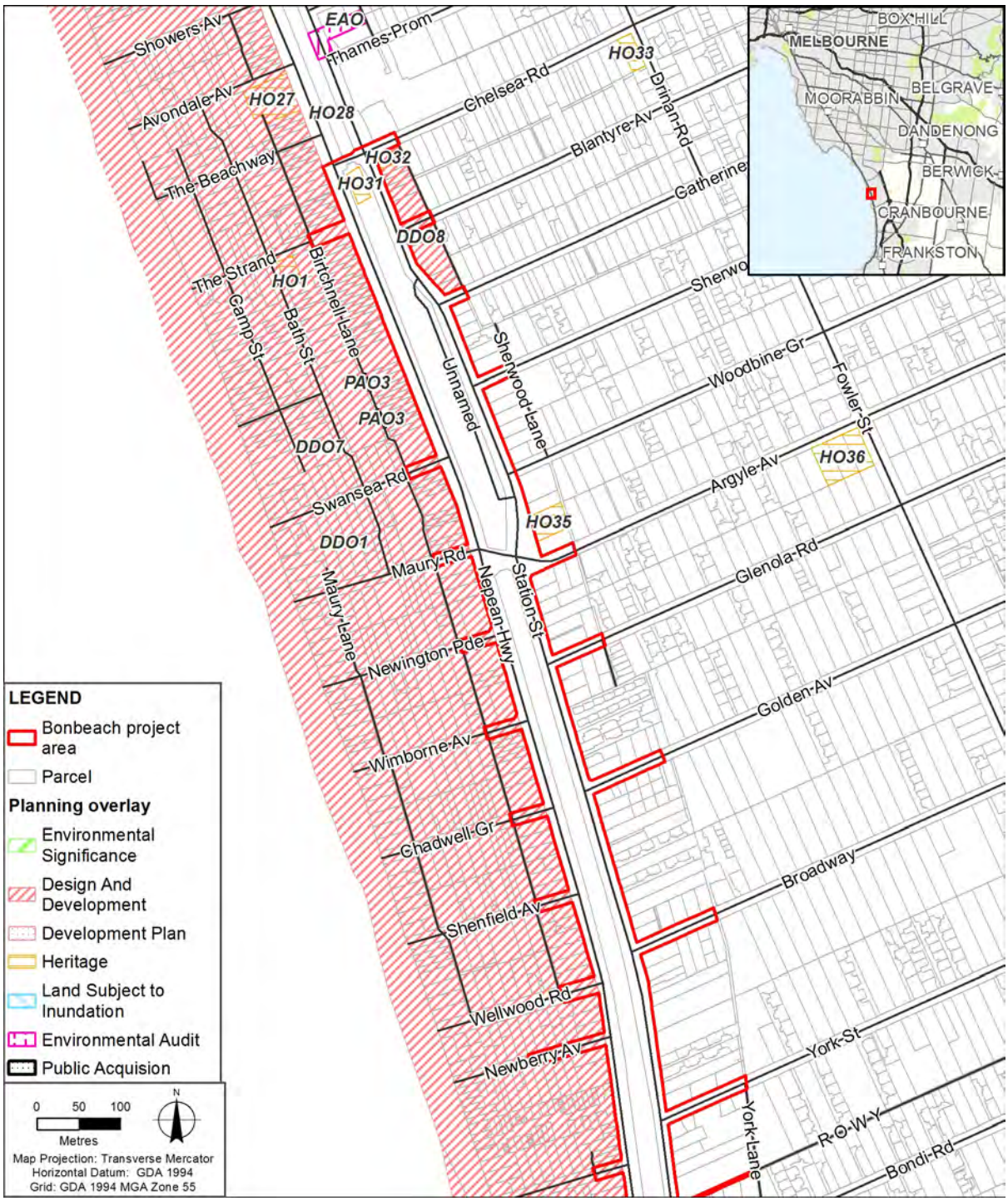

Figure 14 Bonbeach planning overlays (page 1 of 2)

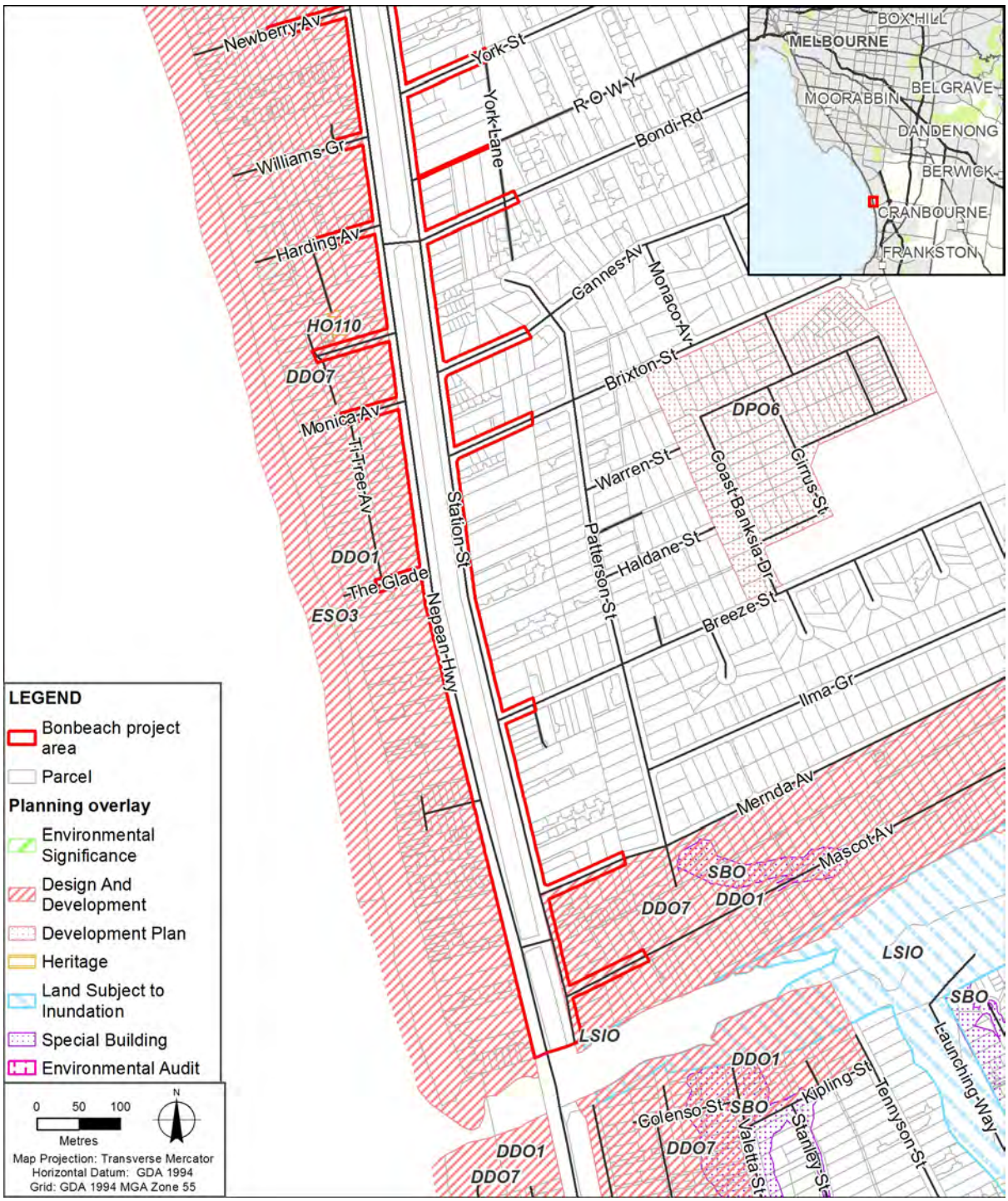

Figure 14 Bonbeach planning overlays (page 2 of 2)

Appendix C – Risk assessment

Table C1 Guide to quantification of likelihood

Qualitative descriptions	Probability over a given time period	Basis
A. Certain	1 (or 0.999, 99.9%)	Certain, or as near to as makes no difference
B. Almost certain	0.2 – 0.9	One or more incidents of a similar nature has occurred here
C. Highly probable	0.1	A previous incident of a similar nature has occurred here
D. Possible	0.01	Could have occurred already without intervention
E. Unlikely	0.001	Recorded recently elsewhere
F. Very unlikely	1×10^{-4}	It has happened elsewhere
G. Highly improbable	1×10^{-5}	Published information exists, but in a slightly different context
H. Almost impossible	$1 X 10^{-6}$	No published information on a similar case

Source: Bowden, A.R., Lane, M.R. and Martin, J.H., 2001, Triple Bottom Line Risk Management – Enhancing Profit, Environmental Performance and Community Benefit, Wiley and Sons, New York, 314 pp.

Table C2 Consequence table used for land use risk assessment

Qualitative descriptor	Negligible		Minor		Moderate		Major		Extreme
Consequence description	**Minimal, if any impact for some communities. Potentially some impact for a small number (<10) of individuals**		**Low level impact for some communities, or high impact for a small number (<10) of individuals**		**High level of impact for some communities, or moderate impact for communities area-wide**		**High level of impact for communities area-wide**		**High level of impact State-wide**
	0.1	**0.3**	**1**	**3**	**10**	**30**	**100**	**300**	**1000**
SOCIAL **Land Use Planning**	Negligible impact on existing and potential future land uses. Land use changes consistent with planning policies and zoning.		Minor impact on existing and potential future land uses. Land use changes result in minor inconsistency with local or State planning policies and zoning.		Moderate impact on existing and potential future land uses. Land use changes result in significant inconsistency with local planning policies and zoning.		Major impact on existing and potential future land uses. Land use changes result in significant inconsistency with State planning policies and zoning.		Catastrophic and permanent impact on existing and potential future land uses. Land use changes result in complete inconsistency with local or State planning policies and zoning.
SOCIAL **Amenity** **(Traffic/ air / noise / odour / visual impacts)**	Short term impacts that alter perception of area as a high amenity place to live / visit.		Short term (months) localised impacts that alter perception of area as a high amenity place to live / visit.		Medium term (1-2 years) regional impacts that alter perception of area as a high amenity place to live / visit.		Community perception that the area is significantly damaged.		Community perception that the area has experienced major damage.
	Region still seen as attractive place to live.		Region not locally seen as attractive place to live.		Region not widely seen as attractive place to live.		Area loses appeal as residential area. Recovery > 2 yrs.		Area is a place to be avoided. Recovery, if at all, >10 yrs.

Qualitative descriptor	Negligible	Minor	Moderate	Major	Extreme
SOCIAL **Non-Aboriginal Heritage**	No measurable alterations to existing natural and human processes already impacting on heritage sites.	Detectable impact to State or Commonwealth significant site with heritage values largely intact. OR Partial reduction in heritage value intrinsic to non-State / Commonwealth significant site.	Partial reduction in heritage value intrinsic to State or Commonwealth significant site. OR Substantial reduction in heritage value intrinsic to non-State / Commonwealth significant site.	Substantial reduction in heritage value intrinsic to State or Commonwealth significant site. OR Complete loss of heritage value intrinsic to non-State/Commonwealth significant site.	Complete loss of heritage value intrinsic to State or Commonwealth significant site.
SOCIAL **Aboriginal Heritage**	No impact on Aboriginal cultural heritage sites.	Destruction of a place(s) and/or associated cultural values in a deteriorated condition with a high degree of disturbance evident and some cultural heritage remaining.	Destruction of a common occurrence place(s) and/or associated cultural values A place with a limited range of cultural heritage materials and a place in fair to good condition with some degree of disturbance evident.	Destruction of a rare occurrence place(s) and/or associated cultural values. A place with a large number and diverse range of cultural materials. A place with stratified deposits and/or surface spatial patterning that reflects the way in which the cultural materials were deposited.	Destruction of place(s) and/or associated cultural values of exceptional value. A place identified by Aboriginal Victoria and/ or cultural values identified by Traditional Owners of exceptional value that the destruction would be catastrophic.

Table C3 Surface Water risks

Risk ID	Risk name	Risk pathway	EPR ID (initial)	Initial risk			EPR ID (final)	Residual risk		
				Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Construction and operation risk										
LUP 25	Land Use Planning	The project is inconsistent with existing or future land use, including relevant land use policy.	EPR LP1 Land use (construction) EPR UD1 Urban Design Guidelines	Unlikely	Negligible	Negligible	As initial EPR	Unlikely	Negligible	Negligible