# Northern Link

## TECHNICAL REPORT NO.11

## PLANNING AND LAND USE

■ September 2008

# Contents

# 1. Introduction

Section 5.6 of the Terms of Reference (ToR) specify the planning and land use matters to be considered in relation to the Project. Section 5.6 of the ToR is provided below:

*5.6.1 Description of existing environment*

*This section should describe the existing land uses, both within and impacting on the Study Corridor, and the planning framework of the proposed works. The following issues should be addressed:*

- *land uses within the Study Corridor and areas potentially affected by the Project;*
- *the regional patterns of development throughout the study corridor with particular regard to the South-East Queensland Regional Plan;*
- *various tenures of the study corridor, including registered Native Title claims if any;*
- *the identification of each land parcel, including the segment/parcel of each affected road reserve and whether these road reserves are State Controlled Roads under the Transport Infrastructure Act 1994 directly affected by surface works;*
- *planning designations within and adjacent to the study corridor as per Brisbane City Council's Planning Scheme and associated local plans, policies and land use designations;*
- *likely future land use by reference to the SEQ Regional Plan and other local and regional planning documents, including the SEQ Regional Infrastructure Plan and Program 2007 – 2026, Integrated Regional Transport Plan for South East Queensland and Transport 2007, draft City Shape Implementation Strategy (Local Growth Management Strategy for Brisbane), City West Taskforce Reports (2005) and Smart Cities: rethinking the city centre (May 2007); and*
- *requirements for the Project under relevant State Planning Polices (SPP).*

*5.6.2 Potential impacts and mitigation measures*

*This section should identify and discuss potential impacts of the Project on existing and likely future land use including:*

- *on future land uses, having regard to planning instruments, including the development of major centres such as Toowong and Indooroopilly;*
- *effect of the Project on broader land use and settlement patterns in the context of the SEQ Regional Plan, Brisbane City Council's Planning Scheme and associated local plans, policies and land use designations; and*
- *effect of the Project on achieving the desired intent of the SEQ Regional Plan, Brisbane City Council's Planning Scheme, policies under the City Plan and special area designations (such as 'heritage precincts') and emerging urban renewal or future land use opportunities arising through the neighbourhood planning process.*

*The EIS should address impacts on existing residential, commercial, open space and sensitive place activities in the Study Corridor that will or are likely to arise from the Project's implementation. This assessment should include:*

- *consideration of necessary land acquisitions, proposed tenure (easements, leases etc.) and land use implications. Consideration of future tenure should include implications for State Land, for example Trust Land (reserves), Unallocated State Land, volumetric leases, volumetric easements, and local roads;*
- *any Native Title requirements necessary under the Native Title Act 1993 (Cwth) for land acquisition, construction purposes, or other Project activities and impacts;*
- *identification of specific land use restoration proposals, if any;*
- *arrangements for property access and associated street closures or widening;*
- *land use impacts from amenity mitigation measures such as the construction of noise barriers adjacent to residential areas or other areas where sensitive places are located and the effectiveness of construction buffer zones in preventing noise impacts at sensitive places;*
- *impacts on surrounding land uses and human activities and strategies for the minimisation of such impacts, especially with respect to places of significant value to the community such as the Toowong Cemetery and Mt Coot-tha Botanic Gardens; and*
- *potential issues involved in proximity and/or co-location of other infrastructure services along the study corridor.*

*Discussion should also include an assessment of any suggested land use and associated area designation changes that would mitigate the impacts of the Project on surrounding land holdings, in particular land uses to compliment the ultimate planning for the transport corridor.*

This report describes the existing planning framework and then provides an assessment of the Project in the context of planning environment in which it is located.

The report also provides an appraisal of the existing land use environment and Project's potential impacts and benefits for the existing environment.

# 2. Existing Environment - Planning Framework

There are three levels of planning that guide and control land use and development with regard to the Project's locality. These are:

- State Planning Policies and other legislation at a State level;
- The South East Queensland Regional Plan, and other plans, at a regional level; and
- Brisbane City Council planning instruments at the local level.

Section 2 of this report describes the planning mechanisms at the State, regional and local levels as they relate to the Project. Section 3 describes how the Project fits within the planning framework.

## 2.1 State Planning Policies

The provisions of the *Integrated Planning Act 1997* enable the State Government to implement State Planning Polices (SPPs). SPPs have effect throughout the State, except where specified, and establish the State Government's position in regard to planning and development matters of State significance. SPPs are applicable to development assessment, the designation of community infrastructure and the making and amending of planning schemes.

The SPPs relevant to the Project are the:

- SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide; and
- SPP2/02 Planning and Managing Development involving Acid Sulphate Soils.

### 2.1.1 SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide

This SPP aims to minimise the potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment. It is supported by 'Guideline for SPP 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide', which provides advice on interpreting and implementing SPP 1/03 in development assessment and when making and amending planning schemes.

### 2.1.2 SPP 2/02 Planning and Managing Development involving Acid Sulphate Soils

Acid sulphate soils are found in low-lying coastal areas and SPP 2/02 sets out the State's interests involving development that could disturb acid sulphate soil areas. The SPP applies to all land, soil and sediment at or below 5 metres Australian Height Datum (AHD) and where the natural ground level is less than 20 metres AHD. Within these areas, the SPP is triggered for development involving any of the following activities:

- Excavating or otherwise removing 100m$^3$ or more of soil or sediment; or
- Filling of land involving 500m$^3$ or more of material with an average depth of 0.5m or greater.

The SPP requires that development involving acid sulphate soils or potential acid sulphate soils be managed to avoid environmental impacts.

## 2.2 Smart Cities: Rethinking the City Centre

The State Government has prepared a report entitled *The Smart Cities: Rethinking the City Centre* which identifies that there are more than 30 urban renewal and transport projects within the inner suburbs of Brisbane that have been prepared independently of each other and that there is a need to assess future opportunities of this area as a whole taking into account the intent and impact of the various proposed projects. The report identifies high order strategies to develop a city that is well connected, integrated and innovative using key centres such as:

- The Australia Trade Coast;
- Educational Facilities - University of Queensland, Queensland University of Technology and Griffith University;
- Health Facilities – PA Hospital and RBWH; and
- Residential, cultural and entertainment facilities – located at South Bank, City West, Woolloongabba, Bowen Hills/Albion and Newstead/Teneriffe.

Further work is yet to be undertaken to further develop these concepts.

## 2.3 City West

Collaboration between the State Government and Brisbane City Council has resulted in production of the City West Strategy, which identifies a number of urban renewal projects including the Kelvin Grove Urban Village, the north-west CBD quarter, Milton and the Normanby area.

In order to achieve these goals, the City West Strategy report recognises a number of challenges that need to be overcome. One challenge, that is particularly relevant to the Project, is the presence of through traffic utilising the City West Area for access to the western and northern suburbs and the CBD.

## 2.4 Regional Planning Framework

At the regional level, the planning framework applicable to the Project is comprised of the:

- South East Queensland Regional Plan which includes the South East Queensland Infrastructure Plan and Program 2006 -2026;
- Integrated Regional Transport Plan for South East Queensland;
- Transport 2007; and
- Integrated Regional Cycle Network for South East Queensland.

It is also a requirement of the Terms of Reference to consider the Western Brisbane Transport Network Investigation.

### 2.4.1 South East Queensland Regional Plan

The South East Queensland Regional Plan (SEQRP) is a statutory document prepared and implemented in accordance with the provisions of the *Integrated Planning Act 1997*.

The SEQRP provides a planning framework for the sustainable management of population growth and land development in the SEQ region to 2026 and beyond.

The SEQRP articulates a regional vision, supported by nine strategic directions to achieve the preferred form for future development. The strategic directions are:

- Creating a more sustainable future;
- Protecting and support regional landscapes and rural production values;
- Identifying land to accommodate future growth;
- Promoting land use efficiency;
- Enhancing the identities of regional communities;
- Facilitating growth in the Western Corridor;
- Supporting rural futures;

- Providing infrastructure and services; and
- Integrating land use, transport and economic activity.

To support the regional vision, the SEQRP also identifies a regional land use pattern, which allocates land in SEQ into one of four categories. This provides a spatial context for both the strategic directions and the regulatory provisions. These four land use categories are:

- Regional Landscape and Rural Production Area;
- Urban Footprint;
- Rural Living Area; and
- Investigation Area.

The SEQRP contains regulatory provisions to ensure that ensure the strategic directions (as listed above) are implemented through planning and decisions making processes. The regulatory provisions for the SEQRP primarily relate to controlling development outside the identified Urban Footprint and within Major Development Areas. In regard to the Rural Living Areas and Investigation Areas, it is a requirement for local governments to incorporate appropriate development control measures in their planning schemes to reflect the SEQRP strategies.

The SEQRP requires that local governments must also prepare a Local Growth Management Strategy, which outlines how the projected population within each local government area will be accommodated in line with the SEQRP's strategies.

#### 2.4.1.1 Regional Policies

The SEQRP is framed to achieve a range of desired regional outcomes, principles and policies that respond to both the region's values and the imperatives of growth management. These are shown in **Table 2-1**.

- **Table 2-1 – SEQRP's Desired Regional Outcomes**

| Regional Policy | Desired Regional Outcome |
|---|---|
| Sustainability | The region grows and changes in the most sustainable way; generating prosperity, maintaining and enhancing quality of life, and providing high levels of environmental protection |
| Natural Environment | A healthy natural environment supports the region's rich biodiversity, clean air and water; and is sustainably managed to support economic development, outdoor lifestyles and community needs |
| Regional landscape | The key environmental, economic, social and cultural resources of the regional landscape are identified and secured to meet community needs and achieve ecological sustainability |
| Natural resources | The key environmental, economic, social and cultural resources of the regional landscape are identified and secured to meet community needs and achieve ecological sustainability.<br>Rural futures Rural communities are strong and viable with sustainable economies, contributing to the health, character and liveability of the region. |
| Strong communities | Cohesive, inclusive and healthy communities with a strong sense of identity and place, and access to a full range of services and facilities that meet diverse community needs |
| Engaging Aboriginal and Torres Strait Islander peoples | Aboriginal and Torres Strait Islander peoples are actively involved in community planning and decision-making processes and Aboriginal Traditional Owners are engaged in business about their community |
| Urban development | A compact and sustainable urban pattern of well-planned communities, and convenient centres close to residential areas, employment locations and transport |

| | |
|---|---|
| Economic development | A strong, resilient and diversified economy – growing prosperity in the region by utilising its competitive advantages to deliver exports, investment and sustainable and accessible jobs |
| Infrastructure | Regional infrastructure and services are planned, coordinated and delivered in a timely manner to support existing and future settlement patterns and desired community outcomes. |
| Water management | Water in the region is managed on a sustainable and integrated basis to provide adequate supplies for human and environmental uses |
| Integrated transport | A connected and accessible region based on an integrated transport system that supports more compact urban growth and efficient travel; connects people, places, goods and services; and promotes public transport use, walking and cycling |

Of the twelve Regional Policies listed in **Table 2-1**, the following are particularly pertinent to the Project:

- Sustainability;
- Natural Environment;
- Urban Development; and
- Integrated Transport.

These are described in further detail in **Table 2-2** below.

### Table 2-2 – Desired Regional Outcomes pertinent to the Project

| Regional Policy | Desired Regional Outcome |
|---|---|
| Sustainability | The overriding intent of the SEQRP is to ensure the region grows and changes in a sustainable way. In order for sustainable development to occur, there needs to be a balance of management between the protection of ecological process and natural systems, economic development and the cultural and social wellbeing of people and communities. |
| Natural Environment | The SEQRP seeks to manage the impact of population of on the natural environment through the following:<br>■ Conserving biodiversity;<br>■ Supporting ecological processes;<br>■ Protecting koala habitat;<br>■ Minimising the adverse impacts on the atmosphere;<br>■ Protecting the coast line; and<br>■ Protecting the natural functions of the region's waterways. |
| Urban Development | Urban Form<br>The SEQRP requires local governments to make the most efficient use of land allocated for urban development. In order to provide for growth within the Urban Footprint, the Regional Plan has established guidelines for achieving a more compact form of development. These guidelines have provided Brisbane City Council the direction for managing growth through encouraging higher density living around transport nodes or business centres.<br>The Project would need to provide opportunities for redevelopment of urban areas that reflect the policies outlined in the SEQRP. |
| | Regional Activity Centres<br>The SEQRP establishes the location of employment and community services in a hierarchy of regional centres. There a number of Regional Activity Centres situated around the study corridor and would be potentially benefited by the Project. These Regional Activity Centres are shown in **Figure 2-1.**<br>Toowong is identified as a Major Activity Centre within close proximity to the study corridor. Major Activity Centres serve a regional catchment and contain concentrations of employment. These Centres also provide a focus for residential intensification, with residential densities of 30 to 80 dwellings per hectare (net) being targeted in their proximity. |

| Regional Policy | Desired Regional Outcome |
|---|---|
| | The Royal Brisbane Hospital (RBH), located within close proximity of the study corridor, is identified as a Specialist Activity Centre, which is to contain specialised economic activity, employment and/or education uses of regional economic significance, rather than a retail focus.<br>Indooroopilly, located within close proximity of the study corridor, is identified as a Principle Activity Centre, which service catchments of regional significance and accommodating key concentrations of employment. They also provide business, service, limited comparison and major convenience retail functions. These Centres also provide a secondary administrative focus, accommodating regional offices of government and regionally significant health, education, cultural and entertainment facilities.<br>As major trip generators, these centres need to be serviced by an efficient road network to allow them to develop to their desired potential.<br>The Brisbane CBD, located within close proximity to the study corridor, accommodates the largest and most diverse concentration of activities and land uses. It provides a broad range of services and facilities including government administration, retail, commercial, specialised personal, professional services, cultural, entertainment, health and education. The CBD generates and attracts a large number of transport trips and is the focus of the region's radial public transport system. |
| Integrated Transport | The SEQRP anticipates that community needs, quality of life and economic development opportunities can be enhanced by easy access to a good transport system. Land use and transport infrastructure are to be planned and delivered in an integrated way so that future urban growth would be focussed around transport. Transport infrastructure and service investment across all transport modes would lead and support the desired future urban form.<br>The SEQRP seeks to provide a sustainable transport system in SEQ through integrating land use and transport as this will play a key role in shaping growth in SEQ and achieving social, economic and environmental sustainability in the region.<br>The SEQRP strongly supports alternative forms of transport such as public transport, walking and cycling. According to the SEQRP, quality orbital road systems are required within the greater Brisbane area to support connectivity of urban centres and to bypass major road congestion points. |


North Lakes
Strathpine
Chermside
Brisbane Airport
Mitchelton
Toombul
Port of Brisbane
Royal Brisbane Hospital
Wynnum Central
Brisbane CBD
Toowong
Indooroopilly
University of Queensland
Carindale
Capalaba
Cleveland
Griffith University
Upper Mt Gravatt
Goodna
Springwood
Ipswich
LEGEND
Urban Footprint
Rural Living Area
Regional Landscape
Study Area Corridor
Freeways
Highways
Regional Activity Centres Network
Primary (CBD)
Principal
Major
Specialist
0
5
10
kilometers
Scale 1:250,000 (A4)
N
NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT
Figure 2 - 1
Regional Activity Centres
Northern Link
SKM Connell Wagner
JOINT VENTURE
I:\QENV\Projects\QE07311\Spatial\Arc_MXD\QLD_Regional_Plan\080704_RegionalPlan.mxd Produced 04/07/2008

## 2.5 South East Queensland Infrastructure Plan and Program

The SEQRP is supported by the South East Queensland Infrastructure Plan and Program (SEQIPP), which was most recently amended in May 2007. The SEQIPP identifies the planning, design and construction of necessary infrastructure over the next twenty years in order to implement the SEQRP. It is a statement of State Governments proposed investment commitments and timing for major infrastructure.

Investment in transport infrastructure is one component of the SEQIPP. The key principles of SEQIPP that underpin regional transport investment listed are:

- ensuring public transport and roads support the preferred pattern of development;
- increasing public transport infrastructure to encourage greater pubic transport usage; and
- supporting economic development, including improved freight links and a greater emphasis on freight rail.

A number of transport infrastructure projects are included in the SEQIPP. The SEQIPP recognises that Brisbane City Council has commenced a prefeasibility study of the Project.

## 2.6 Integrated Regional Transport Plan for South East Queensland

The State Government released the Integrated Regional Transport Plan for South East Queensland (IRTP) in 1997. While it remains Government policy, the IRTP has been superseded by the SEQRP, which provides regional strategic transport planning direction for SEQ.

## 2.7 Transport 2007

The Queensland Government's Transport 2007 is a detailed short term action plan for the implementation of the IRTP from 2001 through to 2008.

Transport 2007 does not identify new ring roads or tunnels within Brisbane by 2007. However, it does note that any future tunnel or ring road proposed beyond 2007 would need to provide an effective alternative for cross-CBD traffic, thereby reducing congestion, trip time and emissions.

Although infrastructure provision is an important element of Transport 2007, the action plan also places emphasis on solutions that change demand for travel. Hence, Transport 2007 promotes planning for better land use and transport integration, including higher density and mixed use development in proximity to transport nodes and centres.

## 2.8 Regional Cycle Strategies

### 2.8.1 Cycle South East

The Queensland Government's Cycle South East (1999), is an implementation document for the IRTP. Cycle South East details strategies to promote alternative modes of transport to cars over the next 25 years. A key strategy is to increase the number of cycling trips in SEQ over this period through integrating cycle networks with road networks and major infrastructure to provide an integrated cycle network in SEQ.

### 2.8.2 South East Queensland Principal Cycle Network Plan

The South East Queensland Principal Cycle Network Plan (SEQPCNP) replaced the 2003 Integrated Regional Cycle Network for SEQ and guides the development of the cycle network across the region by mapping existing and preferred principal cycle network routes.

The purpose of the SEQPCNP is to identify and guide the delivery of a connected and cohesive cycle network within South East Queensland. The plan will be used to inform:

- The planning and construction of cycle routes controlled by state and local councils.
- The prioritisation and allocation of $235 million in funding for cycle network planning and infrastructure committed by the SEQ Infrastructure Plan and Program 2007-2026.
- Assessment of development applications to ensure cycle infrastructure is delivered in a consistent manner.

The Study Corridor includes existing and proposed cycle network infrastructure components that are part of the SEQPCNP. There is existing infrastructure along the Western Freeway, at the roundabout at the Toowong Cemetery, Sylvan Road, Latrobe Terrace and Given Terrace. Proposed cycle network infrastructure is identified for the network on Frederick Street, Milton Road, Musgrave Road and Kelvin Grove Road.

## 2.9 Western Brisbane Transport Network Investigation

The WBTNI project has the objective of producing a transport strategy that will guide transport development in western area of greater Brisbane. This strategy will encompass all modes of transport and will incorporate other transport initiatives addressed in the SEQ Regional Plan.

The WBTNI project includes a number of transport network options, one of which is Brisbane City Council's Northern Link. The State Government is also considering constructing a road tunnel from Toowong to Everton Park.

The details of this tunnel are not known at this time, and furthermore, no decision has been made by the State Government as to whether any of these corridor options or combinations will definitely proceed.

## 2.10 Brisbane City Council Planning Instruments

There are several documents which outline the Brisbane City Council's planning intentions. These are:

- Living in Brisbane 2026;
- City Shape Implementation Strategy- Brisbane City Council's Local Growth Management Strategy; and
- Brisbane City Council City Plan 2000

### 2.10.1 Living in Brisbane 2026

Living in Brisbane 2026 is a statement about Brisbane City Council's aspirations for the City as a livable city and describes the city-wide outcomes necessary to achieve the vision. This vision is supported by Council's corporate plan and Council's organisational strategy.

*Accessible, Connected City* is a theme which focuses on transport issues and is of particular relevance to the Project. City Wide Outcomes that are associated with the *Accessible, Connected City* theme, are summarised below:

- *Green and Active Transport*. In 2026 there will be a network of safe laneways, walkways and cycleways, while 41% of people travelling in the morning peak will walk, cycle or use public transport;
- *Effective Road Networks*: In 2026, Brisbane's road network will be safe, timely and efficient for all users and will deliver economic benefits to the community and business.;
- *Effective Growth Management.* In 2026, Brisbane's land use mix will enable more residents to be walk and cycle to shops, recreational places and their places of employment.
- *Connected and Engaged Communities*: In 2026, rapid public transport and high speed information and communication technology will connect places where people work, live and play.

- *Inclusive and Caring Communities:* In 2026, Brisbane will be an accessible city for those who cannot afford private transport or who do not drive.
- *Learning and Informed Communities:* In 2026, Brisbane residents will have continued to make the change to more frequent use of sustainable forms of transport.

### 2.10.2 Draft City Shape Implementation Strategy

The Draft City Shape Implementation Strategy (CSIS) is the draft Local Growth Management Strategy (LGMS) for Brisbane City. The purpose of a LGMS is to translate the higher-level policies, targets and spatial directions of the SEQRP into practical strategies that can be implemented at the local government level. It is a requirement for all local governments within SEQ to prepare a LGMS.

The Draft SCIS outlines Brisbane City Council's planning vision for the city and identifies the future pattern of development, including growth corridors, new living areas, employment precincts, major industrial areas and major centres. The Draft SCIS identifies the inner western suburbs as a future growth corridor.

The key strategies of the Draft SCIS relevant to the Project include:

- Residential Development Strategy – achieve the residential targets for Brisbane established in the SEQ Regional Plan, particularly through the encouragement of infill development and higher density residential development in selected areas, specifically within growth corridors, near major shopping centres (i.e. CBD and Indooroopilly) and in areas with good access to public transport;
- Integrated Transport Strategy – better integrate transport and land use planning that supports urban infill in centres on the existing public transport network; provide a safe and efficient road network, that minimises traffic impact on neighbourhoods and the environment; facilitates economic growth by minimising commuter travel and preventing congestion delays for high value freight and commercial vehicles; and promote public transport use, walking and cycling;
- Strong Communities Strategy – ensure reliable and affordable transport is provided to regional activity centres, and ensure employment opportunities are located in areas convenient to residential population and to proposed growth areas; and
- Infrastructure Strategy – encourage public transport travel to major centres and activity nodes; improve the attractiveness of active transport trips to reduce private motor vehicle usage; coordinate land use and transport to ensure increased accessibility to urban activities and supports sustainable travel; provide an efficient and safe freight network; provide a safe and efficient road network that protects the environment.

### 2.10.3 Brisbane City Plan 2000

The Brisbane City Council - City Plan 2000 (City Plan) contains the statutory planning components as required by the *Integrated Planning Act 1997* (IPA), as well as other supporting material such as the Strategic Plan and Vision Statement, which are extrinsic to the Planning Scheme.

Brisbane City Council's vision for Brisbane is 'the Liveable City' with Brisbane being the most liveable and progressive city in the Asia-Pacific Region.

Key parts of this vision that should be considered in transport infrastructure planning, (i.e. Project) include:

- Enhancing the City's quality of life;
- Ecological sustainability;

- The living environment is to be human in scale, with a sense of place based on the city's subtropical character. This environment is to blend traditional 'timber and tin' buildings with vibrant and exciting new developments, and have a strong relationship to the Brisbane river;
- Each of Brisbane's local communities is to have a clear sense of identity and have ready access to a range of services. Use of public transport, cycling and walking is to be easy and popular; and
- Infrastructure, including communication, community facilities, pedestrian ways, bikeways and transport, is to be coordinated, integrated, efficient and equitably distributed.

The Vision underpins the principles used in drafting the City Plan and is the foundation for the desired environmental outcomes (DEOs) for the City, which in turn guide all other provisions of the City Plan, such as Area provisions and Local Area Plans.

### 2.10.4 Desired Environmental Outcomes and Strategies

The DEOs are used as a basis for deriving specific policies and measures, which when implemented, contribute to the achievement of the DEOs.

Discussion of the likely outcomes of the Project with respect to the City Plan's DEOs is relevant in determining whether the Project accords or conflicts with the City Plan. DEOs of interest relate to:

- Access and Mobility;
- Natural Environment and Waterways; and
- Liveability, health and safety

The Access and Mobility DEO is of fundamental relevance to the assessment of the Project. This DEO is stated as:

> *Brisbane has an efficient transport system that promotes a compact urban structure and less reliance on private motor vehicles, and enables people and goods to move safely, economically, equitably, comfortably and conveniently.*

Achievement of this DEO is encouraged by integrating the movement system with the land use pattern to maximise efficient use and enhance accessibility through:

- Closer location of employment and housing;
- Matching the location and type of development with the capacity of the movement system and avoiding increased pedestrian traffic conflicts and vehicle turning movements on major roads;
- Integrating the city's movement system with that of South East Queensland;
- Promoting centre development to avoid ribbon development and protect the capacity of major roads;
- Discouraging the use of neighbourhood and local access roads by through traffic, but allowing for interconnectivity between neighbourhoods;
- Preventing development near the major movement network that would restrict their continued operation and expansion; and
- Opportunities for alternatives to road freight movement methods.

Promotion of a development pattern that reduces private motor vehicle dependency and increases potential for use of public transport and walking is also important to achieving this DEO and this is acheived through:

- Encouraging development in locations that support the accessibility, convenience and efficiency of public transport, including higher density housing, and mixed use development in Centres and other locations well served by public transport;
- Transit lanes, bus lanes and busways in strategic locations throughout the City;
- Development to provide effectively for public transport usage, cycling and walking, incorporate easy and convenient access to these modes and avoid safety hazards;
- Development to provide for safe and convenient access for cyclists and pedestrians along the shortest, most direct and flattest path to achieve maximum benefit; and
- Managing the supply of on-site car parking to discourage reliance on private motor vehicle usage, while minimising negative impacts of on-street parking.

Other more broadly related DEOs include:

- Natural Environment and Waterways – Brisbane's environmental quality and natural assets are protected and restored and contribute effectively to no net loss of biodiversity, the management of public health and the social and cultural wellbeing of the community.
- Liveability, health and safety - Brisbane is a safe, healthy and vibrant place to live, offering a wide range of local and regional services, facilities and activities and diverse housing, community, cultural and recreational choices. Brisbane's land use pattern and built environment promotes its unique environment, such as its timber and tin architecture, topography and urban layout, and features a sustainable network of Residential Areas, Centres employment areas and transport links. Brisbane has a vibrant, dynamic and sustainable economy that consolidates and promotes the City's central location in South East Queensland, the State and the Asia-pacific Region.

### 2.10.5 Strategic Plan

The Strategic Plan is extrinsic to the planning scheme and identifies broad spatial land use allocations to the planning horizon of 2011 through seven structural elements, including the Green Space System, Residential Neighbourhoods, Industrial Locations, Centres, Movement System, Native Title and Heritage. The Strategic Plan is particularly relevant to development that may result in major or cumulative impacts, especially development that is not envisaged or anticipated by the Plan.

The Centres element of the Strategic Plan seeks to ensure the continued liveability of the city, enhance the economic viability of centres and preserve the capacity of the major road network which is under threat by increased dispersal of commercial, retail, cultural and community uses as a result of continued private vehicle reliance. The Centres strategy identifies a network of multi-purpose centres (focused on a wide range of retail and commercial uses) and specialist centres (focused on a particular activity such as research or creative industries). Multi-purpose centres include the City Centre, major centres such as Indooroopilly, suburban centres such as Toowong and convenience centres such as Baroona Road and Paddington central. Concentration of uses within these designated centres is intended to allow for more efficient public transport to these locations supported by pedestrian and cyclist access.

The movement system is a transport network which provides for the movement of people and goods through and within the City. Brisbane has acknowledged that its transport infrastructure is outdated due to changes in travel patterns and the continued dispersal of activity. The hierarchy of roads is intended to ensure that roads are designed to meet their intended function. The movement system is seen as a key element in maintaining the City's liveability by ensuring it is equitable, safe, economic and comfortable.

The movement of road freight is intended to be achieved primarily via the motorways and arterial roads linking activity centres, including the air and sea ports. The road transport network also recognises the regional relationships with other growth areas in the SEQ Region, including Ipswich, Logan and the Gold Coast to the west and south, and Pine Rivers and Caboolture to the north. While the Strategic Plan for Brisbane identifies the regional road network the absence of a northern connecting motorway from the Ipswich Motorway to the Gateway Motorway, is readily apparent.

### 2.10.6 Area Designations

The City Plan sets out development intentions and Desired Environmental Outcomes (DEOs) for each Area, which identifies the desired end state for the Area that development is to assist in achieving. This Area classification is identified on the Planning Scheme Maps.

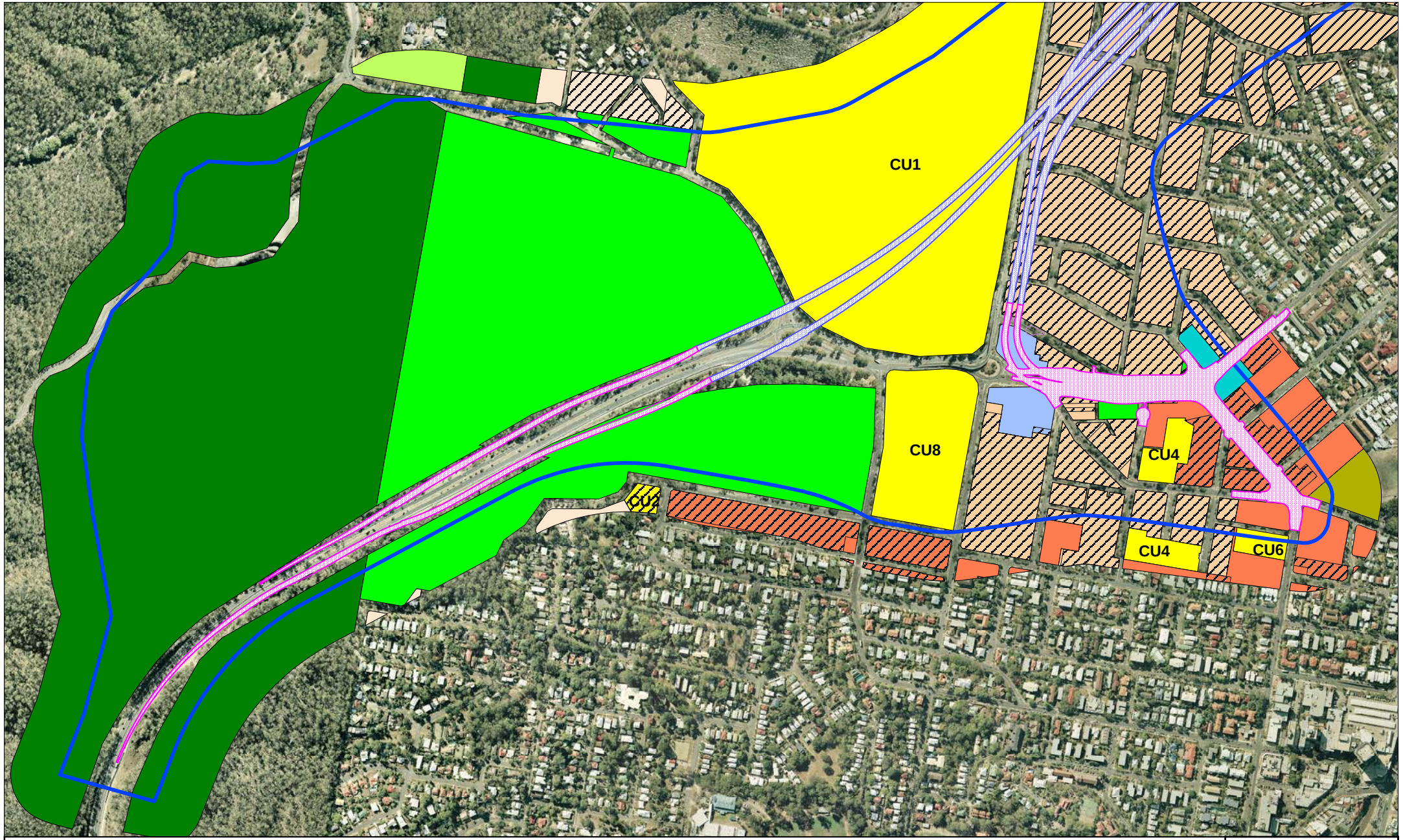
Area provisions are not particularly relevant to the assessment of the Project, as the Project traverses many Areas and the nature of the Project is too large to be assessed against the relatively detailed Area provisions. However, it is necessary to consider the Area classifications within the vicinity of the Project in order to understand the Project's implications on future land use scenarios and redevelopment opportunities.

Planning Scheme Area classifications for the study corridor are shown on **Figure 2-2**, **Figure 2-3** and **Figure 2-4** and the classifications are outlined in **Table 2-3**

- **Table 2-3 City Plan Area Classifications and Intent**

| Area | Purpose/Intent |
|---|---|
| Character Residential | The Character Residential Area will primarily accommodate pre-1946 houses and new development will reflect pre-1946 architectural themes. These areas are included within the Demolition Control Precinct. |
| Low Density Residential | The Low Density Residential Area will consist predominantly of detached houses of up to two storeys in height. |
| Low-Medium Density Residential | The Low–medium Density Residential Area will contain a mix of houses up to 2 storeys and two and three storey multi–unit dwellings and single unit dwellings. Land in this Area is located in those parts of the City that are close to public transport networks or centres. |
| Medium Density Residential | Medium Density Residential Areas are located in near City locations with good access to public transport and centres. Medium Density Residential Areas will accommodate single unit dwellings and multi-unit development up to 5 storeys. |
| Special Purpose Centre | Special Purpose Centres provide for particular major activities. The study corridor contains one special purpose centre – 'SP1 - Major Hospital and Medical Facility'.<br>Development in each Special Purpose Centre Area should contribute to the primary focus specified for that Centre. |
| Park Land | The Parkland Area is for use by the public for informal outdoor recreational, cultural and educational activities. Small areas may accommodate permanent facilities for limited small-scale organised activities, such as youth clubs, and may be used in some circumstances for infrequent special events. Parkland Area is often publicly owned. |
| Sport and Recreation | The Sport and Recreation Area is used for formally organised recreational and sporting activities. It accommodates associated facilities such as clubhouses and car-parking. Land in the Sport and Recreation Area is often privately owned or leased, and access may be restricted by physical means such as fencing, or through other measures such as membership. |
| Multi Purpose Centre MP1 City Centre | The political, administrative, economic and social heart of Brisbane. The City Centre continues to provide the highest order and intensity of shop, office, entertainment, cultural, tourist and residential accommodation in the City. |

| Area | Purpose/Intent |
|---|---|
| Multi Purpose Centre MP3 Suburban Centre | Multi-purpose Centres allow for a wide range of activities to be clustered together. They are to be well serviced by all modes of transport, particularly public, bike and pedestrian. Buildings in Suburban Centres are smaller in scale than buildings in Major Centres.<br>Suburban Centres (MP3) provide a variety of services. They may be characterised by small tenancies within a limited area or lower density larger tenancies over a broader area. They generally contain more than 6,000$m^2$ of gross floor area |
| Multi Purpose Centre MP4 Convenience Centre | Multi-purpose Centres allow for a wide range of activities to be clustered together. They are to be well serviced by all modes of transport, particularly public, bike and pedestrian. Buildings in Suburban Centres are smaller in scale than buildings in Major Centres<br>Convenience Centres (MP4) are smaller centres providing local services within walking distance of residents. They generally contain less than 6,000$m^2$ of gross floor area. |
| Community Use Area | Land in the Community Use Area may be either privately or publicly owned and accommodates a range of community uses. These uses are shown individually on the Scheme Maps and include:<br>CU1 - Cemetery<br>CU2 - Community facilities<br>CU3 - Crematorium<br>CU4 - Education purposes Education purposes denotes the use of premises for systematic training and instruction designed to impart knowledge and develop skill.<br>CU5 - Emergency services<br>CU6 - Health care purposes<br>CU7 - Railway activities Railway activities are the use of premises for activities and associated facilities that support the effective functioning of the railway system.<br>CU8 - Utility installation. |
| Light Industry | The Light Industry Area features a range of light industries and warehousing with low environmental impact. |




**LEGEND**

**Residential**
- Low Density
- Low-Medium Density
- Medium Density
- Character Residential

**Industrial**
- Light Industry

**Centres**
- City Centre
- Convenience Centre
- Suburban Centre
- Special Purpose Centre

**Community**
- Community Use
- Park Land
- Sport And Recreation
- Environmental Protection
- Conservation

- Demolition Control Precincts
- Study Area Corridor

**Proposed Alignment**
- Surface Works
- Tunnel Underground

0 200 400
metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 2 - 2

City Plan Area Designations
Study Corridor West

Northern Link

SKM Connell Wagner
JOINT VENTURE

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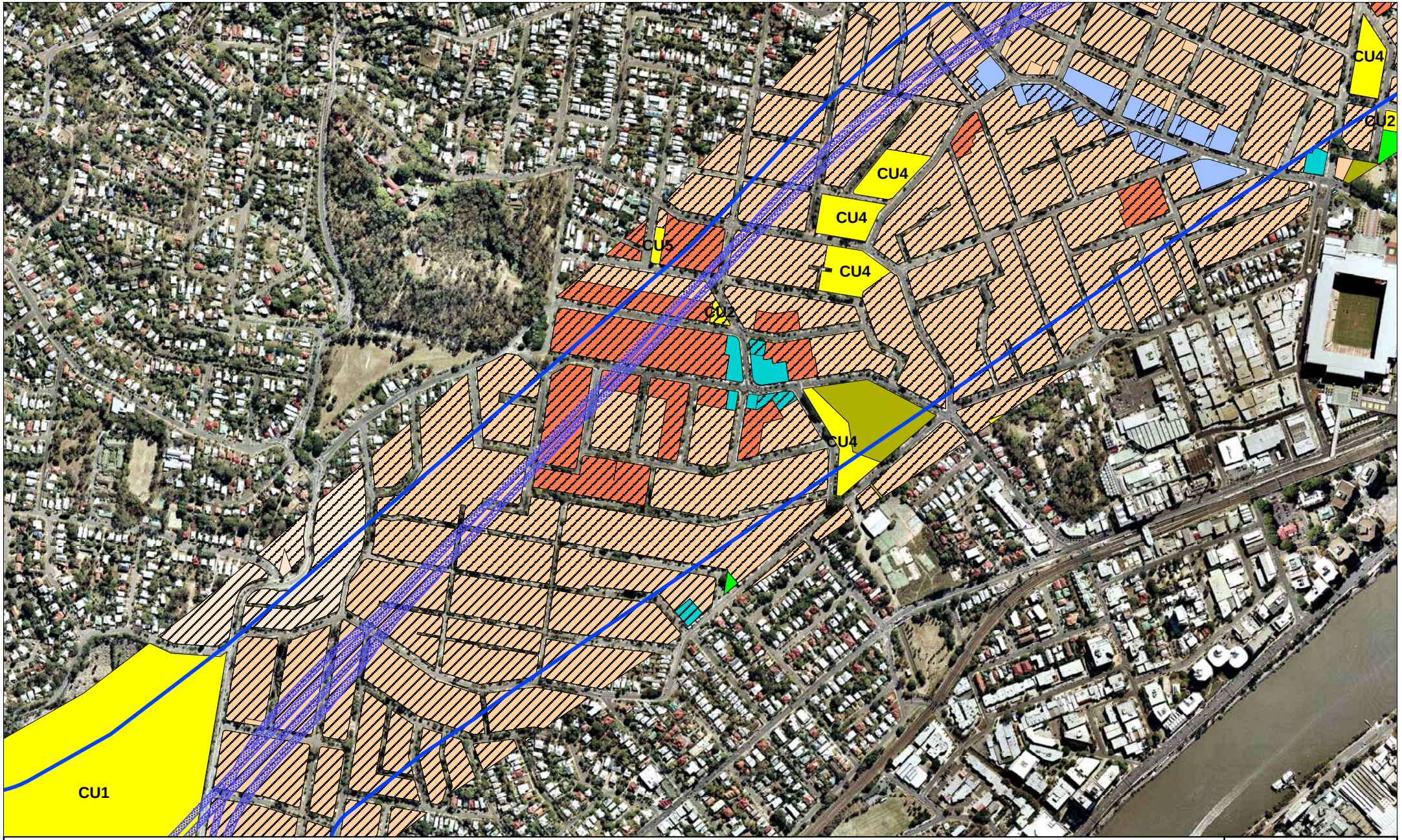


**LEGEND**

**Residential**
- Low Density
- Low-Medium Density
- Medium Density
- Character Residential

**Industrial**
- Light Industry

**Centres**
- City Centre
- Convenience Centre
- Suburban Centre
- Special Purpose Centre

**Community**
- Community Use
- Park Land
- Sport And Recreation
- Environmental Protection
- Conservation

- Demolition Control Precincts
- Study Area Corridor

**Proposed Alignment**
- Surface Works
- Tunnel Underground

0 200 400
metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 2 - 3

City Plan Area Designations
Study Corridor Central

Northern Link

SKM Connell Wagner
JOINT VENTURE

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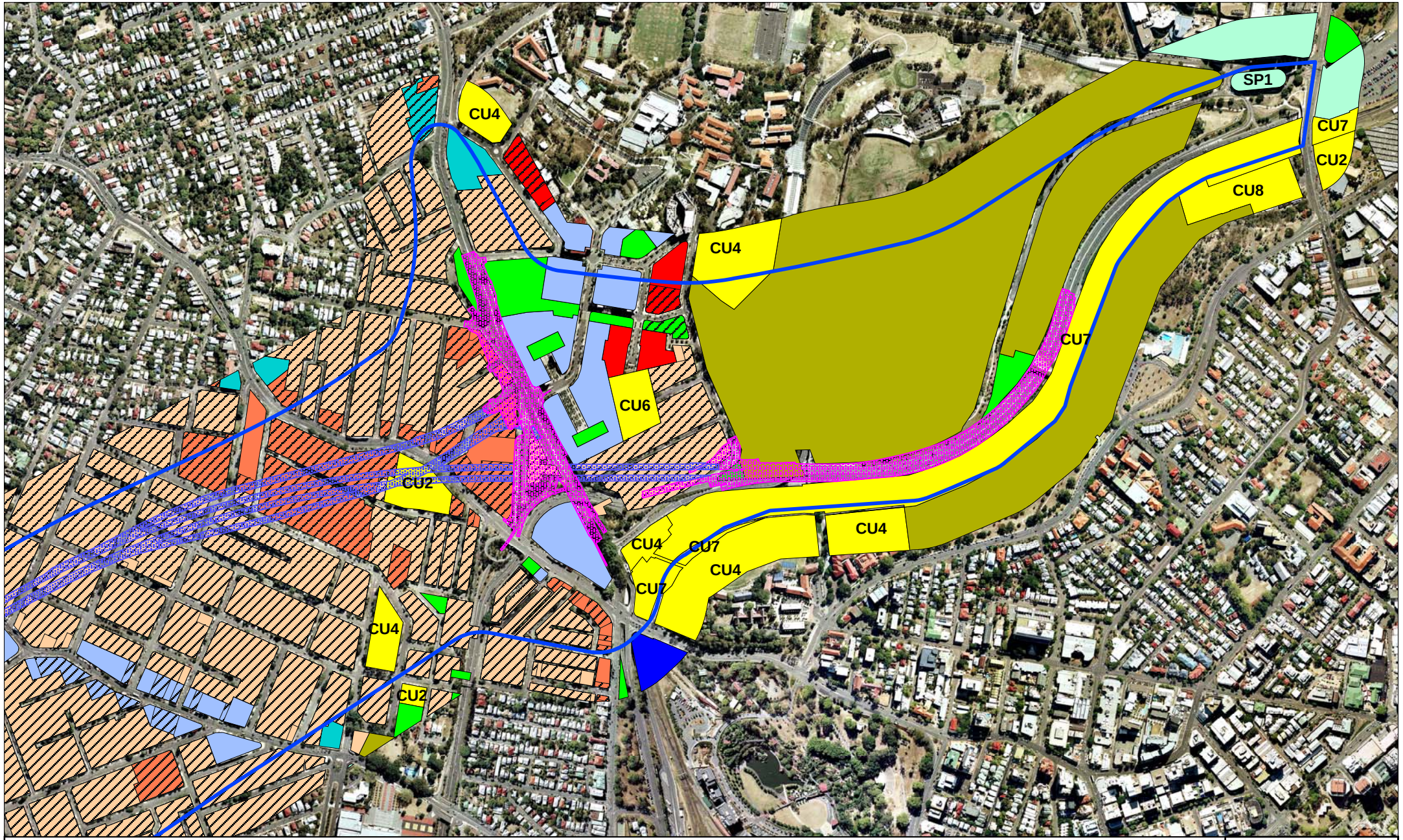


**LEGEND**

**Residential**
- Low Density
- Low-Medium Density
- Medium Density
- Character Residential

**Industrial**
- Light Industry

**Centres**
- City Centre
- Convenience Centre
- Suburban Centre
- Special Purpose Centre

**Community**
- Community Use
- Park Land
- Sport And Recreation
- Environmental Protection
- Conservation

Demolition Control Precincts

Study Area Corridor

**Proposed Alignment**
- Surface Works
- Tunnel Underground

0 200 400
metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 2 - 4

City Plan Area Designations
Study Corridor East

Northern Link

SKM Connell Wagner
JOINT VENTURE

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Most of the residential land within the study corridor is also within the Demolition Control Precinct (on **Figure 2-2**, **Figure 2-3**and **Figure 2-4**). The Demolition Control Precinct is an overlay on the Area classification and triggers development assessment codes for particular types of development. For example, demolition or removal of a building within the Demolition Control Precinct is defined as assessable development and will require a development permit.

The Demolition Control Precinct is a challenge to more intense redevelopment of older residential areas, as the fundamental objective of the Demolition Control Precinct provisions is to protect the traditional character of buildings and streetscapes developed before 1946.

### 2.10.7 Local Area Plans

The Brisbane City Plan includes Local Area Plans, which provide detailed planning for specific localities and these plans take precedence over the City Plan Area provisions.

The study corridor contains several Local Area Plan boundaries as shown in **Figure 2-5.** An overview of each of the Local Area Plan is presented below.

#### 2.10.7.1 Ithaca District Local Area Plan

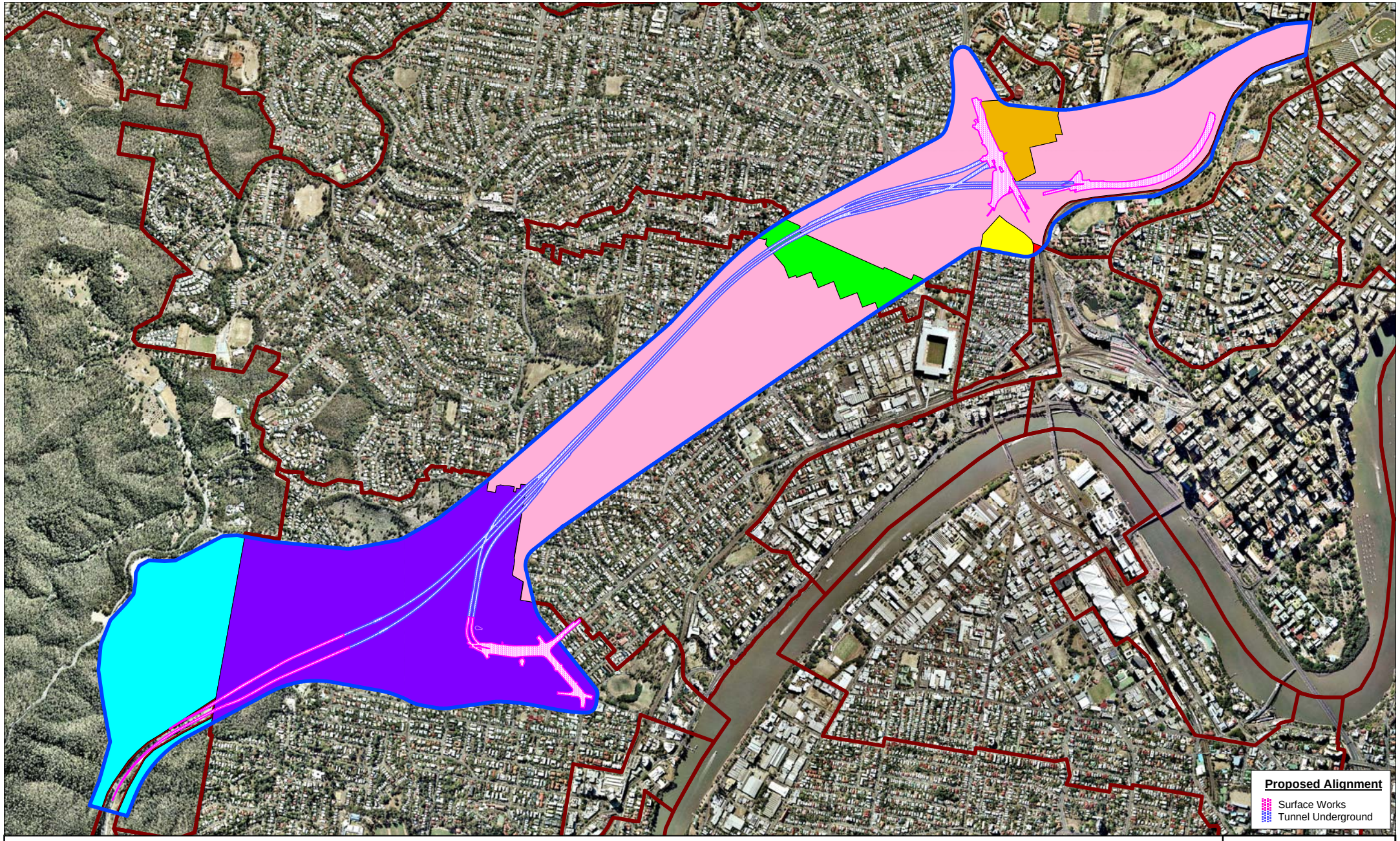
The Ithaca District Local Area Plan occupies a large portion in the middle of the study corridor. The Local Area Plan's development principles, of relevance to the Project, are to:

- Provide a range of housing types that serve the needs of the community, while also maintaining the area's predominant 'timber and tin' style character housing.
- Protect important local heritage places, including areas recognised as significant character streetscapes, such as Enoggera Terrace.
- Protect Enoggera and Ithaca Creeks for their ecological and recreational values.

#### 2.10.7.2 Toowong-Indooroopilly District Local Area Plan

The Toowong-Indooroopilly District Local Area Plan applies to the western end of the study corridor. The Toowong-Indooroopilly District Local Area Plan includes the suburbs of Toowong and Indooroopilly and provides planning direction for the key commercial and residential developments within the Local Plan Area. The Local Area Plan's development principles, of relevance to the Project, are to:

- Maintain the diverse mix of housing and the 'green and leafy' character will be maintained. Groupings of pre-1946 character housing will be protected and higher density living near major centres, public transport and the University of Queensland will be encouraged.
- The amount of parkland available to the public will be increased and redevelopment of existing parks must aim to improve accessibility to park space.
- Pedestrian and cycle paths will be enhanced.




**LEGEND**

- City Centre
- Ithaca
- Kelvin Grove Urban Village
- Latrobe/Given Terrace
- Mt Coot-Tha
- Petrie Terrace
- Toowong Indooroopilly
- Study Area Corridor
- LocalArea Plan Boundaries

0 500 1000

metres

Scale 1: 25,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 2 - 5

**Local Area Plan Boundaries**

Northern Link

SKM Connell Wagner JOINT VENTURE

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### 2.10.7.3 Mt Coot-tha Local Area Plan

The Mt Coot-tha Local Area Plan is also applicable to the western end of the study corridor. The Local Area Plan's development principles, of relevance to the Project, are to:

- Preserve the natural landscape and environment, which are an integral aspect Brisbane's history and an important visual backdrop and contrast to the built up areas of the City; and
- Maintain and enhance recreational opportunities and facilities that are in a natural setting close to the City while being consistent with appropriate conservation measures.

### 2.10.7.4 Latrobe and Given Terraces Local Area Plan

The Latrobe and Given Terraces Local Area Plan focuses on the commercial and residential precincts centred around Latrobe and Given Terraces. In particular, the Local Area Plan focuses on the heritage components of the buildings located in the area. The Local Area Plan's development principles, of relevance to the Project, are to:

- Ensure that development in the area contributes to the high visual quality landscape and compliment the already existing 'timber and tin' hillside character housing;
- Latrobe and Given Terraces are to continue to perform a multi-purpose transport role, catering for pedestrians, cyclists and through traffic
- Development is not to increase the use of residential streets for car parking and should minimise the intrusion of non-residential traffic into these streets.

### 2.10.7.5 Kelvin Grove Urban Village Local Area Plan

Kelvin Grove Urban Village Local Area Plan is applicable to the northern end of the study corridor. The Local Area Plan's development principles, of relevance to the Project, are to:

- Develop the Kelvin Grove Urban Village as an integrated and master-planned urban village within a mixed use and highly urban environment;
- Embrace the urban design 'main street' principles for buildings within the Village, which, in conjunction with the proposed uses, will contribute to and assist in establishing a vibrant and active main-street centred urban neighbourhood; and
- Reflect and express key sustainable development principles within the Village. Planning and design are to deliver, for example, reductions in demand for water and energy and in the generation of waste and greenhouse gases.

### 2.10.7.6 Toowong Major Centre Local Area Plan

The intent for the Toowong centre is to provide the full range of centre services such as shops, offices, residential, community, recreation and entertainment uses to serve the needs of the inner western suburbs. Sherwood Road and High Street are to be the focus of activity and be pedestrian friendly. The centre core is to be intense urban surrounded by less intense mix of business and residential uses. Variety of residential densities support the centre all linked by safe pedestrian access. The centre is to contain a network of public spaces.

### 2.10.7.7 Toowong Centre Local Area Plan

The intent for the Toowong centre, as per the Toowong Major Centre Local Area Plan, is to provide the full range of centre services such as shops, offices, residential, community, recreation and entertainment uses to serve the needs of the inner western suburbs. Sherwood Road and High Street are to be the focus of activity and be pedestrian friendly. The centre core is to be intense urban surrounded by less intense mix of business and

residential uses. Variety of residential densities support the centre all linked by safe pedestrian access. The centre is to contain a network of public spaces.

## 2.11 Brisbane Long Term infrastructure Plan 2007

The Brisbane Long Term Infrastructure Plan (BLTIP) was released in 2007 and provides the integrated planning guidelines for the next 20 years for a range of infrastructure required to sustain our liveability and assist in economic development during periods of unprecedented growth.

The transportation elements of BLTIP are drawn from the *Transport Plan for Brisbane 2002-2016*, however, future editions will reflect the *Transport Plan for Brisbane 2006-2026.* In order to provide infrastructure it is necessary to develop an understanding of expected population growth. The outcomes of the *Local Growth Management Strategy* will provide key inputs to the BLTIP when it's complete.

The BLTIP has established a number of priorities and strategies for the addressing the transport implications faced by Brisbane City. The Plan has recognised the *TransApex* Project, including Project, as a strategy for reducing cross-city traffic congestion within the CBD and inner and middle suburbs. A priority for *TransApex* projects has also been to address freight implications within suburban Brisbane. The BLTIP's freight strategy has a number of goals that could be potentially achieved for the study area as a result of the Project. These goals include:

- Protecting residential areas from impacts of inappropriate intrusion of freight; and
- Providing more efficient road freight movement through better inter-modal and distribution facilities, and an appropriate network of arterial roads.
- The quality and extent of the public domain are critical. While the area is regionally accessible by rail, bus and road, this major transport infrastructure creates barriers to easy, safe and efficient local movement within the area;
- The character, identity and 'sense of place' of City West's localities are critical. City West has places with significant character and identity, which is derived from significant heritage buildings, 19th century residential neighbourhoods, unique topography iconic 'landmarks';
- Harnessing economic resources is a critical issue for prosperity and vitality for the whole city. City West incorporates and is close to State and nationally significant learning, research and health institutions, the State's economic and administrative centre, important 'creative' industry places and the major arts and cultural precinct; and
- Ensure major projects enhance the local environment, contribute to a shared place vision and provide local environmental, social and economic benefits.

## 2.12 Draft Milton Railway Station Precinct Plan

Urban Renewal Brisbane released the draft Milton Rail Station Precinct Plan in May 2008. Once completed, the plan will guide the assessment of development applications and the statutory review of the Milton Local Plan.

The draft was prepared within the policy framework of the *South East Queensland Regional Plan 2005-2026* and the *draft Brisbane CityShape 2026,* both of which promote the area as a location for higher density mixed use development.

The Draft Milton Railway Station Precinct Plan is envisages a high-density urban area that includes:

- High- and medium-density residential dwellings;

- Commercial and recreational precincts that are easily accessed from the surrounding residential areas;
- Easy access in and out of the precinct, including access to Brisbane's Central Business District;
- Public transport focused development with easy access to Milton Railway Station, a proposed Milton Ferry Terminal and efficient bus networks; and
- Recognition and management of the precinct's current cultural heritage developments.

The Draft Plan recognises that most significant challenge that might be preventing Milton from realising its potential as a transit oriented development is the lack of connectivity and quality in the public realm, and the poor standard of access to the station from the immediately surrounding area.

# 3. Planning Impact Assessment

This section considers the Projects implications within the State planning framework, the regional planning framework and the local planning framework.

## 3.1 State Planning Implications

Some elements of the Project may require a development application under Schedule 8 of IPA. These development applications may trigger one or more of the SPPs discussed below. Additionally, the Terms of Reference require the identification of the State Planning Polices (SPP) requirements relevant to the Project.

### 3.1.1 SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide

The SPP is relevant to the Project on the basis that the whole of the Brisbane City Council local government area is listed as a natural hazard management area. This means that development must have regard to Outcomes 1 and 2 of the policy. They are addressed in **Table 3-1**.

**Table 3-1 SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide**

| State Planning Policy Outcomes | Comment |
|---|---|
| **Outcome 1:** Within the natural hazard management areas, development to which the SPP applies is compatible with the nature of the natural hazard, except where:<br>■ The development proposal is a development commitment; or<br>■ There is an overriding need for the development in the public interest and no other site is suitable and reasonably available for the proposal. | The Brisbane City Council area is listed as an area with potential for landslides, bushfires and flooding. Landslides and bushfires are unlikely to be risks in the study corridor and the reference project is not likely to increase the extent or severity of hazards of this nature.<br>Some areas of the study corridor have been determined as being susceptible to localised flood impacts. Flooding impacts have been assessed in a separate technical report.<br>The Project design is able to achieve flood immunity during a 1:10000 year flood event and therefore is considered compatible with the nature of the potential flood hazard in the project locality. |

### 3.1.2 SPP 2/02 Planning and Managing Development involving Acid Sulphate Soils

Review of topographical and geological mapping information has concluded that acid sulphate soils are not prevalent within the study area. However, three locations have been identified as having a low of acid sulfate soils. These locations are:

- In the vicinity of Toowong Memorial Park on Sylvan Road
- The eastern end of Baroona Road
- The south-east end of Given Terrace in Neal Macrossan Park.

However, none of these locations are presently designated for excavation and it is expected that the Project would not generate acid sulphate soils implications. Should acid sulphate soils be encountered during construction, they would need to be treated accordingly.

It is expected that the Project is able to comply with SPP 2/02.

### 3.1.3 Smart Cities: Rethinking the City Centre

The project forms one of many inner suburban urban renewal or infrastructure projects in the City which are outlined by the Smart Cities report and as such contributes to the revised vision of the City. The Project should be considered in any future studies undertaken as part of the Smart Cities initiative.

### 3.1.4 City West

High traffic volumes (including unnecessary through-traffic) is one of the contributing factors of the perceived poor amenity in the City West area. The Project provides the opportunity to improve amenity in the City West area by reducing through-traffic in the area, ie: traffic that would otherwise pass through the City West area but because of the Project it would bypass the City West area by using the Project and the ICB.

The Project would reduce traffic on Milton Road, Countess Street, Petrie Terrace and some other local roads and streets. This in turn may reduce the amount of 'rat-running' generated within the City West area, which might normally occur under congested traffic conditions.

As a result of reduced surface traffic, the Project could aid the implementation of one the key City West Strategies, which is to improve safety and amenity of the City West area's local streets. Strategies that could be benefited from the Project include:

- Restoring streets as social and economic places as well as places for mobility and access;
- Knitting the central area and inner suburbs together with high quality pedestrian and cycle links through the public domain; and
- Acknowledging the economic importance of lifestyle amenity and infrastructure.

## 3.2 Regional Planning Implications

This section considers the Projects implications within the regional planning framework.

### 3.2.1 SEQRP Implications

This section considers whether the Project is able contribute to the achievement of the SEQRP Regional Policy objectives and regional Desired Environmental Outcomes.

The potential impacts and opportunities associated with The Project in regard to the regional policies are described in **Table 3-2.**

- **Table 3-2 Project Assessment against SEQRP Regional Policies**

| Regional Policy | Comment |
|---|---|
| Sustainability | The Project would contribute to sustainability through improving accessibility to activities and services at both regional The Project offers improvements to accessibility in at both the regional level and local level. The Project provides a regional link for the western corridor to the east and in particular to the Australia TradeCoast. Locally, through traffic is reduced and local roads would have less traffic allowing for amenity improvement and improved public transport.<br>Improving the capacity of the transport network is also particularly important given the anticipated continued high population growth predicted for Brisbane and the SEQ region.<br>The Project has been prepared within a sustainability framework as outlined in Chapter 2 of the EIS. |
| Natural Environment | The western end of the Project where it traverses Brisbane Forest Park/ Mt Coot-tha Forest is included in the Regional Landscape or Rural Production Area.<br>Brisbane Forest Park/Mt Coot-tha Forest is also defined as an area of regional biodiversity significance (SEQRP Map 4) and a Koala Sustainability Area (SEQRP Map 5).<br>The proposed works result in widening of the Western Freeway which is already a significant barrier to connectivity in the area. The additional impacts of the Project are likely to be minimal given the existing situation. The values of the area are recognised and an environmental management plan is proposed to mitigate any adverse impacts and to limit the extent of the impact. |

| Regional Policy | Comment |
|---|---|
| Regional landscape | The Brisbane Forest Park/Mt Coot-tha Forest are integral components of Brisbane's natural green spaces. The values of the area are recognised and an environment management plan is proposed to mitigate any adverse visual or natural landscape impacts. |
| Natural resources | The Project is not expected to impact the region's natural resources.<br>An option is being explored to use construction spoil to supply the road construction industry in Brisbane. |
| Rural futures | The Project is not within a rural area. |
| Strong communities | Construction impacts would be managed so as to reduce access and amenity impacts. Design of the Project has taken into account the need to maintain local connectivity and improve amenity fo pedestrian and cycle paths. |
| Engaging Aboriginal and Torres Strait Islander peoples | The traditional owners for the area, the Turrbal and Jagera People are actively involved in the cultural heritage assessment of the project. Refer to the Cultural Heritage Technical Report. |
| Urban development | There are opportunities for land use change as a result of reduced surface traffic on some roads within the inner northern suburbs. With an improved transport network, the Project may facilitate higher density infill development. |
| Economic development | The Project would have a positive impact on the economic development of the SEQ region by improving the movement of people and goods. The project would provide additional road network capacity and would improve the orbital road system in the greater Brisbane area. This would improve access places of business and employment including the Brisbane CBD, Toowong and the Brisbane Airport. |
| Infrastructure | The Project would complete an orbital road link around the Brisbane CBD, by linking the Western Freeway with the ICB and would assist in the reduction of through traffic in the CBD. |
| Water management | The Environmental Management Plan for the Project would seek to minimise water use associated with the project and manage potential runoff. |
| Integrated transport | The SEQRP emphasises integration of transport and land use planning recognising the complementary roles played by roads, public transport, walking, cycling and land use. The Project would provide a more accessible region by increasing accessibility between the Western Corridor and the Brisbane Aiport and therefore improve land use synergies between these two areas.<br>The Project would also provide for reductions of traffic on Milton Road, Coronation Drive as well as local roads within Brisbane's inner northern suburbs. The Project, through reductions in surface traffic, would therefore provide opportunities for urban redevelopment in the inner northern suburbs, including infill development as envisaged by the SEQRP. These opportunities are discussed in the Urban Regeneration Technical Report. |

### 3.2.2 SEQRP Regulatory Provisions

The Project does not trigger the regulatory provisions of the SEQ Regional Plan, as the Project is not an Urban Activity.

### 3.2.3 SEQIPP Implications.

While the Project is recognised by SEQIPP as being a 'project under investigation', the Project is not currently listed in the SEQIPP project to be funded by the State Government.

### 3.2.4 Integrated Regional Transport Plan (IRTP) for South East Queensland

The IRTP has now been superseded by the SEQRP, to the extent that there are inconsistencies between the two, with regard to the establishment of a pattern of development and the delivery of major infrastructure. The Project, while not identified in the IRTP, is identified in the SEQRP as a project under consideration for establishing a link in the orbital road system around the Brisbane CBD.

The Project responds to the issue of increasing congestion (as a result of population growth and economic development) through seeking to provide for the continued efficient movement of people and goods through an alternate transport route that bypasses the Brisbane CBD.

### 3.2.5 Transport 2007

The Project would augment the existing road network and provide a new, high quality road corridor that would improve accessibility and connectivity to goods, services, places of employment to regionally significant locations including the Western Corridor, the Brisbane CBD and the Brisbane Airport.

### 3.2.6 Regional Cycle Strategies – Cycle South East and the Integrated Regional Cycle Network Plan for South East Queensland

The proposed works on Milton Road, Frederick Street and Kelvin Grove Road are likely to impact upon cycling routes. Project design and construction arrangements need to ensure that cycle networks are not compromised.

The anticipated reduction in general surface vehicular traffic is likely to create an environment that is more conducive to cycling and there would be opportunities to increase cycle infrastructure networks on roads that are currently unsafe for cycle travel due to high volumes of traffic (eg: Milton Road).

### 3.2.7 Western Brisbane Transport Network Investigation

The Project is one of many transport network options currently being considered as for the Western Brisbane Transport Network Investigation (WBTNI). The WBTNI recognises the importance of the Project for not only providing an inner city motorway link between the Western Freeway and the ICB, but also as an opportunity for developing public transport and active transport routes in Brisbane's inner west through surface traffic reduction.

## 3.3 Local Planning Implications

This section assesses the Project in the context of the local planning framework.

### 3.3.1 Living in Brisbane 2026

The 'Accessible, Connected City' strategy outlined in the Living In Brisbane 2026 identifies the need for effective road networks in conjunction with opportunities for access to green and active transport. While the report aims to have 41% of peak traffic undertaken by walking, cycling or public transport by 2026, it also recognises the need for private transport around the city.

The Project provides additional road network capacity in Brisbane and therefore responds directly to the need for effective road networks. However, as modelling predicts that there would be reductions in surface traffic on Milton Road and Coronation Drive, the Project offers opportunities to improve green and active transport. Opportunities include transit priority on Milton Road, as well as a safer and more attractive environments for pedestrians and cyclists

## 3.4 Draft City Shape Implementation Strategy Implications

The Draft SCIS identifies an Urban Growth Corridor between Toowong and the CBD, including Milton Road and Coronation Drive.

It is considered that the Project, by reducing traffic on Milton Road and Coronation Drive, could encourage development in the Urban Growth Corridor as envisaged by the Draft SCIS. Because of reduced congestion there are opportunities to improve public transport and active transport, both of which would improve accessibility and connectivity in the corridor, which in turn may encourage urban redevelopment.

In particular, there is potential for the project to encourage redevelopment at Kelvin Grove and at Milton. This is consistent with various strategic planning instruments for the area including Kelvin Grove Urban Village Local Area Plan, the draft SCIS, the draft Milton Station Precinct Plan and the SEQRP.

### 3.4.1 Brisbane City Plan 2000 – Strategic Plan

Overall the Brisbane City Council City Plan's strategic visions are focused on developing a city that is economically diverse and easily accessible while also encouraging a strong sense of community, quality of life and ecological sustainability.

Without mitigation measures the Project could potentially conflict with a number of the strategies outlined in the Desired Environmental Outcomes for development within Brisbane.

As a standalone piece of infrastructure, the Project itself conflicts with the Access and Mobility DEO. The provision of a road tunnel that is used primarily by private and commercial motor vehicles is not in line with the Access and Mobility DEO's strategy for promoting development that reduces private motor vehicle dependency.

However, as the Project would to reduce traffic on surface Milton Road and Coronation Drive, there are opportunities to improve public and active transport on these road networks. Should these opportunities be realised by Brisbane City Council, then it is considered that the Project would help to achieve the Access and Mobility DEO.

The Project could potentially result in a small decrease the amount of green space currently accessible to the Brisbane community and therefore conflict with the Natural Environment and Waterways DEO. The proposed construction sites, ventilation outlets and transition structures, particularly at the western connection, would encroach on green space located within ANZAC Park, the Botanical Gardens and Mt Coot-tha Park. To minimise this conflict the project would need to ensure that impacts on green space are minimised and where possible, green space land affected during construction should be returned to its present state.

### 3.4.2 Brisbane City Plan 2000 - Areas

The Project's implications for the future land use scenario, based upon the current City Plan 2000 Area designations, are described below.

#### 3.4.2.1 Character Residential and Low Density Residential Areas

The Character Residential and Low Density Residential Areas are unlikely to be redeveloped at significantly higher densities. This is due to the planning provisions that seek to retain the traditional housing stock and character and to maintain the low density urban form. Consequently, these areas are unlikely to increase travel demand.

The desired residential character of these areas may suffer if through-traffic is not appropriately managed in local streets (i.e. rat-running) The Project, by reducing traffic on Milton Road and Coronation Drive and other local roads and streets, may alleviate through-traffic in local streets.

The Project's construction traffic management strategy should ensure that through-traffic is restricted to major arterial roads and should endeavour to reduce the number of private vehicle trips through these areas.

#### 3.4.2.2 Low-Medium Density Areas

It is envisaged that the Low-Medium Density Areas would be progressively redeveloped at higher than current densities, depending on consolidation of land holdings and accessibility to public transport and arterial roads.

Higher density residential redevelopment may be encouraged by the Project where, as a result of the Project, surface traffic is reduced on some roads and streets the inner western suburbs.

#### 3.4.2.3 Medium Density Areas and High Density Areas

The Medium Density Areas and High Density Areas are located adjacent to the Toowong centre (not shown on report figures as these particular locations are outside the Study Corridor) and close to rail stations at Milton and Auchenflower. While the increased population in these areas would be encouraged to use public transport, it is assumed that they would also create additional travel demand on the local and regional road network. Given their proximity to activity centres, the High Density Areas would also require good quality active transport linkages to realise the full benefit of their location.

As the Project would reduce traffic on Milton Road and Coronation Drive, higher density residential redevelopment may be facilitated in these Areas. Also, with reduced traffic on Milton Road and Coronation Drive, there would be opportunities to improve active transport linkages.

#### 3.4.2.4 Community Use Areas

Community Use Areas are scattered throughout the inner western suburbs. These areas provide for the community's essential services (i.e. schools) and must be easily accessible to the community. The private schools (which are contained within the Community Use Area) with catchments beyond the local area are expected to attract private vehicle trips during peak times. Reducing traffic near schools would help to improve safety for students and local residents

#### 3.4.2.5 Industrial Areas

Industrial areas, located mostly in Milton, would continue to be used for industrial uses and require good access to freight routes. Congested routes lead to an increase in freight costs, impacting on economic development.

By reducing surface traffic along Milton Road and Coronation Drive, the Project is likely to have positive effects for the industrial uses.

#### 3.4.2.6 Multi Purpose Centres/Special Purpose Centres

There are numerous premises designated as a 'Centres' Area, each with land use specifications and travel demand implications:

- Suncorp Stadium has unique travel demand implications. Travel demand is very high during sporting and entertainment events and is usually managed by local road closures and increased public transport provision. At other times, the travel demand of Lang Park is relatively low;
- The Milton Office Park is likely to create a high level of traffic demand particularly in peak times, given activities in these areas would be focused around general business hours;
- The City Centre would continue to have a very high travel demand, particularly at peak travel times; and
- Suburban Centres would attract shopping trips from local communities and need to be easily accessible to maintain the viability of businesses within them.

#### 3.4.2.7 Open space areas

Open space areas, including Parkland and Sport and Recreation Areas are located throughout the Study Corridor. The open space areas provide green space, visual attractiveness as well as informal and organised recreational spaces. The travel demands associated with these areas are varied:

- Parkland Areas do not generally create a high travel demand. However, parkland needs to be easily accessible for motorists, pedestrians and cyclists so that the recreational opportunities offered by these areas are realised; and
- Sport and Recreation areas may create significant travel demand from both local and broader communities during organised sporting events. Sport and recreation areas need to be easily accessible for motorists, pedestrians and cyclists so that the recreational opportunities offered by these areas are realised.

### 3.4.3 Brisbane City Plan 2000 - Local Area Plans.

The Project, by reducing surface traffic on Milton Road, Coronation Drive and some other local roads and streets, has the potential to assist the achievement of the relevant Brisbane City Plan 2000 – Local Area Plans.

#### 3.4.3.1 Toowong-Indooroopilly District Local Area Plan

The Project would need to ensure pedestrian and cycle accessibility is maintained between key land uses and where possible, should aim to improve existing networks. The Project provides the opportunity to improve pedestrian and cycle connectivity in the Toowong area, particularly within the area surrounding the roundabout adjacent to the Toowong Cemetery.

Where possible, the 'green and leafy' character housing located in the Toowong area should be maintained throughout the construction and operational phases of the project. Although some properties would be required, it is not likely that the Project would significantly diminish the character housing stocks situated in the Toowong area.

There would be some impact on the available park space in the Toowong area as a result of the Project. Partial resumption would be required of ANZAC Park, the Botanical Gardens, Mt Coot-tha Park and Quinn Park on Quinn Street.

#### 3.4.3.2 Mt Coot-tha Local Area Plan

The Project would need to ensure that local area's natural environment is not significantly impacted as a result of the Project. The Project would require partial acquisition of the Mt Coot-tha Park space and would impact on the amenity and value of the local environment. It is expected that the impact would be minimal as the Project would only be acquiring land directly adjacent to the existing Western Freeway and the majority would only be required during construction.

#### 3.4.3.3 Ithaca Local Area Plan

It is not expected that the Project would impact significantly on Ithaca Local Area Plan's development principles. There are a small number of residential and commercial properties required for resumption in the vicinity of the proposed Kelvin Grove Road connection. It is understood that none of these properties are heritage listed or are recognised as significant to the heritage values of the Ithaca area.

The Project would not impact on Enoggera and Ithaca Creeks as they are both located outside the study corridor.

#### 3.4.3.4 Kelvin Grove Urban Village Local Area Plan

The Project would need to ensure pedestrian and cycle accessibility is maintained between the surrounding residential properties, the public transport nodes and the Urban Village. The widening of Kelvin Grove Road and the expected increased traffic would generate accessibility issues.

There are no properties within the Urban Village that are required for resumption. It is expected that the development principles of the Local Area Plan would not be affected by the project.

#### 3.4.3.5 Milton Local Area Plan

Road congestion creates amenity and environmental issues for local communities, such as air quality, noise and accessibility. The Project would reduce surface traffic in the Milton Local Area Plan area and by improving the regional road network and public transport can help to alleviate problems and improve local amenity. Consequently, the Project provides the opportunity for mixed use redevelopment and an intensification of residential uses the land in the Milton Local Area Plan, both of which are consistent with the intent of the Milton Local Area Plan.

#### 3.4.3.6 Toowong Centre Local Area Plan

Improvements to transport infrastructure to improve accessibility to Toowong, and by reducing traffic on Milton Road and Coronation Drive should encourage the development of the Toowong centre as per the intent of the Toowong Centre Local Area Plan.

### 3.4.4 Brisbane Long Term Infrastructure Plan 2007

It is expected that the Project would assist in the achievement of the Brisbane Long Term Infrastructure Plan 2007 (BLTIP). One of the Project's primary objectives, which is to improve freight networks within Brisbane's inner west, is in line with BLTIP's goals to protect residential areas from freight movement and to provide more efficient road freight networks.

The Project would achieve this by providing an improved connection between the Western Corridor and Brisbane Airport, as well as providing improved road access to some the SEQ region's major activity centres centres, being the Brisbane CBD, Toowong and to an lesser extent, Indooroopilly. This is achieved at a comparatively smaller land use impact than if this new road connection was established at surface.

### 3.4.5 Draft Milton Railway Station Precinct Plan

The Project's study corridor is not covered by the boundaries of the draft Milton Railway Station Precinct Plan. However, as the Project is predicted to reduce traffic on Milton Road and Coronation Drive, the Project may facilitate the achievement of the Plan's objectives.

Poor pedestrian and cycling accessibility and connectivity was identified as a major challenge to the realisation of the draft Milton Station Precinct Plan's objectives. The Project would reduce traffic on Milton Road and Coronation Drive, which consequently provides opportunities to improve pedestrian and cycle connectivity and accessibility as a result of a more attractive environment for pedestrians and cyclists.

### 3.4.6 Corporate Plan 2007-2011 and Brisbane City Council Annual Report 2006/2007

The Corporate Plan 2007-2011 and the Brisbane City Council Annual Report 2006/2007 identify the need for the Project as a means to addressing traffic concerns within Brisbane. However, due to the scale of the Project, Brisbane City Council has also identified that it would require funding assistance from other levels of government if it is to proceed.

# 4. Land Use

*This Chapter addresses section 5.6 of the Terms of Reference. It describes the existing land uses and discusses the potential impacts of the project on existing and likely future land use including:*

- *Compliance with relevant planning policies and provisions;*
- *Consistency with the SEQ Regional Plan, City Plan and its associated local plans, policies and land use designations;*
- *Compatibility of the Project with the desired intent of City Plan as per the relevant planning scheme provisions and emerging urban renewal or future land use opportunities described in or associated with Brisbane City Shape 2026 and the Neighbourhood planning process.*

*Impacts and proposed mitigation measures from construction and operation of the Project are described including:*

- *Consideration of necessary land acquisitions and land use implications;*
- *Identification of specific land use restoration proposals such as for public open space and parkland;*
- *Arrangements for property access and associated street closures or widening; and*
- *Land use impacts from amenity mitigation measures such as the construction of noise barriers adjacent to residential areas and other noise sensitive places.*

# 5. Existing Land Uses and Area Classifications

## 5.1 Introduction

Brisbane City Council Plan 2000 controls development within Brisbane City by guiding future land uses and providing a basis for development assessment. The City Plan divides the city into Areas based on preferred land use patterns, which have been devised through the elements of the city outlined in the Strategic Plan.

For the purposes of this report, the study corridor has been split into three sections to describe land use:

- Western Freeway Connection and Toowong Connection (from western limit of study corridor to the northern end of Frederick Street as far as Sleath Street, Sleath Street, Gregory Street between Sleath Street and Shaw Street and Shaw Street, Toowong).
- Central section ; and
- Northern Connection and Kelvin Grove Road Connection (Cairns Terrace and Moreton Street, Paddington to northern extremes of study corridor)

### 5.1.1 Existing Land Uses

A land use survey undertaken in 2007 by Brisbane City Council, which extensively covered the study corridor, has been utilised for assessment in the EIS. Land use data was identified under the categories defined in **Table 5-1** and is shown in **Figure 5-1**, **Figure 5-2** and **Figure 5-3,**

The current land uses within the study corridor are generally representative of the area classifications defined by the Brisbane City Plan. These current land uses were obtained from a land use survey undertaken by Brisbane City Council in 2007.

- **Table 5-1 Land Use Data Categories**

| Land Use Type | Description |
|---|---|
| Detached Dwelling | Individual domestic residences on a premises generally identified by a single letterbox. |
| Multiple Unit Dwelling | Premises that provide for individual accommodation for more than one group of people/household (eg: units, town houses or duplex). Presence of multiple residents verified by several letterboxes and/or additional unit numbers (eg: 1A & 1B or 1/37, 2/37 etc) or signage. |
| Accommodation | Boarding houses, guest houses, private hotels and motels where temporary accommodation is provided for short-term periods. These were identified through signage. |
| Industry | Premises used for industrial activity. |
| Commercial/Retail | Premises used for commercial activity (eg: retail shopping and restaurants). |
| Office | Premises used for a business or office purpose, eg: professional office, real estate office, estate sales office, bank, building society or surgery, where the principal activity provides:<br>■ business or professional advice;<br>■ services or goods that are not physically on the premises; or<br>■ the office based administrative functions of an organisation. |
| Health Care | Premises that provide medical care and treatment. |
| Child Care Centre | Premises that provide the minding or care, but not residence, of children. |
| Education | Facilities used for educational purposes, eg: preschool, primary |

| Land Use Type | Description |
|---|---|
| | school, secondary school, college, university or technical and further education institution. |
| Park | Public open space for free recreation and enjoyment, eg: playing field, playground. Facilities for park users may include kiosks, shelters, play equipment, and car parking facilities. |
| Sport and Recreation | Sporting clubs and facilities eg: bowls club, football clubs with playing fields. |
| Retirement Village/Aged Care | Use of premises for residential accommodation that meets the particular needs of persons who are retired or elderly persons with special care needs. |
| Community Facility | Community facilities such as a library, church, halls and emergency services |
| Mixed Use | Premises with commercial or retail uses in the ground floor/podium of the building and office uses or residential uses on upper levels of the building. |
| Utilities | Premises that contain facilities used for providing the public with a service (eg: telecommunications tower, electricity substation or infrastructure). |
| Car Park | Locations used generally for parking motor vehicles |
| Vacant Land | Premises with no current recognised land-use. |
| Other/Special Use | Unique land uses that cannot be categorised into any of the above land use types. |

Generally, the land use survey results matched the City Plan Area designations. In this regard, the tin and timber housing stock was generally contained within the 'Character Residential Area', multiple unit dwellings were generally found within the 'Low-Medium Residential Area', and the commercial and retail land uses were generally found within the 'Convenience Centre' or 'Suburban Centre' area designations.

## 5.2 Western Connection and Toowong Connection

### 5.2.1 Existing Land Uses

The predominant land uses at the western end of the corridor, in terms of size, are the Toowong Cemetery, the Botanical Gardens, Mt Coot-tha Park/Brisbane Forest Park, ANZAC Park and the Brisbane City Council's Toowong bus depot. Apart from commercial uses along Milton Road, 'tin and timber' character housing is the predominant land use type in this vicinity.

Toowong Cemetery occupies an elevated position adjacent to Milton Road and Frederick Street. It is of both State and local heritage significance. The heritage values are described in the Cultural Heritage Technical Report.

Combined, the Mt Coot-tha Botanical Gardens, Anzac Park and Mt Coot-tha Park/Brisbane Forest Park form a large area of greens space that comprises ecological values but also significant landscape and recreational values being the close to the inner suburbs of Brisbane.

Anzac Park is a large informal recreational park with picnic tables, play equipment, bicycle paths and public toilets.

Quinn Park is located on Milton Road and Quinn Street intersection. It provides recreational services to the local residents and includes playground equipment and picnic tables.

The Toowong Brisbane City Council bus depot is located on Dean Street, adjacent to ANZAC Park. This depot houses over 160 buses and is the largest in Brisbane. As well as providing buses for the western suburbs, the Toowong depot is also occupied by the Brisbane Transport Workshop. The workshop is responsible for undertaking major mechanical, electrical and body repairs and also for assembly of Brisbane's bus fleet.

There are some commercial land uses located on Milton Road. There is a cluster of commercial land uses located to the east of the Toowong Cemetery and the Toowong bus depot, and includes a car dealership and a services station. There is another cluster of commercial uses on the intersection of Milton Road, Croydon Street and Morley Street, provides a range of services including health facilities, food and convenience outlets.

There is one school located within the western end of the study corridor, which is the Toowong State Primary School and it is located on St Osyth Street. There are sporting grounds associated with the Toowong State Primary School located on the corner of Sylvan Road and Quinn Street.

There are a number of multiple unit dwellings located within the western end of the study corridor. These properties are located predominantly around along Milton Road and Croydon Street and vary in quality, size and age.

Land uses at the Western Connection are shown on **Figure 5-1**.

### 5.2.2 Area Classifications

The existing land uses at the Western Connection are generally consistent with the City Plan Area classifications as shown the City Plan 2000 mapping.

There are three prominent land uses, Park Land, Community Use and Character Housing, within the western end of the study corridor. Land either side of the Western Freeway is designated as Park Land. This land includes the Botanical Gardens, ANZAC Park and Mt Coot-tha Park/Brisbane Forest Park. The other dominant area classifications include the Toowong Cemetery and the Brisbane City Council bus depot as Community Uses and almost all residential properties being designated as Character Housing within Demolition Control Precincts.

Other area classifications include land around the roundabout at the Toowong Cemetery designated as Suburban Centre, commercial land on Milton Road designated as Convenience Centre and land south of Milton Road and east of Quinn Street designated as Low-Medium Density Residential.

## 5.3 Central Section

### 5.3.1 Existing Land Uses

Detached residential dwellings are the dominant land use within the central section of the study corridor. Although many of these properties do represent the 'tin and timber' housing style, the area is also well represented by modern, recently developed properties. Another common land use within this central section are multiple-unit dwellings that are situated in various locations throughout the Study Corridor.

There are two major commercial precincts located within the central section of the Study Corridor, one surrounding the intersection of Baroona Road and Nash Street and the other either side of Given Terrace and Latrobe Terrace. These commercial uses provide mostly convenience services to the local community, including banks, general medical practitioners, health services, speciality shops and restaurants and cafes.

Gregory Park, located abutting Milton Primary School, is the largest park within the central section of the study corridor. Gregory Park is in a central location within Milton and is easily accessed from the surrounding land uses, including Milton Primary School.

There are three schools present within this section of the study corridor, Milton Primary, Petrie Terrace Primary and Marist Brothers Rosalie. The only secondary school within this section of the study corridor, Marist Brothers Rosalie is scheduled to close at end of 2008. Presently, no future use has been decided for the site.

Other prominent land uses located within this section of the study corridor are the Paddington Meals on Wheels on Herbert Street and the Sacred Heart Church and Sacred Heart Convent on Given Terrace. The Sacred Heart Church and the Sacred Heart Convent have been used from time to time by adjacent Marist Brothers School. For more information on the land uses in the central section of study corridor refer to **Figure 5-2**.

### 5.3.2 Area Classifications

The dominant land use within the central section of the study corridor is Character Residential. Almost of all this Character Residential and all of the Low-Medium Residential areas within this section of the study corridor are also designated as being in a Demolition Control Precinct. The Low-Medium Residential is predominantly situated around the Convenience Centre area on Baroona Road Nash Street.

Land either side Given Terrace is classified as Suburban Central. This land includes a wide range of shops and facilities that service the local community.

The three schools located within this section of the study corridor are all classified as Community Use. The Community Use classification also encompasses the Paddington Meals on Wheels facility on Herbert Street, the Sacred Heart Church and Sacred Heart Convent.

## 5.4 Northern Connection and Kelvin Grove Connection

### 5.4.1 Existing Land Uses

The predominant land uses at the northern connection are Victoria Park and Victoria Park Golf Course. These open spaces, combined with Brisbane Grammar School's playing fields, dominate the majority of the land either side of the Inner City Bypass.

Near the Kelvin Grove connection, between Kelvin Grove Road and Victoria Park, the Kelvin Grove Urban Village is the predominant single land use in terms of size. However, land uses within the Kelvin Grove Urban Village are diverse and include multiple unit dwellings, food and convenience shops, speciality shops, restaurants and cafes, entertainment facilities and some basic health services. Also situated between Kelvin Grove Road and Victoria Park are a number of residential dwellings and the Hilltop Gardens Retirement Home.

Other significant land uses within this section of the Study Corridor include Brisbane Boys Grammar School and Brisbane Girls Grammar School, which are located just south of the Inner City Bypass on the boundary of the study corridor, St Brigid's Church on Musgrave Road, commercial buildings around the Normanby five-ways intersection and on Kelvin Grove Road and a number of green spaces, including McCaskie Park.

Residential dwellings within the northern section of the study corridor are diverse in style and structural quality. They include a number of multiple unit dwellings and some 'tin and timber' character housing.

There is vacant land on Lower Clifton Terrace, Upper Clifton Terrace and within the Kelvin Grove Urban Village. At present, only the vacant land within the Kelvin Grove Urban Village has any impending development applications, which are for mixed use multi storey developments up13 storeys in height. No development is currently proposed for the vacant land in Lower Clifton Terrace or Upper Clifton Terrace. For more information on the land uses in the eastern section of study corridor refer to **Figure 5-3**.

### 5.4.2 Area Classifications

The land occupied by Victoria Park, the Brisbane Grammar Playing Fields and Victoria Park Golf Course is classified as Sport and Recreation. This land is bordered by the Inner City Bypass and Victoria Park Road and dominates the study corridor at the northern end.

Residential dwellings within the area are classified as either Character Residential or Low-Medium Density Residential and are mostly within Demolition Control Precincts. Low-Medium Residential classifications are located predominantly around Musgrave Road and Kelvin Grove Road.

The Kelvin Grove Urban Village, the Normanby Hotel on Musgrave Road and the adjacent commercial land are all classified as Suburban Centre. Other land within the Urban Village is designated as either Medium Density Residential or Park Land.

Land designated as Community Use includes the St Brigid's Church on Musgrave Road and Hilltop Gardens Retirement Home on Rochester Terrace.

### 5.4.3 Current Development Applications Pending Council Decision

There are three development applications pending Council decision near the Kelvin Grove Connection:

1) 7 and 11 Musk Ave, 26 Gona Parade Lot 2, 3, 5 SP151277

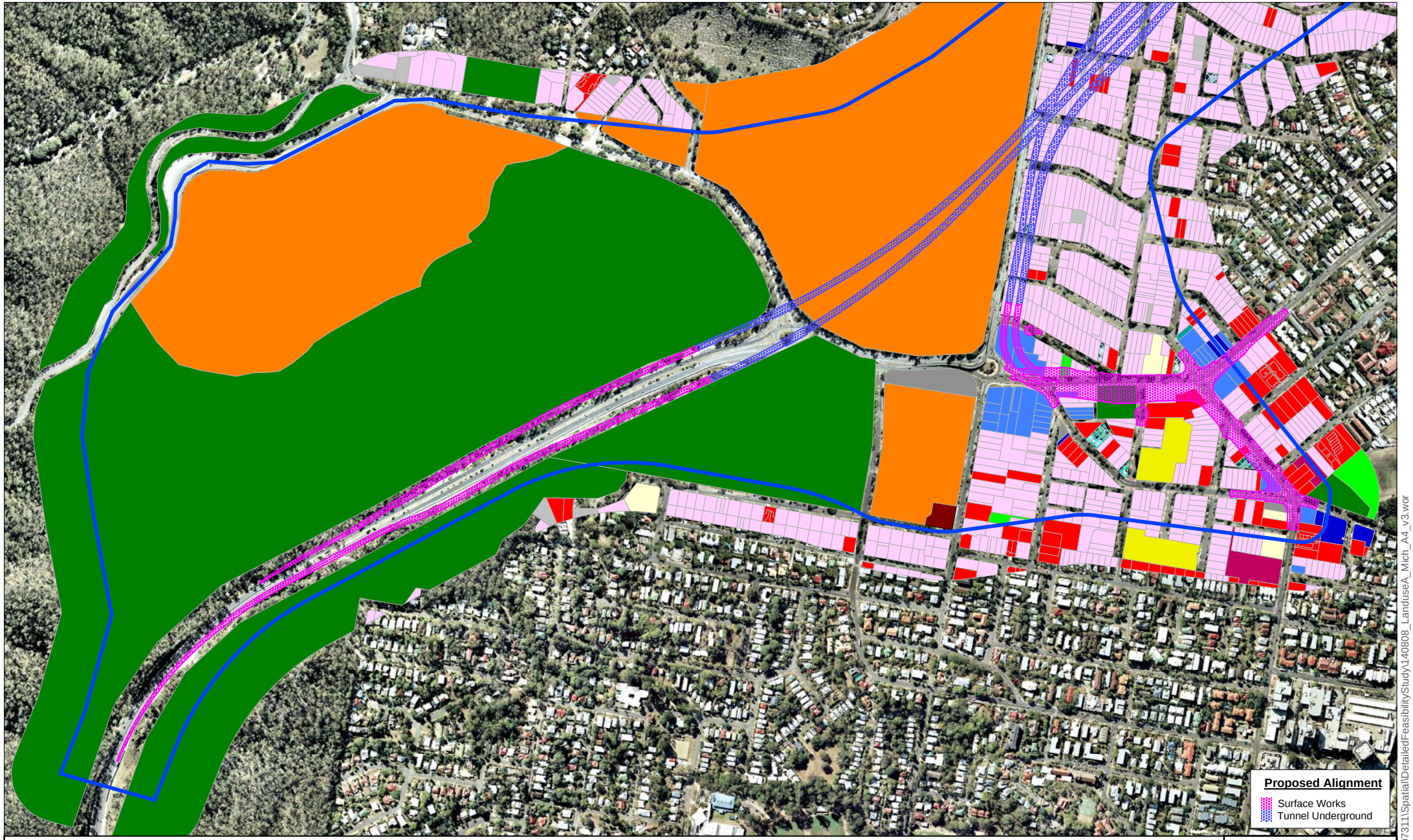
   This application is for a mixed use development. It includes two commercial towers, one ten-storey building and one twelve-storey building. It includes a six-storey educational facility. It includes a proposal to re-use 5 heritage buildings (i.e Gona Barracks) for creative industries, educational purposes and a child care centre. The application also includes 869 car spaces within 4 basement levels and 321 bicycle parking spaces.

2) 16 Ramsgate Avenue, 63 Blamey Street (lots 15, 16 SP181238)

   This is a mixed use, retail, commercial and residential development proposal. The application seeks approval for a number of buildings ranging in height from six-storey buildings to twelve-storey buildings. It is proposed that the buildings would contain retail/mixed uses at ground level with residential uses above. The proposal includes a child care facility.

3) 23 Robinson Place (Lot 29 SP160395)

   This is a residential development proposal. The application seeks approval for 65 residential units contained within an eight-storey building. The proposal includes 91 onsite parking spaces contained primarily within three basement levels.




**LEGEND**

- Multiple Unit
- Detached Dwelling
- Commercial/Retail
- Accommodation
- Office
- Health Care
- Child Care Centre
- Park
- Sport and Recreation
- Education
- Community Facility
- Retirement Village
- Mixed Use
- Car Park
- Other/special use
- Vacant Land
- Utility
- Industry

0 200 400

metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

**Figure 5 - 1**

**Landuse**

**Western Connections**

Northern Link

SKM Connell Wagner JOINT VENTURE

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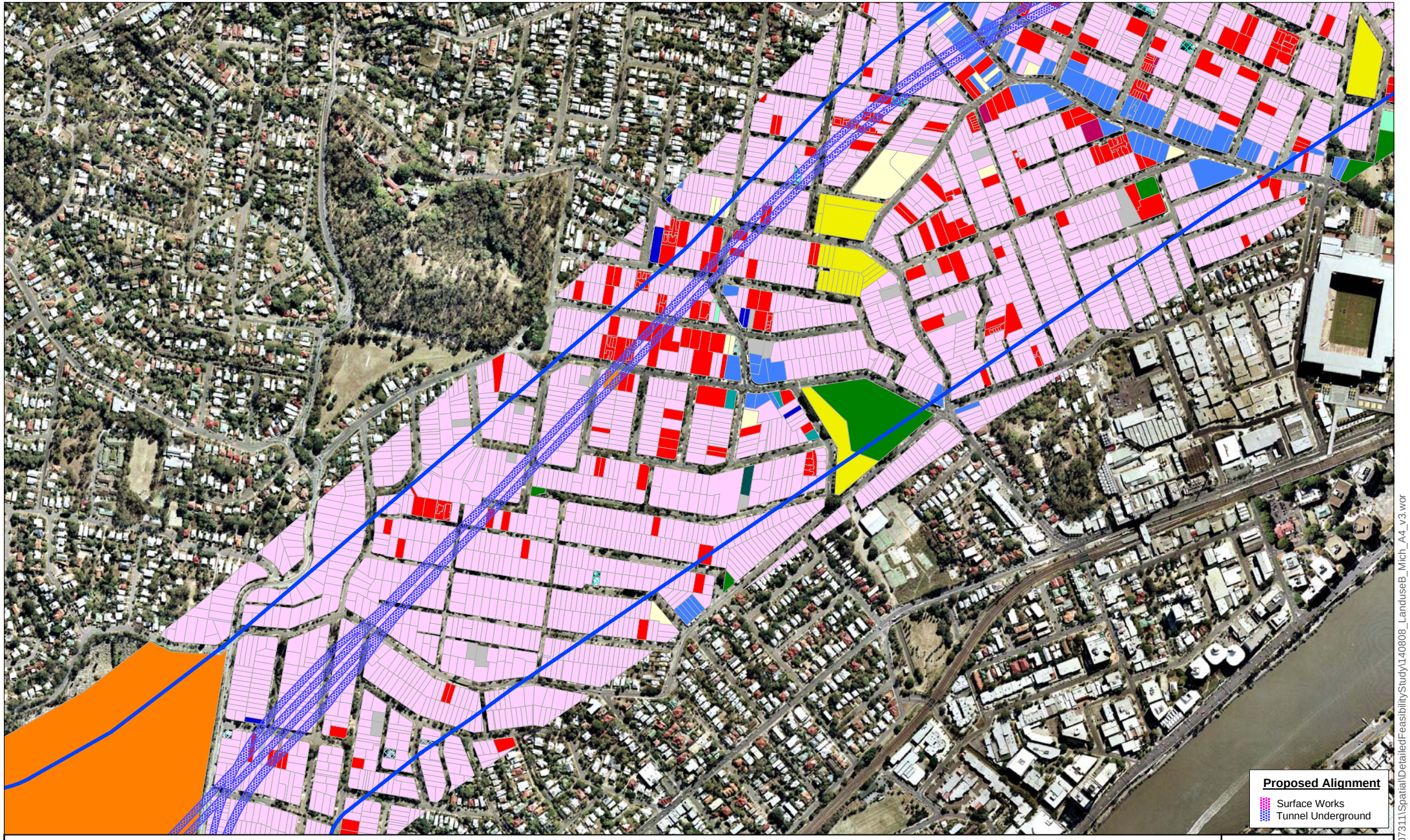


**LEGEND**

- Multiple Unit
- Detached Dwelling
- Commercial/Retail
- Accommodation
- Office
- Health Care
- Child Care Centre
- Park
- Sport and Recreation
- Education
- Community Facility
- Retirement Village
- Mixed Use
- Car Park
- Other/special use
- Vacant Land
- Utility
- Industry

0 200 400

metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

**Figure 5 - 2**

**Landuse**
**Central Section**

Northern Link

SKM Connell Wagner JOINT VENTURE

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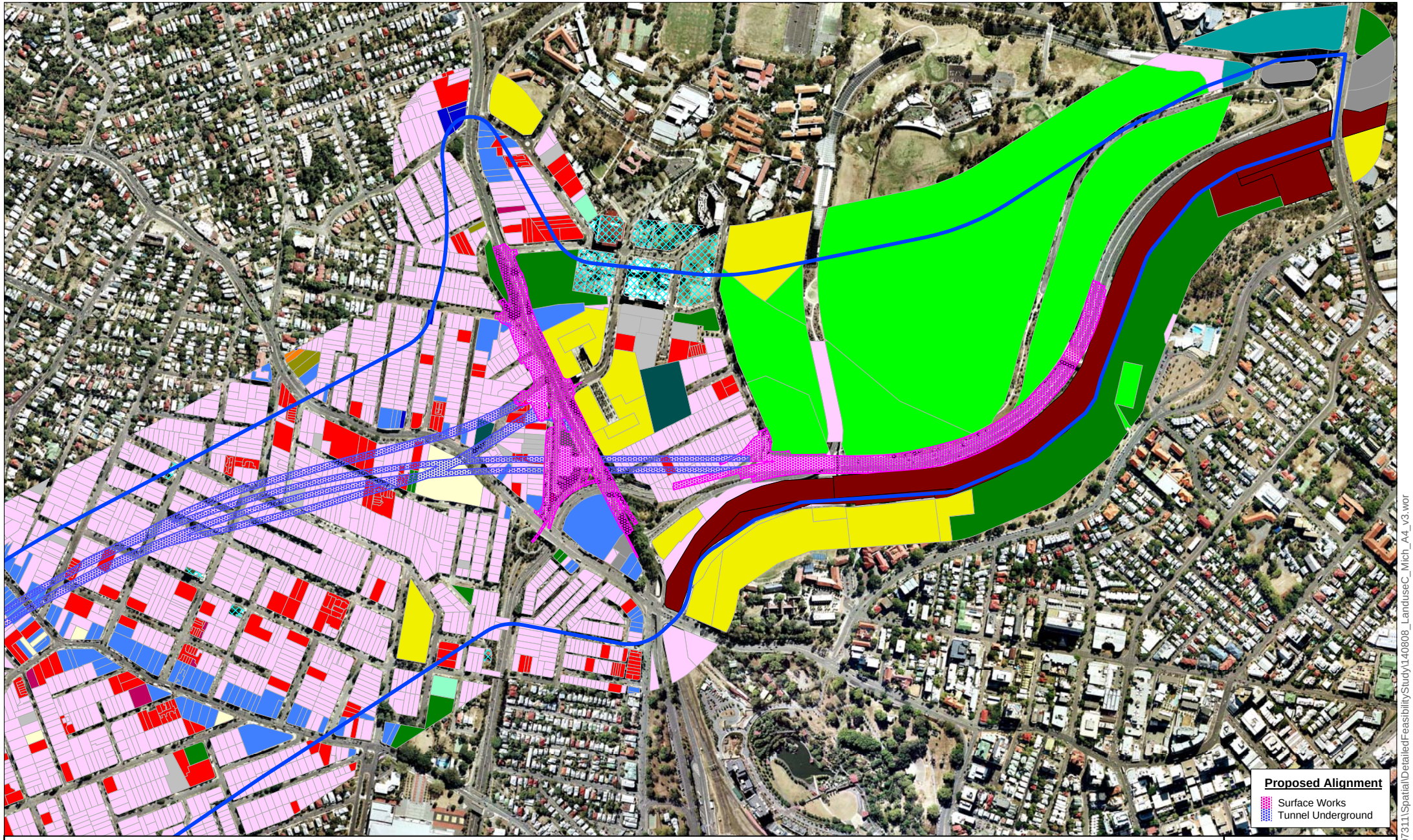


**LEGEND**

- Multiple Unit
- Detached Dwelling
- Commercial/Retail
- Accommodation
- Office
- Health Care
- Child Care Centre
- Park
- Sport and Recreation
- Education
- Community Facility
- Retirement Village
- Mixed Use
- Car Park
- Other/Special Use
- Vacant Land
- Utility
- Industry

0 200 400

metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 5 - 3

**Land Use**
**Eastern Connections**

Northern Link

SKM Connell Wagner JOINT VENTURE

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## 5.5 Key sites outside the Study Corridor

There are a number of key sites located outside the Study Corridor that should be considered in the assessment of the Project. These sites require good accessibility to efficient transport networks and have the potential to increase demand on local and regional transport networks through land use intensification. Key development sites in include:

- **Milton Brewery** – this site is anticipated to continue current operations and relies upon good access to local and regional road network to link to major centres including the Australia Trade Coast;
- **Former Milton Tennis Courts** – approval for 174 residential units, increasing demand on the local road network;
- **Milton Office park** – currently has 35,000m$^2$ of office space, with potential for 63,276m$^2$ on the four-hectare site. Further development of the office park would increase demand on the local and regional road network and public transport;
- **Kelvin Grove Urban Village/QUT** – this 16.7 hectare site has been substantially developed with mixed use residential, creative industries, research and technology precinct. This area would benefit significantly from improved transport connections;
- **Former Sunny Queen Eggs site** – given it inner city location, it is considered that this site is not currently developed to its potential. Based upon the City West Strategy, this site could be developed for mixed use to take advantage of its inner city location;
- **Former Police Barracks, Petrie Terrace** – approval has been granted for a mixed use development including offices, supermarket, cinema, specialty retail and car parking. A pedestrian walkway is being constructed through the site to connect Caxton Street with Roma Street, as part of the infrastructure requirement for the redevelopment of Lang Park;
- **Wesley Hospital** – approval has been granted for Stage 1 of master plan including 24 medical suites and 483 car parks. Stage 2 includes a new east building of 11,985m$^2$. Continued expansion would increase demand on transport services, including road and public transport;
- **Toowong Bus Depot** – to operate effectively the depot requires efficient access to established public transport routes. Any future decommissioning of the depot would require changes to access arrangements; and
- **Long Pocket Research Centres** – the CSIRO and QDPIF operate well-established research facilities on these sites. Further expansion of operations by QDPIF on the site has been curtailed which has led to possible relocation to Boggo Road. Improved accessibility may improve opportunities for redevelopment or expansion on the sites.

## 5.6 Land Tenure

Land tenure for the study corridor is shown in **Figure 5-4**, **Figure 5-5** and **Figure 5-6**. Land tenure has been broadly described under the Digital Cadastral Data Base (DCDB) Tenure Codes within the study corridor and includes:

- Freehold – Land held in Fee Simple (freehold title);
- Council Land – land held by Brisbane City Council under various tenure, including freehold;
- State Leasehold – Leasehold land administered by the Department of Natural Resources, Mines and Water;
- Railway – State land vested for railway purposes in Queensland Transport and Queensland Rail;
- Reserve – State land reserved by the Department of Natural Resources and Mines for community or public purposes, which may be administered by various Government Departments or agencies; and

- State Land – land held by the State of Queensland as Unallocated State Land and other areas vested in the State (or Crown) but not held in Fee Simple or as a lease issued under the *Land Act 1994*. It includes land that has been surrendered back to the State.

Other tenures not described above include Road Reserve, which is State land dedicated as roads under the control of either the Department of Main Roads (State-controlled Roads) or Brisbane City Council.

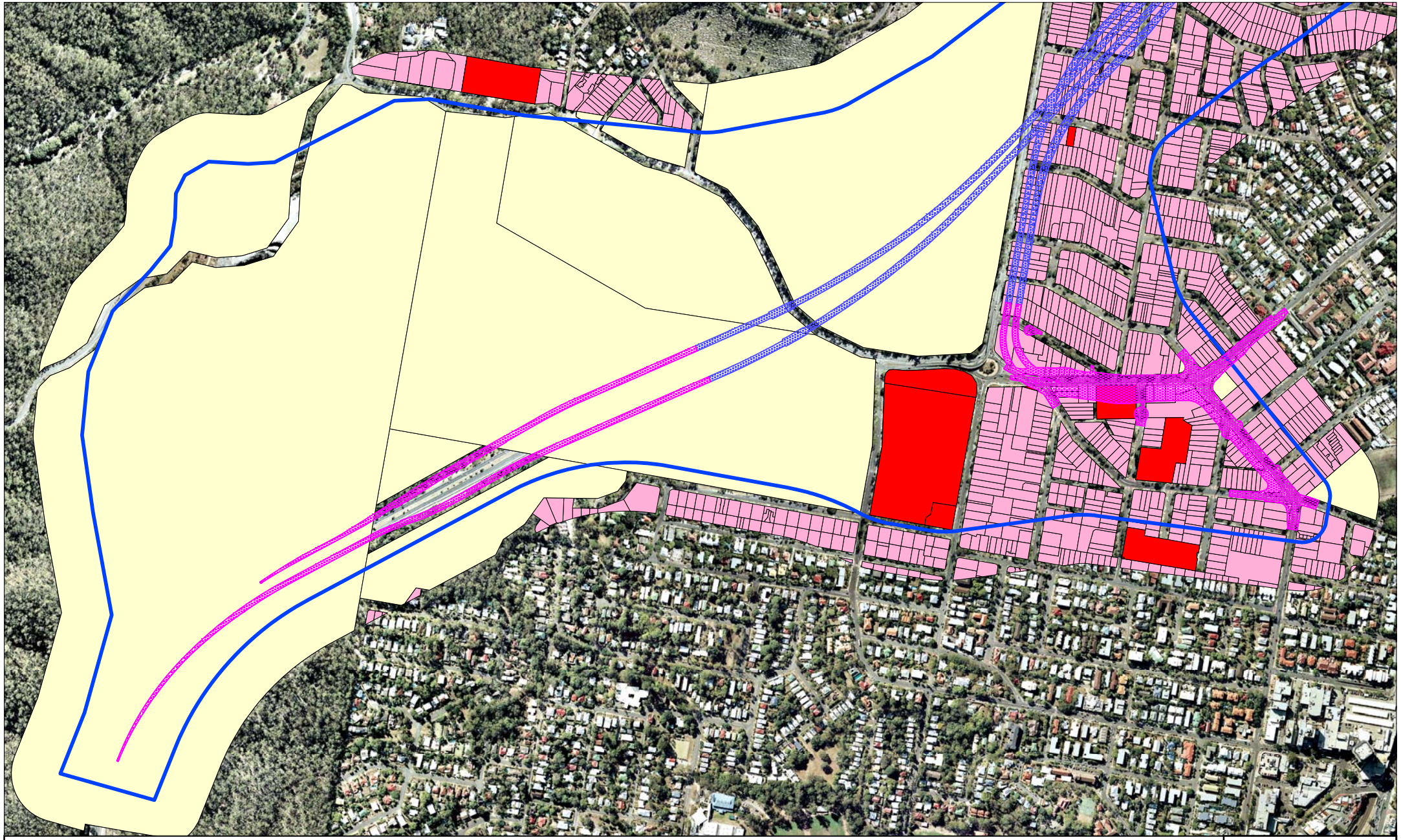
With regard to State Controlled Roads, the Project would have direct surface impacts on State Controlled Road Reserves at the Western Freeway.

The majority of land within the study corridor is held in freehold title. Freehold land required for the Project would either be acquired by private treaty or resumed. State land (including Lands Lease) would require agreement from the State or party entitled to tenure. A volumetric title would be necessary for the subsurface land requirements. Tenure for surface facilities has not been finally determined, but would be held as either freehold or leasehold.

## 5.7 Native Title

There are two registered native title claimants under the Native Title Act. Each claim covers areas of Crown Land across large areas of the City of Brisbane, including the EIS study corridor and beyond.

Depending on the process chosen to grant the necessary interests in Crown lands required to construct the Project, native title may either be extinguished or suppressed for the duration of the Project. Either of these processes would require compliance with the Native Title Act. The Jagera and Turrbal would need to be consulted and/or negotiations carried out to ensure clearance is obtained.



**LEGEND**

Study Area Corridor

**Tenure**

- Council Land
- Freehold
- Lands Lease
- Reserve
- State Land

**Proposed Alignment**

- Surface Works
- Tunnel Underground

0 200 400

metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

**Figure 5 - 4**

**Land Tenure**
**Western Connections**

Northern Link

SKM Connell Wagner JOINT VENTURE

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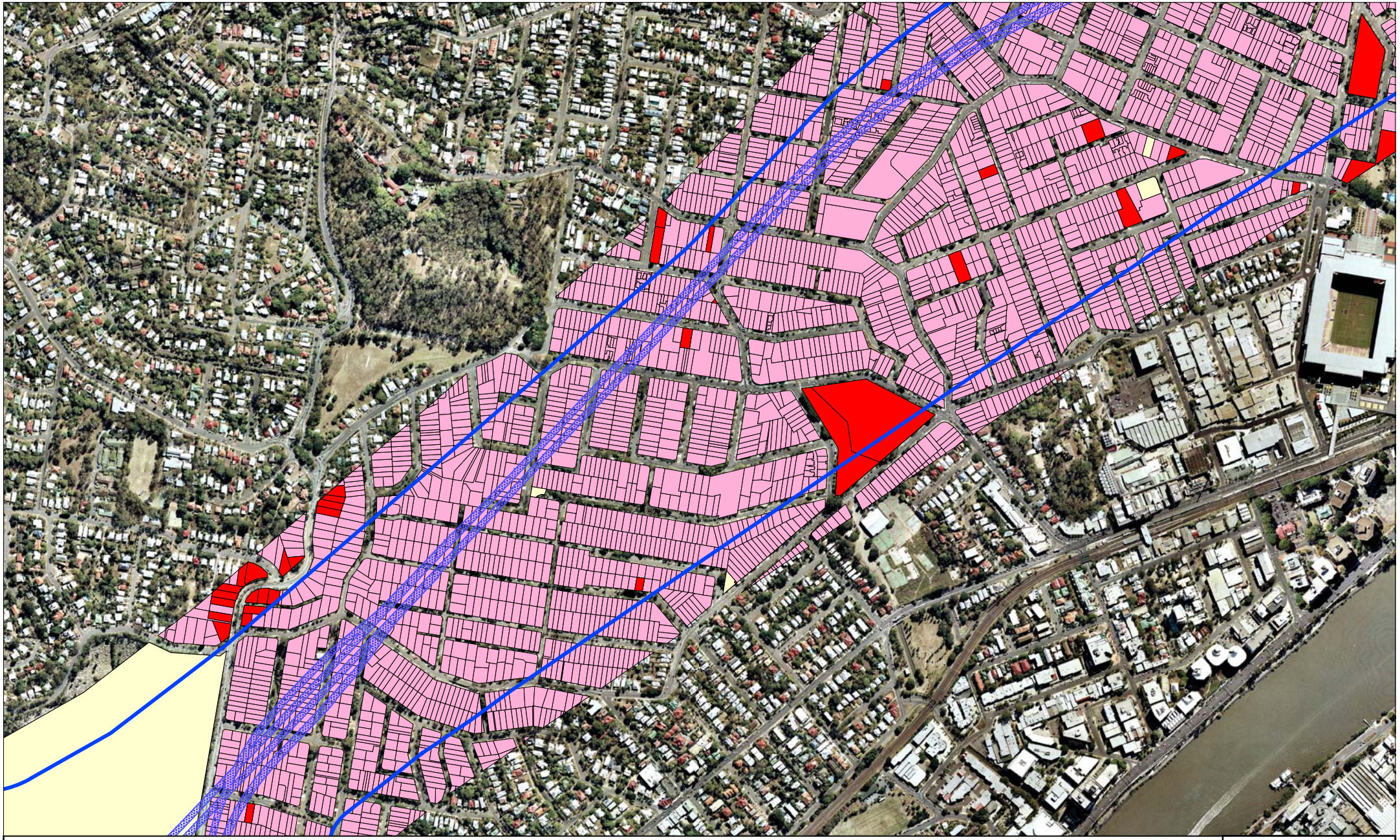

**LEGEND**

Study Area Corridor

**Tenure**

- Council Land
- Freehold
- Lands Lease
- Reserve
- State Land

**Proposed Alignment**

- Surface Works
- Tunnel Underground

0 200 400

metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

**Figure 5 - 5**

**Land Tenure**
**Central Section**

Northern Link

SKM Connell Wagner JOINT VENTURE

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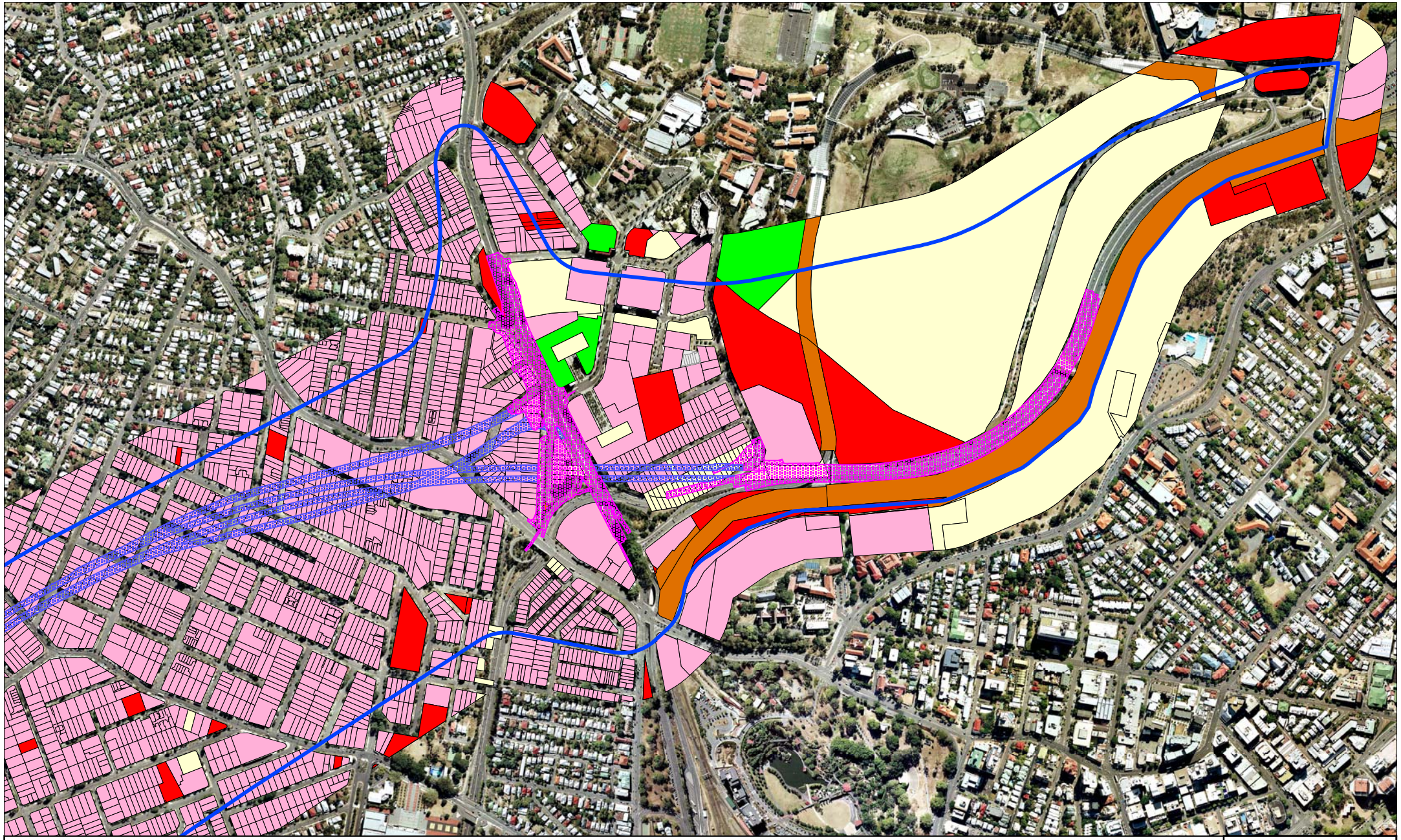

**LEGEND**

Study Area Corridor

**Tenure**

- Council Land
- Freehold
- Lands Lease
- Reserve
- State Land

**Proposed Alignment**

- Surface Works
- Tunnel Underground

0 200 400

metres

Scale 1: 10,000 (A4)

N

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

**Figure 5 - 6**

**Land Tenure**
**Eastern Connections**

Northern Link

SKM Connell Wagner JOINT VENTURE

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# 6. Land Use Impact Assessment

This section addresses the Project's potential construction and operational impacts on existing land uses within the study corridor. Land acquisition required for the Project and the temporary construction worksites as well as changes to access and traffic movements are considered in this section.

## 6.1 Western Connection

### 6.1.1 Land Acquisitions and Land Use Implications

The Western Freeway Connection would largely require the allocation of land currently owned by the Brisbane City council to the Project. Most of the Council owned land to the north of the Western Freeway is occupied by the Mt Coot-tha Botanic Gardens, the Mt Coot-ha Quarry and the Brisbane Forest Park. Most of the land to the south of the Western Freeway is occupied by the Brisbane Forest Park and ANZAC Park. The Council owned land along the alignment of the Western Freeway is also mostly occupied by the Western Freeway apart from a small section of QDMR road reserve.

The Western Freeway worksite is entirely within land owned by the Council with most of the area to the north of the worksite occupied by the Mt Coot-tha Botanic Gardens. A chain wire fence currently delineates the occupied boundary of the Botanic Gardens, with the worksite being outside this occupied area. The construction and operation of the tunnel entry and exit ramps requires the allocation by Council of a 20m wide (approximately) strip of land on the northern and southern side of the Western Freeway. A similar 20m strip on either side of the small section of road reserve for the Western Freeway would require allocation by the State Government to the Project.

During construction, the worksite and construction areas would be licensed by Council to the PPP Co for the duration of construction. Permanent works required for the operations and maintenance of the tollroad, such as the tunnel ramps, ventilation station, tunnel control centre and associated infrastructure would be leased to the PPP Co for the life of the tollroad concession period. Land not required for the operation and maintenance of the Project, including surface road connections, pedestrian and cycle paths and the unoccupied areas of the construction worksites would be returned to the Council, or in the case of the Western Freeway surface connection, to the DDMR. Consequently, there would be some change the current land use to include the tollroad infrastructure. The land returned to the Council would be rehabilitated in order to continue with its existing use prior to construction works.

It is also proposed to install a temporary spoil conveyor during construction between the worksite and the Mt Coot-tha Quarry. The conveyor would require a strip of land between 5-8m wide through land occupied by the Mt Coot-tha Botanic Gardens. The conveyor would be elevated and while it would provide for vehicle and gardens access under it would have an impact on the amenity and function of the gardens within its immediate vicinity. Once construction is complete the conveyor would be dismantled and the affected land rehabilitated and returned to the Botanic Gardens. Rehabilitation would be undertaken in consultation with the Botanic Gardens and their future land use requirements.

The permanent occupation of a strip of land along the western alignment of ANZAC Park should not significantly impact upon the recreational values of the park. The land required is adjacent to the Western Freeway. Land not required for the tunnel ramps would be suitably landscaped, including along the shared pedestrian and cycle path, and returned to Council.

## 6.2 Toowong Connection

### 6.2.1 Land Acquisitions and Land Use Implications

The establishment of the Toowong connection would require the acquisition of fifty-seven residential properties and eight commercial properties (which accommodate twenty-one individual businesses).

All properties located within the boundaries of Frederick Street, Milton Road and Valentine Street would be resumed for Toowong worksite necessary to construct the underground ramps connecting to the mainline tunnel and also the initial connection of these ramps to Milton Road.

The commercial properties on the northern side of Milton Road, near the Milton Road and Frederick Street intersection, would be resumed. Commercial uses currently operating in this area include a car sales premises and a service station. Although the convenience shopping services of the service station would be lost, the loss of these commercial uses does not significantly affect the overall land use balance of the Toowong area because the Toowong Village centre is within close vicinity as is the 'Cat and Fiddle' commercial and retail complex, which provides convenience shopping services. However, the current service station is the only one in this vicinity. There other service stations are located in the inner western suburbs, including the following locations:

- corner of Granzella Street and Milton Road, Milton;
- Gailey Road, Taringa; and
- Benson Street, Toowong.

To the north of Milton Road, the acquisition of residential properties would be required on Frederick Street, Morley Street, Valentine Street and on Milton Road. These properties are predominantly 'timber and tin' character housing common to the Toowong area. These residential dwellings are in various states of repair, with some appearing to have undergone recent renovations or are well maintained and are generally in a good state repair, while some appear to be in bad repair. Despite the acquisitions, the land use balance of the locality would not be significantly affected by this loss of residential land uses.

Partial acquisition is required for one residential property on the corner of Valentine Street and Gregory Street. A three-storey unit building is located on these premises. The building is comprised of six units and is in good repair. Only a portion of land at the corner of the property is required to accommodate the proposed road widening and it is expected that the building would be retained.

There are a number of properties required for acquisition on the southern side of Milton Road. These properties include residential and commercial dwellings as well as Quinn Park, a public green space with playground and picnic facilities. There are ten detached residential dwellings in this location that are would be acquired to accommodate the Project. These properties are predominantly the 'timber and tin' character housing, common to Toowong, and are generally in good repair.

Partial acquisition of a townhouse complex, which has frontages on both Quinn Street, Milton Road and Croydon Street, would be required. At least seven of the townhouses, located on the north eastern corner of the property, need to be acquired to accommodate the Project. The current access and egress location for this property is on Quinn Street. This access would be maintained, but as Quinn Street would change to a cul-de-sac arrangement, direct access from Milton Road onto Quinn Street would be prevented. Despite the acquisitions, the land use balance of the locality would not be significantly affected by this loss of residential land uses.

The commercial properties on the southern side of Milton Road are mostly small business operations and are predominantly located within the commercial precinct on the corner of Milton Road and Croydon Street. While

the building on the premises located on the corner Milton Road and Croydon Street. There is also a small commercial office located on Sylvan Road that would be partially affected by the Project. The Project only requires a portion of land from these properties and it is expected that the business operations would be maintained albeit with a loss of some car parking spaces.

It is likely that Quinn Park would be significantly impacted upon. Land within the park is required for the construction of transition structures. It is expected that the remainder of the park, including current facilities, would remain available for public access. However, the usability of Quinn Park is likely to be severely diminished given that the resumption area is almost half of the total size of the park. Due to the nature of road infrastructure construction, Quinn Park may suffer a poor level of amenity during Project construction.

The Project would require the acquisition of a mixture of residential and commercial properties along the western end of Croydon Street. These properties are predominantly in the typical character housing style and are well maintained. Apart from the small businesses operated from renovated residences, the only other business required for acquisition is the liquor store on the corner of Sylvan Road and Croydon Street.

Apart from the removal of one property adjoining the bottle shop, partial acquisition would be required of a small number of properties on Sylvan Road and Jephson Street, including the Toowong Baptist Church. The acquisition would only require partial frontages of these properties and it is not expected that there would be a significant impact.

### 6.2.2 Access and Traffic Movement

There is a potential for significant disruption to properties affected by surface road works. The Project would need to ensure that access is maintained to:

- Commercial and residential properties Milton Road, Sylvan Road and Croydon Street;
- Residential properties accessed from Frederick Street and Milton Road; and
- The Botanic Gardens, Mt Coot-tha Park, ANZAC Park and Toowong Cemetery.

A number of streets would experience a reduction in access as a result of the Project. These streets include:

- Quinn Street. The construction of a cul-de-sac in Quinn Street would stop traffic access to and from Milton Road.
- Valentine Street. The construction of a cul-de-sac in Valentine Street would stop traffic access to and from Frederick Street.

### 6.2.3 Amenity

It is expected that the proposed construction of the overpass from Frederick Street to Milton Road would add to the visual prominence of the existing road infrastructure at the Toowong roundabout.

Also, it may be necessary to implement noise barriers along Milton Road and Croydon Street. Although these noise barriers would limit traffic noise, they would detract from the visual amenity of the area. Urban design and landscaping treatments may be required to reduce possible visual amenity impacts.

## 6.3 Central Section

In this section, the Project would be constructed underground and therefore would not present any significant impacts on the existing land uses. The Project is likely to provide an overall benefit for the existing land uses situated along the major arterial roads, as the Project would reduce traffic on Milton Road and Coronation Drive

and some local roads. This reduction in traffic has the potential to improve residential amenity, due to less traffic noise, and also create a more amenable and safe environment for pedestrians and cyclists.

The construction phase of the Project would result in minimal impact on the land uses within this section of the study corridor because no surface land resumptions would be required. However, amenity impacts from trucks transporting soil along Milton Road and Coronation Drive from the western portal may be present and would need to be managed to reduce potential noise impacts.

## 6.4 Northern Connection

### 6.4.1 Land Acquisitions and Land Use Implications

For the Northern Connection partial acquisition would be required for land on the Victoria Golf Course and the Brisbane Grammar Playing Fields and full acquisition of the land between the Inner City Bypass and the properties situated on Normanby Terrace. The land required for full acquisition is currently utilised as pedestrian and cycle access between Victoria Park and Kelvin Grove Road and runs parallel to the inner city bypass. Detailed design should maintain the current pedestrian and cycle linkages. The connection would not require the resumption of any residential or commercial properties.

## 6.5 Kelvin Grove Road Connection

To establish the Kelvin Grove Road Connection, and to allow for the proposed worksite, the acquisition of thirty residential properties and three commercial properties is required. The properties required are all located on the western side of Kelvin Grove Road, between Victoria Street and Musgrave Road.

All properties located on the eastern side of Lower Clifton Terrace and one property that is accessed from the western side would be resumed for the Project. They are all residential properties and their physical quality varies from well maintained to some needing a level of repair. These dwellings are typically high set, ‘tin and timber’ character housing. Other buildings currently located within the street include a number of multi-storeyed brick dwellings and a telecommunications tower.

The construction of the tunnel’s transition structures, as well as the proposed worksite would require the acquisition of a number of residential properties on Kelvin Grove Road and Westbury Street. These properties are predominantly older dwellings, but not necessarily character housing, that are either well maintained or in need of some repair.

Construction activities at the northern end of the study corridor would be predominantly located along Kelvin Grove Road between Victoria Street and the Inner City Bypass. The construction sites at this end of the study corridor are considerably smaller than the sites at the western end and would only provide for road header and other non-tunnel boring machine works.

### 6.5.1 Access and Traffic Movement

The Project would change access to and from Lower Clifton Terrace and Westbury Street, which are situated around the proposed Kelvin Grove Road connection. Current access to Westbury Street from Kelvin Grove Road would be removed. Westbury Street would be accessed via Victoria Street. Lower Clifton Terrace would be changed to a cul-de-sac arrangement and would be accessible only from Musgrave Road.

In the area of the Kelvin Grove Road connection, the current pedestrian connectivity could generally be described as poor. It is understood that pedestrians currently use Upper Clifton Terrace a route between bus stops on Musgrave Road and the Kevin Grove Urban Village. The Project should aim to maintain or improve the current pedestrian linkages in this area.

The Project would result in lose of access between Victoria Park Road and the Inner City Bypass. Victoria Park Road would only provide access to local residences, the footpath located between the Inner City Bypass and the Normanby Terrace properties and to the Brisbane Grammar Playing Fields.

### 6.5.2 Amenity

Land uses around the Northern Connection are unlikely to experience significant change as a result of the Project. As in this area, the amenity is currently affected by traffic noise from the Inner City Bypass and from train noise from the rail line.

There would be a change in the amenity around the Kelvin Grove Road Connection as a result of changes in land uses and traffic on Kelvin Grove Road. Unless they are managed properly, there may be noise impacts on residential areas during construction. The amenity of Lower Clifton Terrace may improve as a result of reduced traffic as a result of the Project.

Acoustic barriers are already present at the northern portal as a measure implemented for the Inner City Bypass. Acoustic barriers may also be required on Kelvin Grove Road around the Kelvin Grove Road connection portal.

# 7. Conclusions

## 7.1 Regional Planning and Land Use Implications

The regional planning strategies (of relevance to the Project) paint a clear picture of the desired future land use pattern. In summary, this desired land use pattern proposes that there would be significant residential, employment and economic growth in the Western Corridor and significant employment and economic growth in the ATC. In addition, the inner western suburbs of Brisbane are intended to accommodate a significant amount of the region's predicted population growth through infill development.

The Project would complete a transport route, which would connect the Western Corridor, the Brisbane CBD and the ATC. Namely, the route would comprise the Centenary Motorway, Western Freeway, the Project, Inner City Bypass, proposed Airport Link and East-West Arterial to the Gateway Motorway.

The Project supports the regional strategic planning direction. By providing enhanced connectivity and accessibility between the Western Corridor and the ATC, the Project supports the regional planning objectives for these areas to become key places of residential, employment and economic growth. Furthermore, the Project provides enhanced connectivity between other activity centres of the SEQ region's, being the Brisbane CBD as well as Toowong and Indooroopilly.

Similarly, in regard to the existing regional land use pattern, the Project would become an integral piece of infrastructure, which could improve existing land use synergies between the emerging residential and economic growth areas within the Brisbane region. The corridor provides a connection between emerging residential and economic growth areas in the region's western and south-western corridors, with the Brisbane CBD and the Brisbane Airport (part of the Australia TradeCoast).

## 7.2 Local Planning and Land Use Implications

The Project should facilitate redevelopment within the inner western suburbs and the implementation of the planning strategies within and adjacent to the Study Corridor, by reducing through traffic and improving local accessibility. This would provide:

- improvements to local residential amenity on land adjoining major roads (i.e. Milton Road) and also in nearby areas currently experiencing 'rat running' as drivers seek to avoid congested roads;
- improvements in local accessibility and connectivity for vehicles, pedestrians and cyclists between residential neighbourhoods and to local centres and major activity centres within the inner western suburbs;
- opportunities for improvements to public transport, including opportunities for the development of transit orientated development (TOD) adjacent to key transport nodes; and
- increased opportunities for redevelopment of the inner suburbs, as constraints to development resulting from traffic congestion are eased and local amenity is improved.

However, there is potential for construction works to impact on the amenity of residential areas. In particular, there is potential for noise, vibration and air quality impacts on residential areas if not managed properly. The Noise and Vibration Chapter and Air Quality Chapter of this report address these issues.

# 8. Mitigation Measures

Mitigating the impacts of the Project on surrounding land holdings and land uses should be focussed on the maintaining the future desired land use outcomes for particular land parcels as per the City Plan 2000 mapping. Also, mitigation measures should also focus on the opportunities presented by the Project for urban regeneration as the overarching strategy of possible land use and zoning changes.

Environmental Managements Plans would be prepared by the Contractor for the construction and operation phases of the Project, to identify measures to ensure that environmental objectives and performance criteria are addressed, that potential impacts of the Project are minimised, and environmental values of the study corridor are protected and where possible, enhanced.

The following outlines environmental objectives, performance criteria, and mitigation measures for managing potential land use and planning impacts during detailed design and construction stages.

Suggested Project objectives, performance criteria and mitigation measures are described in **Table 8-1**, **Table 8-2**, **Table 8-3**and **Table 8-4**. In these tables, Residential Areas include Low Density Residential, Character Residential, Low-Medium Density Residential and Medium Density Residential Areas as per the City Plan 2000 mapping. Open Space Areas include Sport and Recreation, Park and Conservation Areas as per the City Plan 2000 mapping.

- **Table 8-1 – Residential Areas**

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| **Objectives** | ▪ To minimise the impacts on residential land availability.<br>▪ To preserve the residential character of the residential neighbourhoods.<br>▪ To protect and enhance the amenity of residential neighbourhoods during the construction and operation phases. |
| **Performance Criteria** | ▪ Minimise the loss of land included in the Residential Area under the City Plan and identify potential new residential development sites as a result of redevelopment sites created by the reference project.<br>▪ Incorporate new residential sites in appropriate locations which arise from the reference project.<br>▪ Minimise the loss of pre-1946 character housing stock from the study corridor.<br>▪ Manage the visual impacts of structures and landform changes through design and use of materials that are sensitive to the context of the locality. |
| **Mitigation Measures** | The Project requires land acquisition which, once the Project is constructed and operational, could result in areas of land remaining unused and not required by the Project. Based on the concept design, these areas are located at:<br>▪ Toowong, to the south of Milton Road and west of Croyden Street;<br>▪ Toowong, in the area bound by Valentine Street and Milton Road;<br>▪ Red Hill, to the west of Kelvin Grove Road on land adjacent to Lower Clifton Terrace, Upper Clifton Terrace and Westbury Street.<br>It is recommended that Brisbane City Council investigate the redevelopment opportunities for these sites. They are all currently included in the Character Residential Area or the Low Medium Density Residential Area. Based upon the City Plan 2000 strategic intent for these Areas, possible development opportunities may be limited to low-medium density (ie: typically townhouses or 3 storey multi unit complexes). However, more intense residential redevelopment could find support in the Draft SCIS and Local Area Plans, whose strategic planning intentions envisage residential development at densities greater than the current land uses.<br>It is also recommended that pedestrian linkages between Musgrave Road and the Kelvin Grove Urban Village be investigated. Following construction, there is opportunity to enhance pedestrian linkages through Upper Clifton Terrace to allow for greater accessibility to Kelvin Grove Urban Village. |

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| **Responsibility** | Contractor |

### Table 8-2 – Multi Purpose Centres (Commercial)

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| **Objectives** | ▪ To maintain the function of the Multi-Purpose Centres and protect the potential for the centres to develop in accordance with the City Plan.<br>▪ To maintain and enhance accessibility of Multi-Purpose Centres from the surrounding suburbs. |
| **Performance Criteria** | ▪ Maintain existing access points to Multi Purpose Centres.<br>▪ Reflect land use changes to the Multi-Purpose Centres resulting from the reference project in the City Plan, and CityShape planning process. |
| **Mitigation Measures** | The Project does not present any redevelopment opportunities as a result of direct property impacts. However, there may be opportunities for existing Multi Purpose Centres to redevelop where they are located on those roads that are predicted have reduced surface traffic as a result of the Project.<br>To ensure that multi purpose centres not only remain viable, but also provide opportunities for those centres to redevelop, the Project must ensure that centres are easily accessible during construction (and operation), such that they are attractive to patrons. |
| **Responsibility** | Contractor |

### Table 8-3 – Community Use Areas

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| **Objectives** | To minimise impacts that would constrain the functioning of Community Use Areas. |
| **Performance Criteria** | There is no net loss of Community Use Areas.<br>Safe and equitable access to all Community Use Areas is maintained during construction and operation. |
| **Mitigation Measures** | Maintaining safe and convenient pedestrian and cycle access to community use areas, particularly in the vicinity of worksites and surface works at Toowong and Kelvin Grove.<br>Connections between residential areas and schools (ie: Toowong Primary School, Brisbane Boys Grammar School and Brisbane Girls Grammar School) are maintained. As these connections would cater for children, active transport connections need to consider CPTED principles. |
| **Responsibility** | Contractor |

### Table 8-4 – Open Space Areas

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| **Objectives** | To preserve and enhance the green space a regional public open space resource.<br>To maintain accessibility to green space from surrounding areas. |
| **Performance Criteria** | The reference project would not create a nett loss of open space in the study corridor upon completion of construction works. |
| **Mitigation Measures** | Take reasonable and practicable measures to avoid, or mitigate and manage the potential construction impacts on the Mt Coot-tha Park.<br>Following construction, rehabilitation of the area of the Mt Coot-tha Botanic Gardens disturbed by construction activities should be undertaken. Works should be consistent with the Botanic Gardens Master Plan<br>Maintain safe access points to Mt Coot-tha Park, ANZAC Park, Quinn Park and Victoria Park and provide alternative, safe access points during the construction phase.<br>Minimise the footprint of surface connections ANZAC Park, Quinn Park and Victoria Park to ensure that that the useable open space within the park is maximised.<br>Where construction works adjoin open space areas, erect physical barriers around construction areas and worksites during the construction phase. |

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|---|---|
| | Undertake rehabilitation works to areas impacted by construction works to enable re-use for parkland and sport and recreation purposes consistent with City Plan designations.<br>Identify opportunities for new Green Space areas from other redevelopment sites created by the reference project.<br>New pedestrian and cyclist paths shall connect to the existing path system wherever possible. |
| **Responsibility** | Contractor |