

# Airport Link

## Phase 2 – Detailed Feasibility

CHAPTER 20

FRAMEWORK FOR URBAN REGENERATION

■ October 2006

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## 20. Framework for Urban Regeneration

*This chapter provides an overview of a proposed framework for urban regeneration initiatives identified during the EIS investigations and through consultation with local community members and key stakeholders. It includes a description of the key urban regeneration initiatives to be considered for local areas along the tunnel alignment.*

### 20.1 Introduction

The Airport Link Project has the potential to influence and benefit the City's residents and future generations for the next 100 years. In particular, it provides the opportunity to deliver lasting transport, economic, community and environmental benefits to the City, if delivered within an over-arching framework of urban regeneration. This approach would be innovative and provide a benchmark for the delivery of infrastructure and city-building.

The model for an over-arching framework for urban regeneration has been developed during the preparation of the EIS, having regard for:

- Project concept development;
- Project implementation – cost, program responsibility;
- Community issues and values.

For the Airport Link Project, the urban regeneration initiatives should:

- Deliver an enduring urban outcome for the foundation of the future city;
- Deliver enduring urban design;
- Build capacity in the communities of the corridor for enhancing their urban environment; and
- Stimulate opportunities for sustainable economic development, consistent with desired urban planning outcomes.

### 20.2 Context

The purpose for initiating a program of urban regeneration associated with the Airport Link Project is to capture potential project benefits and to seek to manage the on-going change occurring in the study corridor within a framework based in infrastructure planning and provision, and in a planning process founded on agency, stakeholder and community consultation.

A framework for urban regeneration in the study corridor would be implemented through the integration of project-specific requirements or conditions, the implementation of existing policies and programs, and the management of the development and redevelopment of land in accordance with established land use and infrastructure plans.

Urban regeneration initiatives would also seek to avoid some of the more commonly-occurring effects of un-coordinated development of infrastructure, land and community structures. Some of these effects could result in the City and its future generations living with unplanned and possibly undesirable consequences, such as:

- Ad hoc development and undesirable land use change;
- Blighted, sterilised land along the study corridor due to surface connections limiting accessibility for multiple transport users;

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- Diminished liveability outcomes, such as harsh urban characters created by inappropriate or insensitive design and siting of infrastructure elements, diminished urban environmental quality (e.g. road traffic noise, air quality along congested surface roads), diminished visual quality in urban settings, and loss or alienation of community facilities and landmarks;
- Technical solutions to infrastructure development, possibly leading to inequity in the distribution of local benefits off-setting local impacts;
- Lost opportunities to capture the added value of urban regeneration, leading to a future requirement for future and possibly remedial investment in community infrastructure and other infrastructure; and
- Little if any community support for the project within the corridor.

### 20.2.1 Community Expectations

The consultation process conducted for the Airport Link EIS has identified the following:

- Recognition of ‘the problem’ of traffic congestion in the northern suburbs, and the need for something to be done about it;
- Concerns over construction and operational aspects (e.g. noise, vibration, air quality, vent location and appearance, visual impacts of surface infrastructure, traffic congestion on approach roads, and project justification);
- Concerns that the surface infrastructure associated with the project will blight or otherwise create ‘dead zones’ in their neighbourhoods; and
- Expectation that local residents should benefit from the project equally, if not more so, with the people who presently drive through their suburbs to access employment in either the CBD or at Brisbane Airport.

From the input received, it is clear that the corridor community expects enhancements beyond ‘the road’ response.

## 20.3 Framework for Urban Regeneration

### 20.3.1 Urban Outcomes

Airport Link would link the city centre, via Bowen Hills and Windsor including the Royal Brisbane Hospital precinct and Fortitude Valley with the Brisbane Airport and the Australia TradeCoast precinct. It would also open up the city centre and the employment node of the inner north<sup>1</sup> to the population growth areas north of the City.

The experience with many transport infrastructure projects has seen the urban form change dramatically and quickly as the private sector responds to improved accessibility by opening up new development fronts, or increasing the intensity with which land is used within transportation corridors. Often such change occurs in an ad hoc manner, with the potential benefits flowing from infrastructure investment not being fully realised.

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<sup>1</sup> Royal Brisbane Hospital, Royal National Association, Bowen Hills precinct, Spring Hill education precinct.

### 20.3.2 Integrated Transport and Land Use Planning

Consistent with regional planning strategies<sup>2</sup> and City Plan, the Airport Link Project needs to be integrated physically and functionally with the present and possible future urban fabric in the study corridor.

This will require integration of land use planning and transport planning. The Brisbane City Council, in response to the South East Queensland Regional Plan needs to prepare a growth management strategy for the City. This strategy would form part of City Plan.

Local planning outcomes however ought to be developed through the neighbourhood planning process<sup>3</sup> being pursued by the Brisbane City Council following on from its landmark neighbourhood planning fairs in 2005. This process is expected to be implemented over the next five years or more, and in time to manage potential changes to land use and travel demand. Interim measure may need to be introduced to City Plan to manage the process of change during the construction phase as well.

As redevelopment occurs in the study corridor, partly in response to the strategic advantages of the corridor (ie. proximity to key employment centres), and partly in response to the opportunities created by the Airport Link Project, further consultation in the plan-making process will take place.

### 20.3.3 Enduring Urban Design

While the Airport Link Project must meet high standards in engineering design, there is also a need for the project to achieve enduring urban design. To often, urban design is applied *post facto* to an engineering solution. In such circumstances, the outcome is often sub-optimal in terms of community and economic benefits from the capital investment.

The key is to integrate urban design with the resolution of engineering challenges, in ways which will survive the demands of present trends and serve to inspire future generations (e.g. Champs Elysee, Arc de Triumphe). The urban design must provide the structural foundation for a high quality urban outcome for future generations, both in the infrastructure and for adjacent land.

The urban design principles for the Airport Link Project are presented in Chapter 15 of the EIS. The urban design theme for the study corridor needs to be developed in consultation with agencies, stakeholders and the community, as part of the integrated planning process.

### 20.3.4 Capacity Building

The Airport Link Project is a major investment in the City's future. There is a real opportunity to optimise the benefits, and particularly the flow-on benefits of this investment by identifying opportunities and stimulating community involvement in the project.

With the Airport Link Project there is a great range of community benefits potentially available through community involvement in the design, implementation and management of related works and programs. For example, reinstating a riparian ecology in Kedron Brook could be achieved in conjunction with the Airport Link

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<sup>2</sup> Integrated Regional Transport Plan 1997, Transport 2007, South East Queensland Regional Plan 2005 - 2026

<sup>3</sup> Local planning commences with the neighbourhood planning workshops scheduled to commence in March 2006. Amendments to City Plan should be sought from the workshop process.

Project by assisting and supporting community groups with expertise and access to funding from present and possible future government services and programs.

Supporting the community in applications for funding, developing expertise for management and implementation of schemes will lead to sustainable urban communities and structures, linking back to the project.

### **20.3.5 Social Equity**

With major transportation projects, a frequently-heard criticism from local communities is that they are impacted by the construction and even the operation of such projects without enjoying the benefits, which often flow to others residing or working outside the corridor.

Other criticisms of major projects allude to the range of more deserving programs or facilities, giving rise to issues of equity. The concept of social equity, in the context of developing a framework for urban regeneration, is narrowed to focus on mitigating the potential construction and operational impacts of Airport Link, through a suite of mitigations leading to sustainable urban regeneration.

To the extent reasonable and practicable, the Airport Link Project should respond to the expressed community views that it "... give something back to the community ..." through which it passes or upon which it might impact. The framework for urban regeneration focuses on responding to this desire.

### **20.3.6 Stimulate Sustainable Economic Development**

The experience in other places suggests that investment in public infrastructure, and transport infrastructure in particular, leads to strong economic development in areas benefiting from enhanced accessibility<sup>4</sup>.

Heightened economic activity could be expected through the development and redevelopment of land in the corridor, which would benefit from relieved congestion and possibly enhanced public transport services consequential to the implementation of the Airport Link Project. Existing community infrastructure in the corridor, such as the major health facilities at Royal Brisbane Hospital precinct, could become more accessible and could become attractive as potential investment sites.

The expected scale of this economic activity is assessed through the EIS process and presented in Chapter 16 of this EIS, to the extent possible. To avoid the costs, or limited gains of speculative economic activity, development needs to be planned and managed. Value in property and economic activity could then be harnessed for enduring community benefits.

## **20.4 Implementation and Outcomes**

### **20.4.1 Community Aspect**

For the Airport Link Project to respond to the community expectations expressed in Section 20.3.5, the Airport Link Project needs to be supported by a program of urban regeneration, preferably driven by one or more key stakeholders who can capture potential project benefits and balance project costs, or impacts. Community acceptance is built upon a process of effective, accessible and on-going community consultation during the planning and implementation phase of Airport Link, and of the urban regeneration program.

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<sup>4</sup> Dublin Port Tunnel, Louisiana TIMEDLA program, Tullamarine Airport and Freeway, Gateway Motorway

## 20.4.2 Implementing Urban Regeneration

Urban regeneration should be funded in the most cost effective way, and should deliver against ‘value for money’ frameworks and community expectations regarding the wise and equitable use of public resources.

The framework for urban regeneration is based on the shared approach to implementation responsibility and funding described below:

- Program initiatives; and
- Redevelopment initiatives.

## 20.4.3 Program Initiatives

Program initiatives would be delivered through existing policy-based programs of the Commonwealth, State and local governments.

Program initiatives relate to the delivery of tangible program outcomes. Program initiatives would need to be:

- Consistent with program objectives and performance measures;
- Appropriately ‘queued’ in the budgeting process for timely implementation and agency support;
- Relevant to the Airport Link Project for agency support and possible sharing of project resources; and
- Delivered equitably to avoid criticism of public resources being re-directed for project benefit.

Potential program initiatives include:

- Investigation of employment schemes for youth, disabled people, indigenous people and prematurely retired or long-term unemployed people, in conjunction with employment initiatives of the delivery vehicle<sup>5</sup>;
- Investigation of local planning to manage land use change and to achieve a high level of integration in land use and transport planning, consistent with the growth management strategy developed under the SEQ Regional Plan;
- Investigation of possible participation in project construction or in community-based, project-related activities building community capacity for people who don’t speak English as their first language, people with low education levels and people with special needs; and
- Investigate the possible extension of accessible public transport for aged or disabled people to places of community importance (e.g. centres, employment, community facilities).

While all these programs are presently operating, the intention is for their delivery in the Airport Link corridor to be integrated and coordinated through a framework for urban regeneration, in order to optimise the potential for enduring community benefit, and to optimise the benefits from each of the programs. In the interests of flexibility, there may be other, equally effective means of integrating and coordinating the delivery of programs across the three tiers of government.

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<sup>5</sup> The ‘delivery vehicle’ for Airport Link could be via a public private partnership, or by a design and construction entity acting on behalf of the proponent.

#### 20.4.4 Redevelopment Initiatives

In the framework for urban regeneration, redevelopment initiatives would seek to capture the benefits of potential real estate windfalls resulting from implementation of the Airport Link Project. Generally, redevelopment initiatives are more likely to be achieved in the medium to longer term, based on the rate of development in the study corridor.

A possible approach is to seek a range of enduring community outcomes during the redevelopment of sites in the study corridor which benefit from improved accessibility, improved environmental conditions or which have been reconfigured as a consequence of construction. Other opportunities may be identified during implementation.

Relying on the legitimate motive of profit, the innovation of the private sector could be harnessed to support the urban regeneration initiatives of the project and programs. Through amendments to City Plan, redevelopment could occur in ways consistent with desired planning outcomes. Simultaneously, City Plan amendments could offer incentives to the private sector to provide community enhancements such as:

- Additional open space or enhanced areas within the public realm;
- Public access networks through sites to increase permeability for pedestrians and possibly motor vehicles;
- Advantageous locations of public transport connections;
- Supported community facilities in accessible locations (e.g. ground floor library space within a commercial development); and
- Increased opportunities for affordable housing.

#### 20.5 Urban Regeneration Initiatives

This section provides an overview of urban regeneration initiatives identified during EIS investigations, including consultation with key agencies and community members. The initiatives include both program and redevelopment initiatives.

##### 20.5.1 Program Initiatives

The urban regeneration program initiatives rely upon existing State and local government policies and programs. The purpose for identifying particular initiatives in the study corridor is to enable program managers to consider the proposals and to make appropriate budget and resourcing allocations in sufficient time to achieve the potential medium to long-term benefits of the Airport Link Project.

The key program initiatives will be centred on land use planning, affordable housing, employment and providing for people with a disability.

##### 20.5.2 Land Use Planning Initiatives

The Brisbane City Council is the authority responsible for land use planning in the City, while having regard for the framework of State policies and regional planning instruments intended to guide infrastructure and development. The Council has successfully implemented a number of planning initiatives in the City of relevance to the Airport Link Project. These include:

- Neighbourhood or local planning; and
- Infrastructure planning.



There are a number of locations in the study corridor, which would benefit from the implementation of these programs. If they could be implemented in step with the implementation of the Airport Link Project, there is potential for added benefits to the long-term liveability of the study corridor. Recommended program initiatives are set out in **Table 20-1**.

■ **Table 20-1 Urban Regeneration Program Initiatives – Land Use Planning**

Location	Program	Priority
<b>North-South Corridor</b>		
Kedron/Gordon Park	Neighbourhood planning studies and community consultation to address redevelopment potential, circulation, access and connectivity, built form and infrastructure requirements for: <ul style="list-style-type: none"> <li>Sites east of Gympie Road and south of Hamilton Road, bounded by Kedron Brook;</li> <li>Sites along Stafford Road and east of Webster Road.</li> </ul>	Medium 2011 complete
Lutwyche	Neighbourhood planning studies and community consultation to address land use change south of Gympie Road – Kedron Park Road to address: <ul style="list-style-type: none"> <li>Redevelopment of Lutwyche centre, including form, function, and mixed use</li> <li>Accessibility and infrastructure requirements including car parking, and multi-modal transport</li> <li>Corridor opportunities</li> </ul>	Medium 2011 complete
Windsor East	Neighbourhood planning studies and community consultation to address redevelopment potential, circulation, access and connectivity, built form and infrastructure requirements for: <ul style="list-style-type: none"> <li>Sites east of Lutwyche Road and south of Ferny Grove railway.</li> </ul>	High 2008 complete
<b>East-West Corridor</b>		
Toombul	Neighbourhood planning studies and community consultation to address redevelopment potential, function of Toombul centre, circulation, access and connectivity to the centre and the rail station, built form around the centre and the rail station, and infrastructure requirements for: <ul style="list-style-type: none"> <li>Sites east of North Coast Railway, west of Melton Road, south of Nundah centre and north of Schulz Canal.</li> </ul>	High 2011
Clayfield	Review of City Plan provisions, including local planning, for Clayfield (Sandgate Road corridor south of Junction Road, north of Albion Road) to manage land use change	Medium 2011
Woolloowin	Review of City Plan provisions, including local planning, to manage land use change, for: <ul style="list-style-type: none"> <li>Sites along Kedron Park Road – Bridge Street corridor</li> <li>Sites in Park Road – Rose Street locality</li> </ul>	Low 2016

### 20.5.3 Affordable Housing

The objectives of the affordable housing initiative are to:

- Provide alternative, affordable accommodation to off-set project impacts in Windsor East and Lutwyche, especially boarding house accommodation;
- Supplement rental housing stock with provision of additional public housing; and
- Provide incentives for development of private affordable housing close to public transport (e.g. Windsor, Albion, Lutwyche).

The affordable housing initiatives are set out in **Table 20-2**.

■ **Table 20-2 Urban Regeneration Program Initiatives – Affordable Housing**

Actions		Responsibility	Priority
Community Housing	Investigate feasibility for property acquisitions to be re-used by Brisbane Housing Company upon completion of construction	BCC	High (2006 – 07)
Boarding Houses	Manage boarding houses affected by acquisition or project implementation according to the BCC / Housing Queensland protocol	Housing Qld/BCC	High (pre-construction)
	Investigate feasibility for mixed use development of worksites, vent sites or other surplus land to include a boarding house component	Proponent	Medium (2006 – 11)
Public Housing	Investigate feasibility for properties owned by Qld Government in Bridge Street, Mawarra St and Dickson Street to be redeveloped for public housing – consider a range of delivery options	Housing Qld/DNRM	Medium (2006 – 11)
	If feasible, undertake community consultation and budget planning for implementation		
	Liaise with BCC to investigate feasibility for inclusion of provisions in City Plan for public housing component in mixed use development of key sites along the corridor – especially the north-south corridor (ie Kedron, Lutwyche, Windsor)		

#### 20.5.4 Employment and Training

The objectives for the employment and training opportunities arising from the Airport Link Project are to:

- Develop skills and workforce capacity for major projects within the Brisbane workforce;
- Enhance employment options for unemployed local residents; and
- Enhance opportunities for the training and employment of people with a disability and indigenous people.

The employment and training initiatives for the Airport Link urban regeneration framework are set out in **Table 20-3**.

■ **Table 20-3 Urban Regeneration Program Initiatives – Employment and Training**

Actions		Responsibility	Priority
Major projects training & employment	Establish a Major Projects Training and Employment Working Group to develop a training and employment allied with construction and urban regeneration works. Where possible, the Working Group is to establish employment targets to be achieved during construction and urban regeneration works.	Proponent Qld Govt (Dept Employment & Training)	High (2007 – 09)
	Investigate the feasibility of a Project-specific Employment and Training Centre <sup>6</sup>		Medium (pre-construction)
Community Jobs	Establish Community Jobs Programs and other employment re-entry schemes to help implement urban	BCC (MIPO/City)	Medium (pre-

<sup>6</sup> Example of a Project-specific Employment and Training Centre is provided by the Channel Tunnel Rail Link project in London, where local people are trained in a centre adjacent to the principal worksite in Kings Cross and employed on the project works.

Actions		Responsibility	Priority
	regeneration initiatives, for example: <ul style="list-style-type: none"> <li>Waterway restoration works;</li> <li>Park restoration and development planning and works; and</li> <li>Landscape planning and works.</li> </ul>	Life/Parks/Roads) Qld Govt (DET & DATSIP) Community organisations	construction)
Indigenous employment	With DATSIP and the Construction Training Centre, investigate opportunities to develop an Indigenous Employment Plan for the construction phase of the project and the urban regeneration program	Proponent Qld Govt (DET & DATSIP)	High (2007 – 09)
Employment for people with a disability	Establish and support a Disability Employment Working Group to investigate the feasibility of implementing a training and employment program allied with construction and urban regeneration. Where possible, the Working Group is to establish employment targets to be achieved during construction and urban regeneration works.	Proponent Qld Govt (DET & DSQ)	High (2007 – 09)

### 20.5.5 Redevelopment Initiatives

The redevelopment initiatives rely upon the process of managed land use change within the study corridor during and beyond the construction phase of the Airport Link Project. With redevelopment and rejuvenation of these inner suburbs, there is an opportunity for development to deliver a range of community facilities and amenities relevant to their needs but concurrently relevant to the framework for urban regeneration.

The scope of such initiatives should be determined through the Neighbourhood Planning process in consultation with agencies, stakeholders and the wider community. For implementation of the redevelopment initiatives, amendments would be required for:

- Brisbane City Plan and its supporting policies, to facilitate land use change through an incentives package; and possibly
- *Integrated Planning Act 1997* and its supporting regulations, to facilitate an infrastructure charging regime which relates to trunk infrastructure and possibly some enhancements of existing infrastructure.

Such initiatives could include those set out in **Table 20-4**.

■ **Table 20-4 Urban Regeneration Program Initiatives – Redevelopment**

Actions		Responsibility	Priority
Open space	Investigate options for adding to or enhancing existing open space to support increased useage, or, to support land use change	BCC	Medium (2011)
Development guidelines	Review and revise development guidelines to: <ul style="list-style-type: none"> <li>■ Achieve increased permeability through development sites</li> <li>■ Achieve enhanced accessibility to public transport and the road network</li> <li>■ Investigate potential for mixed uses on surplus land, possibly including tunnel facilities (e.g. ventilation outlets, maintenance facilities)</li> <li>■ Investigate opportunities for development incentives linked to the provision of community amenities (e.g. development bonus schedule for community facilities, open space, ped/cycle connections, landscaping)</li> </ul>	Qld Govt BCC	Medium (2011)
Community facilities/housing	Investigate potential for community facilities and affordable housing to be provided as part of redevelopment through a development incentive scheme	Qld Govt BCC	Medium (2011)

## 20.6 Urban Mitigations

In parallel with the implementation of an integrated program of urban regeneration measures recommended in sections 2.4 and 2.5 above, there are urban mitigation measures required to address the project impacts during both the construction and the operational phases, in addition to the environmental management and mitigation measures recommended in the draft Outline EMPs in Chapter 19 of the EIS. These mitigation measures are presented in tabular form below and are presented in **Figure 20-1** to **Figure 20-11**. These are recommended as works to be undertaken as part of the Airport Link Project.

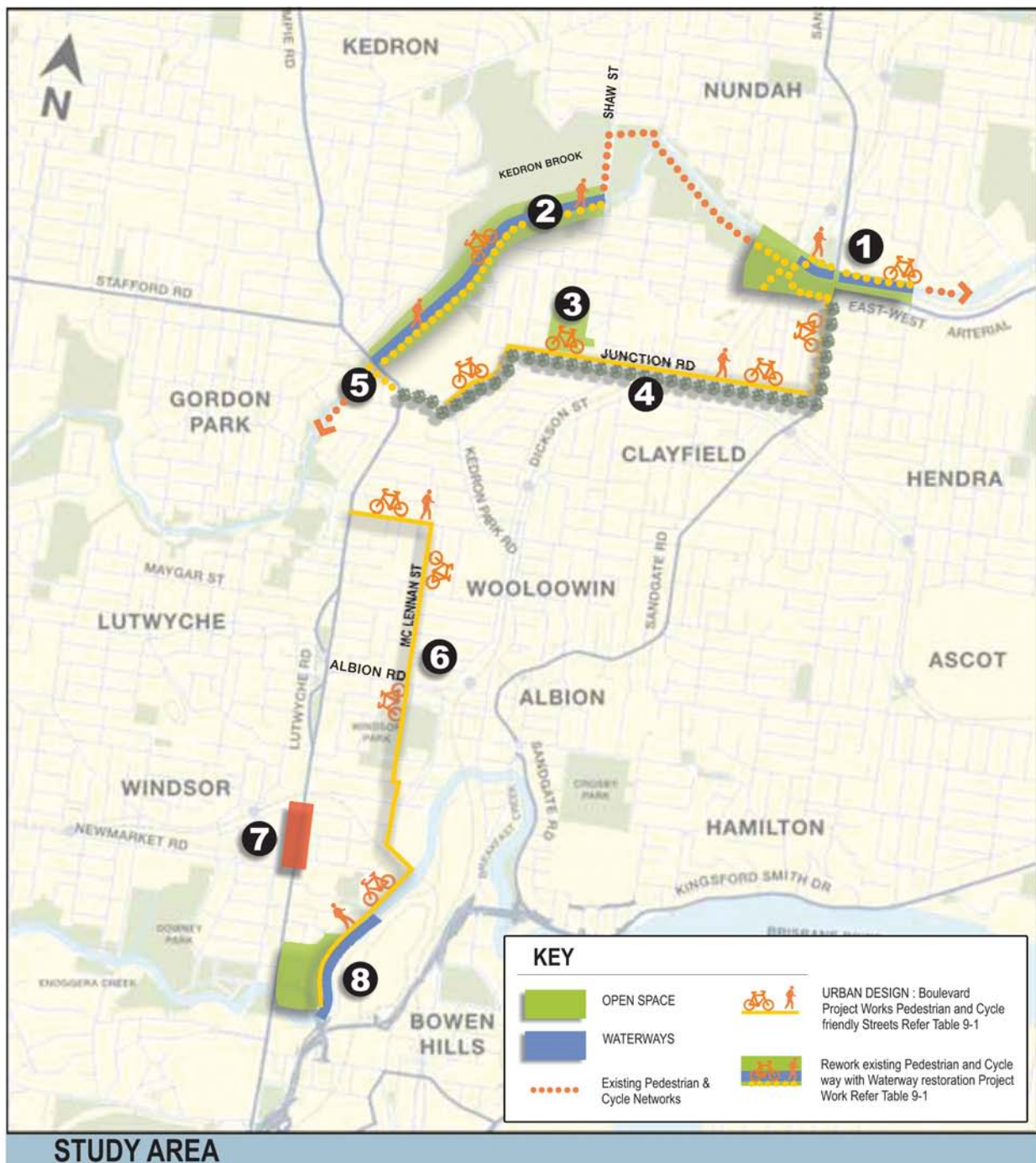
■ **Table 20-5: Urban Mitigations**

Category	Location	Mitigation Measures	Priority
<b>Toombul/Clayfield</b>			
Urban Design	Sandgate Road (Grace Street to Junction Road)	Boulevard works including: <ul style="list-style-type: none"> <li>■ street tree planting;</li> <li>■ footpath pavement improvements;</li> <li>■ lighting; and</li> <li>■ selected character elements.</li> </ul>	High (undertaken as project works)
	Junction Road (Sandgate Road to Rose Street)		
	Rose Street (Junction Road to Park Road)		
Pedestrian & Cycleways	Sandgate Road intersection	Reinstate pedestrian crossing at the intersection of Sandgate Road and East West Arterial intersection	High (undertaken as project works)
	Melton Road to Kalinga Park (Diggers Drive)	Relocate pedestrian and cycle path from southern side of Schulz Canal to northern side; Provide pedestrian and cycle crossing at Melton Road	
	Eagle Junction (Alma Road, Stuckey Road, Elliott Street)	Provide pedestrian and cycle connections into Kalinga Park and Kedron Brook open space corridor	

Category	Location	Mitigation Measures	Priority
Open space	Kalinga Park, Eagle Junction Ross Park, Toombul Melrose Park, Kalinga	Reinstate park & mitigate infrastructure including: <ul style="list-style-type: none"> <li>comprehensive landscaping at the Toombul connection;</li> <li>planting enhancement to that section of Kalinga Park disturbed by construction activities;</li> <li>amenities &amp; BBQ facilities;</li> <li>lighting (not Melrose Park);</li> <li>children's play equipment at Kalinga Park;</li> <li>provision of park entry to Kalinga Park from Jackson Street; and</li> <li>adolescent/young adult facility at Ross Park.</li> </ul>	High (undertaken as project works)
Waterways	Schulz Canal (between Melton Road & Sandgate Road)	Ecological restoration and floodway including: <ul style="list-style-type: none"> <li>natural wetland reconstruction; and</li> <li>wetland planting.</li> </ul>	High (undertaken as project works)
	Relocation of Kedron Brook tributary with Schulz Canal (in Kalinga Park)	Engineering works Ecological restoration and floodway including: <ul style="list-style-type: none"> <li>natural wetland reconstruction; and</li> <li>wetland planting</li> </ul>	High (undertaken as project works)
<b>Kedron/Lutwyche</b>			
Urban Design	Gympie Road (Kedron Brook – Broughton Road)	Boulevard works including: <ul style="list-style-type: none"> <li>street tree planting;</li> <li>pavement improvements; and</li> <li>lighting.</li> </ul> Selected character elements Footpath pavement improvements in Lutwyche Rd (railway to Newmarket Rd only)	High (undertaken as project works)
	Stafford Road (Gympie Road to Clarence Road)		
	Park Road		
	Kedron Park Road (Gympie Road to Park Road)		
Pedestrian & Cycleways	Kedron Brook (Crossing of Gympie Road)	Provision of pedestrian and bikepath; Pedestrian/cycle bridge over Kedron Brook; and Extension of path through open space to Kedron Brook.	High (undertaken as project works)
	Kedron Brook (Gympie Road to Shaw Road)		
	Brook Road		
Open Space	Kedron (east end of Fifth Ave, adjacent to Kedron Brook)	Develop park and landscaped space on DMR land: <ul style="list-style-type: none"> <li>comprehensive landscaping;</li> <li>amenities &amp; BBQ facilities; and</li> <li>lighting.</li> </ul>	High (undertaken as project works)
Waterways	Kedron Brook (Gympie Road to Shaw Road)	Engineering works Ecological restoration and floodway: <ul style="list-style-type: none"> <li>natural wetland reconstruction; and</li> <li>wetland planting.</li> </ul>	High (undertaken as project works)
<b>Windsor</b>			

Category	Location	Mitigation Measures	Priority
Urban design	Lutwyche Road (Ferry Grove Railway to Newmarket Road)	Boulevard works: <ul style="list-style-type: none"> <li>■ street tree planting;</li> <li>■ pavement improvements;</li> <li>■ lighting;</li> <li>■ selected character elements; and</li> <li>■ footpath pavement improvements in Lutwyche Road (railway to Newmarket Road only).</li> </ul>	High (undertaken as project works)
Pedestrian & Cycleways	Windsor – Lutwyche (Chalk, McLennan, Lane Streets, Windsor Park, Flynn Oval)	Provision of pedestrian and cyclepath; and Appropriate level of urban design treatments including theme street planting & lighting.	Medium (completed within 2 yrs of project opening)
Open Space	Windsor (Mann Park, Flynn Oval)	Reinstate park & mitigate infrastructure: <ul style="list-style-type: none"> <li>■ comprehensive landscaping along bikepath and boundaries;</li> <li>■ planting enhancement to Enoggera Creek;</li> <li>■ amenities &amp; BBQ facilities; and</li> <li>■ lighting.</li> </ul>	High (undertaken as project works)
Waterways	Enoggera Creek (from Horace Street to Flynn Oval)	Ecological restoration: <ul style="list-style-type: none"> <li>■ wetland planting</li> </ul>	High (undertaken as project works)





<b>1</b>	WATERWAYS: Ecological Restoration and floodway Refer Table-1	<b>6</b>	PEDESTRIAN & CYCLEWAYS: Windsor-Lutwyche (Chalk, McLennan, Lane St., Windsor Park & Flynn Oval) Refer Table 9-1
<b>2</b>	WATERWAYS: Kedron Brook - Ecological Restoration and floodway Refer Table 9-1	<b>7</b>	URBAN DESIGN: Lutwyche Rd. Boulevard Project Works Refer Table 9-1
<b>3</b>	OPEN SPACE: Melrose Park - Advanced tree planting	<b>8</b>	OPEN SPACE: Windsor (Mann Park, Flynn Oval) Refer Table 9-1
<b>4</b>	URBAN DESIGN: Sangate Rd., Junction Rd., & Rose St. Boulevard Project Works, Refer Table 9-1		WATERWAYS: Enoggera Creek (from Horace St. to Flynn Oval) Refer Table 9-1
<b>5</b>	URBAN DESIGN: Gympie Rd., Stafford Rd., Park Rd., Kedron Park Rd. Boulevard Project Works Refer Table 9-1		

**PROJECT INITIATIVES - PROJECT MITIGATION WORKS**

## KEY



**Figure 20.1 Project Mitigation Works Location Key**





The **urban mitigation measures** propose urban design and landscape concepts to offset project impacts. All measures will be required to apply Australian best practice urban design and landscape standards, codes and practices. The following six strategies are proposed to deal with project impacts:

**1 Open Space Revegetation/Waterway rehabilitation**

- A) Protect existing significant vegetation.
- B) Revegetate areas damaged during construction and rehabilitate damage to Schulz Canal with construction of wetland environment with pathways.
- C) Reinstate natural creek from end of Jackson Street to Schulz Canal.
- D) Provide defined informal recreation space adjacent to Diggers Drive in Kalinga Park.

**2 Urban Forest Treatment**

- A) Create water wise subtropical landscapes with mature trees over the majority of the spaces created by the transition structures into the tunnel.
- B) Connect north-south crossing of Stuckey and Alma Streets across Schulz Canal through to Ross Park.

**3 Activity Zones**

- A) Create areas of high quality landscape amenity and recreation, including the reinstatement of the playground lost to cut and cover works. Opportunities include play spaces for all ages, viewing platforms, interpretive trails and typical park amenities.
- B) Provide safe and accessible pedestrian and cycle paths to Kedron Brook Open Space and connection point to surrounding residential precincts.

**4 Boulevard Treatment**

- A) Provide north, south, east and west pedestrian and cycle movement along Sandgate Road, with improved accessible pathways and streetscape amenity.

**5 Suburban Centre Improvement Schemes (SCIPS)**

- A) The opportunity exists to activate the external environment of Toombul Shopping Centre by creating a landscape setting of high quality looking to the south bank of Schulz Canal. This centre has the opportunity to take advantage of this improved amenity by activating its southern edge by introducing shops, bakeries etc.



**SANDGATE ROAD CONNECTION MITIGATION MEASURES**

This Strategy supports the BCC Living in Brisbane 2010 policy, its implementation is encouraged but does not form a part of the AL project.

- B) There is an opportunity to incorporate visually pleasing ventilation outlets within the existing Toombul shopping centre or in the open space between the transition structures near Schulz Canal. The ventilation outlets could form part of a city gateway feature at this major entrance to the city from the airport.

**6 Design Intervention in Response to Engineering Proposals**

- A) Create themed urban design and landscape treatments for retaining and transition structures, flyovers, portals, ventilation outlets and sound barriers and integrate these with the existing environment of the Sandgate Road key location.

**Figure 20.2**  
**SANDGATE ROAD MITIGATION MEASURES**





## SCHULZ CANAL MITIGATION WORKS

Ecological restoration of existing degraded floodway.

Project works include natural wetland reconstruction, wetland planting, & pedestrian and cycle path.

## PROJECT MITIGATION WORKS

Figure 20.3  
SCHULZ CANAL  
BETWEEN MELTON ROAD & SANDGATE ROAD





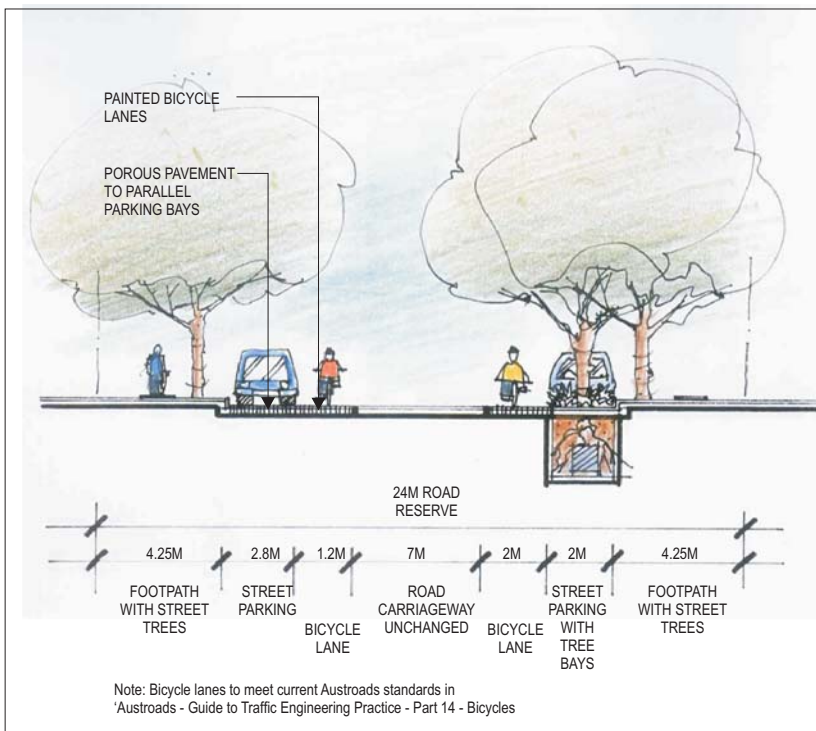
**JUNCTION ROAD LOOKING WEST WITH BOULEVARD TREATMENT**



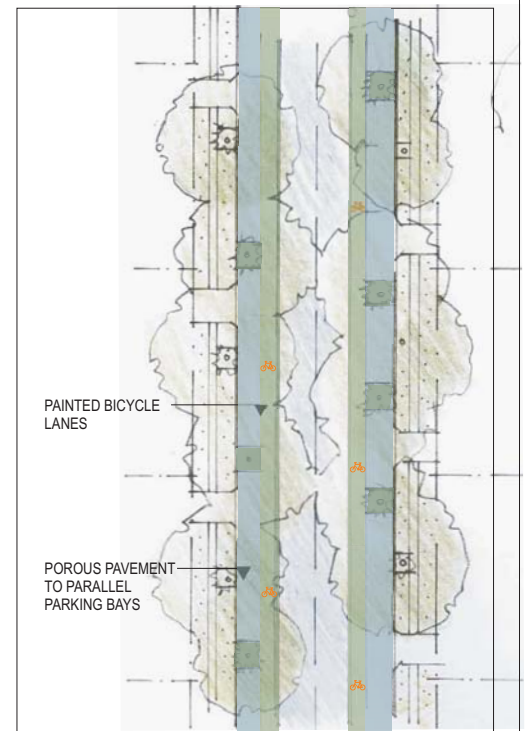
**EXISTING ENVIRONMENT - Junction Road**

**Pedestrian and Cycleways - (Sandgate Road to Rose Street)**  
Project works to include the Provision of pedestrian and bikepath; and an appropriate level of urban design treatments including theme street planting and lighting.

Creating safe and shady cycleways within existing road environment by introducing tree bays into the existing road pavement. There is also the potential to incorporate porous pavements into the on street parking bays and cycle lanes to delineate use and provide water to street trees.



**TYPICAL SECTION - JUNCTION RD.**



**TYPICAL PLAN - JUNCTION RD.**

## PROJECT BOULEVARD WORKS

**Figure 20.4  
JUNCTION ROAD  
LOOKING WEST IN TOWARDS MELROSE PARK**







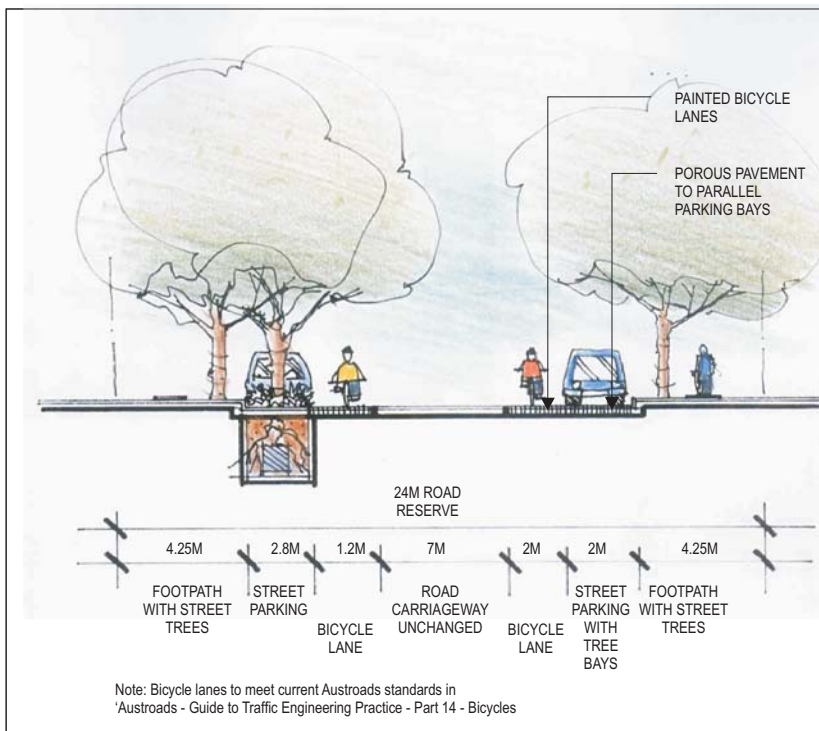
**ROSE STREET LOOKING EAST WITH BOULEVARD TREATMENT**



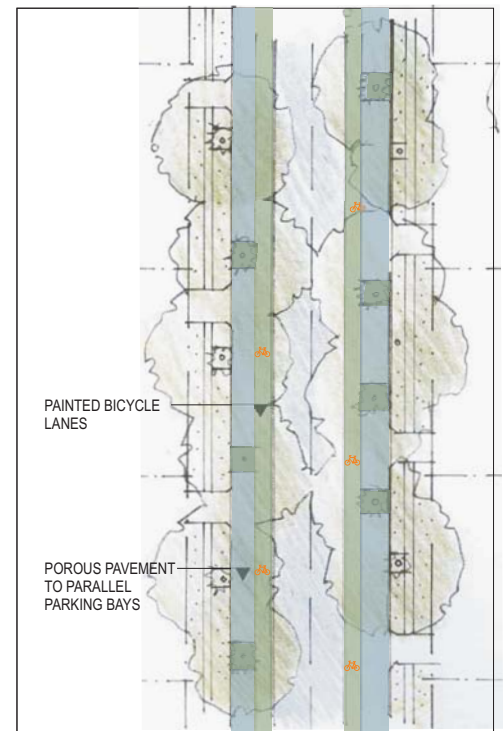
**EXISTING ENVIRONMENT - Rose Street**

**Pedestrian and Cycleways - (Rose Street to Park Road)**  
Project works to include the Provision of pedestrian and bike path; and an appropriate level of urban design treatments including theme street planting and lighting.

Creating safe and shady cycleways within existing road environment by introducing tree bays into the existing road pavement. There is also the potential to incorporate porous pavements into the on street parking bays and cycle lanes to delineate use and provide water to street trees.



**TYPICAL SECTION - ROSE ST.**



**TYPICAL PLAN - ROSE ST.**

## PROJECT BOULEVARD WORKS

**Figure 20.5  
ROSE STREET  
LOOKING EAST IN TOWARDS MELROSE PARK**





The **urban mitigation measures** propose urban design and landscape concepts to offset project impacts. All measures will be required to apply Australian best practice urban design and landscape standards, codes and practices. The following six strategies are proposed to deal with project impacts:

**1 Open Space Revegetation / Waterway rehabilitation**

- A) Protect existing significant vegetation.
- B) Revegetate areas damaged during construction and rehabilitate damage to Kedron Brook (if any) with naturalised reconstruction of waterway.
- C) Provide high amenity planting to screen the sound barriers, ramp and transition structures impacting on the local residential precinct at Colton and Windsor Avenues;
- D) Provide high amenity planting to screen the sound barriers, ramp and transition structures impacting on the local residential precinct at of Erskine Street, Lassitter Streets and Park Terrace where possible.
- E) Provide high amenity planting to Kedron Brook Open Space

**2 Urban Forest Treatment**

- A) Create water wise subtropical landscapes with mature trees over the majority of new spaces created by the transition structures into the tunnel.
- B) Connect the north-south crossing of Kedron Brook with new pedestrian/cycle footbridge over the creek.

**3 Activity Zones**

- A) There is an opportunity to create areas of high quality landscape and recreation amenity to the south western side of the bridge over Kedron Brook at Lutwyche Road. Opportunities include play spaces for all ages, bicycle storage facilities, and typical park amenities.
- B) Provide safe and accessible pedestrian and cycle paths to Kedron Brook Open Space and connection point to surrounding residential precincts.

**4 Boulevard Treatment**

- A) To sections of Lutwyche Road, Kedron Park Road, Gympie Road and Stafford Roads with improved accessible pathways and streetscape amenities.

**5 Suburban Centre Improvement Schemes (SCIPS)**

- A) Investigate opportunities to provide a SCIP to Stafford and



**GYMPIE ROAD CONNECTION URBAN MITIGATION MEASURES**

**6 Design Intervention in Response to Engineering Proposals**

- A) Create themed urban design and landscape treatments for retaining and transition structures, flyovers, portals, ventilation outlets and sound barriers and integrate these with the existing environment of the Gympie Road key location.
- B) There is an opportunity to incorporate a visually pleasing ventilation outlet within a special use building similar to the existing Emergency Services building.

**KEY**



Denotes projects works for Airport Link



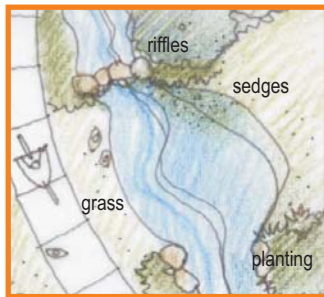
Denotes projects works for Northern Busway



# KEDRON BROOK WATERWAY

Create naturalised creek setting retaining flood capacity. Vary existing alignment widening sections where appropriate and treat with differing edge types such as grass, boulders, & sedges.

Reinforce existing riffles along Kedron Brook with planting. Add to existing riffles where appropriate, and maintain existing waterway flood capacity.



PLAN



SKETCH



SKETCH



Figure 20.7  
Kedron Brook  
Melrose Park







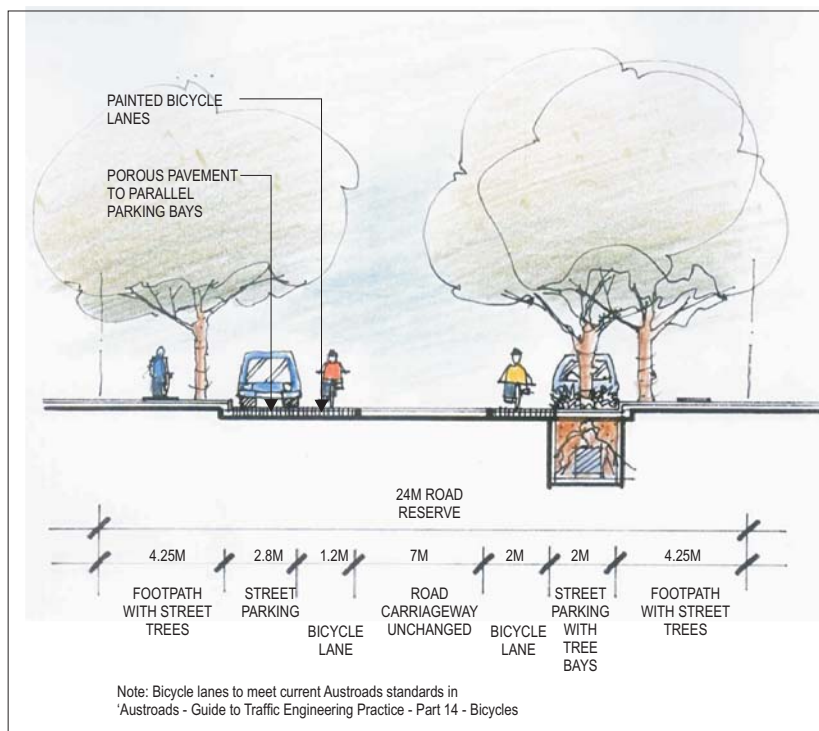
**MC LENNAN STREET WITH BOULEVARD TREATMENT**



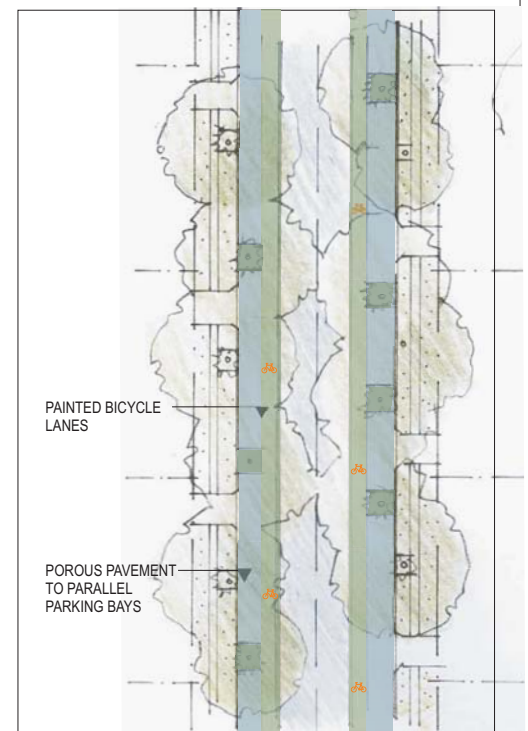
**EXISTING ENVIRONMENT - McLennan Street**

**Pedestrian and Cycleways - Windsor - Lutwyche ( Chalk, McLennan, & Lane Streets )** Project works to include the Provision of pedestrian and bike path; and an appropriate level of urban design treatments including theme street planting and lighting.

Creating safe and shady cycleways within existing road environment by introducing tree bays into the existing road pavement. There is also the potential to incorporate porous pavements into the on street parking bays and cycle lanes to delineate use and provide water to street trees.



**TYPICAL SECTION - McLENNAN ST.**

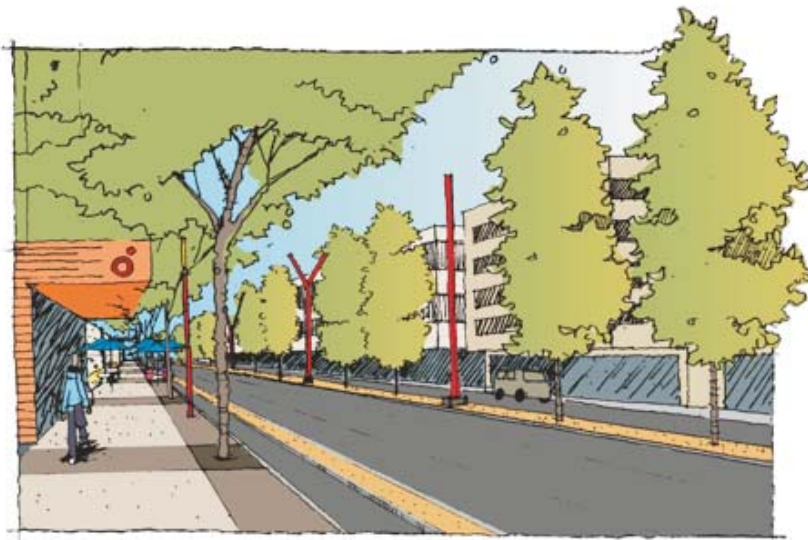


**TYPICAL PLAN - McLENNAN ST.**

## PROJECT BOULEVARD WORKS

**Figure 20.8  
McLENNAN STREET  
LOOKING IN TOWARDS CITY**





### LUTWYCHE ROAD LOOKING NORTH WITH BOULEVARD TREATMENT

This section of Project Works is between Newmarket Road and the Ferny Grove rail overpass.

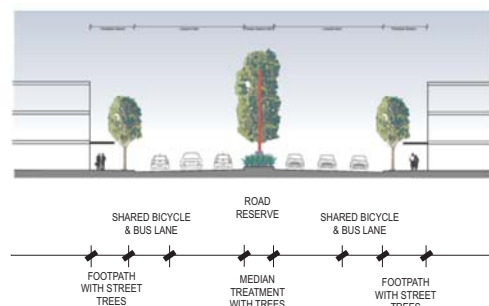
Project works to include the provision of accessible pedestrian pavements and an appropriate level of urban design treatments including themed street planting and lighting. Creating shared on road cycleways within existing road environment.

Where possible the central median to have significant tree planting with vertical art elements.

There is an opportunity to provide this section of Lutwyche Road with a Suburban Centre Improvement Program.



### EXISTING ENVIRONMENT - Lutwyche Road



Note: Bicycle lanes to meet current Austroads standards in Austroads - Guide to Traffic Engineering Practice - Part 14 - Bicycles

### TYPICAL SECTION - Lutwyche Road



### TYPICAL PLAN - LUTWYCHE RD.

## PROJECT BOULEVARD WORKS

Figure 20.9  
LUTWYCHE ROAD BOULEVARD CONCEPT





The **urban mitigation measures** propose urban design and landscape concepts to offset project impacts. All measures will be required to apply urban design and landscape standards, codes and practices. The following six strategies are proposed to deal with project impacts:

#### 1 Revegetation / Waterway rehabilitation

- A) Protect existing significant vegetation.
- B) Revegetate open space areas damaged during construction and rehabilitate damage to Enoggera Creek mangroves and banks due to construction of the bridge to the AL.

#### 2 Urban Forest Treatment

- A) Create water wise subtropical landscapes with mature trees over the majority of left over open space incorporating the north bank of Enoggera Creek.
- B) Ensure connection to and from open space connecting the North and South banks of Enoggera Creek and the pedestrian/cycle bridge provided by the NSBT.
- C) Plant groves of large trees and create new recreation open space to the northern side of Enoggera Creek.

#### 3 Activity Zones

- A) Opportunities exist to create areas of high quality landscape amenity to open space created by the infrastructure.
- B) Repair damage to NSBT planting.
- C) Provide facilities such as Picnic / Barbecues; play space for all ages and; access creek for canoeists on the northern side of the creek.

#### 4 Boulevard Treatment

- A) Provide boulevard street trees; accessible pathways; street furniture; art work to sections of Lutwyche Road, and the whole of O'Connell Terrace,
- B) Provide tree plantings to Hamilton Place, Tufton Street and Wren Street.

#### 5 Suburban Centre Improvement Schemes (SCIPS)

- A) Investigate opportunities to provide SCIPS to sections of Lutwyche Road; Bowen Hills Centre and at O'Connell Terrace.
- B) Provide pedestrian/cyclist connection from existing Bowen Hills Centre west (Bowen Hill train station) to Lutwyche Road and RBH.

#### 6 Design Intervention in Response to Engineering Proposals

- A) Create themed urban design and landscape treatments for retaining and transition structures, flyovers, portals, ventilation outlets and sound barriers and integrate these with the existing environment of the Bowen Hills key location.
- B) There is an opportunity to incorporate a visually acceptable statement for the ventilation outlet within the open space of the northern bank of Enoggera Creek. The ventilation outlet could form part of a city gateway to or from the airport.



**SOUTHERN CONNECTION MITIGATION MEASURES**

**Figure 20.10**  
**SOUTHERN CONNECTION MITIGATION MEASURES**





SEAT



RUBBISH BIN



DRINKING FOUNTAIN



BOLLARDS

#### INDICATIVE STREET FURNITURE PALETTE - TIMBER, STEEL AND CONTEMPORARY



LIGHTING AT STREET LEVEL



INDICATIVE TREE GRATE



INDICATIVE PEDESTRIAN LIGHTING



Permeable pavements help reduce surface runoff within urban catchments. These images are two examples of permeable pavements.

INDICATIVE PERMEABLE PAVEMENTS

## PROJECT BOULEVARD WORKS

Figure 20.11  
BOULEVARD FURNITURE SUITE

