Airport Link

Phase 2 – Detailed Feasibility Study

CHAPTER 14

SOCIAL ENVIRONMENT

- October 2006

Contents

14. Social Environment

This Chapter addresses section 5.10 of the Terms of Reference. It describes the existing social values that may be affected by the Project and the amenity and use of the study corridor. The existing social environment is described by developing a set of social indicators across the study corridor and by mapping available social indicators and social infrastructure.

The Chapter:

- *Assesses potential changes to demography, equity, quality of life and community values and the implications of any such changes for the broader community;*
- *Identifies specific social impacts and benefits within the study corridor and over a broader area;*
- *Predicts potential social benefits and impacts in the areas of property, quality of life, amenity (air, noise, visual), access, demography, social environment, employment, equity and access of community resources;*
- *Indicates mitigation strategies to maximise benefits and minimise impacts to the community in areas including design development, construction management, public transport and urban renewal strategies.*

Specific consultation was undertaken with community members to clarify and quantify benefits and impacts.

14.1 Introduction

Suburbs within the study corridor are among Brisbane's oldest, accommodate more than 50,000 people and are served by an extensive network of social and recreational infrastructure. The study corridor accommodates major traffic and public transport infrastructure, and retail and service precincts. With Brisbane's population growth predicted to continue, increases can be expected in residential development and employment in the study corridor over the next twenty years.

Existing social conditions in the study corridor provide the bases for predicting and managing potential changes to the social environment which is represented by:

- Population and demography, including characteristics of existing and future populations;
- Social infrastructure, including community, cultural, educational, health and recreational facilities; and
- Community values, including character, diversity, amenity, safety, access, and social capital.

Social indicators which describe elements of community well being and social sustainability provide the bases for impact assessment. Social impact assessment of the Airport Link project identifies potential changes to these elements that could enhance or detract from social conditions in the suburbs to receive project infrastructure.

Australian Bureau of Statistics Socio-Economic Indices for Areas (SEIFA), based on data derived from the 2001 Census of Population and Housing, are:

- The Index of Advantage\Disadvantage, which describes a continuum of advantage to disadvantage, based on variables including income, educational attainment, and unemployment.
- The Index of Economic Resources, which describes a continuum of economic resources including household income, expenditure factors, and a range of other factors which indicate potential to cope with change to living conditions.

14.2 Existing Social Environment

This existing social environment is described in terms of community values, demography and social infrastructure of the study corridor which traverses highly urbanised inner northern suburbs.

14.2.1 Community values

Community values are the elements held as important to quality of life and well-being. They include tangible elements such as parks, buildings, architecture and landscape, and intangible elements such as sense of belonging and community diversity. Interactions between social and physical values contribute to qualities such as accessibility, amenity, sense of place, and health and safety. This section focuses on these qualities which could be affected as result of changes to the physical and social environment.

Many community members are aware that other major initiatives, including the Northern Busway, are planned for their area. People are concerned that planning for land use and transport infrastructure needs to be integrated to achieve the best possible outcomes for their living and working environments. People are also concerned that developments and redevelopment are consistent with aspirations for their area, including those represented by the SEQ Regional Plan and Brisbane City Plan. There is also a level of concern amongst some residents with regard to air quality in the local area, particularly associated with major traffic corridors.

Accessibility and connectivity

Lutwyche Road and Sandgate Road provide major northern and north-eastern traffic arteries to the CBD. However, these heavily congested routes form boundaries to neighbourhoods. Lutwyche Road, in particular, constrains pedestrian movements particularly for children, seniors and people with mobility problems. Connectivity between the study corridor and other areas of Brisbane via rail and road services is very good by Brisbane standards.

There is some access to bike paths through the Kedron Brook-Kalinga Park reach, and most streets have footpaths connecting to main roads. The pedestrian environment on main roads is generally poor due to high traffic volumes and the hardening of the environment, especially in Lutwyche Road, Sandgate Road and Gympie Road. Although accessibility in the area is generally very good, it is being compromised by increasing traffic congestion increasing travel times and highlighting inefficiencies in the transport system.

Amenity and sense of place

While some neighbourhoods in the study corridor have a quiet and relaxed character, others are affected by proximity to major roads, and increasingly by rat running. Lutwyche Road and Sandgate Road provide extensive retail and commercial service options, and light industry operates in Windsor, Bowen Hills and Albion. The study corridor accommodates several major community facilities, devoted to health, education, community support, sport and recreation. Windsor Shire Council Chambers, Windsor State School and Wooloowin State School are examples of listed heritage places valued by local residents, and distinctive housing contributes to a traditional Queensland character in many areas.

Collectively, amenity in the study corridor is high, given good access to public transport, a range of housing, access to quiet neighbourhoods within easy reach of services and employment, and excellent access to facilities of state and regional significance. Sense of place includes traditional Queensland neighbourhoods interspersed with increasing medium density housing options and bounded by major commercial/traffic corridors, with relief provided by major facilities, parks and Kedron Brook.

Community health and safety

On the basis of predictive socio-economic factors for health (lower socio-economic households, people living alone, Indigenous population size, cultural and linguistic diversity, unemployment and age greater than 65), the study corridor population appears to have a relatively low risk of general poor health. Disease prevalence rates are consistent with national averages. The exceptions are respiratory system diseases including asthma and osteoporosis in women which are slightly higher than the national average, and mental health disorders which are slightly lower. The 'all causes' death rate (254.9 deaths per 100,000 population per annum) was lower than for Brisbane (277.8) and well below that for Australia (290.4).

The Brisbane North Health District had a higher level of general practitioner services than the Australian average. Access to accident and emergency services, public hospital care and community services supporting health for specific target groups (e.g. aged people) is good throughout the study corridor. Access to open space and recreation facilities which encourage physical activity (including sports clubs and a family recreation centre) is adequate, and supported by public transport. Community support services for community participation and cohesion, and therefore good health, are also well distributed.

Given the status of socio-economic risk factors, the disease profile and access to services, the health status of the general community is good. Individual health outcomes would vary in line with socio-economic factors and personal risk factors, with poorer health experienced by people with lowest incomes or greater ages.

Values that contribute to community safety include freedom from threats to personal well being, protection of personal and public property, road safety, freedom from hazards such as poor air or water quality, and natural catastrophes. Socio-economic factors in the study corridor and crime rates in the Brisbane North region do not invoke particular concern.

14.2.2 Demography

This section describes population characteristics in the study corridor. Unless otherwise referenced, the source of all demographic data is Australian Bureau of Statistics Census of Population and Housing 2001.

Existing Population

Based on figures provided by the Population Information Forecast Unit (PIFU) of the Queensland Department of Local Government, Planning, Sport and Recreation the average annual increase in population of Queensland and of Brisbane as a whole have been significantly higher than for the "study area". This reflects the established inner urban nature of the study corridor as opposed to outer suburban areas where Greenfield housing development is occurring. The increase in average annual population growth in the "study area" from 0.1% in the five years to 30 June 2001 up to 1.6 in the following three years, may reflect development of more medium and high density housing in the "study area". PIFU's projected average annual population growth in the "study area" until 2021 of 0.83% is a median figure relative to the previous 8 years and remains well below that for Brisbane and Queensland, but well in line with its situation as a highly developed urban environment and the national trend to slowing population growth rate.

Table 14-1 outlines the population and growth rates of Brisbane, and the suburbs of the "study area" from 1996 to 2004.

- **Table 14-1 "Study area" Population and Growth 1996-2004**

Area	Est. resident population, 30 June			Average annual population change			
	1996	2001	2004(p)	5 years to 30 June 2001		3 years to 30 June 2004	
	No.	No.	No.	No.	%	No.	%
Brisbane SD	1 519 991	1 650 422	1 774 890	26 086	1.7	41 489	2.5
Brisbane City SSD	824 489	896 649	979 655	14 432	1.7	27 669	3.0
Albion	2 318	2 203	2 224	-23	-1.0	7	0.3
Bowen Hills	844	900	1 418	11	1.3	173	16.4
Clayfield	9 278	9 303	9 709	5	0.1	135	1.4
Hendra	3 556	3 579	3 909	5	0.1	110	3.0
Kedron	11 332	11 397	11 723	13	0.1	109	0.9
Lutwyche	2 570	2 542	2 714	-6	-0.2	57	2.2
Nundah	7 975	8 328	8 721	71	0.9	131	1.5
Windsor	5 960	6 016	6 130	11	0.2	38	0.6
Wooloowin	5 557	5 491	5 572	-13	-0.2	27	0.5
Study area	**49 390**	**49 759**	**52 120**	**74**	**0.1**	**787**	**1.6**
Queensland	**3 338 690**	**3 628 946**	**3 882 037**	**58 051**	**1.7**	**84,364**	**2.3**

Table Note: "Study area" is the sum of the suburbs shown individually. Data is available by suburbs only, and not the study corridor specifically. Data from suburbs that have any part of their area within the study corridor provides useful information about the population changes.

Population projections

Population projections provided in **Table 14-2** are likely to be consistent with local planning for the area. The projections considered expected land use change and major infrastructure projects identified in the *South-East Queensland Regional* Plan ('SEQRP'). Refinements to projections are likely to be required as planning initiatives for the study corridor are developed in consultation with the community.

- **Table 14-2 Population Projections**

Suburb (SLA)	2006	2011	2016	2021	Increase 2006-2021	% Growth 2006-2021
Albion	2268	2357	2468	2622	354	15.6%
Bowen Hills	1530	2144	2532	3944	2414	158%
Clayfield	9823	10022	10297	10696	873	8.9%
Hendra	4072	4080	4026	3976	-96	-2.3%
Kedron	11755	11691	11658	11684	-71	-.06%
Lutwyche	2739	2802	2881	2990	251	9.1%
Nundah	8981	9567	10302	11293	2312	25.8%
Windsor	6247	6318	6334	6379	132	2.1%
Wooloowin	5659	5763	5865	6023	364	6.4%
Study area	**53074**	**54744**	**56363**	**59607**	**6533**	**12.4%**

Table Note: DLGPSR (2005): Corridor Scenario Projections – Small Area Forecasts

See note to Table 14.1 for explanation of "Study area".

Dwellings

All Brisbane City Council (BCC) projections indicate substantial increase in attached housing at the expense of detached housing, especially in the inner suburbs of Brisbane. This would facilitate a higher rate of increase in the number of smaller households than in the number of people, with consequent demands on infrastructure.

Demographic change may also result in that smaller households most often consist of younger couples, older couples and sole person households, leading to a decrease in the proportion of families and group households in the area.

Age profile

The median age in the study corridor increased from 33 in 1996 to 34 in 2001, in line with Brisbane averages. The median age was substantially higher than the Brisbane average in Hendra and slightly higher than the average age in Kedron and Nundah, but lower than the average in all other suburbs. This suggests that younger people are attracted to the inner suburbs for medium density housing options and amenity values. The number of people 0-14 years old increased by approximately 8.5% across the study corridor during 1996-2001, whilst the number of people 65 years and over decreased by approximately 6.8%. This is in contrast to the general ageing of Brisbane's population, and demonstrates the increasing attractiveness of the area to younger people.

The study corridor had a slightly higher proportion of older people than Brisbane as a whole. Property acquisition and increasing property values may affect housing options for seniors. The area has good provision of aged care options, and it is essential that the needs of this growing population are addressed in planning.

Younger couples without families are being attracted to the inner suburbs in the study corridor for medium density housing options and amenity values making provision of community facilities and parks important as the population grows and changes.

Household type

Characteristics of the communities' structure are outlined in **Table 14-3**.

Table 14-3 Age and Household Structure 2001

Suburb	Residents <20 years age (%)	Residents >60 years age (%)	Couple families with children (%)	Couple families (%)	Sole person households (%)	Stable residency[1] (%)
Albion	20.8	15.6	31.6%	50.8	19.5	34.8
Bowen Hills	13.0	14.0	23.6	57.6	26.1	24.7
Clayfield	21.8	17.7	39.2	40.8	19.7	37.2
Hendra	21.5	19.1	43.1	39.6	10.9	48.9
Kedron	21.3	17.2	37.2	40.9	17.5	46.8
Lutwyche	18.1	15.9	26.5	43.4	22.5	36.1
Nundah	18.8	17.3	33.5	41.9	22.2	40.3
Windsor	18.2	15.2	37.4	41.7	18.2	39.6
Wooloowin	24.0	13.9	43.8	35.7	15.0	41.7
Study area	**20.5**	**16.6**	**37.3**	**41.2**	**18.5**	**41.2**
Brisbane City	**27.3**	**15.1**	**44.3**	**31.7**	**26**	**43.5**

Table Note: Source: Census 2001 Basic Community Profile, Table B17

See note to Table 14.1 for explanation of "**Study area**".

[1] Percentage of residents counted at the same address at the 1996 and 2001 Census.

Cultural Diversity

In the study corridor Indigenous Australians comprise 0.1% of the population, compared to the Brisbane average of 1.3%. Language groups provide a useful indicator to the cultural groups within a community. In the study corridor, more than 4,000 people in the study corridor speak other languages at home, (approximately 8.5% of all residents) compared to a Brisbane average of 12.3%.

Advantage and Disadvantage

The ABS produces five Socio-Economic Indices for Areas (SEIFA) based on census data. These indices are used by the Commonwealth Grants Commission and other government bodies to identify areas of advantage and disadvantage. The range of SEIFA Relative Socio-Economic Advantage/Disadvantage values within the study corridor (952-1222) shows that none of the corridor's collector districts are in the bottom 10% of districts across the State[2] and that they are central or just above central to the Brisbane range of 800-1280. Indicators summarised by this index include persons aged 15 years and over with no qualifications, percentage of families with less than $15,600 annual income, percentage of unemployed residents, percentage of dwellings with no motor cars, and people lacking fluency in English. The full range of indicators covered is provided in Technical Report 11 – Social Environment in Volume 3 of the EIS.

In Wooloowin, Lutwyche and Clayfield, the lowest scores were all above the Queensland LGA 90% percentile, indicating a higher overall level of advantage. Highest levels were found in collector districts within Clayfield (1222), Windsor (1159) and Hendra (1175). The lowest values were found in Hendra (952) and Nundah (953), with Kedron next at 978. The range of SEIFA Relative Socio-Economic Advantage/Disadvantage values for collector districts is shown in **Table 14-4**.

Table 14-4 Comparison of Socio-Economic Advantage / Disadvantage

Suburb	Range – SEIFA Index of Advantage / Disadvantage
Albion	998-1101
Bowen Hills	996-1067
Clayfield.	1024 – 1222
Hendra	952-1175
Kedron	978-1113
Lutwyche	1038-1115
Nundah	953-1131
Windsor	992-1159
Wooloowin	1012-1131
Study corridor	**952 – 1222**
Brisbane	**800 – 1280**

Table Note: ABS (2003) SEIFA Index Scores for Brisbane Collector Districts, provided by PIFU

Economic resources

The study corridor had a slightly lower proportion than the Brisbane average of people earning less than $199/week. There are also higher than average proportions of households earning more than $1500/week, indicating a wide range of income types and some polarity in income distribution. Only Bowen Hills, Lutwyche and Nundah showed lower than Brisbane average proportions of households earning $1500/week.

[2] This does not indicate a lack of disadvantage, but rather comparison with some rural areas and Aboriginal communities.

Compared to the Brisbane average the study corridor had a lower percentage of people with a tertiary qualification and unemployment varied 1.5% above and below the Brisbane average.

SEIFA economic resources index values range widely in different suburbs from 929-1234. The study corridor generally has medium to high levels of economic resources, with some pockets of disadvantage in Windsor and Lutwyche.

The study corridor had a lower proportion overall of people with a tertiary qualification, being a predictor of job choice and of resilience. Windsor, Clayfield and Bowen Hills had higher proportions of their populations with tertiary qualifications than the Brisbane average. Unemployment was lower than the Brisbane average in Albion and Clayfield, and substantially lower in Hendra. In other suburbs, unemployment was slightly higher than the average, and highest in Lutwyche and Bowen Hills. It is possible that in Bowen Hills, this proportion has decreased with the movement of more working couples to the area. The study corridor has a wide range of economic resources values, as measured by the SEIFA Economic Resources Index[3]. This index reflects income levels and housing costs for different household types. Details are shown in **Table 14-5**. More detailed information is contained in Technical Report 11 – Social Environment in Volume 3 of the EIS.

Table 14-5 Comparison of Economic Resources in Study Corridor, 2001

Suburb	Median Weekly Household Income	Unemployment (rate, %)	Tertiary Qualifications (% population)	Range – SEIFA Index, Economic Resources
Albion	800-999	4.3	18.2	981-1086
Bowen Hills	600-699	6.3	19.4	1018 – 1097
Clayfield	800-999	4.4	19.5	954 – 1197
Hendra	800-999	2.9	14	951-1137
Kedron	700-799	4.6	14	968 - 1192
Lutwyche	600-699	5.7	16.3	929 - 1148
Nundah	600-699	5.1	11.6	968 - 1234
Windsor	700-799	5.1	19.4	952 - 1145
Wooloowin	800-899	4.9	18	967 - 1160
BSD	**800-899**	**4.5%**	**19.3**	**929 - 1234**

14.2.3 Housing

In 2004, there were 24,238 dwellings in the study corridor, of which 54% were detached dwellings compared to the 69.6% across Brisbane and the 33% in the inner city. Around 9% of total dwellings were unoccupied, compared with against a Brisbane average of 6.6%. Average occupancy in the study corridor was 1.9 people per dwelling, compared with an average of 2.5 people per dwelling for Brisbane as a whole.

Bowen Hills, Lutwyche and Clayfield had the lowest proportions of separate dwellings in the study corridor. All suburbs except Hendra had higher proportions of attached dwellings than the Brisbane average. Lutwyche, Nundah and Clayfield had more than 50% attached dwellings. Kedron and Hendra had higher proportions of detached dwellings than the study corridor average.

[3] Factors contributing to this index include: families with annual incomes greater than $77,999, households paying rent greater than $225 per week and mortgages greater than $1,360 per month, low income families and single-person households. A full listing of indicators is provided in Appendix A.

Home ownership

Home ownership is an indicator of population stability, in that owners are likely to stay longer in a community than renters and may therefore be more likely to participate in developing social capital. Within the study corridor, 73% of separate dwellings were owned or being purchased by occupants, compared to 46.7% in the adjacent inner city region. Almost 70% of households had mortgages of less than $800/month, indicating that there is some affordability for those purchasing their homes, however lower levels are in part due to mature mortgages. The rate of home ownership increased between 1996 and 2001 in all suburbs except Kedron, Lutwyche and Nundah.

Public Housing

The Department of Housing owns approximately 69 properties within the study corridor incorporating 445 housing units. Most are multi-unit dwellings, with the largest, in Albion Road, housing 142 households. Of the 69 properties, nine are detached dwellings on property owned by the Main Roads Department, and may be required for implementation of the project. Of these, six are situated in the vicinity of the southern connection in Earle and Byrne Streets, Windsor; two are situated in the vicinity of the north-western connection on Gympie Road, Kedron; and one is situated in the vicinity of the north-eastern connection on Sandgate Road, Clayfield.

Approximately 4% of Brisbane's housing stock is owned by either the Department of Housing or the Department of Defence Housing. Nundah and Lutwyche had high prorportions of public housing (5.7% and 4.8% respectively at the last census). Windsor was also high at 4.6%.

14.2.4 Social infrastructure

There are several clusters of community facilities in Windsor, Lutwyche, Wooloowin, Kedron and Nundah. Schools, churches, parks and community centres are well distributed throughout the study corridor and adjacent areas.

There are four locations in the study corridor where community facilities are clustered. This has come about through either historical factors (e.g. Holy Cross centre and adjacent facilities, and the Windsor precinct), or the existence of government land including the former QUT campus and nearby Warilda Centre in Kedron. The existence of facilities often spawns others in the vicinity, as efficiency and connections between organisations are then maximised. The clusters of social infrastructure include:

- Windsor, between Harris, Roblane, Grafton and Somerset Streets;
- Wooloowin, between Lutwyche Road and Merehaye Street;
- Kedron, between Tenth Avenue and Park Road; and
- Nundah Town Centre.

More than 158 facilities of various types are distributed throughout the study corridor, including health, education, community support, sport and recreation facilities, provided through schools, churches, community organisations, and Council and State provision. Community organisations are also well established with 28 community organisations funded by the Department of Communities in the study suburbs. More than half of these organisations are situated in Wooloowin.

The study corridor also has a high level of provision of health and aged care facilities, including the Royal Brisbane Hospital, health and residential care facilities based at Rosemount including a palliative care service, several aged care hostels and nursing homes, and the State headquarters for the Alzheimers Association and Arthritis Association.

Schools within the study corridor include Holy Rosary Primary School, Kedron State High School, Kedron State School, Windsor State School and Wooloowin State School. Of these, Holy Rosary Primary School is the smallest in size and enrolments with less than one hundred students. Kedron State High, which serves a regional catchment, is the largest school in size and in enrolments with nearly 1,000 students. All schools are located relatively close to a bus stop[4]. Holy Rosary Primary, Windsor State School and Wooloowin State School have ready access to bus services as they are adjacent to Lutwyche Road, which is a major route for express and local bus services. Windsor State and Holy Rosary Primary are also in close proximity to Windsor Railway Station.

The community facilities in the study corridor provide services and meeting places, serve to nurture social capital, and consequently, are of particular importance to quality of life and social sustainability. **Figure 14-1** shows the distribution of the principal social infrastructure in the study corridor. Particularly strong provision of services for seniors is apparent including residential care facilities.

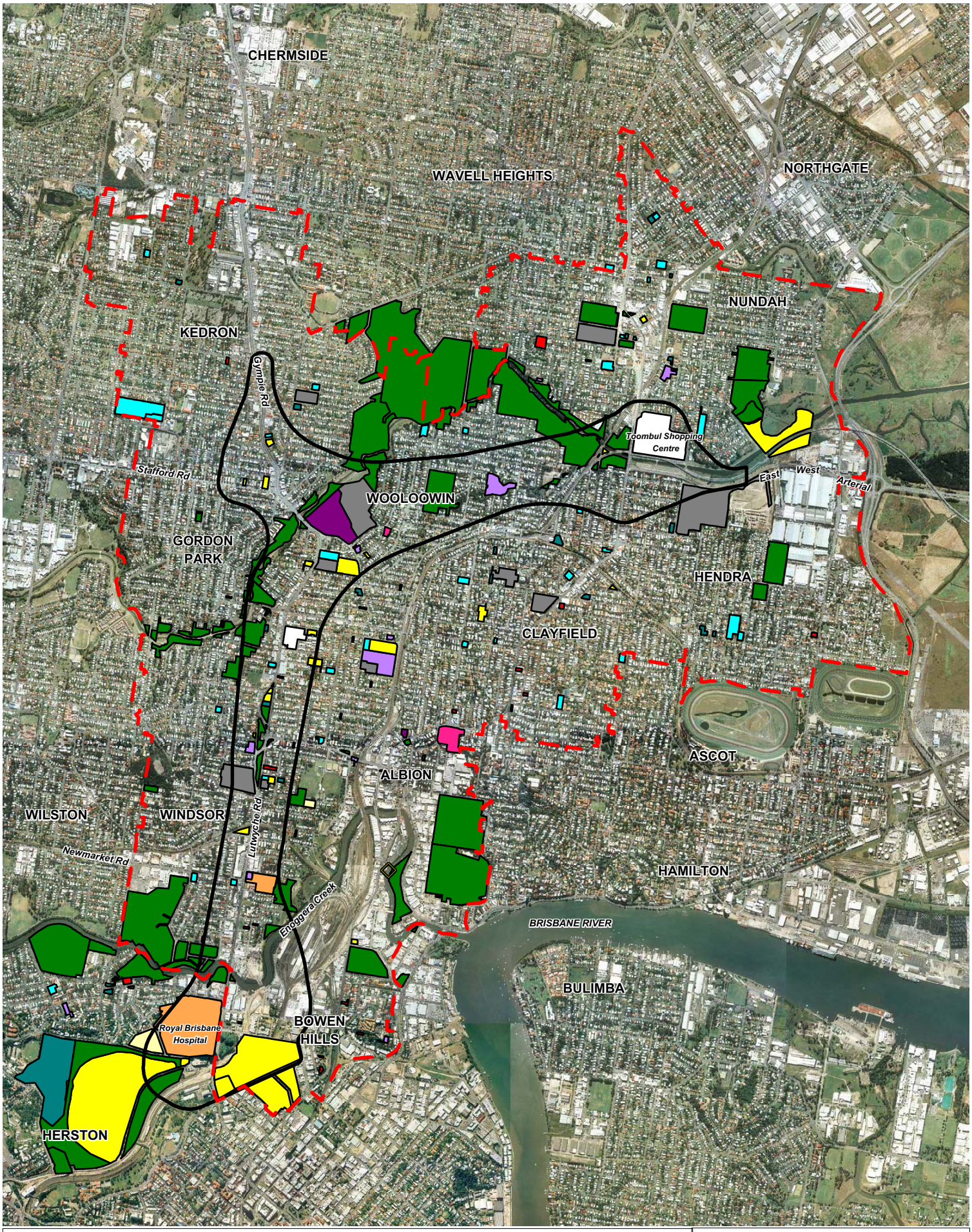
14.2.5 Amenity and character

The study corridor accommodates a rich diversity of land uses including inner city and suburban neighbourhoods, major facilities, commercial and industrial precincts, parks and reserves. Local neighbourhoods enjoy good accessibility through comparatively good public transport services and access to arterial routes, and have excellent access to community, health, cultural and recreational facilities.

The study corridor is made up of distinct residential neighbourhoods, despite being traversed by arterial roads and other transport infrastructure. The study corridor retains open spaces focussed on features such as Kedron Brook and Enoggera Creek, which despite their highly modified condition, retain high local recreational and aesthetic value. Heritage values attaching to particular places are important and recognised through inclusion in heritage registers (local, State – refer to Chapter 13 – Cultural Heritage).

In combination these factors provide a good level of amenity and support quality of life throughout the study corridor. Accessibility and quiet neighbourhood character are being affected by the increased congestion on the major arterial routes. Demographic change and changing housing stock through redevelopment may also influence these issues.

[4] Does not indicate frequency or efficiency of service.



LEGEND

- Aged Care
- Child Care Centre
- Church
- Community
- Higher Education
- Hospital
- Park
- Retirement Village
- Boarding House
- School
- Shopping Centre
- State Government Facility
- Airport Link Corridor
- Study Area

AIRPORT LINK - Figure 14-1
Social Corridor

N

0 0.5 1km

Airport Link

SKM Connell Wagner JOINT VENTURE

14.3 Potential Impacts

14.3.1 Quality of life

Amenity of local streets

Local streets are important to residents' amenity for vehicular movement and walking, but also as part of the neighbourhood realm. Most people feel a strong sense of ownership of their street, its access and aesthetic values. Where residents consider that traffic volumes or driver behaviour, including 'rat running', cause unacceptable noise or safety risks, their perception of amenity is affected.

The Airport Link project is expected to improve amenity in targeted major routes and adjacent local streets in the longer term, with potential benefits including:

- Reduction in traffic noise for community and commercial facilities along Lutwyche Road;
- Protection of neighbourhood character due to reduced rat running (e.g. McLellan Street Windsor and Hudson Road, Albion);
- Reduction of traffic volumes on major routes, supporting a safer pedestrian environment; and
- Potential for improvement to amenity in streets which become cul-de-sacs as a result of the project.

Longer-term impacts on amenity relate to potential for traffic noise to increase, particularly for properties newly exposed to traffic due to removal of buildings or infrastructure moving closer to homes. In these instances , appropriate forms of mitigation measures will be determined during the detailed design stage of the project, but could include noise barriers and possibly landscaping. This is addressed in Chapter 10. Where mitigation measures include noise barriers, their design and placement need to respect pedestrian routes and the visual amenity of adjacent properties.

During construction, streets nearest worksites may experience impacts on amenity including:

- Potential noise, change of physical character and traffic disruption for Kedron and Gordon Park residents in Stafford Road, Lasseter Street, Erskine Avenue, Arnott Street, Gympie Road and Suez Street;
- Potential noise from haulage trucks, changed pedestrian connectivity and visual amenity for Windsor residents in Earle, Federation and Campbell Streets;
- Potential noise from construction of elevated structures and change to visual amenity for Lutwyche residents in Perry Street, Colton Avenue, Windsor Avenue, Norman Avenue and Lamington Avenue;
- Changed access to Kalinga Park for residents of Lewis, Jackson, Elliott and Alma Streets and Stuckey Road; and
- Change of physical character due to location of the worksite, changed access to Kalinga Park and pedestrian connection to Toombul/Nundah for Clayfield residents in Wongara and Elliott Streets and Alma and Stuckey Roads.

Construction methodology and environmental management requirements are designed to reduce and mitigate these potential impacts. Successful mitigation for the duration of the construction phase will depend upon close communication and consultation with local residents.

Residents whose properties lie directly above the proposed tunnel alignments have raised the potential for volumetric tenure to reduce the amenity and value of their properties. There will be a need to acquire a volumetric tenure from all properties sitting above the tunnels.

Amenity of parks and reserves

Visual access to green space and physical access to public open space are particularly valued by residents in urban environments. This value increases as land use intensifies. Most areas within the study corridor meet the BCC park provision goal of 4 ha/1,000 population although accessibility, amenity and relative values are variable. Existing parks, principally along the flood plains of Kedron Brook and Enoggera Creek, have high community values and are well used by local residents. Kalinga Park has aesthetic, heritage and amenity values. The heritage values of Kalinga Park stem mostly from the memorial use of the place, as described in Chapter 13 – Cultural Heritage. Enoggera Creek and Kedron Brook are highly valued for the inter-suburban connectivity they offer walkers and cyclists.

During construction, impacts on some parks and reserves may include:

- Changed access to open space adjacent to Kedron Brook at Gympie Road to be used for worksite;
- Proximity of worksites to Kedron State High School oval;
- Changed access to and through most easterly part of Kalinga Park adjacent to Sandgate Road, linking northwards to Toombul rail station; and
- Changed access to Enoggera Creek at different times and places.

Following construction, disturbed parks and reserves are to be re-instated to the extent possible. Post-construction the impacts on parks and reserves in the study corridor are likely to include:

- Bridge widenings for Gympie Road crossing of Kedron Brook;
- Transition structures to the East West Arterial in the eastern parts of Kalinga Park, and changed connections through this part of Kalinga Park for pedestrian and cycle movements;
- Bridge widenings over Enoggera Creek in the vicinity of Horace St, associated with NSBT connections;
- Increased visibility of infrastructure from parks and reserves in the study corridor, particularly along Kedron Brook and Enoggera Creek, and in Kalinga Park (eg ventilation stations and outlets in the Emergency Services site and at Kalinga Park).

The visual impacts of the proposed infrastructure are described in Chapter 15 – Urban Design. The detailed design stage of project implementation will provide a range of treatments for impact mitigation consistent with the urban design principles established through the EIS.

Community health and safety

The health status of the general community is good. Individual health varies in line with socio-economic factors and personal risk factors, with poorer health experienced by people with lowest incomes or greater ages. Access to accident and emergency services, public hospital care and community services supporting health for specific target groups (e.g. aged people) is likely to improve as a result of Airport Link providing an alternative route and facilitation of increased public transport services.

Access to open spaces and recreation facilities that encourage physical activity are only to be impacted as is absolutely necessary during construction and are to be restored as soon as possible or at completion of construction. Project works, including proposed streetscape improvements to encourage pedestrian activity, and better pedestrian and cycle paths may in the longer term, lead to higher physical activity levels for local people.

Consultation with community groups indicated that some residents facing changes such as relocation or living near a worksite may experience anxiety and stress about changes. Consultation also identified concern amongst

business owners near project works in Lutwyche Road due to uncertainty regarding amenity and access. The risk of air pollution has been raised in consultation as the primary health concern for local residents. It is expected that people will be concerned to ensure air quality is maintained at safe levels. On balance such anxiety is unlikely to affect health given the range of support facilities and socio-economic resilience which is generally evident in the corridor. The implications of the Airport Link Project for public health are discussed in Chapter 9 – Air Quality.

Detailed design development will need to address principles for Crime Prevention Through Environmental Design (CPTED) to promote maximum usability and safety in public areas adjacent to Airport Link surface infrastructure. High levels of activity in public areas, good sight-lines and supporting community surveillance of public thoroughfares and open spaces are required. Attention has also been paid to supporting walking and cycle activity, and increasing the legibility of the environment around worksites and connections.

School amenity and access

The most predominant concern identified in consultation has been in relation to children's safety around construction zones near schools. This is subject to ongoing consultation with Education Queensland and schools, particularly Wooloowin State School on Lutwyche Road where a vehicular access problem exists without Airport Link and needs to be addressed through the preparation of a Construction Traffic Management Plan prior to commencement of works. The school may experience changes to pedestrian access both during construction and longer term. The perceived legibility of the locality of the Wooloowin State School may also be affected during construction as changes take place to the direction of traffic flow. Parental concerns for school children's health and safety include the safety of pedestrian access, air quality and noise levels within the school environs. These matters are addressed in other parts of the EIS (e.g. Chapter 5 – Traffic and Transport, Chapter 9 – Air Quality, Chapter 10 – Noise and Vibration).

Employment Options

The Australia Trade Coast (to the near east of the study corridor) and the inner northern city fringe have been identified as the main drivers for Brisbane's economic growth over the next twenty years. Jobs growth of 550,000 – 850,000 is expected in Brisbane between 2001 and 2026, with the Australia TradeCoast area alone expected to achieve about 50,000 of them.

Support for employment outcomes is expected to derive from the Airport Link project through:

- Provision of more direct access between the major employment hubs;
- Shorter commuting times and more road space for public transport as incentives to travel to jobs;
- Better environments for businesses in key employment corridors such as Lutwyche and Sandgate Roads;
- Potential for a catalyst effect for the location of businesses near portals;
- Business profitability leading to expansion, as a result of reduced cross-town freight and delivery; and
- Support for the development of mixed commercial-housing hubs in response to the SEQ Regional Plan.

14.3.2 Community values

Access and connectivity

The project introduces no new barriers within neighbourhoods. However, work sites and the intensification of road infrastructure may impact on connectivity between neighbourhoods, and on access to community facilities.

Clayfield

Pedestrian access between Clayfield, Eagle Junction, Kalinga Park, Centro Toombul and Toombul rail station is likely to be constrained at times during construction. The situation of the worksite in Kalinga Park adjacent to Sandgate Road and to the east of Sandgate Road will constrain the existing movement patterns for residents of the Eagle Junction area northwards to the Toombul shopping centre and the Toombul rail station. Safe, accessible, temporary pedestrian access arrangements will be required during construction. Temporary pedestrian access along the eastern side of Sandgate Road to the Toombul shopping centre will also be required during construction. It is likely that the configuration and route of these temporary connections will change several times during construction, with local consultation and communications necessary to minimise disruption to local residents.

The reconfiguration of Schulz Canal east of Sandgate Road and the relocation of the cyclepath to the northern side of the canal will provide better sight lines and more convenient connections from local areas to this route. Post-construction, new connections to the cyclepath across Schulz Canal will be required. This is most likely to be provided to the west of Sandgate Road.

Kedron

During construction residents may have to change their route to cross Lutwyche Road between Kedron Park Road and Norman Avenue. This area is important for access to a range of community facilities within a 250 metre radius, including Warilda, Kedron State High School, Wooloowin State School and the Alzheimer's Association. The Lamington Avenue/Norman Avenue neighbourhood is home to a high proportion of seniors, and access to shops and bus stops in Lutwyche Road is important in this regard.

Access from a number of arterial roads to local roads will occur as a consequence of the Airport Link Project. These include:

- Colton Avenue, Norman Avenue, and Windsor Avenue in Lutwyche to Lutwyche Road will occur by way of a service road intersecting with Norman Street;
- Swan Street in Gordon Park to Stafford Road will be reconfigured with no right turns out of Swan Street; and
- Park Terrace and Lasseter Street in Kedron to Gympie Road will be reconfigured to permit left-in, left-out turns only.

This will not affect pedestrian connectivity, noting that the existing road already presents a major barrier in this respect. New project works are expected to restore pedestrian access to major facilities and public transport stops. The truncation of streets could improve their amenity by reducing traffic and buffering streets from traffic and non-residential uses on Lutwyche Road.

Bowen Hills

In Bowen Hills, the construction areas for the North South Bypass Tunnel and Airport Link Projects would be adjacent to each other on land between Lutwyche Road, Federation Street and Enoggera Creek. During construction alternative arrangements for pedestrian access will be required, with the Federation Street intersection providing the opportunity to redirect movements to the western side of Lutwyche Road. Post-construction, detailed design, including urban design treatments for this area will need to provide for both pedestrian and cycle movements southwards to link the northern suburbs into Fortitude Valley and the city centre.

Sense of place

In the study corridor and throughout Brisbane, people derive a strong sense of place from urban bushland, open space, and cultural heritage values. The two highest priorities articulated by residents in Brisbane City Council's Neighbourhood Planning Consultation Workshops have been protection of parks, open space and the natural environment. This has also been demonstrated in consultation for Airport Link, where residents have nominated Kalinga Park, Kedron Brook, Windsor Memorial Park and Pop's Fig as important aspects of place. Changes that may affect sense of place on a broader scale during construction include:

- Loss of tall trees in Kalinga Park adjacent to Sandgate Road;
- Worksites at each of the three connections and their proximity to community infrastructure;
- Removal of the old Windsor Police Station (QPCYWA headquarters building);
- Juxtaposition of transport infrastructure with St. Andrew's Anglican Church and the Kedron Park hotel; and
- Changed access to Enoggera Creek.

Loss of sense of place can lead to disengagement from the area, with impacts on community cohesion ranging from less participation in community activities to relocation.

Longer term, the introduction of infrastructure to the study corridor may 'harden' the environments around portals and structures, by increasing the space used for large and complex built structures. Infrastructure placed in existing major road corridors intensify their use, by widening bridge structures and adding overpasses and complex road connections.

Community Cohesion

At the neighbourhood level, physical separation of neighbourhoods affects cohesion by reducing interactions between neighbouring areas. In Bowen Hills, the impacts on cohesion may have been caused by NSBT construction before Airport Link commences. Worksites and tunnel infrastructure may fragment the suburb's commercial/industrial area, and while residential neighbourhoods are to remain intact, their connection to the rest of Bowen Hills and to Windsor East may be affected. The infrastructure associated with Airport Link will be located between Enoggera Creek and the residential area north of Federation Street, causing some loss of property south of Federation Street. This will have the effect of constraining or reducing the space around the remaining residential area, without necessarily affecting its internal cohesion. Windsor East will rely on Federation Street and Cartwright Street as the access points to other parts of the City.

Around the north-western connection, expansion of the road infrastructure in Gympie, Lutwyche and Stafford Roads is likely to reinforce the visual and functional impacts of this heavily-trafficked corridor, while maintaining connectivity at ground level through a number of pedestrian and cycle linkages. Mitigation of these impacts on cohesion has been attempted in a way that promotes connections and interaction, for example through provision of attractive and usable public space. The loss of residential properties in Lutwyche (Norman Avenue and Colton Avenue) and the loss of residential and commercial properties in Kedron (adjacent to Gympie Road and Kedron Brook) occur primarily on the edges of these established suburbs. There is likely to be dislocation and loss of community cohesion in the short-term following construction, as these communities change and then establish new movement patterns.

At city level, access to better cross-city travel options is likely to provide benefits for community cohesion. Airport Link would provide alternative routes for cross-town travel, decreasing travel time between family, friends and community participation options.

Social sustainability

Successful implementation relies on delivering intended project outcomes whilst managing the change process for social benefit. In this regard the Airport Link project should seek to:

- Comply with social policy priorities and sustainability principles as articulated in the SEQ Regional Plan and Living in Brisbane 2010;
- Maintain neighbourhood amenity during construction, or provide local benefits to offset impacts on community values;
- Ensure the distribution of potential impacts does not impact negatively on social diversity;
- Maintain a focus on improving amenity in the longer term through project initiatives including public transport, pedestrian and cycle infrastructure and urban regeneration; and
- Respect the local importance and operational needs of community facilities and in the study corridor.

This would include working with local communities, to ensure that regeneration of local areas protects and enhances local values, and facilitates positive movement in social indicators such as diversity and advantage.

14.3.3 Demography

Population size and composition

In the short term, Airport Link may cause a population decrease in the order of 200 people if residents whose properties are acquired by the project leave the area. This is not seen as significant against suburb populations of 6,100 (Windsor) and 2,700 (Lutwyche).

Population diversity

The direct property impacts of the Airport Link project are most extensive in three areas already affected by existing transport infrastructure, where average SEIFA (socio-economic) values indicate that residents have lower incomes and fewer resources to cope with change. This is likely to reduce the number of lower income households in the study corridor. People displaced by property acquisition may have to move to other areas away from social networks and known places. This relocation may impact on their well being, considering their resources and other circumstances.

Around 650 residents in the study corridor in 2001 had poor or no English speaking skills. These residents may have limited access to information about the project during construction. The provision of access to translation services in the process of property acquisition and construction may be required to ensure people with poor English continue to feel comfortable in their surroundings.

14.3.4 Equity

Access to community facilities

The project design allows improved vehicular access to the variety of community facilities in the study corridor from other parts of Brisbane. However, during construction visual and pedestrian amenity may be affected by proximity to construction sites. Community facilities in close proximity to proposed construction activities are listed in **Table 14-6**.

.

- **Table 14-6 Facilities and potential impacts**

Southern Connection		
Earle to Cartwright Streets, Windsor	▪ Regis Marooma Aged Care ▪ Children by Choice ▪ Rosemount Hospital and facilities ▪ Arthritis Association	▪ Possible construction noise and vibration in Federation Street potentially affecting aged care facility ▪ Constraints on parking near facilities
North-western Connection		
Lutwyche Road/Kedron Park Road area, Wooloowin	▪ Wooloowin State School ▪ St. Andrew's Anglican Church ▪ Warilda and Disability Services Queensland	▪ Change of vehicular and pedestrian access due to construction barriers or noise barriers ▪ Surface construction noise possibly affecting facility grounds in Lutwyche Road ▪ Constraints on parking near facilities ▪ Impact on visual amenity and legibility near church and school
Kedron Brook/Gympie Road area	▪ Kedron State High School ▪ Department of Emergency Services	▪ Construction of transition structure possibly affecting pedestrian access from Kedron Brook to school ▪ Temporary and permanent use of DES land used for school sports and as open space ▪ Changed access and construction noise possibly impacting on grounds amenity
North-eastern Connection		
Kalinga Park	▪ Eastern extension of Kalinga Park	▪ Possible relocation of pedestrian access within Kalinga Park and to Toombul Shopping Centre

Affordable housing

Boarding houses, public housing, community rental housing, and affordable private rental housing[5] (usually older flats or houses) is often located on or near main roads as in the study corridor. Potential impacts on affordable housing due to acquisition for the project include:

- Three boarding houses (two in Earle Street and one in Colton Avenue), affecting around 18 residents and constituting around 12% of the study corridor's boarding house stock; and
- Affordable private rental dwellings - 20 flats and 6 houses - affecting a total of 26 households[6].

Supplies of affordable housing are falling throughout the city. Diminishing supply makes it difficult for people on low and very low incomes to access housing, particularly in the inner areas. The loss of boarding houses, flats and rental houses may reduce opportunities for people on low and very low incomes to maintain secure housing in the study corridor. In combination, these losses are also likely to reduce socio-economic diversity, to the extent that these residents cannot relocate within the area. The Department of Housing and Brisbane City Council have a protocol in place to deal with boarding house closures in respect to relocating residents. The area's relatively good representation of public housing and boarding houses has maintained some balance in affordability and therefore some social diversity.

[5] Private housing is generally considered affordable when rent or mortgage payments require 30% or less of weekly income. The income and rental payment of affected households have not been identified due to privacy concerns. Affordability was assessed according to age and condition survey.

[6] 14 flats and 1 house in Stafford Road; 6 flats in Gympie Road; three houses in Perry Street and two houses in Colton Avenue

Equity in distribution of the community benefits and social impacts

Social equity is the concept of fair treatment and just sharing of resources. It is integral to Council's liveability agenda. Airport Link's primary objectives are to reduce traffic congestion and improve the strategic traffic and transport network in northern Brisbane. The average full time employee in Brisbane spends almost four hours per week commuting. Congestion has a range of impacts at family and community level, including:

- Impacts on families' disposable income, through increasing the cost of each kilometre travelled;
- Reduction in the range of employment locations that can be reached in a reasonable time;
- Consumption of road space which could otherwise be used for alternative transport, constraining road space as a public good;
- Increased demand for inner-city living which avoids long commuting trips; and
- Effects on travel times, and therefore on time for family, community participation and leisure.

Reducing the household and community costs of congestion would constitute a benefit for the general community, and may provide particular benefits to people living in and near the study corridor, either through tunnel access or better public transport. Other potential benefits for equity include:

- Facilitating the improvement of public transport provision, including leverage of better network functioning through reconfiguration of 'chokepoints' within the study corridor; and
- Reducing bus transit times through bus priority measures made possible by freed road space from congestion.

In addition to potential impacts on less advantaged residents, the project is likely to affect temporarily the perceived liveability of residents nearest to construction sites. The range of potential impacts in some areas includes changed access to parkland, noise, reduction in visual qualities and impacts on pedestrian connectivity. Benefits such as reduced congestion, facilitation of urban regeneration and better public transport are likely to be shared at both local and regional level. Property acquisition and construction impacts would be experienced in areas closest to the project. These areas may include residents with fewer resources. Protection of amenity and community values is to be addressed to protect social equity.

14.3.5 Cumulative effects

Other planning and infrastructure responses have been initiated to achieve sustainable population growth in the inner north. These include the North-South Bypass Tunnel, the proposed Northern Busway, other major infrastructure projects in the inner city, and planning initiatives. Interaction with other projects' impacts may decrease or intensify Airport Link's impacts and benefits on the social environment.

North-South Bypass Tunnel

North-South Bypass Tunnel is an approved project. Construction is likely to begin in the second half of 2006. Development of the reference design for Airport Link has allowed for the connection to NSBT. Further refinement of the proposed connections will occur during the detailed design stage of the Airport Link Project.

Construction for both the NSBT Project and the Airport Link Project require large construction worksites in Windsor East and Bowen Hills. As construction on Airport Link will commence after construction on NSBT, it is likely that the duration of surface construction activities for residents in the Windsor East area and particularly in Federation Street will increase.

Northern Busway

Planning for Airport Link and Northern Busway has been co-ordinated where possible to minimise the potential for additional impacts in construction and operation. Having regard for the reference design for the Northern Busway in Bowen Hills and Windsor, construction of this section of the Busway could occur during Airport Link construction. While co-ordination of construction activities in this area would increase the magnitude of construction, it would also provide an opportunity to reduce the overall duration of construction activities in Bowen Hills and Windsor. The challenge of providing adequate pedestrian connections and a comfortable local environment for local residents during construction remains and would need to addressed in the development of a Construction EMP.

Commuters are likely to require education and awareness support regarding changed access in the Windsor East precinct during construction, and periods of traffic congestion might be expected in the traffic network between Lutwyche Road and Mayne Road. It is likely that this may deter some drivers from the area, particularly during peak times, and may increase public transport patronage.

Between Windsor East and Lutwyche, the proposed Northern Busway is likely to make use of surface routes in the short to medium term. The staged Northern Busway would impact on the Children by Choice facility in Lutwyche Road and affect access to the cluster of facilities located along Roblane and Truro Streets. This needs to be managed carefully to avoid or minimise impacts which may affect their viability and in turn reduce opportunities for social connections in the local area.

In Lutwyche and Kedron, the interim Northern Busway could be constructed co-incidentally with Airport Link. Construction of the Northern Busway would begin at Norman Avenue and extend to a station proposed to be located on Lutwyche Road just south of Kedron Brook, alongside Airport Link structures. Together with Airport Link, this would produce an expanded project footprint with two additional lanes required. It has also required the alignment of Airport Link to be moved to the east to cater for the Busway and requires additional acquisition on the eastern side of Gympie Road. Depending on the programming of particular construction activities, construction of the two projects could intensify or extend the duration of impacts. This may have an impact on access to the Churches of Christ Kedron property on Gympie Road, and constrain pedestrian access to the Housing Queensland unit complex between Leckie Road and Gympie Road.

Other projects

Construction of the Gateway Upgrade Project is expected to start in late 2006 and be completed by 2011. Other developments at Australia Trade Coast and at Brisbane Airport are expected to occur during the same period. In combination, construction traffic from major projects is likely to place additional pressure on arterial roads connecting to the Gateway Motorway north of the Brisbane River, leading to periods of congestion and potential for delays for motorists.

The cumulative impacts of these major projects on the local, regional and State economies and labour markets are addressed in Chapter 16 – Economics.

Assuming each of these projects will draw additional labour to Queensland, there is a potential impact on the rental housing market in terms of supply and availability. In the face of increased demand for rental housing, rents could be expected to increase, placing further pressure on tenants of rental properties. Considering the proportion of rental properties in the housing sector, this pressure could become more evident in Bowen Hills and Lutwyche, and less evident in Hendra and Kedron than elsewhere in the study corridor.

Other potential impacts arising from the construction of the Gateway Upgrade Project, the North-South Bypass Tunnel and Airport Link Projects concurrently, include the increased demand upon community facilities and

services and health care facilities and services as a consequence of short-term population changes due to the inflow of project labour forces.

For these reasons, it may be appropriate for the Queensland Government and the Brisbane City Council to establish an advisory committee comprising representatives from the Proponent, the Coordinator-General, Queensland Transport, the Department of Main Roads and the Brisbane City Council to provide information about the concurrent major transport projects to allow cumulative construction effects from all projects to be managed for their impacts on the environment, including community infrastructure.

Local area planning

The Draft *Brisbane Cityshape* identified a growth corridor corresponding to the Airport Link corridor. The study corridor is expected to become increasingly attractive as public transport, public amenity and employment options strengthen in response to Airport Link and other projects. Growth pressures may reduce the proportion of single dwellings, and older flats and duplexes can be expected to be redeveloped for higher yields in suburbs such as Lutwyche, Albion and Kedron.

14.4 Significance of Social Impacts

This section evaluates the significance of the project's potential benefits and impacts. It refers to Council and Government objectives for liveability in Brisbane, and to community values identified in consultation.

Table 14-7 summarises themes and objectives of relevant planning studies as relevant to social impacts and benefits.

Table 14-7 Social Framework - SEQRP and Living in Brisbane 2010

South East Queensland Regional Plan	Living in Brisbane 2010
Desired Regional Outcome 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	**Key themes** ■ Accessible city ■ Active and healthy city ■ City of inclusive communities ■ Clean and green city ■ Regional and world city ■ Smart and prosperous city
Principles ■ Maximising access to social infrastructure; ■ Managing the social effects of growth and change to create and enhance a sense of community ■ Addressing issues of disadvantage; ■ Creation of well-designed, safe, and healthy local environments; ■ Supporting community engagement in planning; and ■ Protecting cultural heritage, including historic places.	**Key directions** ■ An active and healthy place to live; ■ Providing access to affordable housing; ■ Revitalising places and communities; ■ Supporting special needs; ■ Safe and supportive communities; ■ Pedestrian and bike friendly; and ■ Keeping Brisbane moving (primarily bus transport initiatives).

14.4.1 Significance for quality of life

Benefits

Potential benefits significant to quality of life include:

- Reduced congestion, which constrains the capacity of major routes and streets affected by rat running to support social functions such as walking and meeting friends;
- Better access to community facilities with regional catchments for the Brisbane community, due to decreased congestion on major routes, and facilitation of better public transport outcomes in the study corridor;
- Reduced costs of congestion for disposable income and family time;
- Potential for greater vitality of local activity centres (including commercial and community facilities) through reduced traffic noise, better pedestrian amenity and urban regeneration; and
- Support for economic development leading to greater employment access.

Impacts on Amenity

Most potential impacts on amenity due to construction, would be experienced by residents in neighbourhoods nearest construction worksites. During the detailed design development stage, Construction Environmental Management Plans will be prepared, dealing with such matters as construction impacts (air quality, soil erosion, water quality, noise and vibration, pedestrian access etc) and road network impacts (e.g. Construction Traffic Management Plan).

While individual construction effects would be managed within environmental goals, impacts such as loss of views to open space and changes to pedestrian and cycle connectivity would cumulatively detract from amenity. In part these impacts can be off-set by temporary or advanced rehabilitation and landscaping works in some locations. In the longer term, exposure of properties previously screened to traffic and infrastructure by existing housing and other buffers may require mitigation to safeguard amenity of residents from noise and pedestrian safety issues.

Potential impacts on school access and amenity

Wooloowin State School and Kedron State High School adjoin areas required for surface works associated with the project. Some parents have expressed concerns about construction safety issues and ventilation outlet locations in relation to the two schools, and some parents at Wooloowin have expressed concerns about access to the school being impeded or discouraged by construction impacts. Physical access to the school is an existing constraint on its operations and some parents fear further impacts, in combination with perceptions about air quality, may affect viability. Some of St. Andrew's Anglican Church parishioners have expressed similar concerns. It is important that amenity and access to these facilities is recognised and reflected in detailed project construction planning and in detailed design for project operations. Air quality on Lutwyche Road is discussed in Chapter 9 – Air Quality.

'Creation of well-designed, safe, and healthy local environments' is a key objective for both Council and the Queensland Government. Urban regeneration of areas near project connections is planned and this needs to pay attention to restoration of worksites and connection areas in a way that enhances access to the schools and Church in particular.

Impacts on community health and safety

Stress, due to property impacts, uncertainty or environmental changes is likely to affect small numbers of residents, and communication and responsiveness to residents' concerns are recognised as being of the utmost importance. Concerns and perceptions about air quality changes as a result of the project also need to be addressed through community education and communication with residents. Potential for noise and vibration impacts on Rosemount Hospital facilities are of specific concern and need to be sensitively managed.

14.4.2 Significance for community values

Impacts on access and connectivity

Construction of transition structures and cut and cover tunnelling is proposed in areas where pedestrian connectivity is important to local residents, who include lower income households, older people and people with disability. The ability to get around the local area without cars is an important value in respect to health, safety and independence of these groups, and contributes to better connections with place and other residents. Access to community facilities clustered near major interchanges responds to the Commonwealth Disability Discrimination Act (DDA) 1992. The creation of safe and attractive urban spaces which are pedestrian and bike friendly are addressed in the urban design and urban regeneration strategies for Airport Link.

Impacts on sense of place

Key factors include visual access to open space and trees, and the physical and social character of neighbourhoods. Sense of place during construction may be affected by juxtaposition of construction with facilities such as churches, parks and schools, and changed access to Kedron Brook and Enoggera Creek. Longer term, while the project's infrastructure design is imposing, urban landscapes around interchanges are likely to be improved by urban design strategies. This would include through high quality landscaping and path networks, particularly adjacent to homes.

Impacts on park and open space values

The qualities of Brisbane's natural environment are strongly aligned with its lifestyle and sense of community. Kalinga Park and Kedron Brook make a substantial contribution to open space and park access. Kedron Brook is regionally significant open space, while the Enoggera Creek flood plain is valued by local residents for connectivity and passive recreation values. Transition structures (alongside Kedron Brook and in Kalinga Park), ventilation outlets and bridge structures (Enoggera Creek and Kedron Brook) are likely to be seen by some residents as detracting from their aesthetic values, and potentially on connectivity and amenity values. Urban design, landscaping and regeneration proposals in these areas have significance for both local and regional residents.

14.4.3 Significance for Demography

The study corridor's demographic profile (characteristics, distribution and size) changes in response to citywide growth, redevelopment of private and public facilities, and demographic trends such as population ageing and smaller households. Short term, demographic changes due to Airport Link may include:

- A small decrease in the number of people on very low incomes, due to removal of boarding houses and affordable private rental stock, affecting some 18 boarding house residents and 26 households and;
- The potential for a slight, short-term slowing of population growth in areas closest to project infrastructure due to uncertainty about moving into areas near worksites and ventilation outlets.

Longer term, Airport Link is likely to support the development of employment centres at either end of the corridor (inner city, Australia Trade Coast and Brisbane Airport) consistent with current land use planning. Urban renewal in response to existing market forces and infrastructure initiatives including Airport Link are likely to increase housing values and costs, and to increase average SEIFA values as the area develops. This is addressed in Chapter 12 – Land Use Planning and in Chapter 16 – Economics.

14.4.4 Significance for equity

The project footprints in Bowen Hills and Kedron are in areas of high social sensitivity, in that socio-economic values are low along the major transport corridors including locations near project connections. Several important community facilities are adjacent. Environmental management requirements in respect of connectivity, community facility access and consultation mitigate potential impacts on these facilities.

While project benefits are expected at both local and regional scale, activities giving potential rise to impacts such as removal of properties and changes in access arrangements would be experienced at local level in neighbourhoods closest to construction activity. The focus of urban regeneration work focuses on areas closest to the project connections rather than along benefited routes. Integration of community planning and urban development practices should be applied in these areas.

14.4.5 Conclusion

Airport Link has been proposed in recognition of and response to the social, environmental and economic costs of growing traffic congestion, and in response to deficiencies in Brisbane's road network. It has potential for both citywide and local benefits. Underground roads also provide the potential to improve environmental quality within their corridors.

Project infrastructure would be placed in a highly urbanised areas, potentially bringing both immediate and longer term changes to their physical and social environments. The construction of Airport Link has the potential to change urban amenity in the immediate area during construction. Where these changes are permanent, urban design and other mitigation measures are required to address potential impacts and achieve acceptable outcomes for the community.

14.5 Mitigation

14.5.1 Development of Design

The project's design should respect community values in the study corridor. In particular, it should ensure that the amenity of residential neighbourhoods, community facilities and public adjacent to the project's traffic infrastructure is maintained to reasonable and practicable extent. This may include:

- Minimising the footprint of transition structures near Wooloowin State School and Kedron State High School;
- Designing and locating worksite fencing and sheds to address visual and pedestrian legibility around worksites;
- Designing public spaces adjacent to the project to create safe and attractive urban spaces with high levels of vitality and connectivity to surrounding areas, including support for pedestrian connectivity between neighbourhoods in Lutwyche and Bowen Hills, and to community facilities in adjoining suburbs during and following construction;
- Designing and landscaping barriers and batters adjacent to residential properties responsive to the neighbourhood scale and values; and

- Restoring parks adjacent to project infrastructure to maintain parkland amenity and protecting cultural and community values identified in consultation.

14.5.2 Urban renewal, regeneration and capacity building

Brisbane City Council and the Queensland Government, as the project's proponents and as land use planning authorities, are well placed to integrate planning for Airport Link with planning for land use, community infrastructure and transport infrastructure in the study corridor. The Environmental Impact Statement for Airport Link includes a framework for urban regeneration planning (Chapter 20), which aims to:

- Capitalise on opportunities to enhance active transport, public transport and environmental values;
- Maximise Airport Link's contribution to the amenity of neighbourhoods near the project; and
- Build stronger communities, through capacity building initiatives.

A 'place making' approach (integrating community development and urban development practices) is applied to urban regeneration. This would include consideration of social, environmental and economic outcomes for neighbourhoods and activity centres, and co-operation with local residents, business and groups to implement 'place making'. Implementation would begin in early stages of project planning to ensure development of local capacity to participate in urban regeneration initiatives.

Urban regeneration initiatives are proposed under three categories: project works (delivered as part of Airport Link); program works (delivered in partnership with other agencies); and redevelopment opportunities (delivered through a variety of means). Projects of particular relevance to the social environment include:

- Enhancement of existing open space adjacent to the project;
- Landscaping and themed street planting to enhance amenity and ecological values adjacent to project infrastructure;
- Providing or reinstating cycle links to mitigate impacts and improve connectivity throughout the study corridor;
- Housing initiatives to supplement affordable housing in the study corridor; and
- Capacity building initiatives to engage community members in urban regeneration program initiatives.

Successful implementation relies on managing the change process and outcomes to avoid impacts on quality of life and equity. Collaborative action by the Brisbane City Council, the State Government and community agencies may be required to this end.

14.5.3 Public transport

The concept design and impact management plan for Northern Busway has been developed concurrently with the Airport Link EIS. The Northern Busway increases capacity for travel to employment, services and community facilities, and provides connectivity for local bus services. Its delivery promotes a high degree of connectivity between catchments and bus stations, thus improving local pedestrian access throughout the Lutwyche Road corridor. Delivery of the 'staged' Northern Busway (Royal Children's Hospital to Kedron) has been considered in construction planning and delivery of Airport Link.