11.0 FREIGHT NETWORK

Freight movement across Queensland is forecast to double by 2020 (South East Queensland Regional Plan). This is influenced by future population and employment growth proposed in the region. It is important to be able to facilitate this freight movement efficiently to encourage ongoing economic development of the region.

The freight task in the study area is generally influenced by a number of types of movement:

- transit freight – which moves through South East Queensland to connect external origins and destinations. This freight moves between regional Queensland and other states as well as export/import freight moving through the Port of Brisbane;
- trans-urban freight – moves between origins or destinations in South East Queensland and those located external to South East Queensland;
- inter-urban freight – moves between origins and destinations in separate South East Queensland concentrations;
- intra-urban freight moves between origins and destinations within a local urban area.

(Source: South East Queensland Regional Freight Network Strategy 2007-2012 (SEQ RFNS))

The Mt Lindesay/Beaudesert Strategic Transport Network Investigation considers road and rail freight. The rail network can play an important role in minimising the amount of freight travelling through, or to/from, the study area via the road network. It is expected that road will continue to play an important role in the increasing inter and intra urban freight movements as rail cannot provide a door to door service (South East Queensland Regional Freight Network Strategy). The rail freight network can assist in minimising the amount of freight which travels via the AusLink road network, allowing more road capacity for passenger vehicle movements.

The key existing AusLink routes catering for transit freight in and adjacent to the Strategic Transport Network Investigation study area is the Pacific Motorway connecting to NSW, the Warrego and Cunningham Highways connecting to NSW, Victoria and regional Queensland and the interstate rail line which carries freight between Acacia Ridge and Sydney and continuing to Melbourne. These routes are expected to continue to be utilised into the future.

Proposed rail freight routes that will influence rail freight demands include the Surat Basin rail line which would link Toowoomba and Gladstone and the North South Rail Corridor which would link Melbourne and Brisbane. The North South Rail Corridor preferred alignment is under investigations with the Australian Government announcing an engineering and scoping study to determine the best alignment for an inland rail corridor from Melbourne through Parkes to the Queensland border. The first stage of this study indicates a route via Toowoomba is preferred.

Inter-modal terminals are also a key part in the freight network. Existing freight terminals in South East Queensland are the Brisbane Multi-modal Terminal at the Port of Brisbane (import/export, interstate and interregional freight and sea node) and the Acacia Ridge Terminal (key interstate and interregional inter-modal node). Capacity constraints may alter the role of these freight terminals into the future. The Port of Brisbane and the Brisbane Airport will facilitate mainly import and export freight movements, which will be focused around the air and sea freight tasks. The Acacia Ridge terminal will remain as the primary road/rail freight node servicing domestic rail freight movements to/from the Brisbane area and regional Queensland.

The South East Queensland Regional Freight Network Strategy notes that additional terminals will be required between 2010 and 2020 to manage interregional and interstate freight. The two potential locations under consideration are Bromelton and Ebenezer/Purga. The South East Queensland Regional Freight Network Strategy notes that both sites have strong links to major highways and the rail network and offer surplus land for additional facilities. The study also notes that Bromelton is considered more suitable due to its position along the interstate rail line and its road connections. However, decisions in regards to the AusLink North South Rail Line could influence future inter-modal terminal locations. For example, if the inland route is chosen it may favour Ebenezer/Purga over Bromelton.

The Southern Freight Rail Corridor is also currently under investigation by the Department of Transport and Main Roads and should link these two proposed terminals via rail. The proposed Southern Freight Rail Corridor could link:

- Bromelton and Ebenezer/Purga;
- the south-western Queensland rail freight network with Bromelton/Interstate rail line (bypassing the Brisbane urban rail network);
- Bromelton/Interstate rail line to the proposed rail connection between Melbourne and Toowoomba;
- Bromelton/Interstate rail line to the proposed Surat Basin rail line to Gladstone.

Notwithstanding this, Bromelton, will always be located along the interstate rail line which currently, and will most likely continue to, provide for freight movement between Sydney and Brisbane. In addition, Bromelton is expected to be a significant industrial destination for the region, with current expectations seeing it developed with approximately 13,000 jobs by 2026. The Mt Lindesay/Beaudesert Strategic Transport Network Investigation considers 2056 land use scenarios which proposes continuing growth of this area of between 13,000 and 48,000 jobs depending on the scenario.

Other future industrial lands in the study area and its vicinity are at Yatala (existing), Ebenezer/Purga (proposed), Swanbank (proposed), Park Ridge (proposed) and enterprise areas at the key centres such as Flagstone, Greenbank Central, and Yarrabilba (proposed).
Currently, the industrial areas within the Study Focus Area are comprised of mainly small rural industries. These rural industries are dispersed throughout the study area and as a result place limited demand on the existing freight network. Most of the existing freight demand within the Study Focus Area is through freight movements.

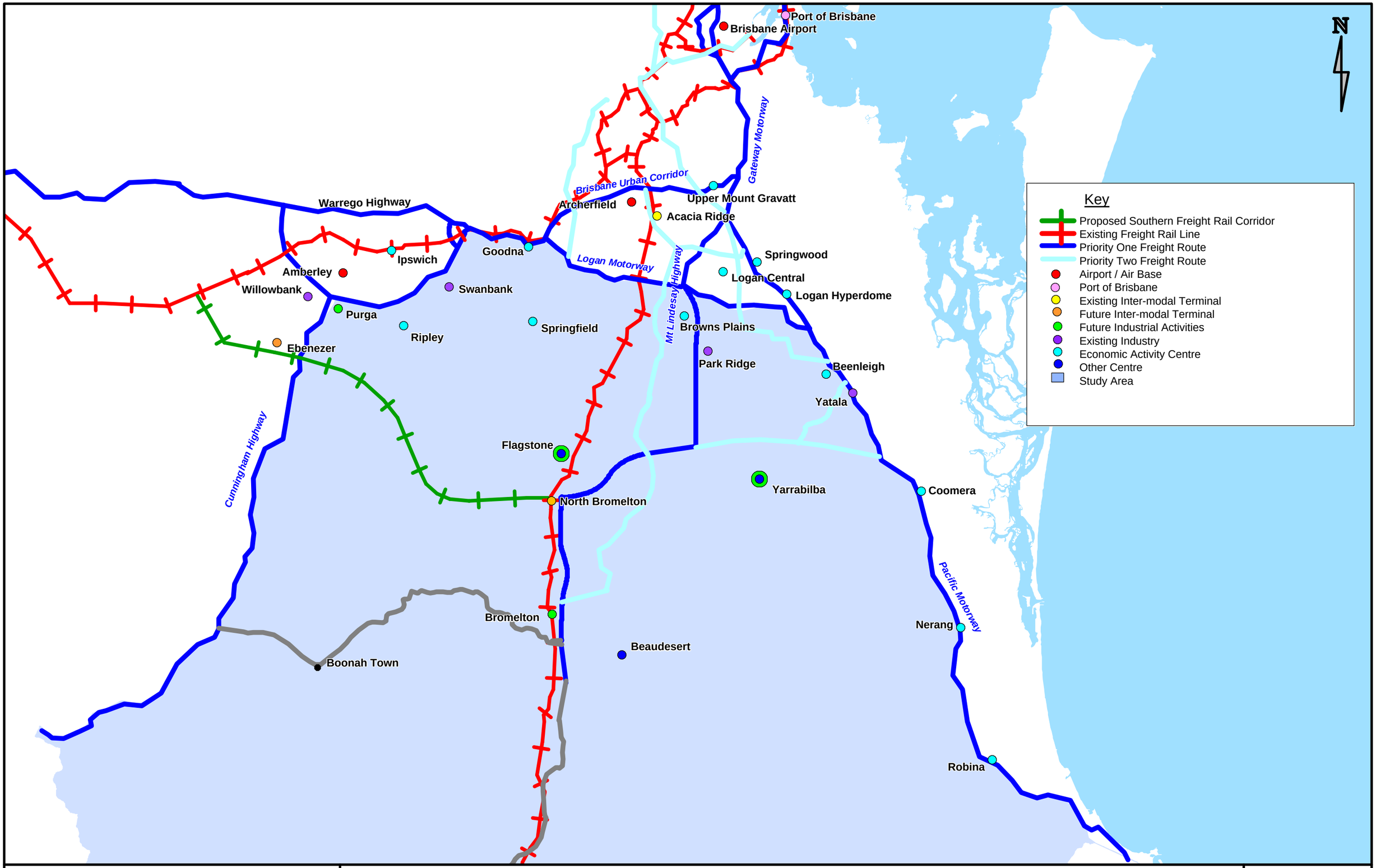
In the future, it is anticipated that the small rural industries, whilst still remaining, will generate a much smaller proportion of the freight task than industry located at Bromelton and other key enterprise centres within the study area. In comparison to the existing dispersed rural industries, the future industrial areas will be more substantial. Urban development in the proposed centres in the Study Focus Area will also generate significant servicing needs for the retail and commercial activities in each centre. For this reason the 2056 freight demand within the Study Focus Area will be markedly different than at present.

These areas, including Bromelton, will generate the need for both inter and intra urban freight movements. Bromelton will at least generate such movements and potentially also transit and trans-urban freight movements. A significant freight node such as the proposed inter-modal terminal development at Bromelton could impose significant freight impacts on the surrounding road network and residential areas if not manage appropriately.

The proposed 2056 freight network will include the key elements of the 2026 freight network, outlined in Section 5.4 of this report. In addition to the 2026 base freight network, the 2056 freight network will include the proposed regional road links outlined in Section 10. Figure 11.1 shows the 2056 proposed regional freight network within the study area.

Bromelton could potentially become an inter-modal terminal servicing the Queensland - New South Wales rail freight task, the southern Brisbane industrial suburbs and the industrial area located at Bromelton. The potential inter-modal terminal located at Kagaru (north Bromelton) will require good road connections and should be located near the intersection of the proposed Southern Freight Rail corridor and the Interstate Rail Line. Any demands not able to be met at Acacia Ridge at 2056 may also be able to be accommodated at Ebenezer/Purga and/or Bromelton.

Within the study area, a freight route to/from Bromelton to the Airport/Australian Trade Coast (ATC) will address the need to link these two locations. These transit and trans-urban road freight movements to/from the study area are proposed to utilise new roads in the Bromelton industrial area (guided by the location of the Southern Freight Rail Corridor), the proposed Southern Infrastructure Corridor (road) and the proposed new north south road east of the Mt Lindesay Highway and south of the Logan Motorway then connecting to the Gateway Motorway to the port. These proposed freight routes will be supplemented by existing major freight routes including the Gateway Motorway, Pacific Motorway, Logan Motorway, Ipswich Motorway, Cunningham Highway and Warrego Highway.



Cardno Eppell Olsen

PROJECT TITLE:
Mt Lindesay Beaudesert STNI

DRAWING TITLE:
2056 Proposed Freight Network

FIGURE NO.
11.1

PROJECT NO.
CE005519

DATE DRAWN
16/02/2009

Due to the introduction of the new north south road east of the Mt Lindesay Highway, the Mt Lindesay Highway is proposed to remain as priority two road freight link connecting Bromelton to other industrial areas within the Brisbane southern suburbs (inter and intra urban freight). The northern section of the Mt Lindesay Highway will continue to provide a freight link to Beaudesert Road, which provides access to the existing Acacia Ridge terminal. The form of the Mt Lindesay Highway through the Browns Plains area and the limited ability for significant upgrades as a primary freight route provides further justification for the proposed new roads through Bromelton and the proposed new north south road east of the Mt Lindesay Highway to be provided as the primary freight route. In addition, the section of the Southern Infrastructure Corridor (road) between the new north south road east of the Mt Lindesay Highway and the Pacific Motorway will also form part of the priority two freight network, providing access to industrial areas on the Gold Coast. A priority two freight link along an upgraded Stanmore Road will provide a connection between the Southern Infrastructure Corridor (road) and the existing industrial areas at Yatala.

Beaudesert-Boonah Road, while not accommodating significant volumes of freight traffic, will provide an important and direct road freight link between Bromelton and the Cunningham Highway and this role must be considered in any road upgrading.

In its existing form Summerland Way is not suitable for high volumes of freight traffic and is not proposed as part of the future freight network. As discussed earlier in the report, an investigation by the Roads and Traffic Authority into the feasibility of upgrading Summerland Way concluded that it was not feasible to upgrade, in the Strategic Transport Network Investigation's time frame. Major upgrading has and is currently taking place along the Pacific Motorway, between the Gold Coast and Grafton which should sufficiently cater for freight movements. In addition, the existing interstate rail corridor and the proposed North South Rail Line inland freight route will support the freight task between Brisbane and NSW/Victoria and it is desirable that the existing road and rail infrastructure be utilised within capacity before additional freight links be considered. It should be noted that detailed investigations into interstate connectivity did not occur as part of the investigation and recommendations in regards Summerland Way upgrading are beyond its scope.

The proposed 2056 rail freight routes within the study area will include the existing Interstate Rail Line and the possible Southern Freight Rail Corridor (between Ebenezer/Purga and the Interstate Rail Line). This will provide connection to the potential North South Rail Line freight route via Toowoomba (to Victoria) and to the proposed rail freight line to Gladstone (Surat Basin rail line).

12.0 SUSTAINABLE MODES OF TRANSPORT

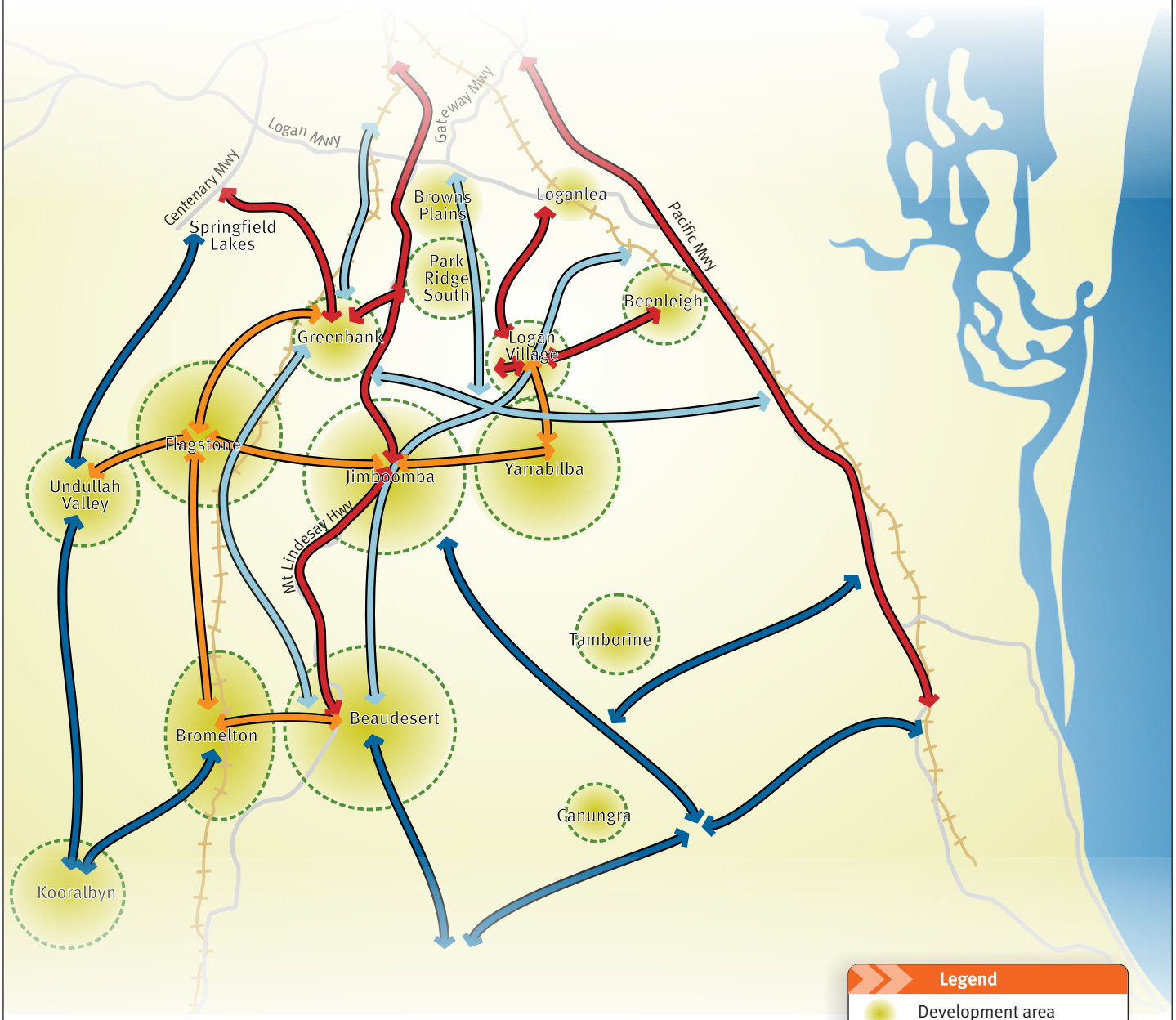
The pedestrian and cycle networks will form an important part of the future transport system in the study area. Given the limited existing networks, significant planning and design will be required to cater for the anticipated 2056 demand.

Current regional cycle network planning for the area is contained in the South East Queensland Principal Cycle Network Plan (PCNP), although recommendations are limited due to the current development densities in the area. As discussed in Section 7.0, this will change significantly in the long term. The Principal Cycle Network Plan is an evolving publication and is systematically reviewed every 5 years to update the planning. It is therefore important to start planning for such networks and preserving appropriate corridors if necessary.

The Strategic Transport Network Investigation is a strategic examination of future transport systems and there is a need to develop a comprehensive and useable network of both regional and local walk and cycle networks in the future. The majority of the pedestrian and cycle networks within the study area should therefore be developed as part of new development structure planning processes beyond the scope of the study. However, the Strategic Transport Network Investigation has developed some guiding objectives contained in Section 12.1 to assist in the development of these more local networks. Local government existing and proposed cycle network plans and recreation/open space planning can also guide this planning.

Due to the difficulties in developing a detailed cycle network without the benefits of detailed land use planning, a conceptual network has been developed and shown on Figure 12.1. This network has been developed based on the principles discussed in Section 6.1 of this report. The key elements of this network are as follows:

- comprehensive external connections north to Logan and Brisbane. Based on the Principal Cycle Network Plan, this would include connections in vicinity of Beaudesert Beenleigh Road to Logan and the proposed V1 Bikeway and Mt Lindesay Highway/Beaudesert Road. In addition, Waterford Tambourine Road should be considered as a connection and a dedicated cycle route along the proposed new north south road east of the Mt Lindesay Highway south of the Logan Motorway;
- external connections to the Gold Coast via Beaudesert Nerang Road and a dedicated cycle route along the proposed Southern Infrastructure Corridor (road);
- external connections to Ipswich via the Springfield Greenbank Arterial;
- sub-regional connections between residential areas, key centres and enterprise areas;
- comprehensive internal pedestrian and cycle network within all existing and proposed development areas. As noted above, this should be planned as part of Council's structure planning processes;



Legend

- Development area
- Comprehensive internal walk & cycle network required
- Existing road
- Existing rail line
- External cycle network connections
- Recreational/touring hinterland routes
- Sub regional cycle connections
- Investigation routes

This map is conceptual only and not to scale

Cardno Eppell Olsen

Drawing Title: 2056 Cycle Network Connections

Figure No: 12.1

Date: 18.09.09

Project No: CE005519

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- recreational routes should be developed within cities, towns and villages and to/from key recreational destinations. In addition, where topography or distance is a constraint for commuter travel, training and recreational links could be provided. This is particularly the case through the Scenic Rim hinterland areas and connections to the Gold Coast and Tweed areas. These can also be guided by Council's recreation planning;
- investigations should also occur into the use of the Bethania to Beaudesert rail line for walking and cycling, potentially as a rail trail development and provision of cycle route alongside the Beaudesert to Salisbury rail line. These rail corridors form an ideal location for such facilities due to their grades, topography and that they also serve a direct route between major development areas.

All new transport corridors proposed for the Strategic Transport Network Investigation should therefore be investigated to include facilities for cycling. Generally public transport corridors are preferable to road corridors as these corridors will be designed to connect directly into the urban centres unlike major bypass roads. It is noted that the above routes need to be considered in association with open space and recreational planning studies.

In this regard, the following provides a summary of the former Department of Main Roads position on cycling.

> In accordance with Main Roads Bicycle Policy, the department will encourage and facilitate cycling. Cyclists are legitimate users of the Queensland road network and as such the planning for, and design, construction, maintenance and operation of State-controlled roads should be undertaken on the basis that cyclists will use the network.
>
> Main Roads will allow for cycling as part of the planning and protection of new road corridors. This may include identifying instances where cyclists' needs are better met on an alternative alignment.
>
> As with all road construction and maintenance projects, planning and investment in cycling will be subject to:
>
> - consultation;
> - available funding;
> - competing priorities;
> - obtaining value for money.
>
> Main Roads will seek to make State-controlled roads cycle-friendly by incorporating cycle- friendly design in traffic operations, road-upgrading, and maintenance projects. This may include the economical retrofitting of roads where necessary to accommodate cyclists.
>
> Along priority cycling routes, Main Roads will positively provide for cyclists in road-upgrading projects.

Where a State-controlled road is shown as part of a priority cycling route but where cycling cannot be positively provided for, Main Roads will negotiate with local government and stakeholders to achieve a suitable alternative solution. As an example, an alternative route could be provided along a nearby local government road parallel to the State-controlled road, or on other land.

Notwithstanding the above Main Roads will, as necessary, restrict or prohibit cycle access to parts of the State-controlled road network where there is unacceptable safety risk such as on motorways.

Section 6.5 discusses potential future mode share scenarios for modes other than the car. The scenarios are recreated in Table 12.1 below.

Table 12.1 ***2056 Mode Share Scenarios***

Mode Share Scenarios	External Trunk Trips*			Between Town Trips**			Within Town Trips***		
	Cycle	Walk	Public Transport	Cycle	Walk	Public Transport	Cycle	Walk	Public Transport
Low	0.1%	0%	10%	1%	0%	4%	5%	10%	3%
Medium	0.5%	0%	15%	2%	0%	8%	8%	15%	8%
High	1%	0%	20%	4%	0%	12%	10%	20%	10%

Distance was the determinant when developing the mode shares for different trip types. It was considered unlikely that external trips and trips between towns would be made by walking. For the same reason, low cycling mode share scenarios for these longer trips were set. High public transport mode share scenarios for external trips are due to the anticipated high number of trunk commuter public transport trips to the Brisbane CBD and Brisbane City. Given that walking and cycling become more feasible modes of transport over shorter distances, it was anticipated that the walking and cycling mode share percentages within towns would be higher within towns than between. In comparison public transport is less feasible over shorter distances. For this reason the public transport mode share scenarios within towns is slightly lower than between towns.

To achieve the above scenarios, it is therefore essential that a comprehensive and more detailed cycle network plan be developed once more detailed planning occurs in the study area and in particular in the new development areas.

12.1 Key Cycle/Pedestrian Planning and Design Guidelines

In order to achieve the best practice planning and design for walking and cycling networks a set of key design and planning principles or guidelines have been developed for the Strategic Transport Network Investigation. It is important that existing standards such as AUSTROADS Part 13 and 14 and Australian Standards 1428 series as well as best practice are applied to all future facilities. The guidelines are detailed in the following:

1. The cycle network will need to provide good connections from the study area into other Local Government Areas (LGAs). These routes should connect with the existing and proposed cycle routes outlined by the South East Queensland Principal Cycle Network Plan and any primary routes outlined by surrounding local government areas.
2. Provide strong cycle connections between key residential areas, enterprise precincts and activity centres.
3. Cycle networks and facilities should be developed within a five to ten kilometre radius of townships and cities.
4. Cycle connections between major development areas and key activity centres should be developed with higher priority given to connections which are less than 10km. Priority should also be given to providing safe cycling routes to schools ranging from 3-5km.
5. Where possible existing and proposed rail and road corridors should be utilised as cycle routes (due to appropriate grades), with adequate width to accommodate on road or off road cycling (as appropriate).
6. A cycle route utilising or adjacent to a dedicated public transport corridor is generally preferable to one utilising a road corridor since dedicated public transport corridors are designed to connect directly into the urban centres unlike major bypass roads.
7. High quality recreational routes should be developed within cities and townships and to/from key recreational destinations.
8. Long distance touring and training routes can be developed along regional transport links over distances greater than 10km and/or where hilly terrain exists. Safe shoulders should be retrofitted if necessary and appropriate.
9. New developments within the study area should be designed in accordance with cycling best practice initiatives.
10. Cyclists and pedestrians should be separated where possible. Particularly where higher speed commuter cycling traffic is likely to come into conflict with slower speed cyclists and pedestrians.
11. Design of new facilities should anticipate and cater for future growth in cycling and pedestrians (for example, wider footpaths in key activity centres).
12. End and mid trip facilities must be incorporated into the design of all new cycling links. Cycling connections to public transport nodes should be provided for with the appropriate end of trip facilities.
13. Application of AUSTROADS Part 14: Bicycles should be treated as a minimum standard.

13.0 NETWORK STAGING

The purpose of the network staging modelling is to establish priorities for the Department of Transport and Main Roads in terms of future corridor presentation. The 2036 time frame was selected as it is 10 years after the current timeframe of committed infrastructure projects (i.e. projects in South East Queensland Infrastructure Plan and Program) to provide an indication of the next round of priority projects in the region.

13.1 2036 Land Use

The 2036 population for the South East Queensland region was based on a linear extrapolation between 2026 and 2056. This resulted in an additional 470,000 people across the region at 2036, and a total of 4.4 million. Since this work was undertaken, the 2009 Regional Plan has been released and predicts 4.4 million people at 2031, resulting in this interim timeframe being equivalent to 5 years after the 2026 period. Although, the timeframe tested is not 10 years ahead as originally intended, it still provides an indication of the next round of priority projects in the region. Locality population growth in areas, besides the Study Focus Area and Ipswich City area, were also distributed based on this linear extrapolation. In the Study Focus Area and Ipswich City area, the linear extrapolation was used as an overall total however locality population growths have been adjusted. Additional population, based on linear extrapolation, at 2036 for the former Beaudesert Shire is 79,600 and for Ipswich City 103,800 people.

The South East Queensland Strategic Transport Model and South East Queensland Regional Plan predicts a 2026 population for the former Beaudesert Shire of approximately 116,600 people. More recent investigations by the former Beaudesert Shire Council indicate this may be closer to 140,000 people at 2026.

As a result the 2036 demographics were adjusted for this additional 24,000 persons to 2026 plus the amount added from the linear extrapolation process. A total of an additional 103,600 people was therefore utilised for the 2036 population growth Staging Scenario. For the Study Focus Area, this correlates to an additional population of 100,400 people.

The distribution of this population (103,600) was targeted towards existing development areas and Yarrabilba, Flagstone and Beaudesert Town. In Ipswich City, the growth was primarily designated to the Ripley area, the eastern suburbs and the Ipswich CBD.

There are two sub-scenarios developed for 2036 related to employment. These were based upon the existing ratio of jobs per resident worker in the Study Focus Area and a jobs per resident worker slightly less than the 2056 Scenario 1A jobs per resident worker ratio. Staging Scenario A includes an approximate jobs/resident worker balance of 0.5 in the Study Focus Area in 2036, whereas Staging Scenario B includes a jobs balance of 0.7 jobs per resident worker.

The employment numbers were also linearly interpolated between 2026 and 2056. The jobs were primarily distributed to Bromelton, Yarrabilba, Flagstone and Beaudesert Town.

The above assumptions resulted in a 2036 population for the Study Focus Area of approximately 188,900 and 2036 employment of approximately 39,100 for Staging Scenario A and approximately 50,000 for Staging Scenario B.

The population and employment distribution for the 2036 Staging Scenarios are contained at Appendix K.

13.2 2036 Modelling Process

The demands at 2036 were established for a single population level as described in Section 13.1. This entails a growth in population of around 13.21% above the 2026 levels of the South East Queensland Strategic Transport Model data provided. Two employment levels were assessed. These represent a jobs balance of 0.5 jobs/resident worker and 0.7 jobs/resident worker.

The population and employment information was disaggregated to the traffic zones used for the model. The full model build including redistribution was carried out using the trip time data from the 2026 South East Queensland Strategic Transport Model.

Public transport usage was taken as the Low case which has:

- 3% by transit for local trips;
- 4% by transit for intercity trips;
- 10% by transit for trunk external trips to Brisbane City and CBD.

Table 13.1 shows the growth in travel compared to population and also the main components of travel patterns for the study area.

Table 13.1 2036 Growth Summary - 0.5 Jobs/Resident Worker

Locality	Population		Growth Vehicle Trip Ends 2026-2036		
	2026	2036	Internal	External	Total
Former Beaudesert Shire	116,612	220,223	166,412	105,407	271,819
Former Ipswich City	317,114	420,984	339,770	192,382	532,153
Former Logan City	200,332	210,202	26,761	94,506	121,267
Brisbane and Redland	1,294,927	1,403,777	490,552	296,263	786,815
Remainder External	1,816,787	2,082,406	2,022,537	261,207	2,283,744
TOTAL	**3,745,772**	**4,337,592**	**3,046,031**	**949,766**	**3,995,797**

A comparison of the numbers in Table 13.1 against the recently released 2009 Regional Plan which predicts 2031 population data for the region indicates:

- the future total of population in the region at 2031 is predicted to be 4.4 million, compared to 4.3 million predicted above at 2036;
- Scenic Rim and Logan City Council combined could have approx 580,000 people at 2031. Although a direct comparison is not possible with the above numbers as they were based on pre-amalgamation boundaries, this area is similar to former Beaudesert and former Logan combined (although Scenic Rim Regional Council now includes Boonah). In Table 13.1 the combined total for former Beaudesert and Logan is for 430,425 people, indicating the above predictions are lower than the 2009 Regional Plan;
- Ipswich City Council in the 2009 Regional Plan is predicted as having 435,000 people at 2031 compared to 420,984 above (it is noted that the Ipswich City Council area since amalgamation is slightly smaller in area), again slightly lower than the 2009 Regional Plan;
- Brisbane and Redland Council areas are predicted to have 1,439,000 people at 2031 in the 2009 Regional Plan compared to 1,403,777 people above, which are similar predictions

This comparison indicates that the 2036 population and job predictions in this report may be slightly low compared to that predicted in the 2009 Regional Plan for 2031. However, as the aim of the 2036 scenario was to consider a future scenario to obtain a broad indication of priorities, it is considered appropriate for these purposes. The Department of Transport and Main Roads should monitor the growth in the study area, specifically the take up and level of development that occurs in the area and may need to bring recommended infrastructure projects forward.

Table 13.1 shows a significant growth in trip ends in the former Beaudesert Shire as a result of nearly doubling its 2026 population by 2036.

Table 13.1 also shows the broad change in trip patterns for the former Beaudesert Shire that could potentially occur at 2036. At 2026, approximately 40% of trips generated in Beaudesert remained within the Shire and by 2036, 55% could be remaining within the Shire indicating an increase in self containment as the major development areas continue to grow.

Table 13.2 ***2036 Growth Summary - 0.7 Jobs/Resident Worker***

Locality	Population		Growth Vehicle Trip Ends 2026-2036		
	2026	2036	Internal	External	Total
Former Beaudesert Shire	116,612	220,223	180,158	104,193	284,351
Former Ipswich City	317,114	420,984	338,521	192,581	531,102
Former Logan City	200,332	210,202	26,804	94,493	121,296
Brisbane and Redland	1,294,927	1,403,777	489,815	294,966	784,781
Remainder External	1,816,787	2,082,406	2,012,262	259,140	2,271,402
TOTAL	**3,745,772**	**4,337,592**	**3,047,560**	**945,372**	**3,992,931**

Table 13.2 shows the increased trend for greater self containment by 2036, however in this case the proportion of internal trips in the former Beaudesert Shire is higher again due to the increase in jobs per resident worker that has been assumed for this case.

13.3 2036 Staging Results

The 2036 vehicle travel demands were assigned to the 2056 base network (excluding new north south road east of the Mt Lindesay Highway) and to Strategic Transport Network Investigation Network 1.

Table 13.3 shows the screenline volumes for each network and for the two jobs balance levels tested.

This screenline data shows:

- additional jobs at Bromelton in the 0.7 jobs/resident worker case add substantially to link volumes on Screenline 2 which lies south of Flagstone and Jimboomba;
- otherwise small variations in forecast volumes between the two networks are evident.

Tables 13.4 and 13.5 show the levels of self containment for Flagstone and Yarrabilba for the two jobs balance cases.

Table 13.3 *2036 Interim Model – Summary Daily Volumes on Screenlines*

Screen Line	Link Name	2036 Interim Model							
		0.5 Jobs/Worker				0.7 Jobs/Worker			
		WOSP	NWI	NWII	REC NW	WOSP	NWI	NWII	REC NW
1	Undullah Road	10,656	10,669	11,843	11,638	10,923	10,997	12,317	12,059
	Teviot Road	12,851	12,872	11,906	9,706	12,988	13,118	12,108	9,633
	Mount Lindesay Highway	44,801	45,149	44,866	36,526	45,716	45,857	45,550	37,252
	New north south road east of the Mt Lindesay Highway	0	0	0	21,171	0	0	0	21,590
	Waterford Tamborine Road	26,218	26,061	26,725	18,243	26,555	26,233	26,939	18,478
	Beaudesert Beenleigh Road	34,367	37,667	41,110	40,882	33,911	36,778	39,652	39,520
TOTAL		**128,893**	**132,417**	**136,449**	**138,166**	**130,093**	**132,983**	**136,565**	**138,532**
2	Bromelton to Flagstone	8,179	9,346	9,515	9,488	12,696	13,904	14,100	14,085
	Mount Lindesay Highway	30,623	29,787	30,439	30,585	36,162	35,331	36,046	36,427
	Mundoolun Road	3,988	3,343	3,029	2,756	3,956	3,220	2,961	2,642
	Beaudesert Beenleigh Road	11,634	10,766	10,200	10,499	12,524	11,671	11,223	11,382
	Waterford Tamborine Road	7,705	6,880	5,940	6,218	7,258	6,525	5,747	5,982
TOTAL		**62,130**	**60,121**	**59,123**	**59,546**	**72,596**	**70,651**	**70,077**	**70,517**
	Tamborine Road	13,988	12,764	11,776	11,660	13,551	12,353	11,517	11,363
	Beaudesert Nerang Road	22,109	21,448	20,889	20,695	22,328	21,650	21,091	20,931
TOTAL		**36,097**	**34,211**		**32,355**	**35,879**	**34,003**	**32,609**	**32,294**
4	Logan Motorway	59,532	59,364	57,662	55,425	59,278	59,187	57,612	55,306
	Browns Plains Road	20,830	20,851	21,586	21,898	20,830	20,847	21,470	21,876
	Park Ridge Road	9,323	9,246	9,123	4,769	9,197	9,134	9,015	4,724
	Granger Road Extension (Mt Lindsay Hwy to Chamber Flat Road)	4,001	3,985	4,083	12,427	4,111	4,086	4,184	12,646
	Southern Infrastructure Corridor (road)	31,898	32,373	33,831	40,617	31,937	32,417	33,705	40,218
	Camp Cable Road	4,151	4,587	4,590	4,746	4,700	5,068	5,059	5,412
TOTAL		**129,735**	**130,406**	**130,876**	**139,883**	**130,052**	**130,739**	**131,044**	**140,181**
5	Stanmore Road	21,419	21,933	22,645	22,495	21,596	22,208	22,812	22,796
	Pascoe Road	6,480	6,494	6,479	6,471	6,496	6,499	6,491	6,481
	Peachey Road	12,930	13,886	14,579	14,749	12,930	13,754	14,510	14,520
TOTAL		**40,828**	**42,313**	**43,703**	**43,715**	**41,022**	**42,461**	**43,813**	**43,797**

Table 13.4 ***2036 Self Containment - 0.5 Jobs/Resident Worker***

Locality	Population	Employment	Total Trips	% Internal	% Former Beaudesert Remainder	% Remainder
Flagstone	45,840	5,450	92,861	34.30%	30.66%	35.04%
Yarrabilba	46,184	5,682	87,707	41.35%	22.14%	36.51%

Table 13.5 ***2036 Self Containment - 0.7 Jobs/Resident Worker***

Locality	Population	Employment	Total Trips	% Internal	% Former Beaudesert Remainder	% Remainder
Flagstone	45,840	6,150	94,273	34.76%	33.74%	31.50%
Yarrabilba	46,184	6,382	88,678	42.10%	23.67%	34.23%

This data shows that for both the cities of Flagstone and Yarrabilba, the increased employment under 0.7 jobs/resident worker results in an increase in trips of between 1% and 1.5%. The percentage of trips internal to the cities has grown only marginally (approximately 0.5%) suggesting that the increase in employment is attracting trips from outside the cities and not significantly effecting self containment. In particular the data indicates that the increased employment in Flagstone and Yarrabilba results in trips from elsewhere in the Study Focus Area being attracted to the cities, whilst there is a corresponding reduction in trips destined for other local government areas. Further investigation is required into this issue to understand directional travel demands during the peak periods.

13.4 Network Issues

Figures L13.1 and L13.2 show the traffic volumes resulting from the 2036 demands assigned to the 2026 South East Queensland Strategic Transport Model network and a 2036 Network I respectively. The new north south road east of the Mt Lindesay Highway has not been included in the assignments at Figures L13.1 and L13.2. Figure L13.3 shows the road network (in number of lanes and hierarchy) and Figure L13.4 shows the volume/capacity ratio for the 2036 Network I with 0.7 jobs/resident worker.

Part of the Southern Infrastructure Corridor (road) is included in both networks. The level of use of the facility is up to 38,000vpd. This warrants a four lane road, and highlights that without the Southern Infrastructure Corridor (road) from Mt Lindesay Highway east to Beaudesert-Beenleigh Road, upgrading of local roads would otherwise be a major challenge and have impacts on access and properties.

The results also support major upgrading of Greenbank to Springfield Road with a high quality four lane road needed. Anticipated volumes are 33-35,000vpd at 2036.

Decisions on the new north south road east of the Mt Lindesay Highway and the Southern Infrastructure Corridor (road) connection eastward from Beenleigh-Beaudesert Road need to focus on staging and potential upgrading of existing roads. These decisions are also directly related to the take up and level of development that occurs in the area and could bring need for these infrastructure projects forward.

In the absence of the new north south road east of the Mt Lindesay Highway, the assignments indicate that upgrading to high quality four lane roads would be needed for the following existing roads:

- Waterford – Tamborine Road from around Camp Cable Road north to Dairy Creek Road;
- Chambers Flat Road north from Chambers Flat area into Browns Plains Road/Kingston Road.

A 2036 Network with the new north south road east of the Mt Lindesay Highway (2036 Network II) has also been tested and the results are shown at Figures L13.5 and L13.6. In this network the links above (Waterford– Tamborine Road and Chambers Flat Road) are retained as two lane roads – with their existing form. Figure L13.7 shows the network form (number of lanes) and L13.8 has the V/C ratio for the 0.7 jobs balance case.

Table 13.6 below summarises the key link volumes.

Table 13.6 2036 New North South Road east of the Mt Lindesay Highway Tests

	Network with new north south road east of the Mt Lindesay Highway		**Network without new north south road east of the Mt Lindesay Highway**	
Location (just north of Southern Infrastructure Corridor (road))	**Daily 2 way Volume**	**Form Needed (lanes)**	**Daily 2 way Volume**	**Form Needed (lanes)**
Mt Lindesay Highway	36,500	4	44,800	4
New north south road east of the Mt Lindesay Highway	20,800	2	n/a	n/a
Waterford – Tamborine Road	18,300	2-4*	26,800	4
Beenleigh – Beaudesert Road	40,900	4	41,100	4
Chambers Flat Road (North of Logan Reserve Road)	10,100	2	16,800	2-4*

*Note: Volumes normally accepted on urban roads for two lanes. As intercity links, lower deficiency volumes would apply and four lanes needed.

Figures L13.9-13.13 show the select link results for locations north of Southern Infrastructure Corridor (road) on Waterford Road–Tamborine Road (Network I and II); and the new north south road east of the Mt Lindesay Highway (only included in Network II).

Table 13.7 shows the major movements on Waterford Tamborine Road for the two networks.

Table 13.7 ***Select Link Analysis Waterford Tamborine Road***

Locality	**Network I (no new north south road east of the Mt Lindesay Highway)**	**Network II (with new north south road east of the Mt Lindesay Highway)**
Daily two-way flow total (on Waterford Tamborine Road)	26,728	15,243
From Locations to the South of Waterford Tamborine Road		
Yarrabilba	59%	49%
Jimboomba/Flagstone	12%	21%
Mt Lindesay Highway south of Jimboomba	8%	9%
Beenleigh–Beaudesert Road (Cedar Creek, Waterford, Yatala)	11%	15%
Other locations to the south	10%	6%
Total from the south	100%	100%
From Locations to the North of Waterford Tamborine Road		
Logan Village	20%	41%
Gateway Motorway north of Logan Motorway	1%	5%
Waterford/Loganlea	36%	24%
Logan Motorway/Johnson Road west of Mt Lindesay Highway	2%	0%
Other locations to the north	41%	30%
Total from the north	100%	100%

Figures L13.12 and L13.13 show the new north south road east of the Mt Lindesay Highway select link data from 2036 Network II. This data is summarised in Table 13.8.

Table 13.8 ***Select Link Analysis***
New North South Road east of the Mt Lindesay Highway

Locality	**Network II (with new north south road east of the Mt Lindesay Highway)**
Daily two-way flow total (on new north south road east of the Mt Lindesay Highway)	21,593
From Locations to the South of the new north south road east of the Mt Lindesay Highway	
Yarrabilba	40%
Jimboomba/Flagstone	27%
Mt Lindesay Highway south of Jimboomba	23%
Beenleigh–Beaudesert Road (Cedar Creek, Waterford, Yatala)	2%
Other locations to the south	8%
Total from the south	100%
From Locations to the North of the new north south road east of the Mt Lindesay Highway	
Gateway Motorway north of Logan Motorway	21%
Gateway Motorway south of Logan Motorway	60%
Waterford/Loganlea	11%
Logan Motorway/Johnson Road west of Mt Lindesay Highway	5%
Other locations to the north	3%
Total from the north	100%

The data in Tables 13.7 and 13.8 highlights the different roles that the new north south road east of the Mt Lindesay Highway and Waterford-Tamborine Road serve in Network II. Waterford-Tamborine Road has a much more local function with 41% of traffic associated with the Logan Village area and only 5% using the Gateway north of the Logan Motorway. On the other hand the new north south road east of the Mt Lindesay Highway serves longer distance traffic with 60% travelling north as far as the Logan Motorway and 23% drawn from south of Jimboomba.

The role of each road in serving Yarrabilba is also evident with nearly half of the traffic on Waterford Tamborine Road and 40% of the Gateway traffic having an origin or destination in Yarrabilba.

In the absence of the new north south road east of the Mt Lindesay Highway, duplication of Waterford-Tamborine Road would be brought forward. At 2056 with the new north south road east of the Mt Lindesay Highway, volumes on Waterford-Tamborine Road would still need to be upgraded to four lanes.

The key issue therefore is to assess whether the funding for all or part of the new north south road east of the Mt Lindesay Highway can be found early enough in the process to avoid the works on existing roads. From a staging perspective, incremental improvement to existing roads is easier to finance with smaller benefits realised as works are completed, however some upgrading works may be able to be avoided. Major limited access links like the new north south road east of the Mt Lindesay Highway need to be constructed in bigger stages, with no benefit until completion at which time a major benefit is gained.

The study's conclusion for 2056 is that the new north south road east of the Mt Lindesay Highway tension is needed in the long term. A more detailed assessment of the local impacts involved in Logan Village and along existing roads will form part of the corridor evaluation studies to determine the timing for introducing the new north south road east of the Mt Lindesay Highway. These studies will then be in a position to fully evaluate the relative merits of short term upgrading of existing roads followed by later construction of the new north south road east of the Mt Lindesay Highway. While this course may have financial benefits it has two sets of impacts – upgrading the existing roads causes impacts and still doesn't avoid those associated with introducing the new route.

Similar arguments apply to the eastward extension of Southern Infrastructure Corridor (road). However in that case, the 2056 analysis shows that upgrading of the existing Beaudesert-Beenleigh Road is needed at 2056 in any case. Additionally, the terrain to be crossed, and the resulting costs affect the financing decision differently.

Travel to the Gold Coast represents approximately 11% of trips generated in the Study Focus Area reducing to approximately 10% in the 0.7 jobs per resident worker case. Of this travel approximately 56% could be destined for the northern part of Gold Coast City (including Yatala and Beenleigh) whilst the remainder would be destined for centres south of the Coomera River. Appendix G details the sector to sector trip movements for the 2036 scenarios. When an increased level of employment in the Study Focus Area is modelled under the 0.7 jobs per resident worker scenario, there is a slight decrease in the number of trips made between the Study Focus Area and the Gold Coast.

The data in Table L13.3 shows the Mt Lindesay Highway at the Southern Infrastructure Corridor (road) would be approaching the capacity relief on the Mt Lindesay Highways and results in volumes that are well within the capacity of a four lane highway.

The data from Table L13.3 also illustrates the need for upgrading of Beaudesert-Beenleigh Road, given that the Southern Infrastructure Corridor (road) would not be extended to the Pacific Motorway by 2036.

It is also reiterated that all of the above results depend on the take up of and location of development in the area. The above are based on a future total population of 220,000 people in the former Beaudesert Shire at 2036. For example, if Yarrabilba develops quicker, it may bring forward the need for the new north south road east of the Mt Lindesay Highway. In addition, timing, staging and delivery of the key elements of the future strategic road network will be important factors in determining the impact on the local road network.

13.5 Public Transport Staging

The additional work undertaken in the Southern Public Transport Options Study provides assistance with staging of public transport in the area. Section 9.1 provides details of the results of this study.

This indicates that depending on the land use development achieved in the study area, 2026 demand for a passenger rail line between Beaudesert/Bromelton and Salisbury is on the cusp, and would depend how and where development of the area unfolds. As a result, it is considered necessary to undertake more detailed planning and investigation of this corridor as a priority to ensure land is preserved into the future.

In addition, public transport connections between the northern section of the study area and Brisbane/Logan should also be a higher priority until proposed centres establish themselves.

14.0 SUMMARY AND CONCLUSIONS

The South East Queensland Regional Plan identified a number of investigation areas that provide potential land banks for medium to long term development within South East Queensland (SEQ). The South East Queensland Regional Plan included the Mt Lindesay North Beaudesert (MLNB) area as a special investigation area. More recently the 2009 Regional Plan has identified sections of this investigation area as part of the urban footprint.

In 2005, the Office of Urban Management (OUM), now the Department of Infrastructure and Planning, commenced a study of the Mt Lindesay North Beaudesert area which detailed a preferred long term development option. The study concluded that the proposed future land use would increase future transport demand within the Mt Lindesay North Beaudesert study area. The predicted increase in transport demand has necessitated a strategic network investigation to detail the long term transport needs of the study area.

The Mt Lindesay/Beaudesert Strategic Transport Network Investigation aims to identify the important long term passenger and freight transport links needed to support growth consistent with the Mt Lindesay North Beaudesert Study preferred development option. The Strategic Transport Network Investigation will assist local governments and agencies with long term planning for the Mt Lindesay North Beaudesert area and the wider study area.

The project has undertaken strategic modelling and analysis to assess a range of land use, mode share and transport network scenarios for 2056. The results of this analysis are described in detail in the preceding sections. It is noted that minimal analysis occurred for the 2026 timeframe, as it was beyond the scope of the study.

The study area for the Strategic Transport Network Investigation has been wide, stretching from the Pacific Motorway west to the Ipswich area. However, the focus of the analysis has been the former Beaudesert Shire and the connections through and from Beaudesert to other areas. Areas outside Beaudesert form a frame to ensure interactions are properly understood. However, the study has not sought to define networks in these frame areas. These road networks in turn may need to be assessed in their own wider frame. The analysis has revealed issues around the periphery of the study area but has not considered options to deal with those. The Pacific Motorway and cross border connections are a case in point. While the Pacific Motorway capacity will be challenged in the study period, separate studies are needed to develop options for that corridor.

The study aims to identify the need for the transport infrastructure, and not its detailed alignment. The South East Queensland Regional Plan identified a number of investigations into potential long term transport corridors so corridor preservation can begin to occur. This study seeks to identify the need for these corridors specifically focussed around the Study Focus area. Detailed corridor studies will form the next stage of work for the Department of Transport and Main Roads which will assist in corridor preservation for the future. Detailed studies will form the next stage of work for the Department of Transport and Main Roads which will assist in corridor preservation in the future. Due to the long term nature of the study, a range of potential land use futures have been developed to provide a robust analysis of the future. The recommendations aim to therefore ensure they are appropriate for any potential future development in the area.

The key elements which did not form part of the scope of the Mt Lindesay Beaudesert Strategic Transport Network Investigation are:

- identification and resolution of transport networks outside of the focus area;
- issues of interstate connectivity;
- identification of corridor alignments;
- recommendations in relation to transport network needs before the 2026 timeframe (with the exception of public transport network planning, which included 2016, 2026 and 2056 timeframes)
- detailed local planning of land use or transport networks. The analysis was at a regional and sub-regional network level;
- implementation and staging issues related to the recommended transport corridors.

Consultation with stakeholders and the community occurred as part of this project. Key government stakeholders formed part of a Technical Working Group which met regularly throughout the project. In addition, consultation occurred with the study area community. Two stages of community consultation occurred. The first stage focussed on alerting the community to the study, which occurred in March 2007.

The second stage occurred following the completion of the draft report in May/June 2009. Over the four week consultation period a total of 54 instances of contact occurred. From this, the project team received 31 specific submissions related to the study and draft report, with 16 of these being formal written submissions.

Generally the submissions received supported the recommendations of the report, with the majority of submissions raising issues with infrastructure alignments, implementation, timing – issues which were beyond the scope of the study.

14.1 Conclusions

A number of key strategic questions were formed to assist with the overall direction of the Strategic Transport Network Investigation outcomes. The strategic questions and the overall conclusions are contained below.

Figures 14.1, 14.2 and 14.3 illustrate the proposed public transport, road and cycle networks required at 2056 in the area. Key aspects of these networks are discussed below.

Figure 14.1 ***2056 Future Road Network***

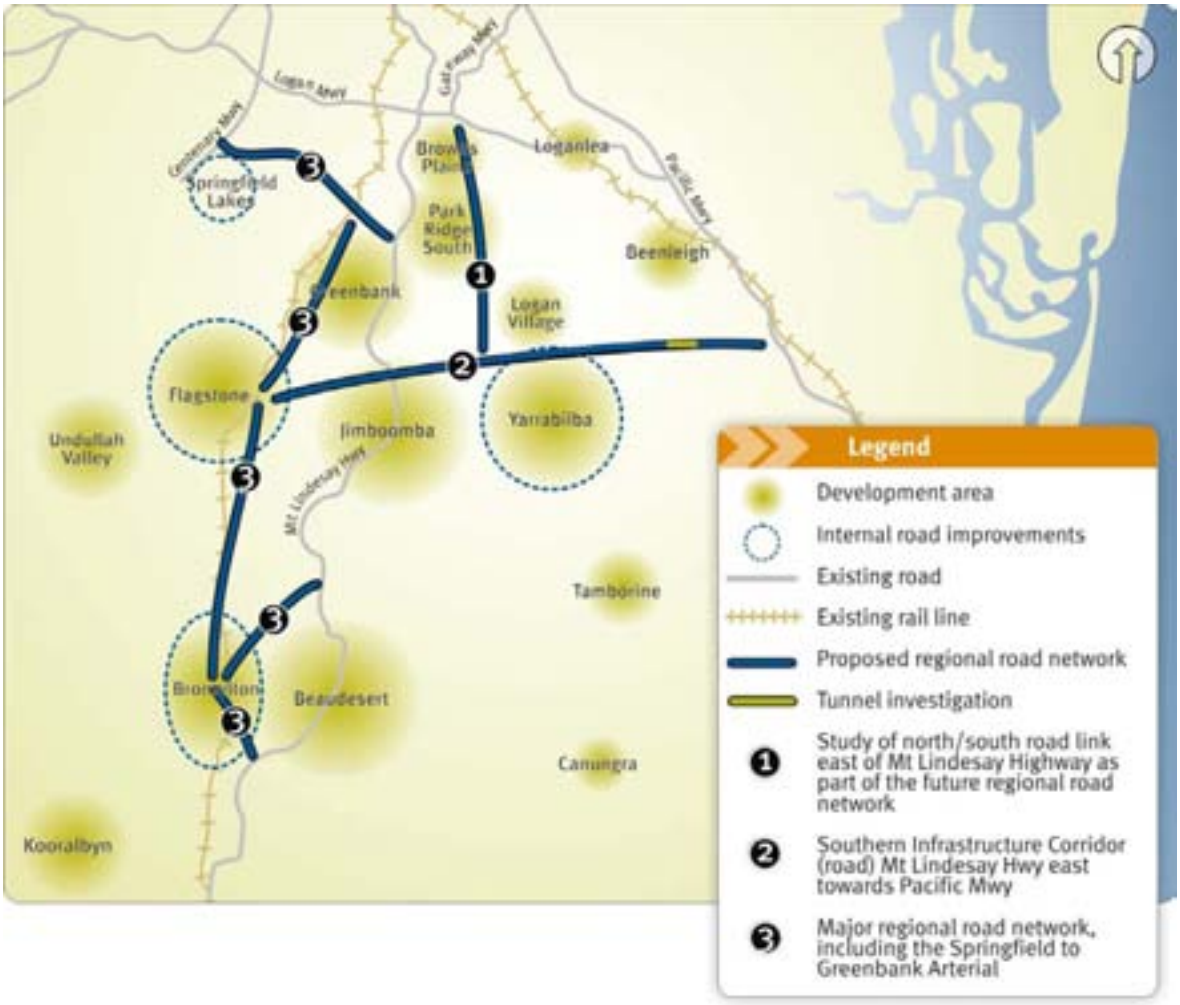
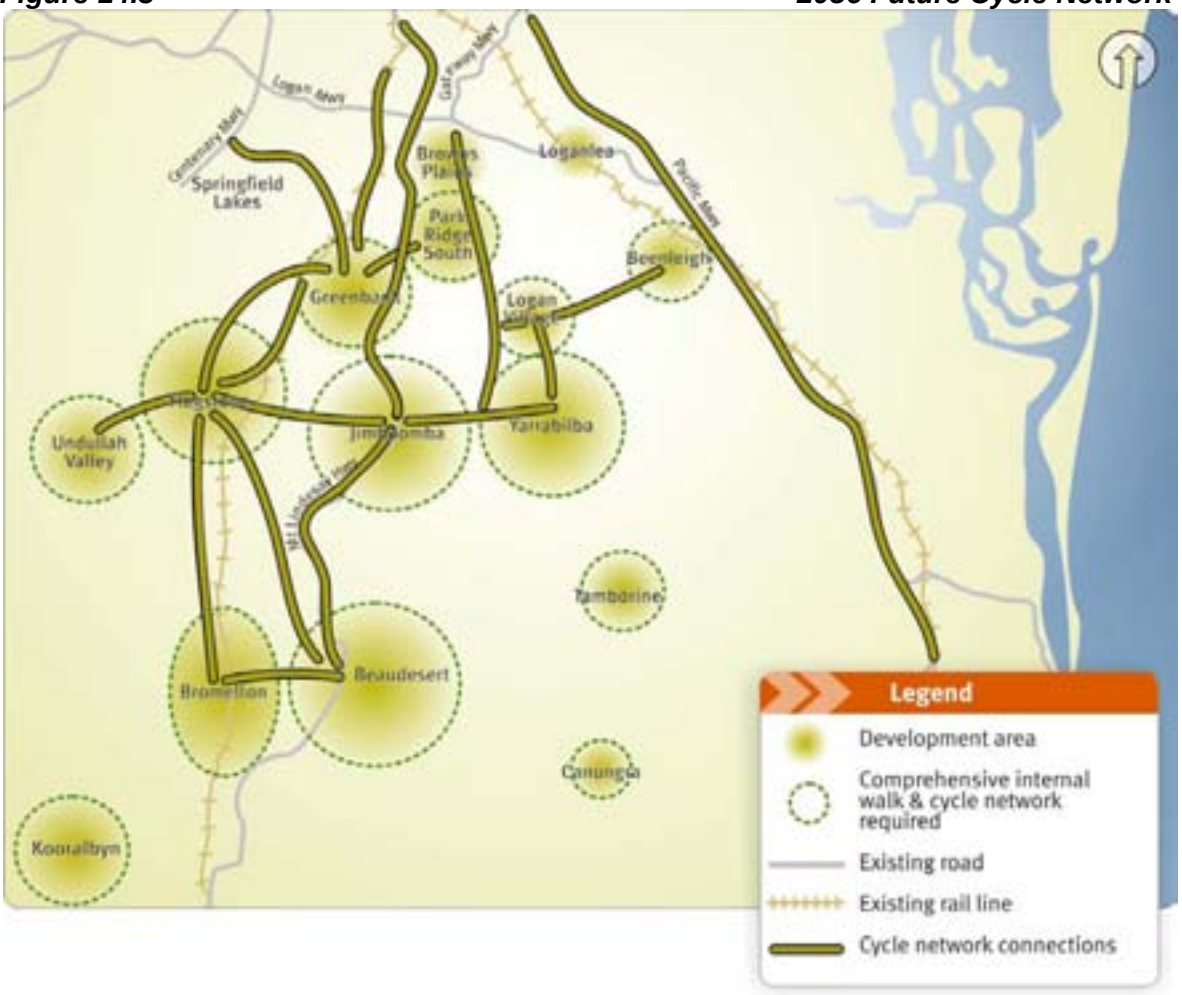


Figure 14.2 ***2056 Future Public Transport Network***

Figure 14.3 ***2056 Future Cycle Network***



New North South Road Link (Gateway Motorway Extension South of Logan Motorway)

An extension of the new north south road east of the Mt Lindesay Highway, south of Logan Motorway will be required by 2056 if the land use develops in the Study Focus Area along the lines of any of the three scenarios discussed in this report. The key generators for this route are the future population and jobs proposed around new growth areas in Yarrabilba, Logan Village, Jimboomba, Park Ridge, Greater Flagstone, Beaudesert and Bromelton.

The conclusions that can be drawn from the study indicate that:

- a new north-south motorway standard road extending south from the Logan Motorway would be required if land use continues to develop as forecast;
- whilst it is not the aim of this study to identify specific alignments for future works, a route from the study area to the existing Gateway Motorway on the eastern side of the Mt Lindesay Highway would attract the greatest traffic volume and provide the greatest capacity relief to the Mt Lindesay Highway. It would support the safe and efficient operation of other roads in the vicinity: the Mt Lindesay Highway, Beaudesert-Beenleigh Road and Waterford-Tamborine Road;
- an alignment east of the Mt Lindesay Highway and joining the existing Gateway Motorway could ultimately attract between approximately 30,000 and 45,000 vehicles per day on the new north-south road link;
- a north-south link road, connecting to the Gateway Motorway would also serve as a freight route from the study area to the Port of Brisbane and Brisbane Airport, thereby reducing freight traffic on the Mt Lindesay Highway, and other major roads in the study area;
- the identification and preservation of the route is urgently required to avoid conflicting development decisions and as an input to land use planning in the area. The identification should include the location, impacts, staging and alignment of the corridor, especially for sections of the road to be established in the Park Ridge and Berrinba areas;
- new interchanges would be required to ensure connectivity with the local road network and to access new commercial and industrial development in the area;
- the development of other high capacity north south arterial routes in the area are also required to assist with public transport and service the traffic generated by new development in Park Ridge.

The overall corridor is required east of the Mt Lindesay Highway, running north south between the Logan Motorway and proposed Southern Infrastructure Corridor (road) (see Figure 1). A more detailed study is required to identify the location, impacts, staging (including impacts of local road upgrading), local connectors and alignment of this corridor. Staging investigations undertaken indicates that this road is not required until beyond 2026. However the timing will be affected by the sequencing and location of development in the study focus area. The recent release of the 2009 Regional Plan indicates growth in the South West Corridor may occur earlier than assumed in this investigation, resulting in the need to bring forward infrastructure requirements. This should be investigated as part of the planning study.

Southern Infrastructure Corridor (road)

The Southern Infrastructure Corridor (road) is conceptually shown in the 2009 Regional Plan as an east-west route from the Gold Coast to Ipswich. This study's analysis shows that the longer regional connections from Gold Coast to Ipswich make up only 10% of Southern Infrastructure Corridor (road) use. As a consequence there is little benefit to the network by a linkage from the southern part of the new north south road to Ipswich.

The study also shows that the Southern Infrastructure Corridor (road) primarily serves to link development in the southern part of what is now Logan City to the Gold Coast. This linkage would provide significant benefit to the network but is not needed before 2026.

As a result the continuous east-west concept suggested in the South East Queensland Regional Plan has been varied and the Southern Infrastructure Corridor (road) is recommended in sections:

- the central section – Mt Lindesay Highway to Beaudesert-Beenleigh Road – this section would link Greater Flagstone, Jimboomba and Yarrabilba to the east and also function as a high capacity distributor road connecting the various north-south links in the area. High capacity arterial roads are also required to link these development areas;
- the eastern section – Beaudesert-Beenleigh Road to M1 Pacific Motorway/Intra-Regional Transport Corridor broad corridor – this section would link the southern part of what is now Logan City and areas further west to the Gold Coast and is not required until beyond 2026;
- the western section – Mt Lindesay Highway to Springfield via Springfield Greenbank Arterial – this section would link the south west corridor development areas of Greater Flagstone and Park Ridge with the emerging centre of Springfield. It would also support the Logan Motorway.

The outcome of testing the Southern Infrastructure Corridor (road) concludes:

- that a southern east west linkage from the Pacific Motorway to Ipswich would be required to provide an alternative to the Logan Motorway for long distance trips and to provide linkages from the study area to centres in Ipswich City (Ripley, Ebenezer/Purga and Springfield) and Gold Coast City (Yatala and southern Gold Coast);
- the preferred route for the Southern Infrastructure Corridor (road) would be north of Yarrabilba and Jimboomba.

In terms of connections at the eastern and western ends, the preferred outcome would be:

- an eastern connection directly to the Pacific Motorway (and potentially beyond), which would involve investigation of a route through the Darlington Range;
- a western connection to Ipswich City from Mount Lindesay Highway via Springfield-Greenbank Arterial and then connecting to the South West Arterial. The ability for upgrading of the Springfield-Greenbank Arterial would also need to be investigated, in association with Council.

The preferred form of the Southern Infrastructure Corridor (road) described above would necessitate additional works including:

- upgrading of Beenleigh-Beaudesert Road and Stanmore Road, given that a tunnel connection to the Pacific Motorway from Beenleigh-Beaudesert Road would likely be the last component of the Southern Infrastructure Corridor (road) in terms of staging;
- the Springfield-Greenbank Arterial would take on a significant role in the strategic network and would require upgrading. The ability for this to occur would need to be investigated. This could be a separate study from the Southern Infrastructure Corridor (road).

A detailed study identifying location, impacts, staging and alignment of the Southern Infrastructure Corridor (road) is therefore required as well as the ability to achieve the above local road work networks upgrading.

Connections to Bromelton

A new north-south spine running within the Bromelton area is recommended. Major movements are anticipated between Flagstone and Bromelton. At the northern end the route could skirt the south-east of the Flagstone area and join together with a main feeder from Flagstone to join the Mt Lindesay Highway/Southern Infrastructure Corridor (road) interchange. In addition, a link to the Mt Lindesay Highway in vicinity of Gleneagle will also be required. Linkages north-south would join into Flagstone and to Undullah Road which itself would eventually become a major road link.

The scenarios tested a wide variation in employment levels at Bromelton from 13,000 to 30,000 jobs. In all cases there is need to configure roads in the Bromelton area to link north to Flagstone and hence to Mt Lindesay Highway. If development were constrained to the southern part of Bromelton then the latter connection to Mt Lindesay Highway could be made closer to Beaudesert.

Freight connections from Cunningham Highway to Bromelton will be provided by Beaudesert-Boonah Road and Boonah-Flagstone Road. Maintenance of suitable alignment, grades and passing opportunity for freight will be necessary. Rebuilding of the section of road affected by the Wyaralong Dam should also consider this role.

Internal Sub Regional Road Connections

The 2056 land use scenarios all include significant development at Flagstone, Greenbank/Greenbank Central, Beaudesert Town and Yarrabilba. There will need to be a network of major roads within these areas and also between these centres. The internal road network should be resolved as part of Council's detailed structure planning for these areas. Specifically, the Strategic Transport Network Investigation indicates the need for major road connections are required to service Yarrabilba, Flagstone and Bromelton. A more detailed local arterial road network should be developed for the study area.

In addition to the key strategic links above, additional local capacity improvements would be required including:

- Beenleigh-Beaudesert Road and Stanmore Road, due to likely staging of the Southern Infrastructure Corridor (road);
- Kingston-Beenleigh Road, in particular the crossing of the Logan River;
- Springfield-Greenbank Arterial;
- local network improvements around the major development centres of Flagstone and Yarrabilba;
- Waterford-Tamborine Road in the vicinity of Flagstone and extending north;
- linkages from Flagstone to Greenbank/Greenbank Central west of Teviot Road are desirable to supplement Teviot Road.

Passenger rail between Beaudesert and Brisbane

The Strategic Transport Network Investigation found that future public transport demands are likely to warrant the passenger rail along the interstate rail line between Beaudesert/Bromelton and Brisbane at 2056, if public transport patronage levels are above the low public transport scenarios. It is noted that the highest demands for this route are north of North Bromelton/Kagaru.

Connections to Beaudesert Town or Bromelton were also considered and based on the modelling Bromelton receives higher demands. However due to the large scale development type at Bromelton it is unlikely that a rail service is the best solution to service this area. A bus route will be able to permeate and better serve a development of this nature. It is likely therefore that the rail line is better targeted to Beaudesert Town, the principal rural activity centre. It is noted that estimated 2056 demands to Beaudesert Town are lower than achieved on other components of the rail line and as a result may not warrant a rail service. It is considered however that due to the proposed nature of Beaudesert Town as a principal rural activity centre, a rail line to this destination should be investigated as an option.

It is also recommended that the passenger rail tracks should be in addition to the freight track provided along this line. This is consistent with previous work undertaken by the former Queensland Transport.

It is therefore recommended that a detailed planning study is required to assess the requirements for achieving passenger rail services along the Sydney to Brisbane interstate rail corridor with a view to identifying future corridor preservation options. The former Queensland Transport has investigated the ability of the interstate rail corridor (between Salisbury and Bromelton) to accommodate additional rail infrastructure suitable for passenger services. The Salisbury to Bromelton section of the interstate rail corridor, without alignment upgrades, is considered technically suitable for upgrading for passenger services. A preliminary engineering study is required to investigate the land requirements, land impacts and retaining wall requirements of upgrades. This should be incorporated into the proposed corridor study. Further details in regards to alignment, operational characteristics, local area impacts, station locations, staging and timing should also be investigated in this corridor study.

The route between Salisbury and North Bromelton/Kagaru can traverse the Sydney to Brisbane interstate rail line. The corridor study needs to also identify a route between North Bromelton/Kagaru and Beaudesert Town to ensure it is preserved into the future. This route may utilise parts of the historical Bethania to Beaudesert rail line and this should form part of the corridor investigations. The study should also address in more detail whether a rail line is also warranted to Bromelton. The corridor study should also coordinate with Council's structure planning, particularly in the Flagstone and Greenbank/Greenbank Central area.

A more detailed corridor study will be required to confirm appropriate locations and the corridor. The population levels proposed under the South East Queensland Regional Plan Amendment 1 are not sufficient to justify provision of this rail line at 2026. Our 2036 estimates suggest provision in the 2026-2036 timeframe, depending on level and location of future development. It is noted that the 2009 Regional Plan predicts additional development in this area at 2031 than considered in the study for 2036 and hence the rail line may be required earlier. The Salisbury to Beaudesert Passenger Rail Corridor Study will investigate in more detail the future growth of the area pre-2031.

Other Public Transport Networks

To serve the remainder of the Study Focus Area, a detailed network of bus connections between and to/from centres will be required to meet the public transport demands as illustrated on Figure 14.2. Bus networks should also be developed in the study area as an interim network before the passenger rail line is provided and will suitably provide for the needs of the area.

The development of public transport systems within major development areas of Flagstone, Beaudesert Town, Greenbank/Greenbank Central, Yarrabilba, and Bromelton will be crucial to meeting public transport targets and should be resolved as part of Council's detailed structure planning for these areas, in conjunction with TransLink's network planning. Within these areas, there may be a need to provide bus priority measures.

In parallel with the planning for the 2056 public transport network, further work has also been undertaken to develop a 2016 and 2026 public transport network for the study area. This work has been undertaken in association with McCormick Rankin Cagney in the Southern Public Transport Options Study (Draft August 2007). Key elements of this proposed network include an east west bus route between Beenleigh and Loganlea rail station, via Yarrabilba, Jimboomba, Flagstone, Greenbank/Greenbank Central and potentially connecting the future rail station at Springfield. A high frequency service along the Mt Lindesay Highway; and bus services between Browns Plains and Yarrabilba and Flagstone are also required.

Future new road links may provide opportunities for alternative public transport network configurations. For example, a more direct link to the Gold Coast rail line may be via parts of the proposed Southern Infrastructure Corridor. These opportunities require investigation as transport network planning proceeds.

Freight Networks

The primary regional freight movements are anticipated from Bromelton to Australia Trade Coast/Port of Brisbane. These will use rail links, and by road using the new north-south link from Bromelton connecting to the future Southern Infrastructure Corridor (road) and the future new north south road east of the Mt Lindesay Highway. This route will be supplemented by existing major freight routes of the Pacific Motorway, Logan Motorway, Cunningham Highway and Warrego Highway. The Mt Lindesay Highway will also continue to serve a secondary freight route.

Rail will also serve a role in the movement of goods via the Interstate rail line to Acacia Ridge and also via the proposed Southern Freight Rail Corridor between Bromelton/Kagaru and Ebenezer. This route is currently under investigation as part of another study.

Non-Motorised Transport Modes

Cycle networks will form an important part of the future transport system for the study area. All new transport corridors proposed for the Strategic Transport Network Investigation should be investigated for the provision of facilities for cycling. In addition, the study recommends safe centre to centre cycle connections as well as connected internal cycle networks within these centres. The internal networks should be identified in Council's detailed structure planning for these areas. The key elements of this network are as follows:

- comprehensive external connections to Logan (and Brisbane), Gold Coast and Ipswich;
- sub-regional connections between residential areas, key centres and enterprise areas;
- comprehensive internal pedestrian and cycle network within all existing and proposed development areas. As noted above, this should be planned as part of Council's structure planning processes;
- recreational routes should be developed within cities, towns and villages and to/from key recreational destinations. In addition, where topography or distance is a constraint for commuter travel, training and recreational links could be provided. This is particularly the case through the Scenic Rim hinterland areas and connections to the Gold Coast and Tweed areas. These can also be guided by Council's recreation planning;
- investigations should also occur into the use of the Bethania to Beaudesert rail line for walking and cycling, potentially as a rail trail development and provision of cycle route alongside the Beaudesert to Salisbury rail line. These rail corridors form an ideal location for such facilities due to their grades, topography and that they also serve a direct route between major development areas.

Figure 14.3 illustrates the proposed cycle networks required at 2056 in the area.

14.2 Recommendations

As a result of the key study findings, the Strategic Transport Network Investigation has defined a need for a number of future transport infrastructure projects. It is therefore recommended that the Department of Transport and Main Roads undertake further investigations for:

- new north south road east of the Mt Lindesay Highway south of the Logan Motorway into the Study Focus Area;
- the Southern Infrastructure Corridor (road) (Mt Lindesay Highway towards Beaudesert-Beenleigh Road and on to the Pacific Motorway/Intra-regional Transport Corridor broad corridor);
- western Southern Infrastructure Corridor (road) links to Ipswich from Mt Lindesay Highway via Greenbank-Springfield Arterial;
- Mt Lindesay Highway;
- in considering the Southern Infrastructure Corridor (road) connectivity to the Pacific Motorway/Intra-regional Transport Corridor broad corridor, investigation of the Pacific Motorway corridor between Springwood and the northern Gold Coast is required in relation to supporting road opportunities to the east and west of the Pacific Motorway;
- more detailed network studies of the new north south road east of the Mt Lindesay Highway and the Southern Infrastructure Corridor (road) to gain better understanding of the staging of these roads;
- the Brisbane to Beaudesert rail line.

The corridor studies need to investigate potential alignment, location and staging of these corridors as well as consider in detail impacts on the local area and local road upgrading.

It is also recommended that Scenic Rim Regional and Logan City Councils undertake structure planning including internal road, public transport and cycle networks of the following key growth areas:

- Flagstone;
- Yarrabilba;
- Beaudesert Town;
- Bromelton;
- Greenbank/Greenbank Central;
- Buccan/Bahrs Scrub;
- Park Ridge.

Analysis of the priority of the above recommendations has been undertaken based on considering growth to 2036. This indicates the new north south road east of the Mt Lindesay Highway, the Southern Infrastructure Corridor (road) and the Salisbury to Beaudesert rail line corridor alignment studies are the highest priority, depending on the level of growth achieved at this time. Depending on the location and timing of this growth, may also bring forward the need for some of these projects. A comparison with the 2009 Regional Plan growth estimates indicates that the 2036 population and job predictions in this report may be slightly low compared to that predicted for 2031. However, as the aim of the 2036 scenario was to consider a future scenario to obtain a broad indication of priorities, it is considered appropriate for these purposes. The Department of Transport and Main Roads should monitor the growth in the study area, specifically the take up and level of development that occurs in the area and may need to bring recommended infrastructure projects forward.

The 2016 and 2026 recommendations for public transport systems of the report should also be incorporated into TransLink's planning and implementation program (i.e., TransLink Network Plan). These are to include an enhanced bus system with improved frequency and route coverage in the Study Focus Area.

A consultation process was undertaken on the Draft for Consultation Mt Lindesay Beaudesert Strategic Transport Network Investigation report in May/June 2009. Generally the submissions received supported the recommendations of the report, with the majority of submissions raising issues with infrastructure alignments, implementation, timing – issues which were beyond the scope of the study. As a result of the consultation period, none of the recommendations noted above have changed and remain the key outcomes of the study.

Many of the submissions and their suggestions should be considered in the ongoing more detailed planning recommended in the study – specifically the corridor studies and structure planning. It is recommended that these submissions be forwarded to the project managers of the relevant corridor studies, once commenced.

14.3 Where To From Here?

The study identified merit in upgrading key routes in the south Logan area (i.e. Study Focus Area) and establishing new road connections to service urban growth areas nominated in the South East Queensland Regional Plan. The Department of Transport and Main Roads will continue with further strategic road network planning, in consultation with local governments, to further define the road network function, requirements and relative priorities. The aim of these investigations is to identify necessary upgrades to the transport network in the SEQ South West development corridor and to develop a delivery and corridor preservation program. This will provide certainty for Local Governments and local communities regarding the future transport network and assist the Department of Transport and Main Roads to support transport needs in the area.

The 2009 Regional Plan has consequently identified the Southern Infrastructure Corridor (road) and the new north south road east of the Mt Lindesay Highway as part of its future transport needs. In addition the 2009 South East Queensland Infrastructure Plan and Program identifies the following studies and investigations in the study area:

- Southern Freight Rail Corridor (Rail: Ebenezer to interstate standard gauge rail) 2009 – 2010;
- Salisbury to Beaudesert Passenger Rail Study;
- Gateway Motorway extension south of Logan Motorway investigation and preservation 2009 – 2019.

GLOSSARY

CBD	Central Business District
ICC	Ipswich City Council
ICS	Infrastructure Charges Schedule
IRTP	Integrated Regional Transport Plan
LGA	Local Government Area
LGMS	Local Growth Management Strategy
LPM	Logan Population Model
MLNB	Mt Lindesay North Beaudesert
MTAA	Motor Traders Association Australia
NORSROC	Northern Sub-regional Organisation of Councils
OUM	Office of Urban Management
PIFU	Planning Information and Forecasting Unit
PIP	Priority Infrastructure Plan
ROC	Regional Organisation of Councils
SEQ	South East Queensland
SEQIPP	South East Queensland Infrastructure Plan and Program
SEQRFNS	South East Queensland Regional Freight Network Strategy
SEQRP	South East Queensland Regional Plan
SEQSTM	South East Queensland Strategic Transport Model
SouthROC	Southern Regional Organisation of Councils
SRWP	Southern Regional Water Pipeline
TWG	Technical Working Group
V/C	Volume to Capacity
WBTNI	Western Brisbane Network Investigation
WESROC	Western Sub Regional Organisation of Councils
WOSPP	Whole of Shire Planning Process

South East Queensland Regional Plan in the report means South East Queensland Regional Plan 2005-2026. Amendment 1 refers to the South East Queensland Regional Plan 2005-2026 Amendment 1.