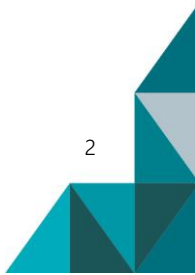


REDLAND CITY LOCAL GOVERNMENT INFRASTRUCTURE PLAN – ROAD NETWORK REVIEW

AUGUST 2022



PREPARED FOR



Redland City Local Government Infrastructure Plan – Road Network Review

Project No. 21-066

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1. Introduction

Local Government Infrastructure Plans (LGIP) are integral to planning schemes. An LGIP aims to identify local shared infrastructure that supports development within any particular Local Government Area. The local government must review its Local Government Infrastructure Plans every five years to ensure that the LGIP continues to meet the requirements of the Planning Act.

Veitch Lister Consulting has undertaken transport demand modelling to assist Redland City Council in reviewing their current LGIP. Based on the Council's latest land use and development projections, demand modelling and network performance assessments have been undertaken to identify road network upgrades to service projected development.

The road network upgrades identified through the transport demand forecasting and network analysis are intended to form the basis of Redland's review of the current Local Government Infrastructure Plan (LGIP) plan for trunk road infrastructure.

This report aims to document the methods and assumptions used by Veitch Lister Consulting (VLC) in producing the traffic forecasts and subsequent assessments of road infrastructure requirements in Redland City.

2. Approach to network performance assessment

The transport modelling and assessments undertaken to assist with the Redland City Council LGIP review is an iterative approach to demand forecasting and network deficiency assessment. The modelling and network assessment aim to identify road infrastructure improvements required to meet forecast demand and determine network capacity consumption attributable to development fronts within the Priority Infrastructure Area. The following steps describe the process:

1. Establish a validated 2016 base year model
2. Establish demographic projections as an input to the transport model for all forecast years being 2026, 2031, 2036 and 2041.
3. Establish the base year 2041 model, which includes only committed and funded road upgrades.
4. Identify underperforming sections of the road network using the 2041 base model.
5. Establish a preferred 2041 road upgrade schedule of works that address forecast network deficiencies.
6. Run interim base year models working back from 2041 to identify elements of the 2041 network strategy required in each interim year.
7. Assess results and use modelling to inform a schedule of works for every five-year tranche.
8. Analyse the origins and destinations of trips using upgraded links in each forecast horizon and produce usage allocation tables for the LGIP schedule of works model.

2.1 Desired Standards of Service

Council's LGIP includes a plan for trunk infrastructure (PFTI) that covers all infrastructure networks. The PFTI for each network includes trunk infrastructure necessary to service projected urban development at the Desired Standards of Service (DSS). For the trunk road infrastructure plan Council's DSS, relevant to trunk road network performance assessment, is as follows:

1. provide a functional urban and rural hierarchy of roads that supports settlement patterns, commercial and economic activities, and freight movement;
2. plan and design the network to ensure the operation of a trunk road or an intersection is no worse than Level of Service C;
3. design the local road network to comply with Council's adopted standards identified in Planning Scheme Policy 2 – Infrastructure Works;

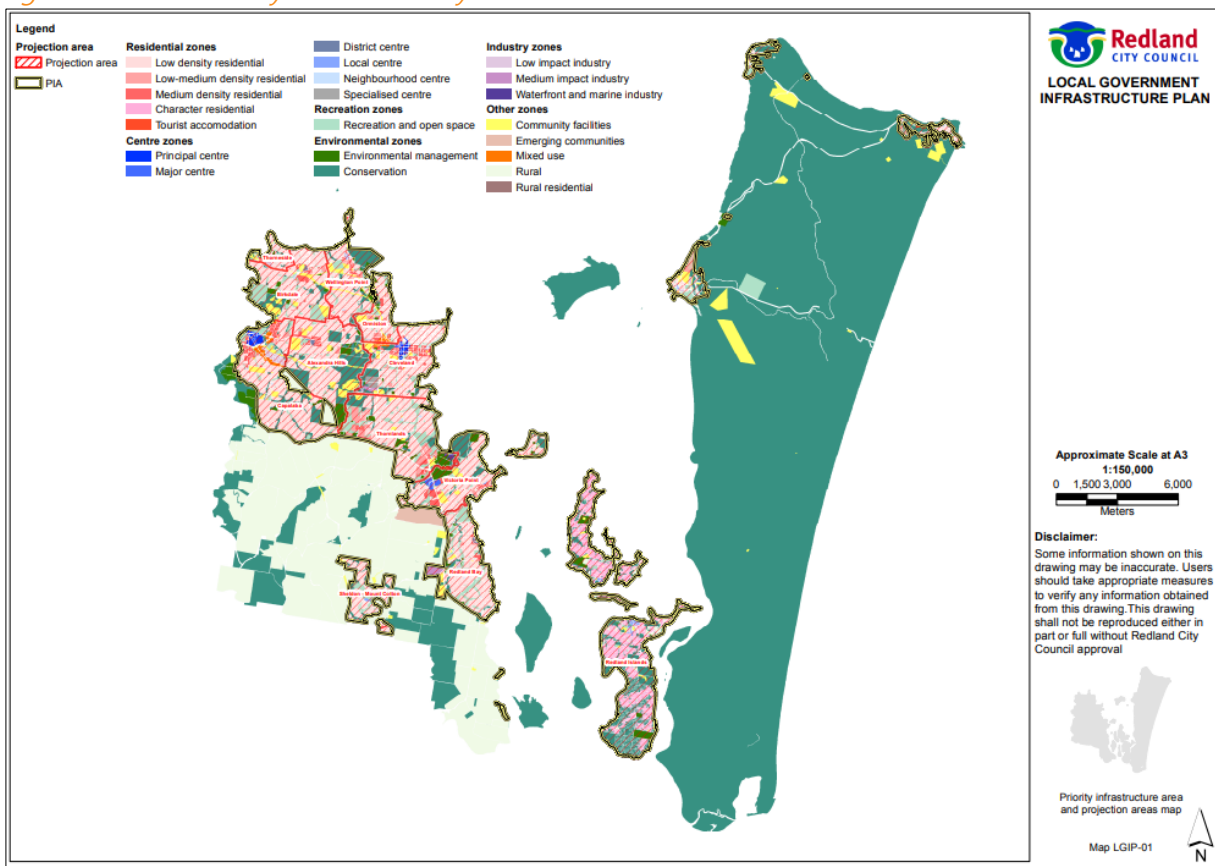
Level of Service (LOS) C provides for flow with speeds at or near the free-flow speed of the road. Freedom to manoeuvre within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. The upper threshold of LOS C is equivalent to a volume to capacity ratio (V/C) of 0.7 as defined by Austroads.

In order to assess network performance against Council's Road Network DSS, VLC compare traffic volumes with the modelled network capacity. When peak volume to capacity ratios exceed 0.7, the link is further analysed to identify if additional midblock capacity is warranted. The road projects identified in the modelling are based on a practical assessment of traffic demands against road network design to establish if an upgrade to the link's capacity is warranted and practical.

Priority infrastructure area definition

Council's LGIP includes a Priority Infrastructure Area (PIA). The PIA must, among other things, accommodate at least 10 years, but no more than 15 years of growth for urban areas. The Plan For Trunk Infrastructure must identify trunk infrastructure that is necessary to service at least the projected urban development for the PIA. Council's PIA is shown in Figure 2-1.

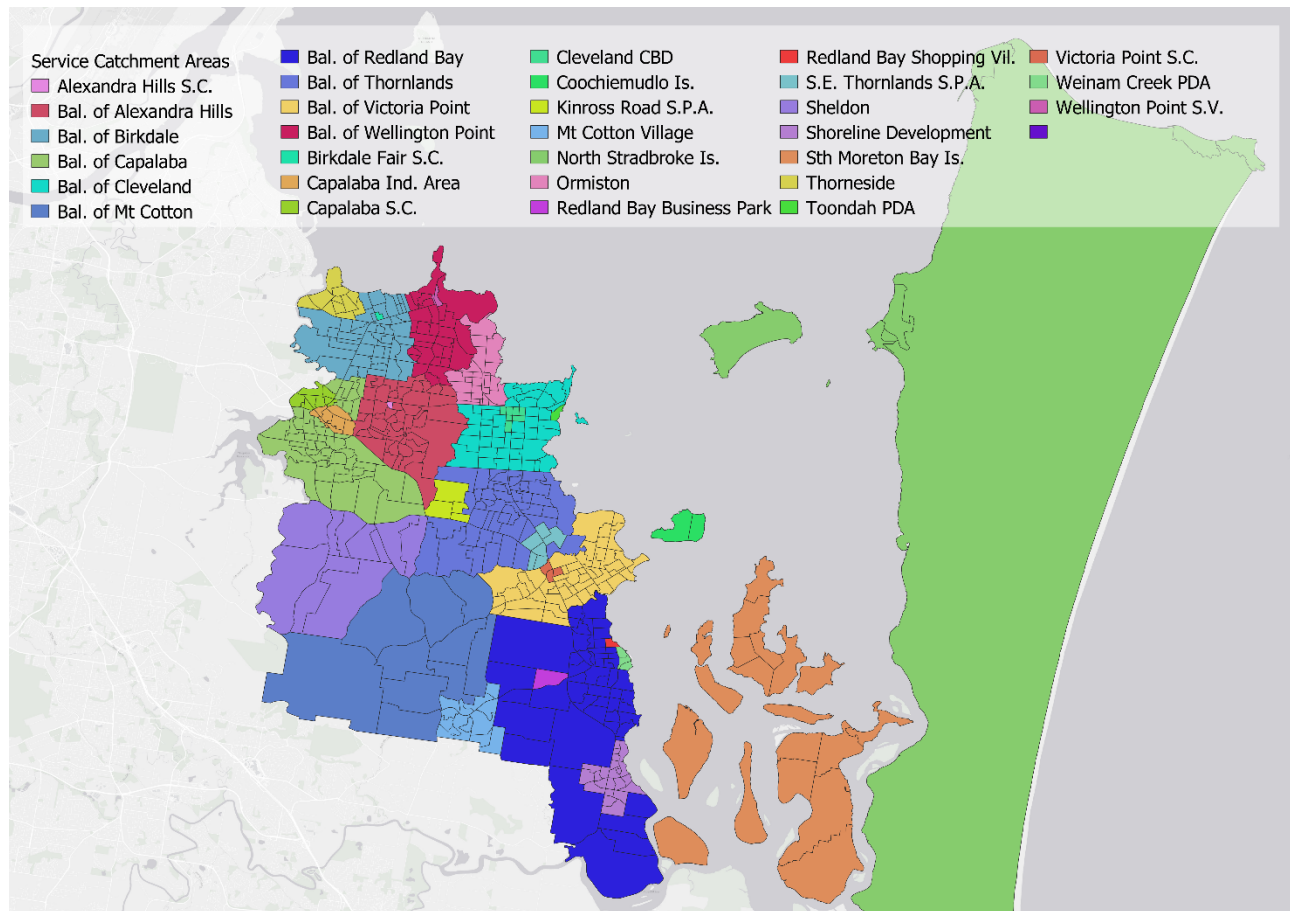
Figure 2-1: Redland City Council Priority infrastructure Area



Service catchment areas

Service catchments are areas defined in the Local Government Infrastructure Plan to apportion asset usage against different development fronts within the Priority Infrastructure Area. The LGIP SOW model requires, as an input, the base and future infrastructure demand projections for each service catchment for a trunk infrastructure network. Thirty service catchment areas have been identified for the trunk road infrastructure network. These service catchments are shown in Figure 2-2. The trip end tables outlining demand from each catchment is outlined in Section 7.

Figure 2-2: Service Catchment Areas



3. Planning Assumptions and Development Projections

Transport modelling inputs to inform the LGIP update are as far as practically possible consistent with the Planning Assumptions and Development Projections detailed in the Development Projections Modelling Report, January 2022.

The transport model requires detailed demographic estimates and profiles to represent the future land-use patterns of Redland City Council's Planning Scheme. The demographic projections used in future year transport model scenarios are based on inputs from Council per the Development Projections Modelling Report, January 2022.

The Development Projections Modelling provided to VLC are lot-level land-use projections that include the type and number of dwellings and non-residential GFA expected to be in place at each projection horizon. VLC translated the Development Projections Modelling outputs to convert dwelling and non-residential GFA projections into population and employment forecasts for each model zone within Redland LGA. This process resulted in a distribution of the Queensland Government Statisticians Office's detailed demographics forecasts (2018) that aligned with the Development Projections Modelling. That is to say, the distribution of forecast population and employment growth prepared by the Queensland Government Statisticians Office have been aligned with Councils' development activity projections at the model zone level.

3.1 Future Demographic Projections

Redland City's population is forecast to increase by approximately 25% (approximately 38,000 people) between 2016 and 2041. This equates to a compound annual growth rate of 0.9% pa. The Cleveland CBD, Toondah Harbour Priority Development Area, and Shoreline Development Area are significant growth areas. Combined, these three growth fronts are projected to accommodate roughly 40% of the forecast population growth to 2041. The Southern Morton Bay Islands are anticipated to accommodate roughly 13% of the forecast population growth, equating to roughly 5,100 additional people between 2016 and 2041.

Figure 3-1: Population and household projections within Redlands LGA

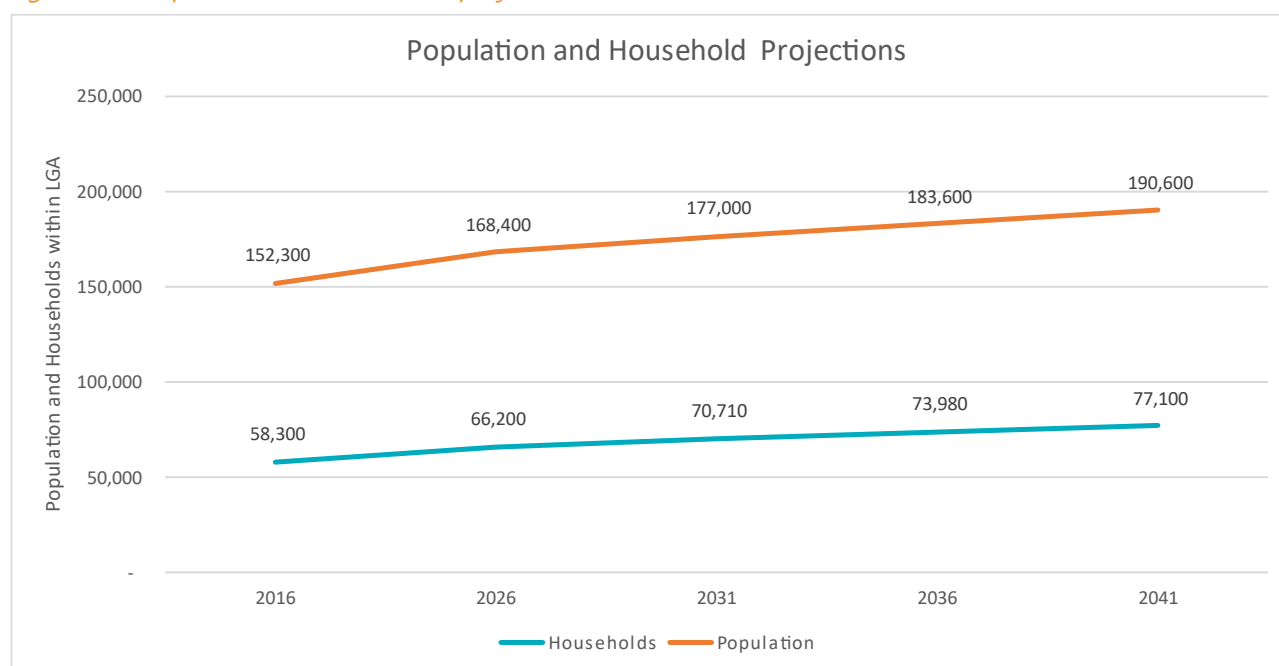


Figure 3-2 shows the change in gross dwelling density between 2016 and 2041.

Figure 3-2: Change in Dwelling Density 2016 - 2041

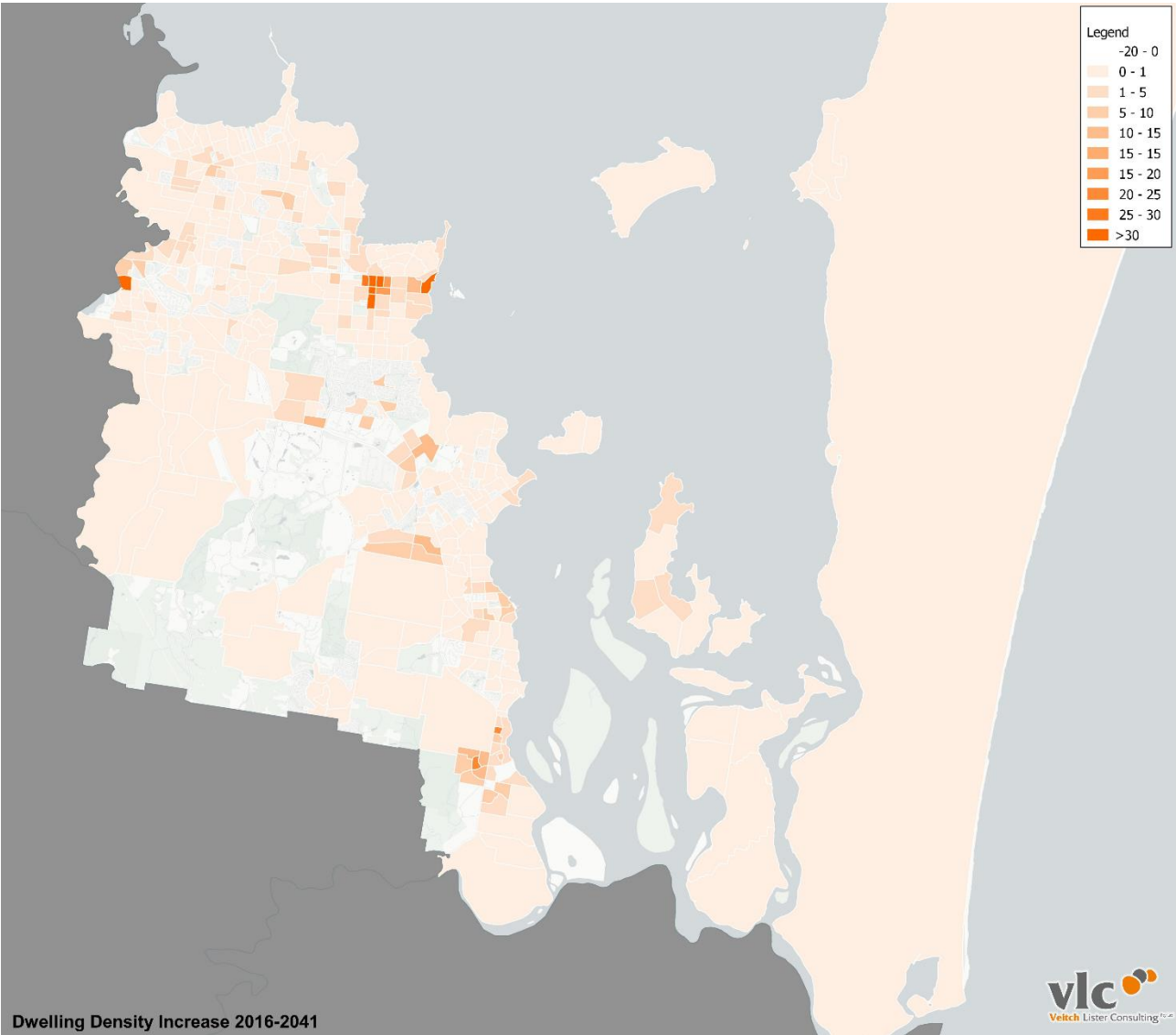


Table 3-1 summarises the distribution of QGSO household projections used in the demand modelling. The distribution is broken down into the service catchments in Figure 2-2 for each forecast year, 2026 through 2041.

Table 3-1: Projected Dwellings by Service catchment 2026 to 2041

SECTOR NAME	2026	2031	2036	2041	GROWTH 2026 TO 2041	% OF TOTAL GROWTH
Alexandra Hills S.C.	-	-	-	-	-	0%
Bal. of Alexandra Hills	6,260	6,320	6,360	6,400	140	1%
Bal. of Birkdale	5,930	6,070	6,230	6,400	470	4%
Bal. of Capalaba	7,550	7,840	8,050	8,250	700	6%
Bal. of Cleveland	7,140	7,450	7,520	7,600	460	4%
Bal. of Mt Cotton	330	330	330	330	-	0%
Bal. of Redland Bay	5,410	5,620	5,760	5,940	530	5%
Bal. of Thornlands	4,420	4,520	4,570	4,590	170	2%
Bal. of Victoria Point	6,840	7,230	7,580	7,780	940	9%
Bal. of Wellington Point	4,520	4,640	4,690	4,740	220	2%
Birkdale Fair S.C.	20	30	40	40	20	0%
Capalaba ind. Area	10	10	10	10	-	0%
Capalaba S.C.	140	350	380	410	270	2%
Cleveland CBD	1,480	2,000	2,330	2,700	1,220	11%
Coochiemudlo Is.	410	440	460	460	50	0%
Kinross Road S.P.A	880	970	1,100	1,140	260	2%
Mt Cotton Village	2,060	2,050	2,070	2,080	20	0%
North Stradbroke Is.	1,000	1,040	1,070	1,080	80	1%
Ormiston	2,590	2,720	2,790	2,860	270	2%
Redland Bay Business Park	-	-	-	-	-	0%
Redland Bay Shopping Vil.	170	190	200	200	30	0%
S.E. Thornlands S.P.A	1,110	1,140	1,190	1,200	90	1%
Sheldon	590	590	590	590	-	0%
Shoreline Development	690	1,410	1,950	2,640	1,950	18%
Sth Moreton Bay Is.	4,120	4,520	4,820	5,150	1,030	9%
Thorneside	1,690	1,700	1,700	1,700	10	0%
Toondah PDA	510	1,110	1,750	2,360	1,850	17%
Victoria Point S.C.	-	-	-	-	-	0%
Weinam Creek PDA	170	260	280	290	120	1%
Wellington Point S.V.	160	160	160	160	-	0%
Total	66,200	70,710	73,980	77,100	10,900	100%

Employment Projections Summary

The total number of jobs is anticipated to increase from 45,700 in 2016 to 69,100 in 2041. The compound annual growth rate for the number of jobs over the 25 years from 2016 to 2041 is approximately 1.7%, almost twice the population compound annual growth rate of 0.9%. 25% of all new jobs are forecast to be located in the Capalaba Activity Centre, with 6% of new jobs in the Cleveland CBD.

Figure 3-3: Employment Projections 2016 -2041

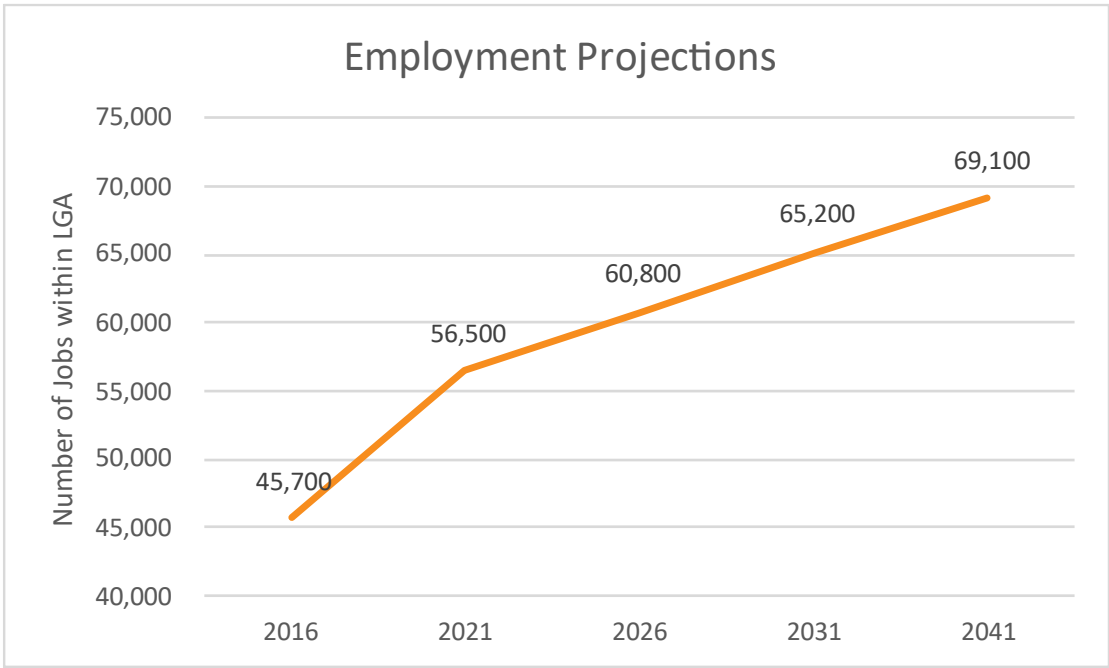


Figure 3-4 depicts the projected change in job density from 2016 to 2041. Table 3-2 details the number of jobs in each service catchment based on the modelled demographics.

Figure 3-4: Change in Job density 2016 -2041

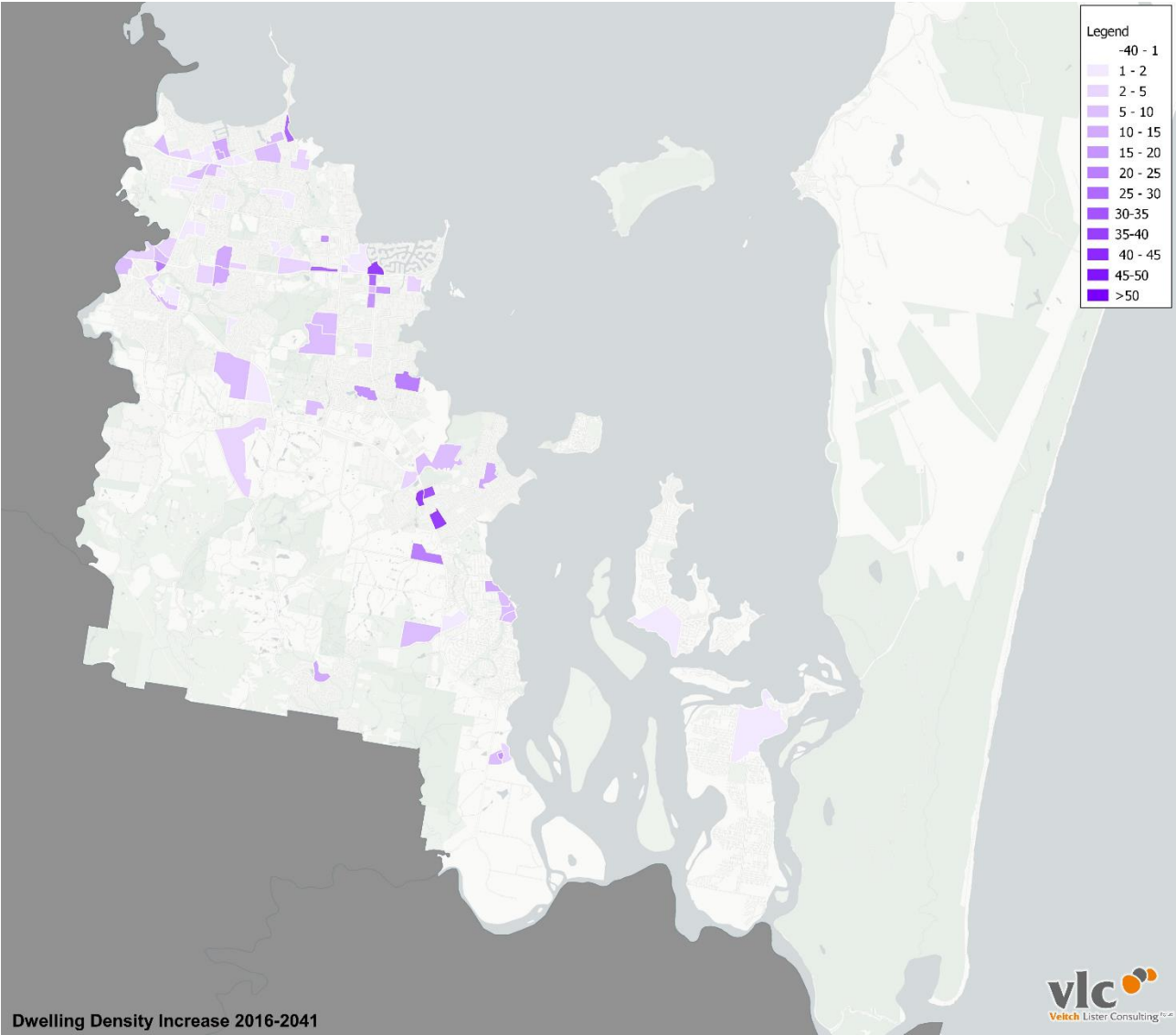


Table 3-2: Jobs by Service Catchment areas

SECTOR NAME	2026	2031	2036	2041	GROWTH 2026 TO 2041	% OF TOTAL GROWTH
Alexandra Hills S.C.	690	680	660	640	-50	0%
Bal. of Alexandra Hills	2,350	2,630	2,850	3,060	710	6%
Bal. of Birkdale	2,450	2,670	2,800	2,950	500	4%
Bal. of Capalaba	2,680	2,820	2,960	3,040	360	3%
Bal. of Cleveland	7,630	8,240	8,640	9,070	1,440	12%
Bal. of Mt Cotton	670	670	670	670	-	0%
Bal. of Redland Bay	2,580	2,550	2,550	2,560	-20	0%
Bal. of Thornlands	2,970	3,390	3,800	4,160	1,190	10%
Bal. of Victoria Point	3,000	3,310	3,520	3,760	760	6%
Bal. of Wellington Point	1,960	2,130	2,260	2,390	430	3%
Birkdale Fair S.C.	520	510	550	600	80	1%
Capalaba ind. Area	4,810	4,820	4,820	4,810	-	0%
Capalaba S.C.	7,630	8,440	9,660	10,580	2,950	24%
Cleveland CBD	3,670	3,720	3,790	3,880	210	2%
Coochiemudlo Is.	10	10	10	10	-	0%
Kinross Road S.P.A	190	200	210	220	30	0%
Mt Cotton Village	950	1,180	1,370	1,540	590	5%
North Stradbroke Is.	990	1,030	1,270	1,310	320	3%
Ormiston	2,150	2,210	2,280	2,450	300	2%
Redland Bay Business Park	230	290	410	540	310	2%
Redland Bay Shopping Vil.	30	150	160	180	150	1%
S.E. Thornlands S.P.A	350	350	350	350	-	0%
Sheldon	1,380	1,380	1,380	1,380	-	0%
Shoreline Development	150	160	210	310	160	1%
Sth Moreton Bay Is.	1,200	1,380	1,430	1,670	470	4%
Thorneside	510	560	600	640	130	1%
Toondah PDA	610	600	590	590	-20	0%
Victoria Point S.C.	3,460	4,130	4,380	4,860	1,400	11%
Weinam Creek PDA	250	290	290	290	40	0%
Wellington Point S.V.	420	440	440	430	10	0%
Total	56,490	60,940	64,910	68,940	12,450	100%

4. Infrastructure Demand Projections

2041 is the final year for which QGSO demographic forecasts are available. As such, 2041 has been used to identify long-term road infrastructure upgrades that form the basis of a coordinated strategy. This report section presents network deficiencies identified under the 2041 horizon and practical road upgrades to support development.

By defining the 2041 long-term network strategy, Redland City Council can progressively roll out upgrades in line with development projections between 2021 and 2041. To establish when individual road upgrades in the 2041 strategy are likely to be required, 2026, 2031 and 2036 base case scenarios were run to identify network deficiencies. By first testing base case networks with only committed and funded projects, elements of the 2041 strategy could be selected for inclusion in each interim year to resolve network issues. The primary focus of this work has been on road capacity upgrades; however, several PT infrastructure projects have been assumed based on Council's overarching Redland Coast Transport Strategy.

4.1 2041 Base Case Network

Demand forecasts based on a Base Case 2041 network were undertaken to identify performance deficiencies in 2041. The 2041 base case network is the existing road network as well as upgrades contained within Council's committed works program and the Queensland Transport and Roads Infrastructure Plan (QTRIP). The projects included in the 2041 base case network are all committed works to be delivered between 2016 and 2026. Therefore the base case networks are the same for all other forecast years, 2026, 2031, 2036 and 2041. The projects included in the Base Case networks are detailed in Table 4-1.

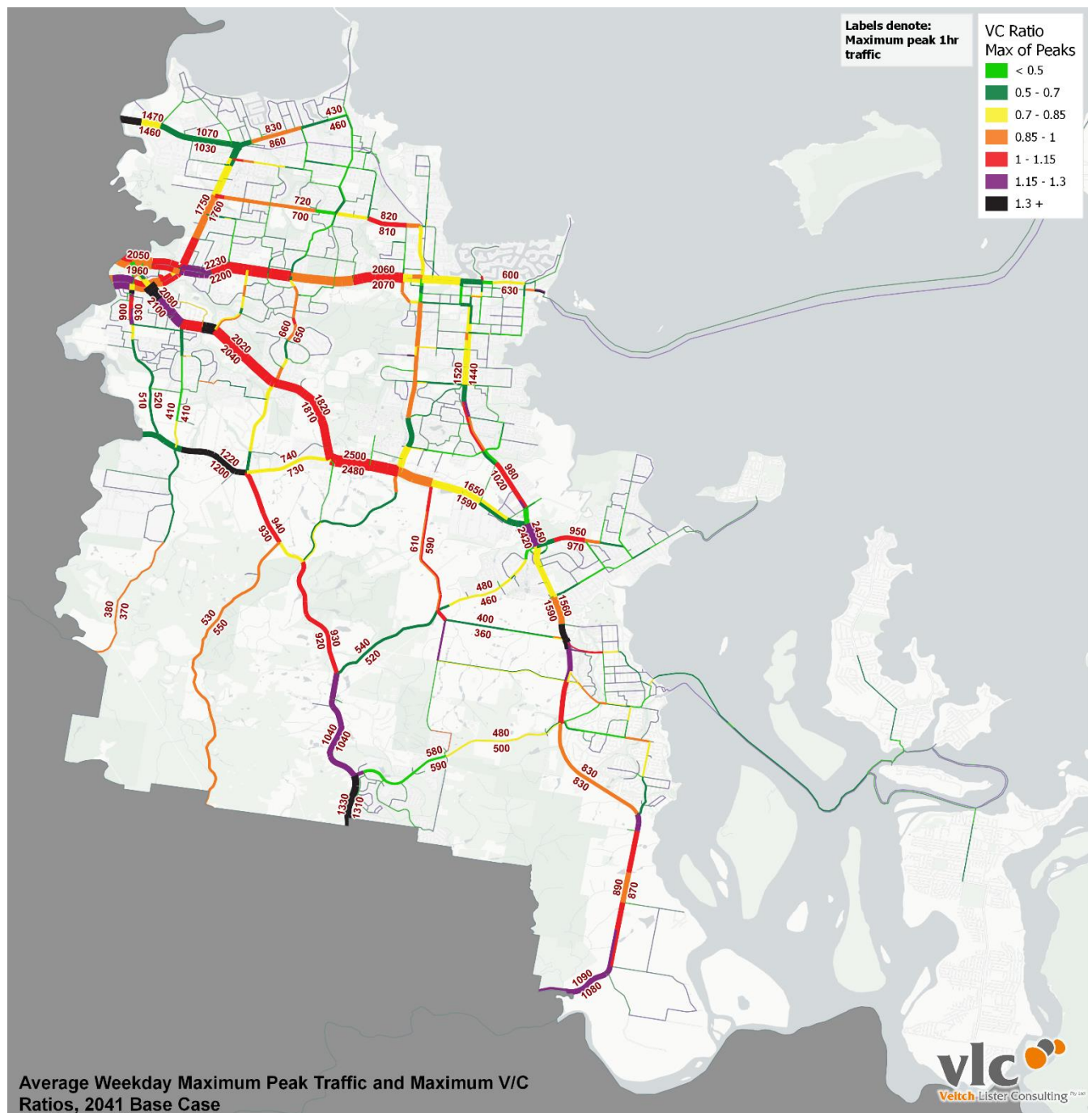
Table 4-1: List of committed and funded works included in 2041 Base Case upgrades

Road Name	From	To	Description Of Modelled Improvement
Kinross Rd	Boundary Rd	Lewis Street	two lane urban collector standard - increased midblock capacity
Panorama Dr	Boundary Rd	Wellington Rd	Upgraded to four lanes with capacity increase
Main Rd	Plumer St	Duncan St	Seal widening with minor capacity increase
Seaforth Ave	Boundary Rd	Cleveland-Redland Bay Rd	two lane collector road from Boundary Rd to Cleveland-Redland Bay
Double Jump Road	Heinmann Rd	Kingfisher Rd	Realignment from Heinmann Rd to Kingfisher Rd
Cleveland-Redland Bay Rd	Anita St	Magnolia Pd	Upgraded to four lanes with capacity increase
School of arts Rd	German Church Rd	Kalima Dr	Seal widening with minor capacity improvement
Beveridge Road	Cleveland Redland Bay Rd	Rachow St	Seal widening with minor capacity improvement

4.2 2041 Base Case Network Performance

Redland City Council has very little through traffic on an average weekday, and network demand culminates on the State Controlled Road Network. The State-Controlled Road Network in Redland City Council serves the major routes into and out of the LGA. Also, the State-Controlled Road Network forms key links for traffic travelling within the LGA. Most of the severely underperforming links in 2041 are State Controlled Roads. Figure 4-1 shows the forecast volume to capacity ratio under a 2041 scenario where only committed and funded road upgrades are completed.

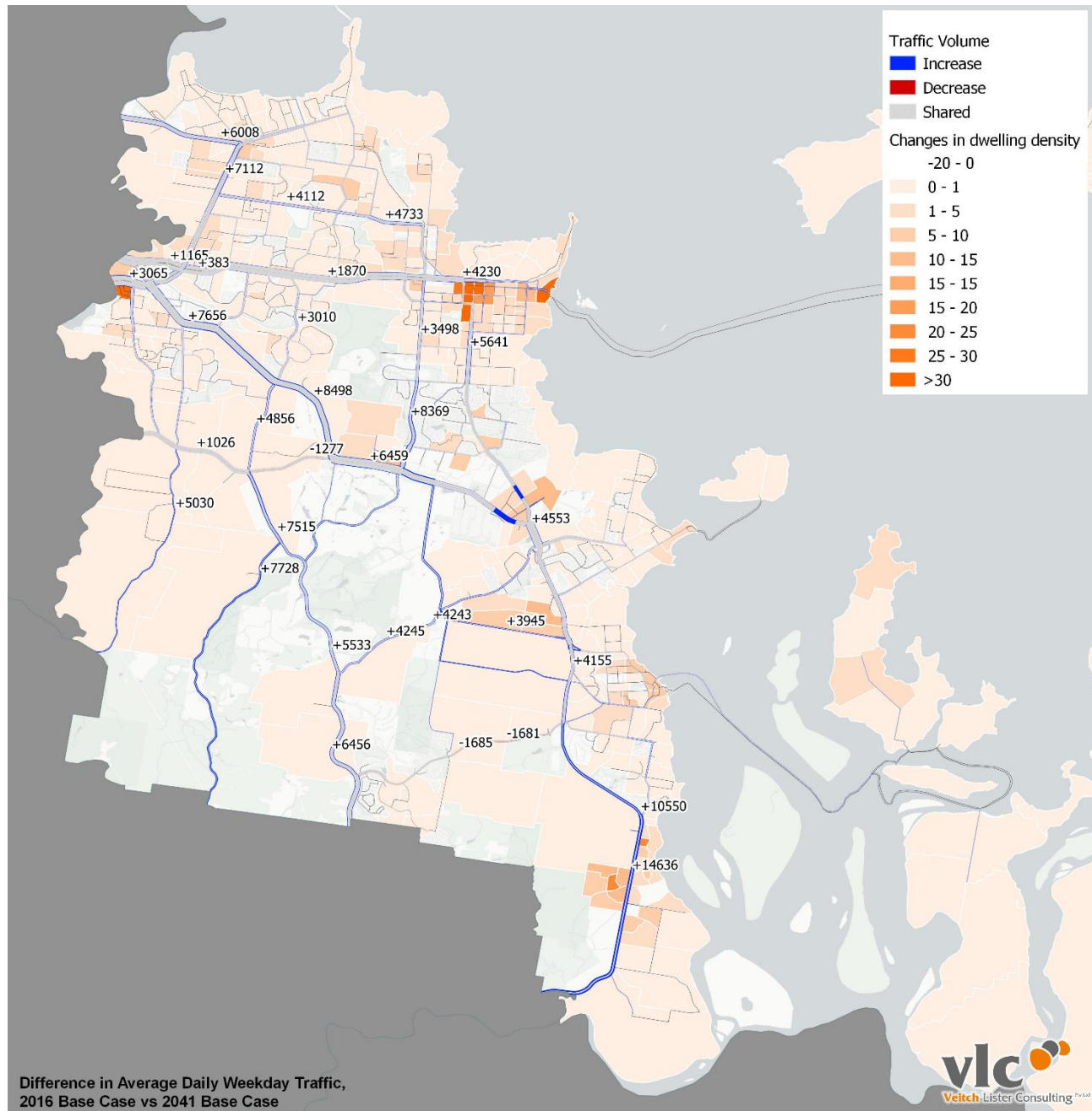
Figure 4-1: 2041 Base Case Network Performance (V/C)



4.3 Increased trip making

Compared to the base 2016 model, the total number of vehicle trips to, from or within Redland City Council is forecast to increase by approximately 5.8 million trips per average weekday. The resulting change in daily traffic volumes on the road network is depicted in Figure 4-2.

Figure 4-2: Change in Daily Traffic Volumes 2016-2041



State-controlled Road Network Performance

The following outlines key state-controlled roads that are forecast to experience significant delays due to traffic during peak periods in 2041 under the base case scenario.

Cleveland-Redland Bay Road

Cleveland-Redland Bay Road runs north to south, connecting urban centres along the Redland Coast and key east-west links. In 2041, growth in activity centres such as Cleveland CBD and increased residential and non-residential growth at Shoreline, Double Jump Road and Toondah Harbour means that Cleveland-Redland Bay Road will carry an additional 6,000 to 14,000 vehicles per day, relative to 2016.

Boundary Road (State Route 21)

Boundary Road between Panorama Drive and the intersection with Duncan Road is forecast to carry an additional 6,500 vehicles per day in 2041 compared to 2016. This is partly due to increased demands from the Kinross Road Estate and increased demands to and from the south-eastern parts of the Redland LGA. Boundary Road is a key east-west route and sees significant traffic growth that results in network performance issues during peak periods as traffic volumes exceed the practical capacity of a four-lane arterial link.

Mt Cotton Road (State Route 21)

Mt Cotton Road between Lyndon Road and Ney Road is a two-lane arterial that in 2041 is forecast to carry more than 24,000 vehicles per day, well beyond the capacity of a two-lane road. The increase in demand is linked to the presumed construction of the Coomera Connector in 2036, including its connection with Mt Cotton Road at Beenleigh -Redland Bay Road and increasing demand from growth within Redlands and its role as a key east-west link.

Mt Cotton Road (State Route 45)

With the construction of the Coomera Connector (assumed in 2036) and growth within Redlands, Mt Cotton Road south of State Route 21 is forecast to carry approximately double the average daily traffic in 2041 compared to 2016. This link is predominantly a two-lane rural arterial link with no kerb and channel, with several uncontrolled intersections and property access.

Capalaba Principal Activity Centre

The State-Controlled Road network forms the primary network serving the Capalaba Activity Centre. The network in this area connects directly to Old Cleveland Road, the principal route for access to the Gateway Motorway and Brisbane. As the population of Redland City Council grows, more trips will be made to Brisbane for essential services and employment, which, as the forecasts show, will lead to increased traffic volumes in Capalaba. In addition, Capalaba is forecast to become the major retail and commercial hub of the Redland LGA. As a result, traffic on key routes such as Moreton Bay Road and Old Cleveland Road are forecast to grow significantly, with average weekday traffic volumes of approximately 50,000 vehicles per day.

Local Government Road Network

Several local government controlled roads are forecast to experience traffic volumes that exceed their capacity. In addition, urban development in certain areas will necessitate the upgrade of existing links to cater to increased demands and appropriately service development, maintaining safe and efficient transport operations.

Rickertt Road

Rickertt Road provides access to the northern parts of Redland City. Rickertt Road crosses Tingalpa Creek (E.G.W Wood Bridge), with the western side of Rickertt Road controlled by Brisbane City Council and the eastern side by Redland City Council. To the east of the E.G.W Wood Bridge, the road is a four-lane urban arterial link, transitioning to two lanes across the bridge itself. This change in road traffic capacity will be a considerable constraint within the local road network. Despite this, even as a two-lane road, the bridge is forecast to carry more than 28,000 vehicles per day, which theoretically exceeds the capacity of this link.

Kingfisher Road

Kingfisher Road is forecast to carry approximately 12,000 vehicles on an average weekday in 2041, more than double the current volume. Kingfisher Road will become an important route for trips from new residential areas south of Redland Bay Road, particularly new residential developments at Double Jump Road and Shoreline. Kingfisher Road is a collector road with narrow shoulders, no kerb and channel, and limited channelised/auxiliary turning lanes. As traffic increases, there will be a need to upgrade Kingfisher Road to an urban standard two-lane arterial to maintain safety and efficiency as traffic volumes increase.

Double Jump Road (including realignment)

Double Jump Road is currently a “low order” collector road. In 2041, according to the modelled demographics, the rural residential lots on the northern side of Double Jump Road are forecast to be redeveloped and are expected to accommodate approximately 1,500 dwellings. Upgrades to Double Jump Road will be required to support this growth.

4.4 2041 Network Upgrades

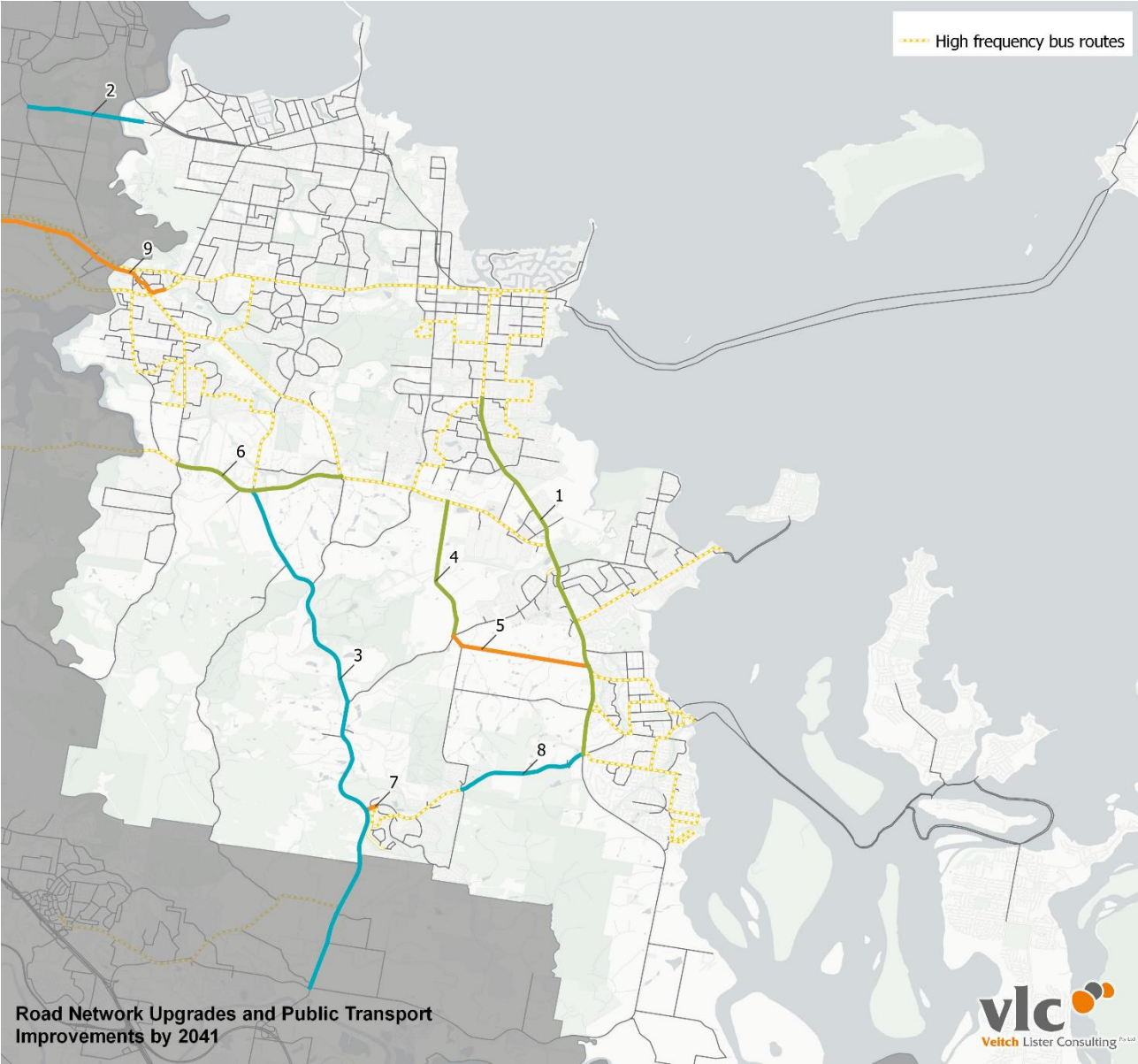
After analysing network performance and considering the scale and distribution of growth, VLC, in collaboration with council, identified a series of network upgrades to support growth within the LGA. The improvements identified include public transport upgrades, state-controlled road upgrades and local trunk road network upgrades. The 2041 network upgrades were informed by the Redland Coast Transport Strategy, previous network planning and the modelling undertaken by VLC discussed in Section 4.2.

The identified 2041 road network upgrades are detailed in Table 4-2. The location of these upgrades is represented thematically in Figure 4-3.

Table 4-2: Road Network Upgrades and Public Transport Improvements by 2041

Number	Road Upgraded	From	To	Description
1	Cleveland Redland Bay Road	South Street	German Church Road	Complete duplication to four lanes
2	Rickertt Road	Green Camp Road	West of Thorneside Rd	Duplicate to four lanes
3	Mount Cotton Road	Duncan Road	Beenleigh Redland Bay Road	Duplicate to four lanes
4	Kingfisher Road/Springacre Road	Bunker Road	Boundary Road	Increase lane capacity – Urban Arterial
5	Double Jump Road (including realignment)	Kingfisher Road	Cleveland Redland Bay Road	Increase lane capacity – Urban Arterial
6	Mount Cotton Road/Duncan Road	Ney Road	Redland Bay Road	Duplicate to four lanes
7	Valley Way	Mount Cotton Road	Papaya Street	Increase lane capacity – Urban Arterial
8	German Church Road	Valley Way	Cleveland Redland Bay Road	Increase lane capacity – Urban Arterial
Public Transport Improvements				
Refer to map legend	High-frequency bus routes			2031
9	Eastern Busway			2036

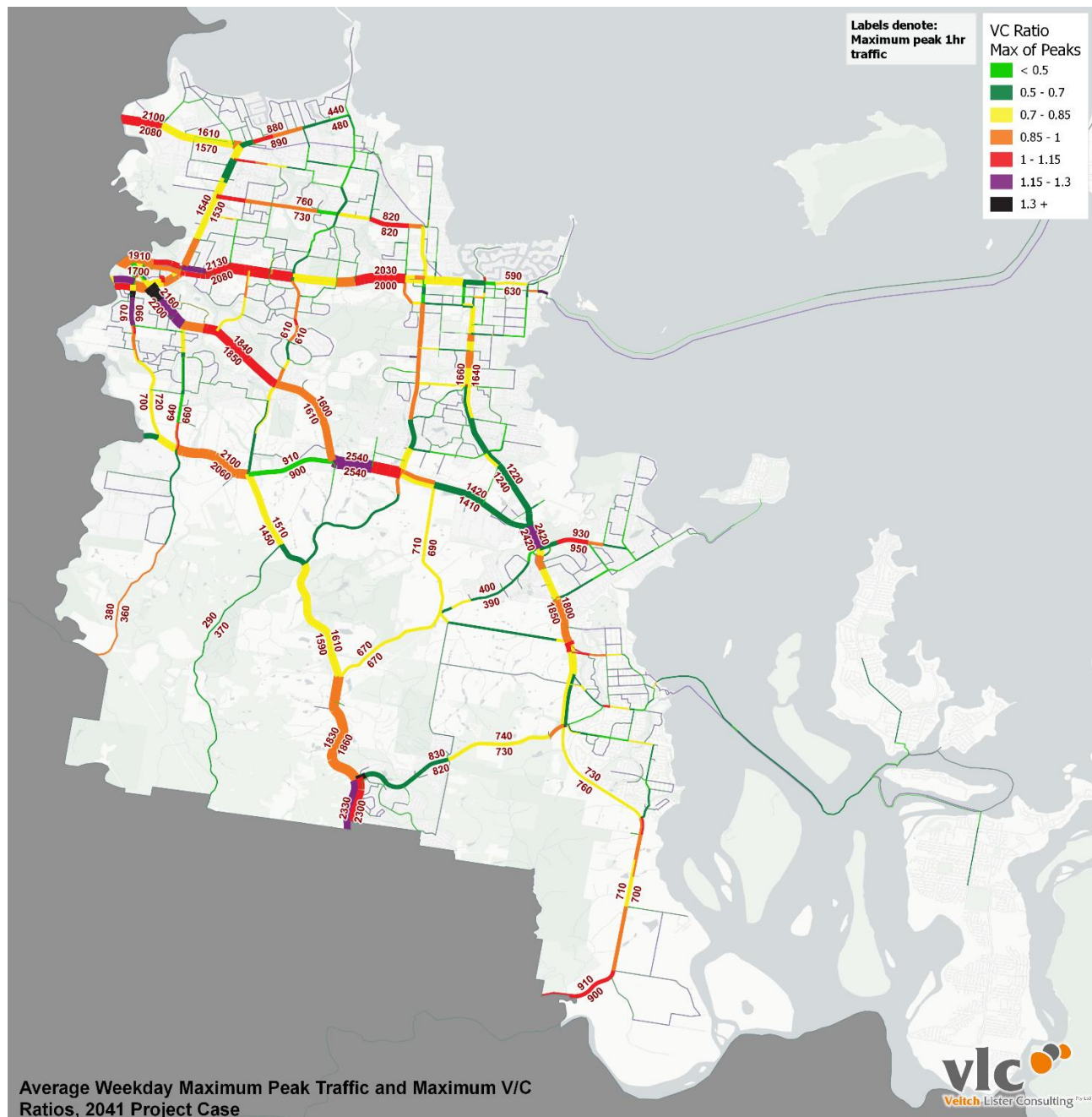
Figure 4-3: Location of road network upgrades and public transport improvements



2041 Strategy - Road Network Performance

Figure 4-4 shows the maximum volume to capacity ratio on each link in 2041 after the upgrades identified above are included in the modelled network. This figure shows a significant improvement with most major links carrying midblock capacities within their practical capacity with V/C ratios of close to one. After reviewing the network performance and considering additional midblock capacity upgrades, it was determined that additional capacity increases through increasing the number of lanes would be impractical due to corridor constraints and property impacts.

Figure 4-4: 2041 Strategy Road Network Performance (V/C)



Several links at key locations on the network will experience excessive congestion during peak periods in 2041, even with the included upgrades identified above. Congestion can be considered excessive when the travel speed of vehicles is lower than 55% of the posted speed. Ensuring appropriate intersection treatments and signal controls will be important for managing forecast traffic demands. The most heavily congested sections of the Redland City road network have been analysed in terms of average weekday traffic volumes, AM peak v/c ratios and peak period congested speeds. Specific locations analysed are presented in Figure 4-5.

Figure 4-5: Key locations for network performance assessment



Table 4-3 details the average weekday traffic volumes (AWDT), AM peak period volume to capacity ratio and the congested speeds as a percentage of the freeflow speeds coded in the model. The table compares the 2041 base case and project case models. As presented, several of the most congested links remain at or over their practical capacity. Nevertheless, congested speeds on many critical links improve as a result of the network upgrades. Rickertt Road's congested speed and V/C ratio improve significantly. In addition, Rickertt Road plays a more significant role in providing for movements in and out of Redlands, carrying an additional 8,500 vehicles per day.

Improvements to other local roads in the strategy, including Double Jump Road (label 6), Kingfisher/Springacre Road (label 7), and German Church Road (label 5), reduce congestion and improve travel speeds during peak periods.

Table 4-3: 2041 Base Case and Strategy network performance at key locations

Label	Location	2041 Base Case			2041 Project Case		
		AWDT ¹	AM V/C ²	Congested speed % of posted speed ³	AWDT ¹	AM V/C ²	Congested speed % of posted speed ³
Arterials							
1	Rickertt Rd	28,700	1.6	16%	37,200	1.0	51%
2	Moreton Bay Rd	54,800	1.2	35%	53,600	1.1	40%
3	Redland Bay Rd	42,400	1.2	44%	43,800	1.2	39%
4	Boundary Rd	48,100	1.1	41%	50,300	1.2	39%
5	German Church Rd	7,000	0.8	70%	15,100	0.8	73%
6	Double Jump Rd	15,600	1.0	51%	11,800	0.8	73%
7	Springacre Rd	12,800	1.0	55%	13,000	0.8	76%
8	Longland Rd	22,400	1.2	40%	16,400	1.0	62%
Old Cleveland Rd E							
9	East of Starkey St	18,700	1.0	54%	18,800	1.0	52%
10	North of Finucane Rd	33,000	1.1	54%	29,500	0.9	69%
Finucane Rd							
11	East of Old Cleveland Rd E	44,100	1.2	37%	42,100	1.1	44%
12	At Hilliards Ck	41,100	1.0	52%	39,900	1.0	56%
Mount Cotton Rd							
13	East of Avalon Rd	24,100	1.3	23%	39,500	0.9	59%
14	South of Duncan Rd	20,000	1.0	54%	27,300	0.7	80%
15	South of Valley Way	29,000	1.5	20%	54,500	1.2	40%
Cleveland Redland Bay Rd							
16	South of Thornlands Rd	18,200	1.1	53%	24,600	0.7	84%
17	At Pinklands Sporting Complex	19,700	1.1	51%	25,100	0.6	87%
18	At Eprapah Ck	46,600	1.2	37%	49,100	1.2	37%
19	South of Boundary St	21,400	1.3	34%	31,400	0.8	72%

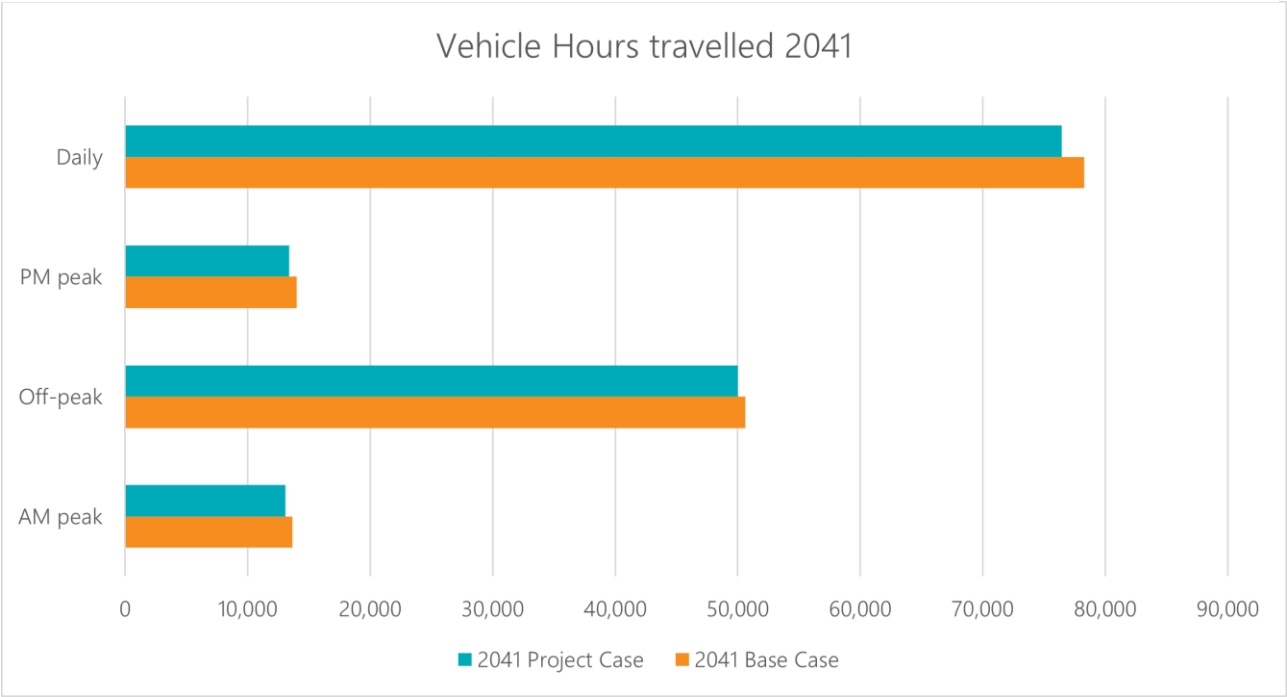
¹ AWDT volumes are bi-directional.

² AM V/C ratio and congested speeds are taken from the worst performing direction.

³ Congested speed % of posted speed less than 55% for arterials is defined as excessive congestion (highlighted red). Posted speeds are assumed as the model speeds which are similar to actual speed limits.

As a result of the upgrades identified in the 2041 strategy, vehicle hours travelled during peak periods are reduced by 5%. This equates to roughly 1,200 fewer vehicle hours travelled in Redlands during peak periods every weekday. Over the entire day, there are 3,700 fewer vehicle hours travelled on the Redlands Road network due to the identified road network upgrades.

Table 4-4: Vehicle Hours Travelled within Redland LGA 2041



5. Trunk Infrastructure Upgrades 2021 to 2036

After establishing the 2041 road network improvements detailed within the preceding sections, demand forecasts were prepared to establish a staging plan from 2021 to 2036. This staging has been prepared to inform the Plan For Trunk Infrastructure (PFTI). The PFTI is part of the Local Government Infrastructure Plan; it sets out trunk infrastructure network improvements required to support development for the next 15 years.

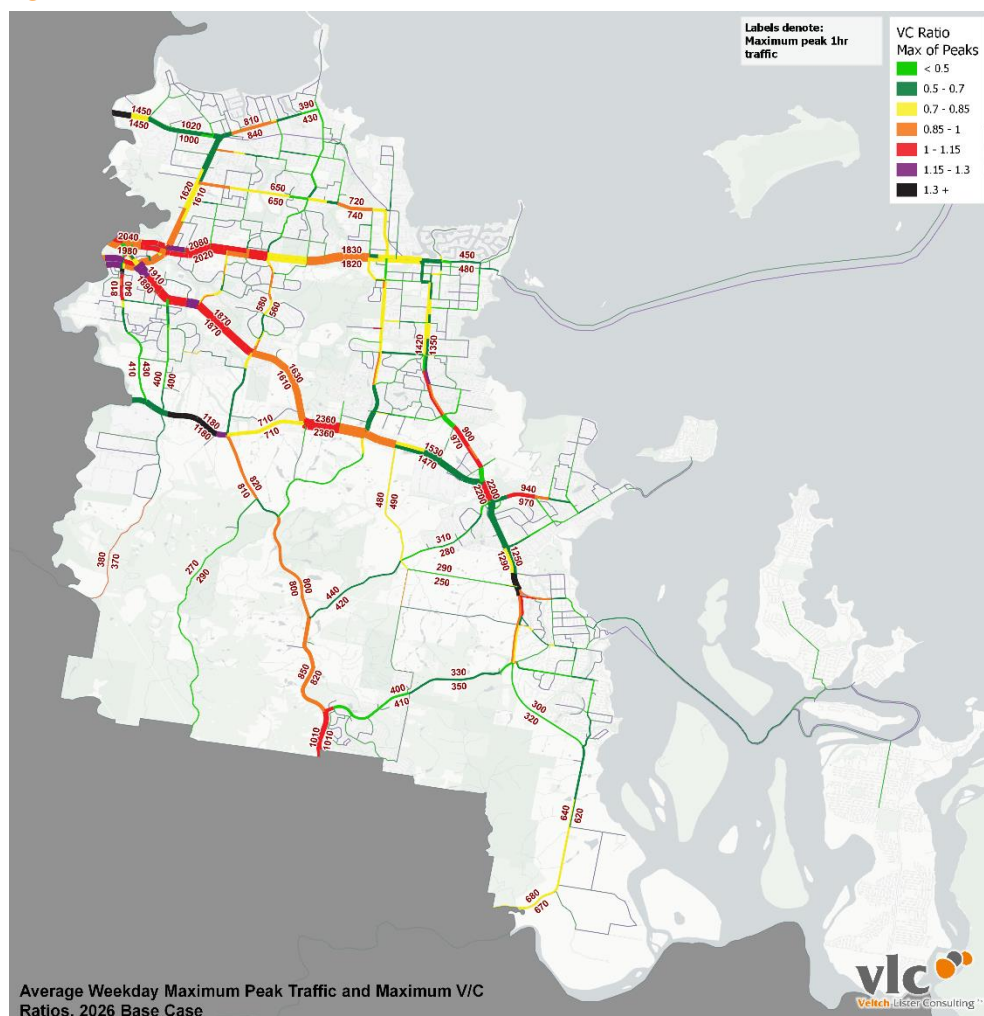
Each LGIP year was analysed in chronological order. Network performance in 2026 with only committed works was first analysed, and projects from the 2041 network were selected to relieve capacity constraints observed. Network performance was then tested through modelling. Once a set of projects for 2026 was confirmed the 2031 strategy was developed. To identify constraints in 2031, the model was used to assign 2031 demands to the 2026 network. Results were analysed, and additional upgrades were included in the modelled network. The process was repeated for 2036.

5.1 2026 Network Development

2026 Base Case Network Performance

Demand modelling was used to understand network performance in 2026 with forecast population growth and only committed and funded works. Essentially, the model was used to understand where network deficiencies are expected if nothing more than committed works were delivered before 2026. Figure 5-1 shows the worst V/C ratio for peak periods from the 2026 Base Case forecasts.

Figure 5-1: 2026 base case network V/C



2026 Network Improvements

After reviewing network performance, the upgrades identified in Table 5-1 were selected to service traffic growth between 2021 and 2026. The locations of these network improvements are depicted in Figure 5-2.

Table 5-1: Road Network Upgrades by 2026

Project ID	Project name
New and Upgraded Infrastructure 2021 - 2026	
1	Beveridge Road (Cleveland Redland Bay Rd to Rachow St)
2	Cleveland Redland Bay Road (Anita St to German Church Rd)
3	Cleveland Redland Bay Road (Magnolia Pde to Anita St)
4	Double Jump Road realignment (Heinemann Rd to Kingfisher Rd)
5	Mount Cotton Road/Duncan Road (Ney Rd to Redland Bay Rd)
6	New Road (Panorama Dr to Kinross Rd)
7	New Road (Boundary Rd to Cleveland Redland Bay Rd)
8	Panorama Drive (Boundary Rd to Wellington St)
9	Rickertt Road (Green Camp Rd to West of St James Rd)

Figure 5-2: Network Improvement Locations (2026)



The projects listed in Table 5-1 were added to the 2026 Project Case network, and the resulting V/C ratios during peak periods are depicted in Figure 5-3.

Figure 5-3: 2026 Project Case Network Performance (V/C)

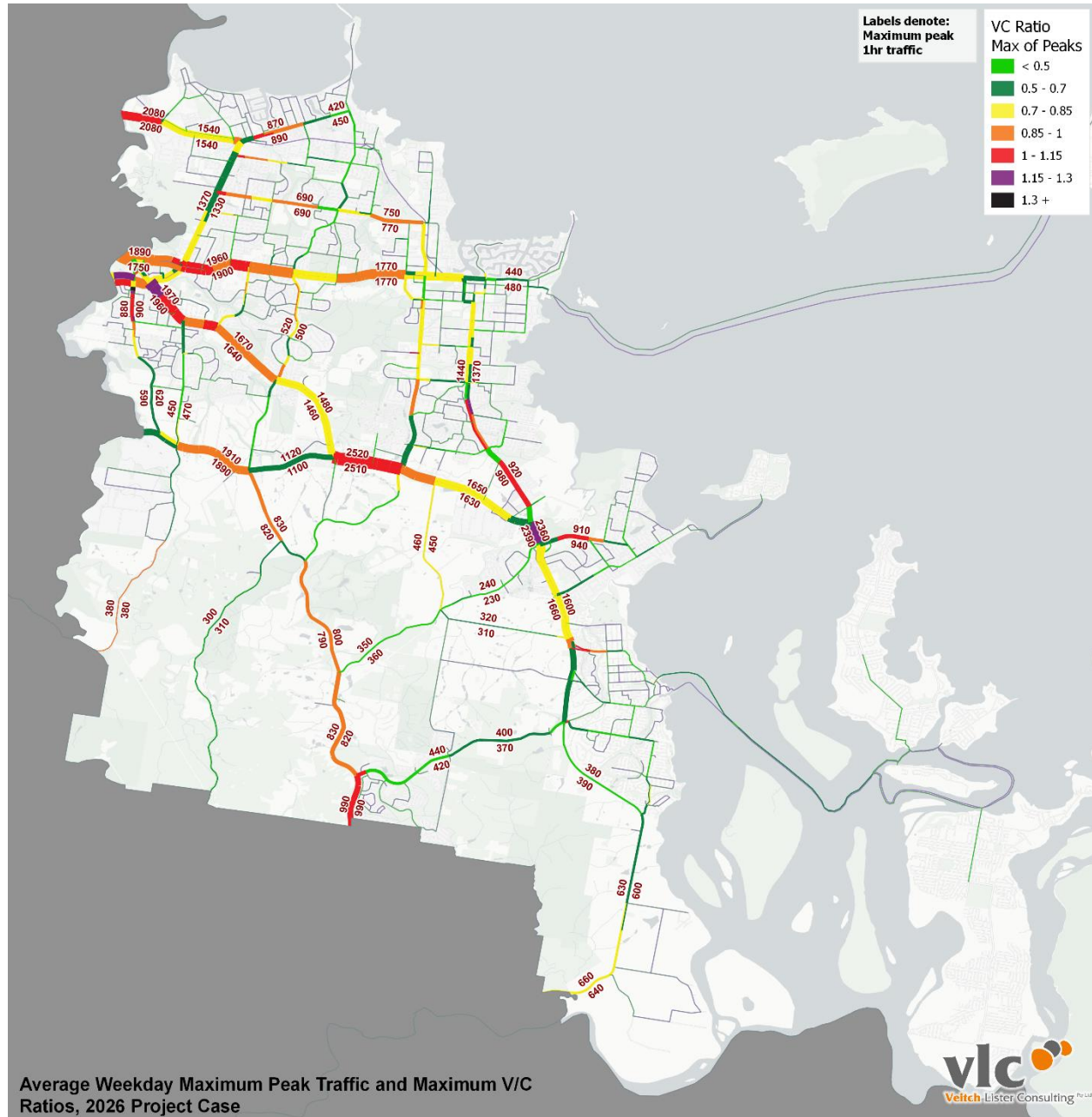


Table 5-2 details the average weekday traffic volumes (AWDT), AM peak period volume to capacity ratio and the congested speeds as a percentage of the freeflow speeds coded in the model. The table compares the 2026 base case and project case models. Congested speeds on many critical links improve due to the network upgrades. Travel speeds on Double Jump Rd increase as traffic volumes decrease. The reduction is due to Cleveland-Redland Bay Rd upgrades that reduce the number of vehicles using Double Jump Road and Kingfisher Road as an alternative.

Increasing the number of lanes on Cleveland-Redland Bay Road increases congested travel speed. As a result, peak travel speeds are within acceptable levels, with congested speeds greater than 55% of freeflow speeds. The one exception is at the intersection with Boundary Road, where congestion is expected to remain an issue without intersection improvements.

Table 5-2: 2026 Base Case and Project Case network performance at key locations

Label	Location	2026 Base Case			2026 Project Case		
		AWDT ¹	AM V/C ²	Congested speed % of posted speed ³	AWDT ¹	AM V/C ²	Congested speed % of posted speed ³
Arterials							
1	Rickertt Rd	26,200	1.6	17%	33,900	1.0	53%
2	Moreton Bay Rd	53,800	1.2	35%	52,000	1.1	41%
3	Redland Bay Rd	40,400	1.1	49%	41,100	1.1	45%
4	Boundary Rd	48,200	1.1	45%	50,600	1.1	39%
5	German Church Rd	8,700	0.6	87%	9,700	0.7	82%
6	Double Jump Rd	6,900	0.8	75%	4,600	0.6	88%
7	Springacre Rd	7,000	0.8	73%	6,500	0.8	78%
8	Longland Rd	9,300	0.7	80%	9,300	0.7	82%
Old Cleveland Rd E							
9	East of Starkey St	15,600	0.9	65%	16,200	1.0	59%
10	North of Finucane Rd	30,600	1.0	57%	26,800	0.8	71%
Finucane Rd							
11	East of Old Cleveland Rd E	43,700	1.1	42%	42,500	1.0	48%
12	At Hilliards Ck	39,100	0.9	63%	38,100	0.9	65%
Mount Cotton Rd							
13	East of Avalon Rd	24,800	1.3	25%	33,400	0.9	67%
14	South of Duncan Rd	14,100	0.9	66%	14,800	0.9	64%
15	South of Valley Way	23,800	1.1	43%	23,700	1.1	45%
Cleveland Redland Bay Rd							
16	South of Thornlands Rd	18,600	1.1	60%	18,800	1.1	57%
17	At Pinklands Sporting Complex	20,000	1.1	61%	20,400	1.1	58%
18	At Eprapah Ck	48,200	1.1	48%	50,100	1.2	39%
19	South of Boundary St	20,000	1.0	62%	24,400	0.7	83%

¹ AWDT volumes are bi-directional.

² AM V/C ratio and congested speeds are taken from the worst performing direction.

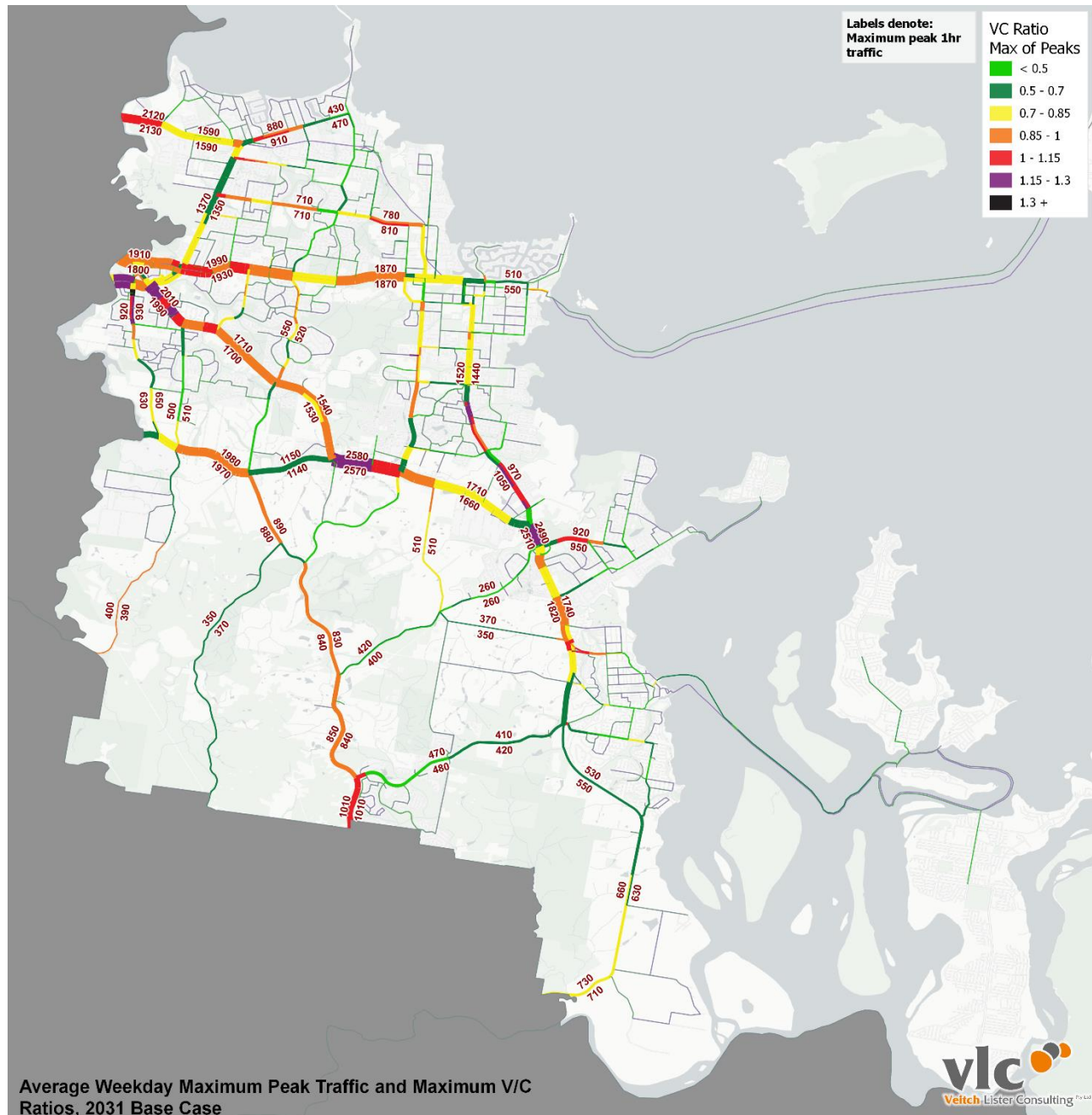
³ Congested speed % of posted speed less than 55% for arterials is defined as excessive congestion (highlighted red). Posted speeds are assumed as the model speeds which is similar to actual speed limits.

5.2 2031 Network Development

2031 Base Case Network Performance

The 2031 Base Case is the same as the improved 2026 network outlined in Section 5.1. The transport model was used to understand how the improved 2026 network would perform in 2031 with the impacts of an additional five years of development. Results from the 2031 base case model were interrogated to identify elements of the 2041 strategy that would assist in resolving network performance issues on the 2031 Base Case network. The 2031 Base Case Network performance is shown in Figure 5-4 in terms of volume to capacity ratio.

Figure 5-4: 2031 Base Case Network Performance (V/C)



2031 Network Improvements

Road network improvements included in the 2031 network are detailed in Table 5-3. Upgrades to Double Jump Road and Kingfisher Road have been included to align with forecast growth in the precinct north of Double Jump Road, which is forecast to accommodate approximately 1000 households by 2031 - more than half of the ultimate projection for growth in this area. Due to population growth in this area, Double Jump Road needs to be included in LGIP to align with the forecast year of growth. Forecast volume to capacity ratios of roads within Redlands under the 2031 Network Improvement Scenario is shown in Figure 5-5.

Table 5-3: Road Network Upgrades by 2031

Project ID	Project name
New and Upgraded Infrastructure 2026 – 2031	
10	Cleveland Redland Bay Road (Dinwoodie Rd to Beveridge Rd)
11	Cleveland Redland Bay Road (South St to Ziegenfusz Rd)
12	Double Jump Rd (Kingfisher Rd to Cleveland Redland Bay Rd)
13	Kingfisher Rd/Springacre Rd (Boundary Rd to Bunker Rd)

Figure 5-5: Network Improvement Locations (2026 to 2031)



The projects listed in Table 5-3 were added to the 2031 Project Case network, and the resulting V/C ratios during peak periods are depicted in Figure 5-6.

Figure 5-6: 2031 Project Case Network Performance (V/C)

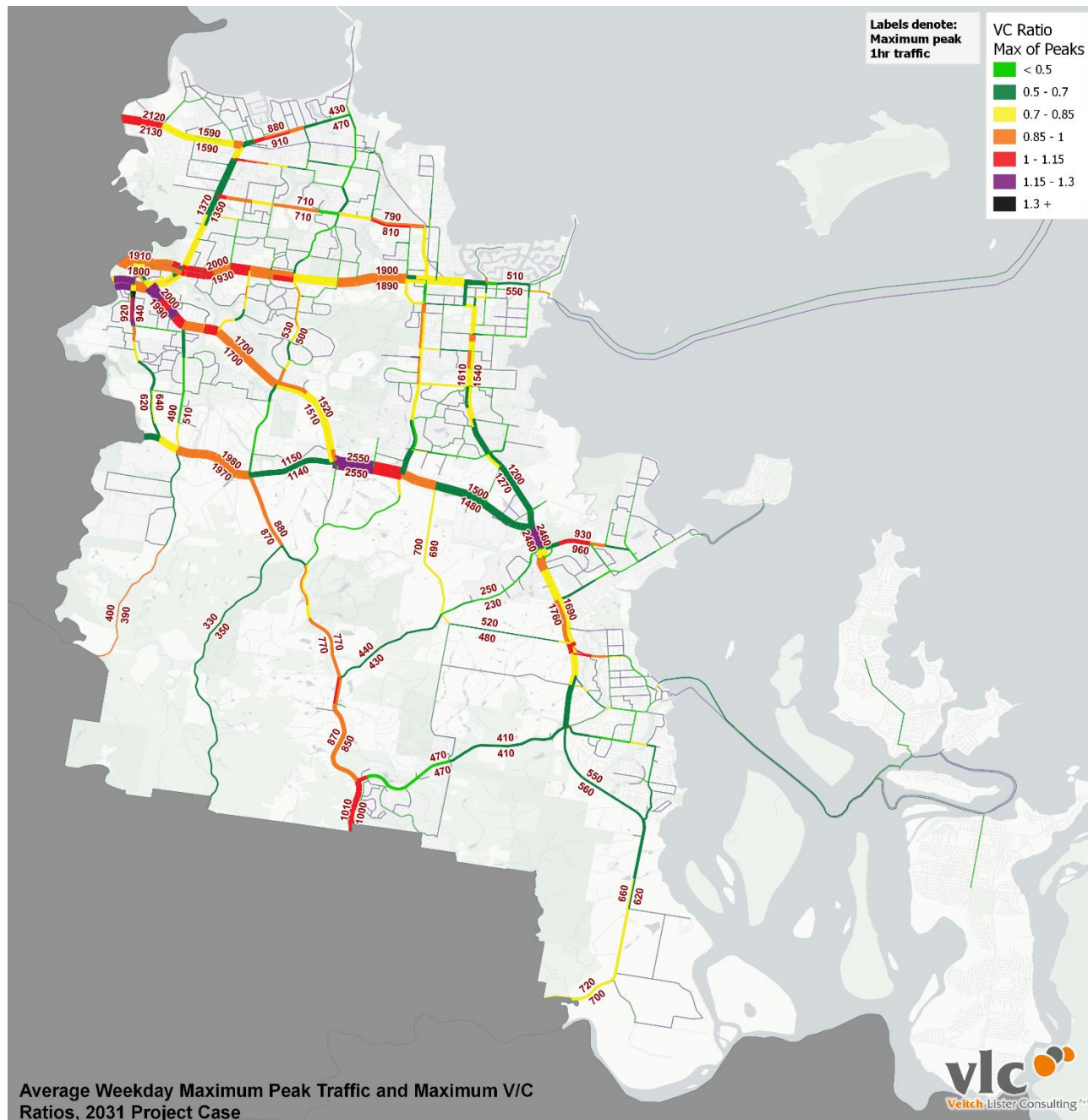


Table 5-4 details the average weekday traffic volumes (AWDT), AM peak period volume to capacity ratio and the congested speeds as a percentage of the freeflow speeds coded in the model.

The improvements to Double Jump Road (Label 6) and Kingfisher/Springacre Road (Label 7) draw higher daily traffic, with peak congested speeds on Double Jump Road decreasing slightly but still maintaining acceptable levels of peak period congestion. Duplication of the Northern sections of Cleveland Redland Bay Road result in higher daily traffic volumes, higher peak congested speeds and a reduction of peak period congestion (labels 16 and 17)

Table 5-4: 2031 Base Case and Project Case network performance at key locations

Label	Location	2031 Base Case			2031 Project Case		
		AWDT ¹	AM V/C ²	Congested speed % of posted speed ³	AWDT ¹	AM V/C ²	Congested speed % of posted speed ³
Arterials							
1	Rickertt Rd	34,800	1.1	50%	34,800	1.1	50%
2	Moreton Bay Rd	53,900	1.2	38%	53,800	1.2	38%
3	Redland Bay Rd	42,200	1.1	43%	42,200	1.1	43%
4	Boundary Rd	53,400	1.2	36%	53,100	1.2	37%
5	German Church Rd	10,200	0.7	81%	10,200	0.7	81%
6	Double Jump Rd	5,500	0.7	82%	5,900	0.7	80%
7	Springacre Rd	7,100	0.9	70%	8,600	0.8	77%
8	Longland Rd	11,100	0.8	78%	11,100	0.8	78%
Old Cleveland Rd E							
9	East of Starkey St	16,900	1.0	55%	17,100	1.0	54%
10	North of Finucane Rd	27,000	0.8	71%	26,900	0.8	71%
Finucane Rd							
11	East of Old Cleveland Rd E	43,400	1.1	46%	43,400	1.1	47%
12	At Hilliards Ck	39,600	0.9	60%	39,700	1.0	58%
Mount Cotton Rd							
13	East of Avalon Rd	35,400	0.9	64%	35,500	0.9	64%
14	South of Duncan Rd	16,100	1.0	58%	16,000	1.0	59%
15	South of Valley Way	24,100	1.1	43%	24,200	1.1	43%
Cleveland Redland Bay Rd							
16	South of Thornlands Rd	19,600	1.2	55%	24,300	0.7	85%
17	At Pinklands Sporting Complex	21,400	1.2	53%	24,400	0.6	87%
18	At Eprapah Ck	53,900	1.3	34%	54,400	1.2	36%
19	South of Boundary St	26,900	0.8	79%	27,300	0.8	78%

¹ AWDT volumes are bi-directional.

² AM V/C ratio and congested speeds are taken from the worst performing direction.

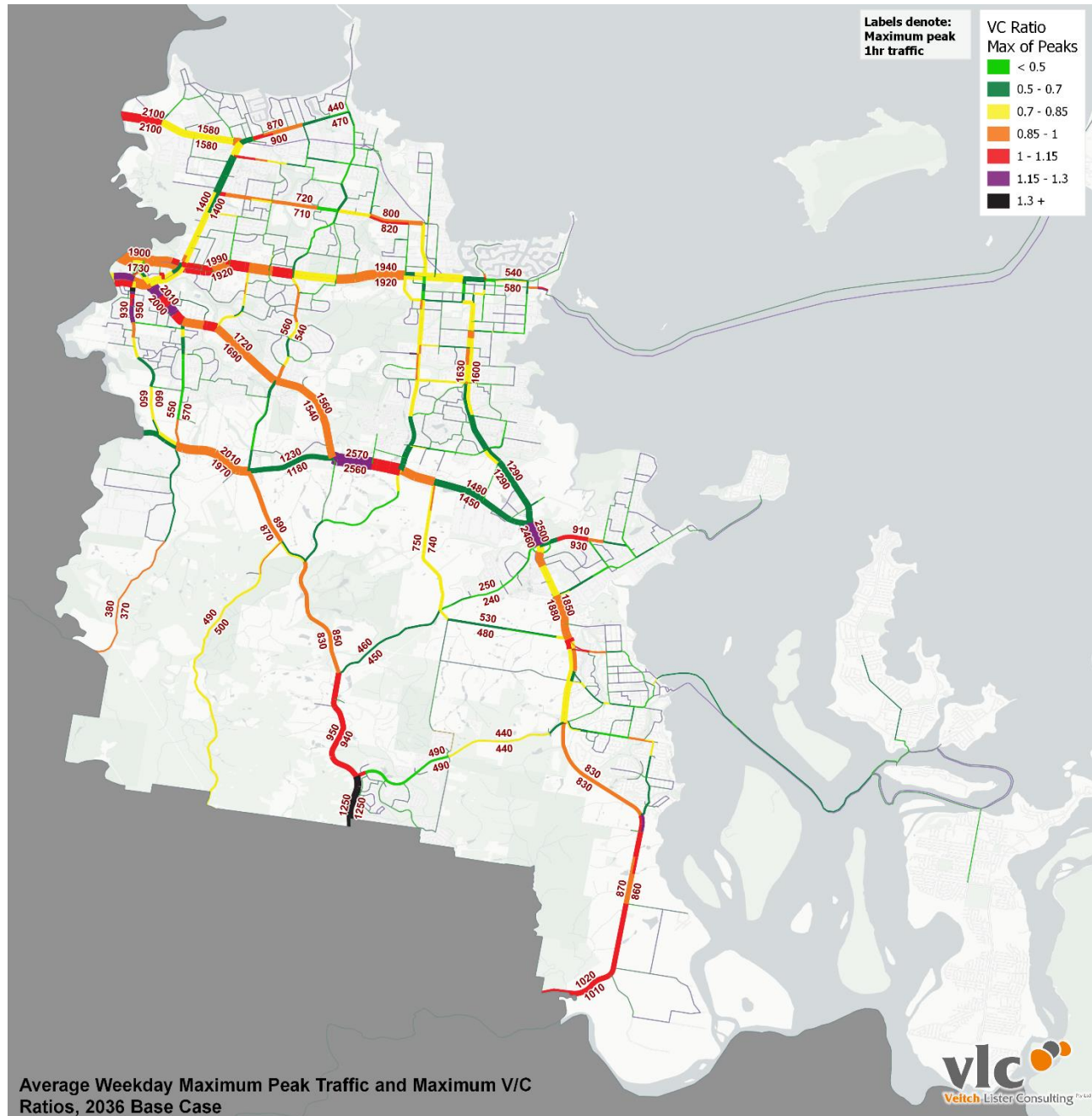
³ Congested speed % of posted speed less than 55% for arterials is defined as excessive congestion (highlighted red). Posted speeds are assumed as the model speeds which is similar to actual speed limits.

5.3 2036 Network Development and Apportionments

2036 Base Case Network Performance

The approach to identifying upgrades warranted in 2036 is the same as that used for 2031. The 2031 improved network was tested with an additional five years of growth, and the results were analysed.

Figure 5-7: 2036 Base Case Network Performance (V/C)



2036 Network Improvements

By 2036 all but two of the network upgrades identified in the 2041 strategy have been included in the network. The remaining projects include the *upgrade of German Church Road and the Western section of Valley Way to a two-lane Urban Arterial link*. Furthermore, considering the base case demands, the Mount Cotton Road duplication was included to relieve congestion observed on that link and to align with the delivery of the Coomera Connector which is assumed in 2036. Mount Cotton Road is a State Controlled Road, and it does not fit within the definition of trunk roads that should be included in a Local Government Infrastructure Plan. The Location of the Mount Cotton Road upgrade included in the 2036 network improvement list is shown in Figure 5-8. The resulting network performance in terms of Volume to Capacity ratios is presented in Figure 5-9.

Table 5-5: Road Network Upgrades by 2036

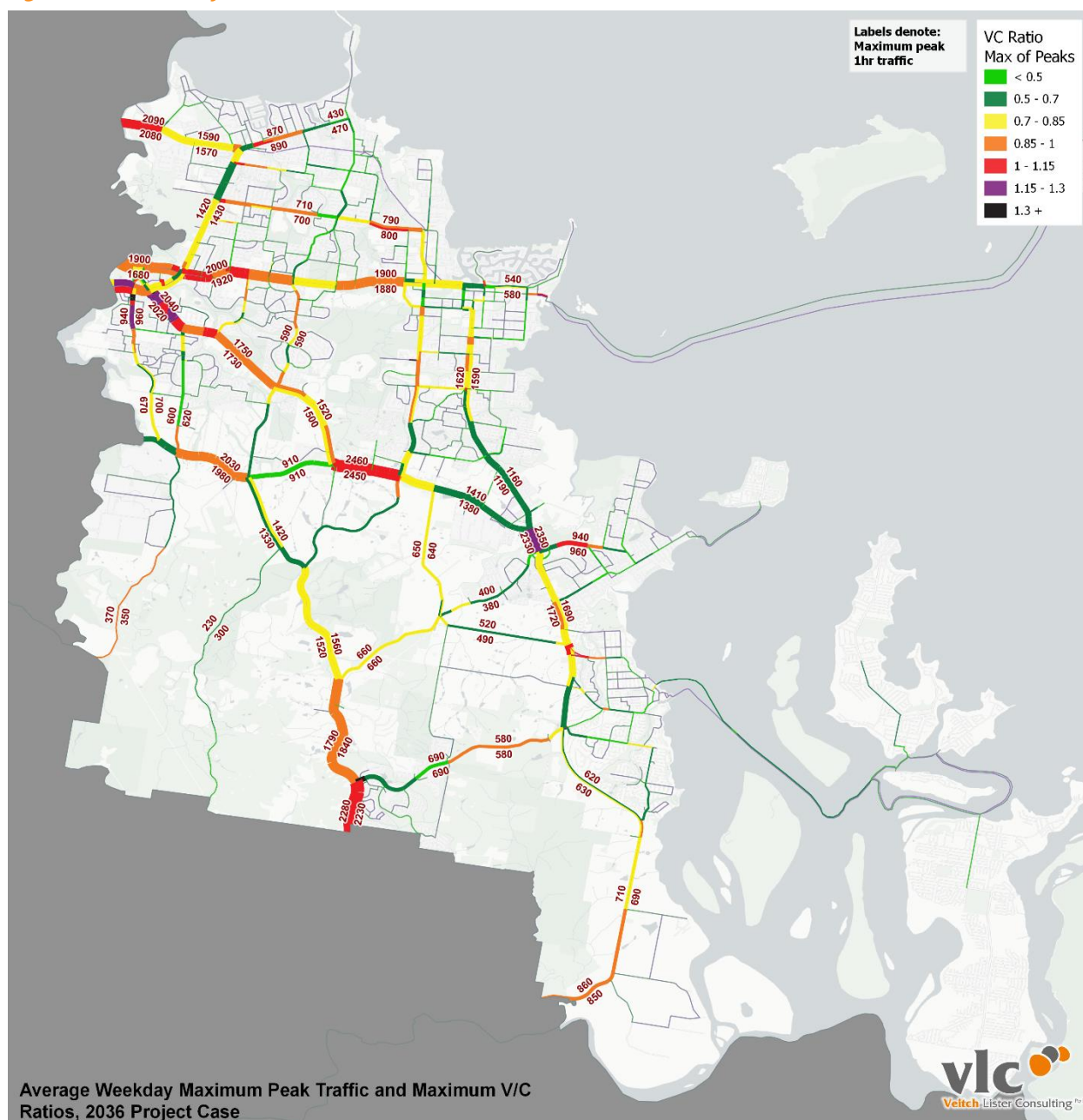
Project ID	Project name
New and Upgraded Infrastructure 2031 - 2036	
14	Mount Cotton Rd (Duncan Rd to Beenleigh Redland Bay Rd)

Figure 5-8: Network Improvement Locations (2031 to 2036)



The projects listed in Table 5-5 were added to the 2036 Project Case network, and the resulting V/C ratios during peak periods are depicted in Figure 5-9.

Figure 5-9: 2036 Project Case Network Performance (V/C)



Mt Cotton Road duplication was identified as a project that would likely be required as a result of the Coomera Connector and its proposed connection over the Logan River at Beenleigh-Redland bay Road. The Coomera Connector has been assumed to be delivered by 2036.

Planning for the Coomera-Connector is not finalised, and a planning study for Mount Cotton Road between Duncan and Double Jump Road is identified in QTRIP. The interactions between Double Jump Road and Brisbane Beenleigh Road require careful examination and should be reviewed as more certainty regarding Coomera Connector becomes available prior to the next LGIP review in 2026-7.

Table 5-6 details average annual weekday traffic, peak congested speeds, and AM volume to capacity ratios on the network in 2036 under the base case and with the duplication of Mount Cotton Road. From this table, it can be seen that Mt Cotton Road duplication does little to improve the performance of key links except for Mount

Cotton Road itself. The effect of duplicating Mount Cotton Road is a redistribution of traffic with more trips heading south out of Redlands to access the Motorway network.

Table 5-6: 2036 Base Case and Project Case network performance at key locations

Label	Location	2036 Base Case			2036 Project Case		
		AWDT ¹	AM V/C ²	Congested speed % of posted speed ³	AWDT ¹	AM V/C ²	Congested speed % of posted speed ³
Arterials							
1	Rickertt Rd	36,300	1.0	52%	36,300	1.0	53%
2	Moreton Bay Rd	52,600	1.1	40%	52,300	1.1	41%
3	Redland Bay Rd	41,200	1.1	42%	41,600	1.1	40%
4	Boundary Rd	50,700	1.2	35%	48,800	1.1	40%
5	German Church Rd	7,900	0.7	78%	12,300	1.0	57%
6	Double Jump Rd	11,100	0.8	73%	10,800	0.7	80%
7	Springacre Rd	14,000	0.8	70%	12,100	0.7	80%
8	Longland Rd	21,500	1.1	49%	14,900	1.0	68%
Old Cleveland Rd E							
9	East of Starkey St	18,600	1.0	53%	18,400	1.0	55%
10	North of Finucane Rd	27,800	0.9	70%	28,100	0.9	70%
Finucane Rd							
11	East of Old Cleveland Rd E	40,900	1.0	45%	40,600	1.0	46%
12	At Hilliards Ck	38,800	1.0	57%	38,300	0.9	59%
Mount Cotton Rd							
13	East of Avalon Rd	36,200	0.9	63%	37,200	0.9	62%
14	South of Duncan Rd	19,000	1.0	59%	24,800	0.7	83%
15	South of Valley Way	28,200	1.4	24%	52,900	1.1	44%
Cleveland Redland Bay Rd							
16	South of Thornlands Rd	25,200	0.7	85%	23,600	0.7	85%
17	At Pinklands Sporting Complex	24,900	0.7	86%	23,800	0.6	87%
18	At Eprapah Ck	48,700	1.2	34%	47,700	1.2	38%
19	South of Boundary St	31,500	0.9	70%	27,900	0.8	77%

¹ AWDT volumes are bi-directional.

² AM V/C ratio and congested speeds are taken from the worst performing direction.

³ Congested speed % of posted speed less than 55% for arterials is defined as excessive congestion (highlighted red). Posted speeds are assumed as the model speeds which is similar to actual speed limits.

The following section of this report details the growth in trip ends of each service catchment and the proportion of traffic on each project attributed to the 30 service catchments discussed above. The exact delivery timing for LGIP projects is subject to financial analysis undertaken by council.

6. Asset Usage Allocation 2036

The LGIP Schedule of Works (SOW) model¹ requires local governments to identify the service catchment(s) of each element of their Plan for Trunk Infrastructure (PFTI). For transport networks, the asset allocation is based on the cost of the PFTI element apportioned across all project users in the ultimate LGIP year (2036). The 2036 model has been used to calculate what proportion of forecast traffic on each project is attributed to each service catchment. Figure 6-2 details the percentage of traffic attributed to different Redland City Council LGA areas and can be used to develop costed asset allocations for each sector as an input to the LGIP SOW Model. An unformatted table version is presented in Asset Usage Allocation 2036. Table 6-1 details the standard of each local government project with local government roads highlighted in Figure 6-2.

The asset usage allocations detailed in Figure 6-2 have been apportioned between the 30 service catchment areas discussed in Section 2.1 of this report. Full details of these 30 service catchment areas can be found within Appendix A. An 'External' zone has been included to represent all locations outside of Redland City Council. For each network improvement (project), utilisation has been split evenly between all vehicles using the modelled links that make up that project (including passenger vehicles and goods vehicles, but not scheduled bus services). Each vehicle trip is weighted by the distance travelled along the project. Each of these vehicles has been matched to its origin and destination sector. Each of these sectors takes an equal share (50/50) of the usage. In this way, project usage is apportioned according to the weighted average of the daily traffic travelling to or from each sector.

Table 6-1: Standard of Local Government Road Upgrades to 2036

Project ID	Road Name	From	To	Standard
4	Double Jump Rd realignment	Heinemann Rd	Kingfisher Rd	Four Lane Sub-Arterial
6	New Road	Kinross Rd	Panorama Dr	Collector Street
7	New Road	Boundary Rd	Cleveland Redland Bay Rd	Major Collector Street
8	Panorama Dr	Boundary Rd	Wellington Rd	Four Lane Sub-Arterial
9	Rickertt Rd	Green Rd	St James Rd	Two Lane Sub-Arterial
12	Double Jump Rd	Cleveland Redland Bay Rd	Kingfisher Rd	Two Lane Sub-Arterial
13	Kingfisher Rd/Springacre Rd	Bunker Rd	Boundary Rd	Two Lane Sub-Arterial

Figure 6-1: Project Location

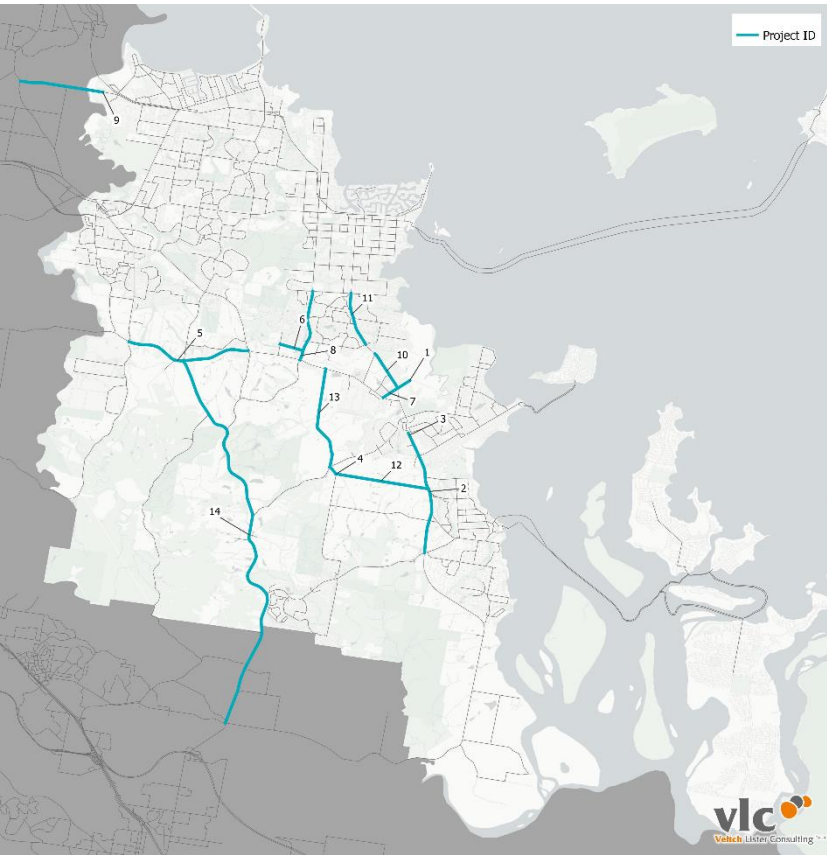


Figure 6-2: Network improvements usage apportionment (2036)

Year Implemented	2026	2026	2026	2026	2026	2026	2026	2026	2026	2031	2031	2031	2031	2036
Project ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Project Name	Beveridge Road (Cleveland Redland Bay Rd to Rachow St)	Cleveland Redland Bay Road (Anita St to German Church Rd)	Cleveland Redland Bay Road (Magnolia Pde to Anita St)	Double Jump Road realignment (Heinemann Rd to Kingfisher Rd)	Mount Cotton Road/Duncan Road (Ney Rd to Redland Bay Rd)	New Road (Panorama Dr to Kinross Rd)	New Road (Boundary Rd to Cleveland Redland Bay Rd)	Panorama Drive (Boundary Rd to Wellington St)	Rickertt Road (Green Camp Rd to West of St James Rd)	Cleveland Redland Bay Road (Dinwoodie Rd to Beveridge Rd)	Cleveland Redland Bay Road (South St to Ziegenfusz Rd)	Double Jump Rd (Kingfisher Rd to Cleveland Redland Bay Rd)	Kingfisher Rd/Springacre Rd (Boundary Rd to Bunker Rd)	Mount Cotton Rd (Duncan Rd to Beenleigh Redland Bay Rd)
Alexandra Hills S.C.	0.1%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.2%	0.3%	0.4%	0.3%
Bal. of Alexandra Hills	1.0%	0.7%	0.8%	1.6%	1.3%	0.3%	2.3%	1.1%	2.8%	0.8%	1.1%	1.6%	1.9%	3.1%
Bal. of Birkdale	0.4%	0.4%	0.5%	0.4%	0.6%	0.2%	0.2%	0.4%	17.1%	1.4%	1.7%	0.4%	0.5%	1.6%
Bal. of Capalaba	1.0%	0.8%	0.8%	2.0%	7.8%	0.0%	3.7%	2.5%	0.6%	0.1%	0.1%	2.1%	1.9%	3.7%
Bal. of Cleveland	3.6%	2.7%	4.3%	2.2%	5.7%	10.6%	0.7%	24.1%	2.4%	14.9%	18.9%	0.6%	3.0%	4.3%
Bal. of Mt Cotton	0.2%	0.2%	0.1%	2.0%	1.1%	0.1%	0.3%	0.7%	0.0%	0.0%	0.1%	1.9%	1.5%	2.0%
Bal. of Redland Bay	2.7%	29.6%	25.5%	18.1%	2.9%	2.3%	0.0%	0.1%	0.0%	9.3%	7.6%	21.0%	12.5%	2.0%
Bal. of Thornlands	19.4%	3.1%	4.9%	2.9%	8.6%	12.3%	20.1%	16.6%	0.7%	16.2%	14.7%	1.8%	10.8%	3.7%
Bal. of Victoria Point	5.7%	16.4%	17.4%	18.1%	6.1%	5.6%	0.1%	1.3%	0.0%	16.9%	13.0%	22.5%	15.0%	4.2%
Bal. of Wellington Point	0.5%	0.5%	0.7%	0.4%	0.1%	1.3%	0.0%	1.0%	11.0%	2.5%	2.9%	0.2%	0.5%	1.8%
Birkdale Fair S.C.	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	1.5%	0.2%	0.2%	0.0%	0.0%	0.1%
Capalaba Ind. Area	0.6%	0.6%	0.6%	1.5%	1.3%	0.0%	1.9%	0.7%	0.0%	0.0%	0.0%	1.5%	1.7%	1.8%
Capalaba S.C.	1.0%	1.2%	1.1%	2.7%	2.6%	0.0%	3.1%	0.4%	0.3%	0.1%	0.4%	2.9%	3.1%	2.9%
Cleveland CBD	1.9%	1.5%	2.3%	0.7%	1.0%	4.6%	0.5%	4.9%	1.0%	7.3%	10.1%	0.2%	1.6%	1.3%
Coochiemudlo Is.	0.1%	0.6%	0.3%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.5%	0.5%	0.0%	0.0%	0.1%
Kinross Road S.P.A.	0.5%	0.3%	0.3%	1.0%	2.1%	50.0%	1.8%	3.5%	0.0%	0.0%	0.0%	0.8%	1.2%	0.7%
Mt Cotton Village	0.5%	3.1%	1.5%	6.8%	2.7%	0.4%	0.0%	1.3%	0.0%	0.0%	0.7%	0.3%	4.5%	6.8%
North Stradbroke Is.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
Ormiston	0.9%	0.7%	1.1%	0.9%	0.5%	3.6%	0.1%	6.2%	2.8%	3.7%	4.5%	0.3%	1.0%	1.4%
Redland Bay Business Park	0.1%	1.2%	0.7%	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.3%	0.2%	0.5%	0.3%	0.2%
Redland Bay Shopping Vil.	0.1%	0.3%	1.1%	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.4%	0.3%	0.9%	0.5%	0.1%
S.E. Thornlands S.P.A.	36.0%	0.7%	1.2%	0.1%	1.1%	0.9%	34.6%	0.1%	0.0%	3.9%	2.8%	0.1%	0.3%	0.5%
Sheldon	0.5%	0.3%	0.2%	1.2%	4.4%	0.0%	1.7%	2.3%	0.0%	0.0%	0.0%	1.3%	0.5%	1.8%
Shoreline Development	0.3%	7.6%	4.8%	3.3%	0.3%	0.4%	0.0%	0.0%	0.0%	1.8%	1.5%	4.0%	2.5%	0.0%
Sth Moreton Bay Is.	0.1%	1.3%	2.9%	4.0%	0.7%	0.1%	0.0%	0.0%	0.0%	1.0%	0.9%	4.8%	3.1%	0.6%
Thorneside	0.1%	0.1%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	7.6%	0.2%	0.3%	0.1%	0.1%	0.4%
Toondah PDA	0.3%	0.3%	0.4%	0.1%	0.2%	0.7%	0.1%	1.2%	0.3%	1.5%	2.0%	0.0%	0.4%	0.4%
Victoria Point S.C.	8.3%	7.7%	12.6%	1.1%	2.7%	5.6%	0.0%	13.9%	0.0%	10.4%	10.4%	1.1%	0.1%	2.4%
Weinam Creek PDA	0.1%	1.0%	1.5%	1.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.5%	0.5%	1.3%	0.7%	0.1%
Wellington Point S.V.	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	1.0%	0.2%	0.2%	0.0%	0.0%	0.1%
External	13.9%	16.7%	11.9%	26.2%	45.1%	0.8%	28.7%	30.9%	50.6%	2.2%	4.1%	27.3%	30.4%	51.5%

¹ <https://dsdmipprd.blob.core.windows.net/general/AppendixC-ScheduleofworksmodelV11Feb2016.xlsm>

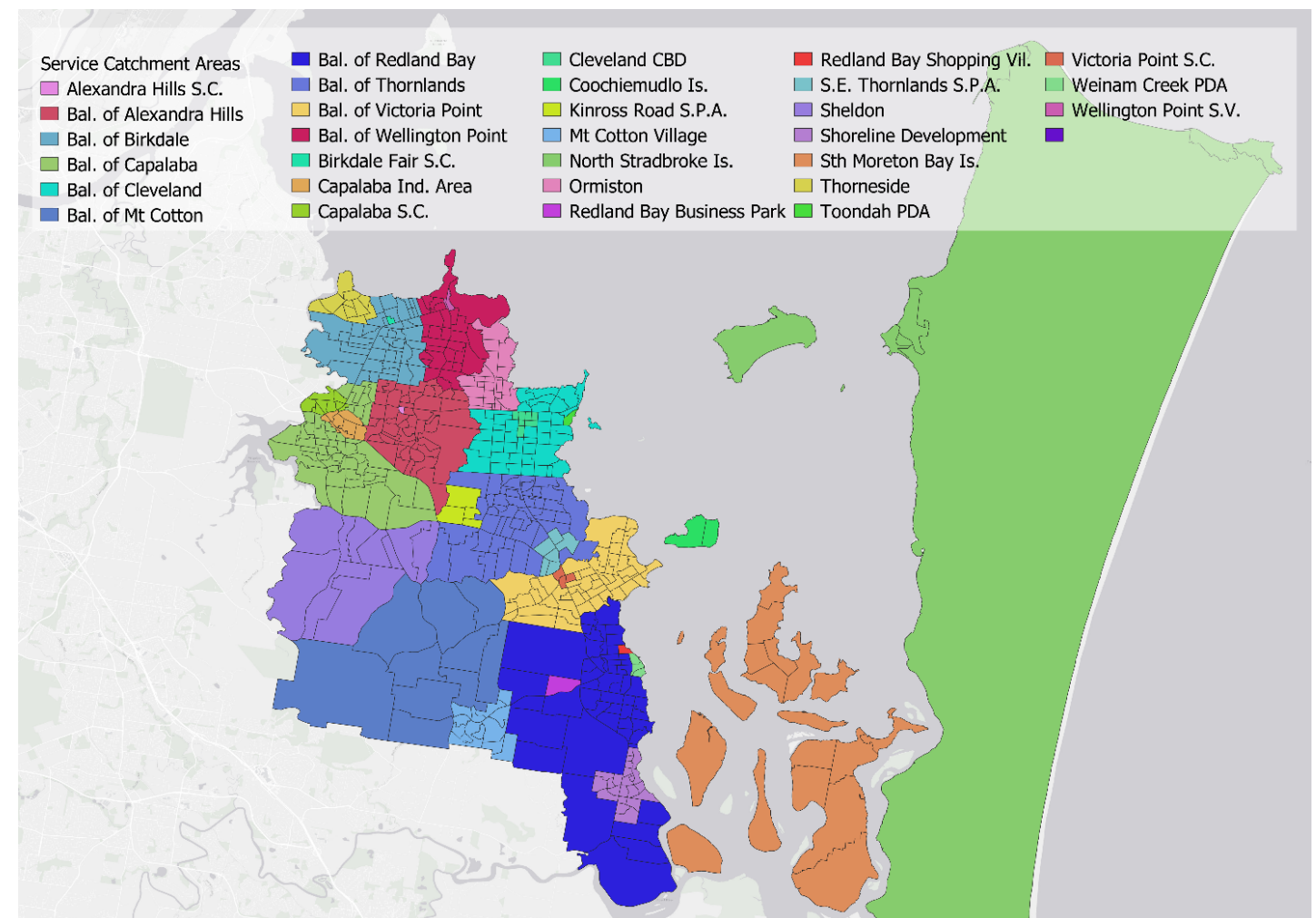
7. Vehicle Trip Ends Per Average Week Day

Table 7-1 details the 2026 and 2036 demand attributed to each service catchment. Demand is defined as the number of trips generated by or attracted to a catchment ('trip ends'). The service catchment areas are shown spatially in Figure 7-1.

Table 7-1: Vehicle Trip Ends 2026 and 2036

AREA	2026	2036	GROWTH IN TRIP-ENDS	% OF REDLAND'S GROWTH
Alexandra Hills S.C.	8,692	8,295	-397	-0.69%
Bal. of Alexandra Hills	53,694	54,562	867	1.51%
Bal. of Birkdale	49,518	51,160	1,643	2.86%
Bal. of Capalaba	58,955	59,967	1,012	1.76%
Bal. of Cleveland	69,894	74,017	4,123	7.17%
Bal. of Mt Cotton	4,972	5,059	88	0.15%
Bal. of Redland Bay	48,841	51,294	2,453	4.27%
Bal. of Thornlands	48,085	51,921	3,836	6.67%
Bal. of Victoria Point	56,990	61,189	4,199	7.31%
Bal. of Wellington Point	40,346	41,787	1,441	2.51%
Birkdale Fair S.C.	5,269	5,202	-67	-0.12%
Capalaba ind. Area	30,621	30,577	-44	-0.08%
Capalaba S.C.	60,790	69,724	8,934	15.54%
Cleveland CBD	32,799	35,997	3,198	5.56%
Coochiemudlo Is.	1,661	1,834	174	0.30%
Kinross Road S.P.A	7,410	8,256	846	1.47%
Mt Cotton Village	19,116	20,962	1,846	3.21%
North Stradbroke Is.	4,366	4,132	-234	-0.41%
Ormiston	30,316	31,309	993	1.73%
Redland Bay Business Park	778	1,366	588	1.02%
Redland Bay Shopping Vil.	1,094	1,789	695	1.21%
S.E. thornlands S.P.A	7,033	7,270	237	0.41%
Sheldon	10,386	10,311	-75	-0.13%
Shoreline Development	4,824	13,325	8,502	14.79%
Sth Moreton Bay Is.	13,428	16,133	2,706	4.71%
Thorneside	12,038	12,246	208	0.36%
Toondah PDA	5,085	8,449	3,364	5.85%
Victoria Point S.C.	29,544	35,065	5,522	9.61%
Weinam Creek PDA	2,107	2,896	789	1.37%
Wellington Point S.V.	3,449	3,479	30	0.05%
Total	722,100	779,576	57,476	100%

Figure 7-1 : Service Catchment Areas



Appendix A Asset Usage Allocation 2036

Year Implemented	2026	2026	2026	2026	2026	2026	2026	2026	2026	2031	2031	2031	2031	2036
Project ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Project Name	Beveridge Road (Cleveland Redland Bay Rd to Rachow St)	Cleveland Redland Bay Road (Anita St to German Church Rd)	Cleveland Redland Bay Road (Magnolia Pde to Anita St)	Double Jump Road realignment (Heinemann Rd to Kingfisher Rd)	Mount Cotton Road/Duncan Road (Ney Rd to Redland Bay Rd)	New Road (Panorama Dr to Kinross Rd)	New Road (Boundary Rd to Cleveland Redland Bay Rd)	Panorama Drive (Boundary Rd to Wellington St)	Rickertt Road (Green Camp Rd to West of St James Rd)	Cleveland Redland Bay Road (Dinwoodie Rd to Beveridge Rd)	Cleveland Redland Bay Road (South St to Ziegenfusz Rd)	Double Jump Rd (Kingfisher Rd to Cleveland Redland Bay Rd)	Kingfisher Rd/Springacre Rd (Boundary Rd to Bunker Rd)	Mount Cotton Rd (Duncan Rd to Beenleigh Redland Bay Rd)
Alexandra Hills S.C.	0.1%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.2%	0.3%	0.4%	0.3%
Bal. of Alexandra Hills	1.0%	0.7%	0.8%	1.6%	1.3%	0.3%	2.3%	1.1%	2.8%	0.8%	1.1%	1.6%	1.9%	3.1%
Bal. of Birkdale	0.4%	0.4%	0.5%	0.4%	0.6%	0.2%	0.2%	0.4%	17.1%	1.4%	1.7%	0.4%	0.5%	1.6%
Bal. of Capalaba	1.0%	0.8%	0.8%	2.0%	7.8%	0.0%	3.7%	2.5%	0.6%	0.1%	0.1%	2.1%	1.9%	3.7%
Bal. of Cleveland	3.6%	2.7%	4.3%	2.2%	5.7%	10.6%	0.7%	24.1%	2.4%	14.9%	18.9%	0.6%	3.0%	4.3%
Bal. of Mt Cotton	0.2%	0.2%	0.1%	2.0%	1.1%	0.1%	0.3%	0.7%	0.0%	0.0%	0.1%	1.9%	1.5%	2.0%
Bal. of Redland Bay	2.7%	29.6%	25.5%	18.1%	2.9%	2.3%	0.0%	0.1%	0.0%	9.3%	7.6%	21.0%	12.5%	2.0%
Bal. of Thornlands	19.4%	3.1%	4.9%	2.9%	8.6%	12.3%	20.1%	16.6%	0.7%	16.2%	14.7%	1.8%	10.8%	3.7%
Bal. of Victoria Point	5.7%	16.4%	17.4%	18.1%	6.1%	5.6%	0.1%	1.3%	0.0%	16.9%	13.0%	22.5%	15.0%	4.2%
Bal. of Wellington Point	0.5%	0.5%	0.7%	0.4%	0.1%	1.3%	0.0%	1.0%	11.0%	2.5%	2.9%	0.2%	0.5%	1.8%
Birkdale Fair S.C.	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	1.5%	0.2%	0.2%	0.0%	0.0%	0.1%
Capalaba Ind. Area	0.6%	0.6%	0.6%	1.5%	1.3%	0.0%	1.9%	0.7%	0.0%	0.0%	0.0%	1.5%	1.7%	1.8%
Capalaba S.C.	1.0%	1.2%	1.1%	2.7%	2.6%	0.0%	3.1%	0.4%	0.3%	0.1%	0.4%	2.9%	3.1%	2.9%
Cleveland CBD	1.9%	1.5%	2.3%	0.7%	1.0%	4.6%	0.5%	4.9%	1.0%	7.3%	10.1%	0.2%	1.6%	1.3%
Coochiemudlo Is.	0.1%	0.6%	0.3%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.5%	0.5%	0.0%	0.0%	0.1%
Kinross Road S.P.A	0.5%	0.3%	0.3%	1.0%	2.1%	50.0%	1.8%	3.5%	0.0%	0.0%	0.0%	0.8%	1.2%	0.7%
Mt Cotton Village	0.5%	3.1%	1.5%	6.8%	2.7%	0.4%	0.0%	1.3%	0.0%	0.0%	0.7%	0.3%	4.5%	6.8%
North Stradbroke Is.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
Ormiston	0.9%	0.7%	1.1%	0.9%	0.5%	3.6%	0.1%	6.2%	2.8%	3.7%	4.5%	0.3%	1.0%	1.4%
Redland Bay Business Park	0.1%	1.2%	0.7%	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.3%	0.2%	0.5%	0.3%	0.2%
Redland Bay Shopping Vil.	0.1%	0.3%	1.1%	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.4%	0.3%	0.9%	0.5%	0.1%
S.E. Thornlands S.P.A	36.0%	0.7%	1.2%	0.1%	1.1%	0.9%	34.6%	0.1%	0.0%	3.9%	2.8%	0.1%	0.3%	0.5%
Sheldon	0.5%	0.3%	0.2%	1.2%	4.4%	0.0%	1.7%	2.3%	0.0%	0.0%	0.0%	1.3%	0.5%	1.8%
Shoreline Development	0.3%	7.6%	4.8%	3.3%	0.3%	0.4%	0.0%	0.0%	0.0%	1.8%	1.5%	4.0%	2.5%	0.0%
Sth Moreton Bay Is.	0.1%	1.3%	2.9%	4.0%	0.7%	0.1%	0.0%	0.0%	0.0%	1.0%	0.9%	4.8%	3.1%	0.6%
Thorneside	0.1%	0.1%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	7.6%	0.2%	0.3%	0.1%	0.1%	0.4%
Toondah Pda	0.3%	0.3%	0.4%	0.1%	0.2%	0.7%	0.1%	1.2%	0.3%	1.5%	2.0%	0.0%	0.4%	0.4%
Victoria Point S.C.	8.3%	7.7%	12.6%	1.1%	2.7%	5.6%	0.0%	0.1%	0.0%	13.9%	10.4%	1.1%	0.1%	2.4%
Weinam Creek Pda	0.1%	1.0%	1.5%	1.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.5%	0.5%	1.3%	0.7%	0.1%
Wellington Point S.V.	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	1.0%	0.2%	0.2%	0.0%	0.0%	0.1%
External	13.9%	16.7%	11.9%	26.2%	45.1%	0.8%	28.7%	30.9%	50.6%	2.2%	4.1%	27.3%	30.4%	51.5%

