

APPENDIX

INLAND  
RAIL 

U

# Traffic Impact Assessment

Part 2 of 2

HELIDON TO CALVERT ENVIRONMENTAL IMPACT STATEMENT

IR\_1381

ARTC

The Australian Government is delivering  
Inland Rail through the Australian  
Rail Track Corporation (ARTC), in  
partnership with the private sector.

APPENDIX

U

Traffic Impact Assessment

**Appendix A** DTMR Traffic Growth Rates

ARTC

The Australian Government is investing  
in infrastructure through the Australian  
Rail Track Corporation (ARTC) to  
improve growth through rail.



Location & Year		Annual Average Daily Traffic (AADT) growth rates										Heavy Vehicles (HV) percent projections									
Segment	Station	Lanes	Year	Annual AADT	Projected AADT	Linear Growth Rate per year and equation used for projections (y=a*x+b)	Equivalent Exponential Growth Rate per year	Final Growth Rate	Total (all lanes) by vehicle type	Projected HV	Linear Growth Rate per year and equation used for projections (y=a*x+b)	Equivalent Exponential Growth Rate per year	Final Growth Rate	Projected HV	Percent of HV	Final Percent of HV					
				Estimated AADT		%	a	b	%	Historic AADT	Light vehicle	Heavy vehicle	Estimated HV	%	a	b	%	Estimated HV	Percent of HV	Average %	
Laidley Plainland Road	12017 100m North of Gals	2	2010	5,058	5,058	1.90%				5,058	5,052	6	20.3%	6	0.11%	0.11%					
			2011	5,058	5,058	1.90%			5,058	5,052	6	20.3%	6	0.11%	0.11%						
			2012	5,058	5,058	1.90%			5,058	5,052	6	20.3%	6	0.11%	0.11%						
			2013	5,058	5,058	1.90%			5,058	5,052	6	20.3%	6	0.11%	0.11%						
			2014	5,058	5,058	1.90%			5,058	5,052	6	20.3%	6	0.11%	0.11%						
Laidley Plainland Road	12016 150m South of Old	2	2010	6,239	6,239	1.44%				6,239	6,234	5	11.9%	5	0.08%	0.08%					
			2011	6,239	6,239	1.44%			6,239	6,234	5	11.9%	5	0.08%	0.08%						
			2012	6,239	6,239	1.44%			6,239	6,234	5	11.9%	5	0.08%	0.08%						
			2013	6,239	6,239	1.44%			6,239	6,234	5	11.9%	5	0.08%	0.08%						
			2014	6,239	6,239	1.44%			6,239	6,234	5	11.9%	5	0.08%	0.08%						
Haleisa Amberley Road	15538 Hospital/Amberley	2	2010	4,123	4,123	-1.93%				4,123	4,112	11	-1.6%	11	0.26%	0.27%					
			2011	4,123	4,123	-1.93%			4,123	4,112	11	-1.6%	11	0.26%	0.27%						
			2012	4,123	4,123	-1.93%			4,123	4,112	11	-1.6%	11	0.26%	0.27%						
			2013	4,123	4,123	-1.93%			4,123	4,112	11	-1.6%	11	0.26%	0.27%						
			2014	4,123	4,123	-1.93%			4,123	4,112	11	-1.6%	11	0.26%	0.27%						
Karrabin Rosewood Road	15533 Karrabin Rd West o	2	2010	3,627	3,627	1.44%				3,627	3,622	5	14.2%	5	0.15%	0.20%					
			2011	3,627	3,627	1.44%			3,627	3,622	5	14.2%	5	0.15%	0.20%						
			2012	3,627	3,627	1.44%			3,627	3,622	5	14.2%	5	0.15%	0.20%						
			2013	3,627	3,627	1.44%			3,627	3,622	5	14.2%	5	0.15%	0.20%						
			2014	3,627	3,627	1.44%			3,627	3,622	5	14.2%	5	0.15%	0.20%						
Rosewood-Laidley Road	15527 Rosewood/Laidley	2	2010	2,482	2,482	1.51%				2,482	2,473	9	3.7%	9	0.43%	0.43%					
			2011	2,482	2,482	1.51%			2,482	2,473	9	3.7%	9	0.43%	0.43%						
			2012	2,482	2,482	1.51%			2,482	2,473	9	3.7%	9	0.43%	0.43%						
			2013	2,482	2,482	1.51%			2,482	2,473	9	3.7%	9	0.43%	0.43%						
			2014	2,482	2,482	1.51%			2,482	2,473	9	3.7%	9	0.43%	0.43%						
Rosewood-Laidley Road	13209 100m West of Mills	2	2010	1,411	1,411	11.40%				1,411	1,400	11	4.3%	11	0.75%	0.70%					
			2011	1,411	1,411	11.40%			1,411	1,400	11	4.3%	11	0.75%	0.70%						
			2012	1,411	1,411	11.40%			1,411	1,400	11	4.3%	11	0.75%	0.70%						
			2013	1,411	1,411	11.40%			1,411	1,400	11	4.3%	11	0.75%	0.70%						
			2014	1,411	1,411	11.40%			1,411	1,400	11	4.3%	11	0.75%	0.70%						
Cunningham Highway	13578 100m North of Sw	2	2010	24,360	24,360	4.59%				24,360	24,353	15	1.2%	15	0.05%	0.05%					
			2011	24,360	24,360	4.59%			24,360	24,353	15	1.2%	15	0.05%	0.05%						
			2012	24,360	24,360	4.59%			24,360	24,353	15	1.2%	15	0.05%	0.05%						
			2013	24,360	24,360	4.59%			24,360	24,353	15	1.2%	15	0.05%	0.05%						
			2014	24,360	24,360	4.59%			24,360	24,353	15	1.2%	15	0.05%	0.05%						
Cunningham Highway	14001 2 South of Chum St	2	2010	19,209	19,209	23.12%				19,209	19,193	16	0.0%	16	0.08%	0.06%					
			2011	19,209	19,209	23.12%			19,209	19,193	16	0.0%	16	0.08%	0.06%						
			2012	19,209	19,209	23.12%			19,209	19,193	16	0.0%	16	0.08%	0.06%						
			2013	19,209	19,209	23.12%			19,209	19,193	16	0.0%	16	0.08%	0.06%						
			2014	19,209	19,209	23.12%			19,209	19,193	16	0.0%	16	0.08%	0.06%						
River Road	13249 Between Queen an	2	2010	6,611	6,611	-1.79%				6,611	6,600	11	28.0%	11	0.16%	0.19%					
			2011	6,611	6,611	-1.79%			6,611	6,600	11	28.0%	11	0.16%	0.19%						
			2012	6,611	6,611	-1.79%			6,611	6,600	11	28.0%	11	0.16%	0.19%						
			2013	6,611	6,611	-1.79%			6,611	6,600	11	28.0%	11	0.16%	0.19%						
			2014	6,611	6,611	-1.79%			6,611	6,600	11	28.0%	11	0.16%	0.19%						
Baudouart Bushland Road	1002 1.4km west of Sw	2	2010	2,768	2,768	1.06%				2,768	2,749	19	-3.3%	19	0.68%	0.64%					
			2011	2,768	2,768	1.06%			2,768	2,749	19	-3.3%	19	0.68%	0.64%						
			2012	2,768	2,768	1.06%			2,768	2,749	19	-3.3%	19	0.68%	0.64%						
			2013	2,768	2,768	1.06%			2,768	2,749	19	-3.3%	19	0.68%	0.64%						
			2014	2,768	2,768	1.06%			2,768	2,749	19	-3.3%	19	0.68%	0.64%						
Mount Lindesay Highway	11763 450m north of Cryn	2	2010	4,774	4,774	4.88%				4,774	4,761	13	9.9%	13	0.27%	0.27%					
			2011	4,774	4,774	4.88%			4,774	4,761	13	9.9%	13	0.27%	0.27%						
			2012	4,774	4,774	4.88%			4,774	4,761	13	9.9%	13	0.27%	0.27%						
			2013	4,774	4,774	4.88%			4,774	4,761	13	9.9%	13	0.27%	0.27%						
			2014	4,774	4,774	4.88%			4,774	4,761	13	9.9%	13	0.27%	0.27%						
Mount Lindesay Highway	1000 Tamookum Hill	2	2010	1,770	1,770	2.99%				1,770	1,756	14	10.7%	14	0.79%	0.84%					
			2011	1,770	1,770	2.99%			1,770	1,756	14	10.7%	14	0.79%	0.84%						
			2012	1,770	1,770	2.99%			1,770	1,756	14	10.7%	14	0.79%	0.84%						
			2013	1,770	1,770	2.99%			1,770	1,756	14	10.7%	14	0.79%	0.84%						
			2014	1,770	1,770	2.99%			1,770	1,756	14	10.7%	14	0.79%	0.84%						

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Traffic Impact Assessment

## Appendix B RMS Traffic Growth Rates

ARTC

The Australian Government is achieving  
national growth through the National  
Railway Corporation (ARTC) in  
partnership with its state partners.

Location & Year		Annual Average Daily Traffic (AADT) growth rates					Heavy Vehicles (HV) percent projections																					
Segment	Station	Lanes	Year	Annual Average Daily Traffic	Projected AADT	Linear Growth Rate per year and equation used for projections (y=a*x+b)	Equivalent Exponential Growth Rate per year	Final Growth Rate	Total (all lanes) by vehicle type	Projected HV	Linear Growth Rate per year and equation used for projections (y=a*x+b)	Equivalent Exponential Growth Rate per year	Final Growth Rate	Projected HV	Percent of HV	Final Percent of HV												
				Historic AADT	Estimated AADT												%	a	b	%	Historic AADT	Light vehicles	Heavy vehicles	Estimated HV	%	a	b	%
Pacific Motorway	6115 Between QLD/ NSW		2011	-	-	$y = 2,324.67x - 4,679,620.80$ $R^2 = 0.77$	11.65%	11.65%																				
			2012	-	-													7,497	31.01%	2,324.7	-4,679,620.80	7,497	4,781	2,716	2.0%	2,716	36.23%	
			2013	-	-													7,647	30.40%			7,647	4,877	2,770	2.0%	2,770	36.23%	
			2014	-	-													7,800	29.80%			7,800	4,974	2,826	1.9%	2,826	36.23%	
			2015	-	-																	11,563					2,880	24.91%
			2016	-	-																	34,809					3,429	9.85%
			2017	-	-																	58,056					4,082	7.03%
			2018	-	-																							
			2028	-	-																							
			2038	-	-																							
Summerland Way	04331 Between Trenayr R		2010	-	-	$y = 124.11x - 243,681.42$ $R^2 = 1.00$	1.04%	1.04%																				
			2011	-	-													5,903	2.02%	129.1	-248,624.14	5,903	5,903	502	2.1%	502	8.34%	
			2012	-	-													6,021	1.98%			6,021	5,629	512	2.1%	512	8.34%	
			2013	-	-													6,141	1.94%			6,141	5,519	522	2.0%	522	8.50%	
			2014	-	-													6,264				6,264	5,732	533	2.0%	533		
			2015	-	-													6,390				6,390	5,846	543	1.9%	543	8.50%	
			2016	-	-													6,517				6,517	5,963	554	1.9%	554		
			2017	-	-													6,648				6,648	6,082	565	1.9%	565		
			2018	-	-																	11,839					575	4.86%
			2028	-	-																	13,130					681	5.19%
2038	-	-					14,420					786	5.59%															

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Traffic Impact Assessment

**Appendix C** Helidon to Calvert Land Use



ARTC

The Australian Government is investing  
in infrastructure through the Australian  
Railway Corporation (ARTC) in  
partnership with its private partners.

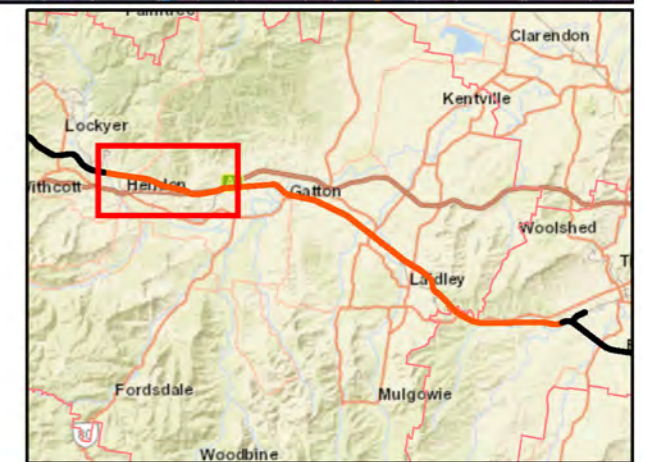




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**Legend**

- |                       |                            |                             |                                  |                              |
|-----------------------|----------------------------|-----------------------------|----------------------------------|------------------------------|
| 5 Chainage (km)       | EIS investigation corridor | <b>Land use</b>             | Land in transition               | Transport and communication  |
| Localities            | Local Government Areas     | Nature conservation         | Irrigated perennial horticulture | Mining                       |
| Existing rail         | Cadastre                   | Managed resource protection | Irrigated seasonal horticulture  | Waste treatment and disposal |
| G2H project alignment |                            | Other minimal use           | Intensive horticulture           | Reservoir/dam                |
| H2C project alignment |                            | Grazing native vegetation   | Manufacturing and industrial     | River                        |
| Watercourses          |                            | Production forestry         | Residential                      |                              |
| Major roads           |                            | Grazing modified pastures   | Services                         |                              |
| Minor roads           |                            | Cropping                    |                                  |                              |



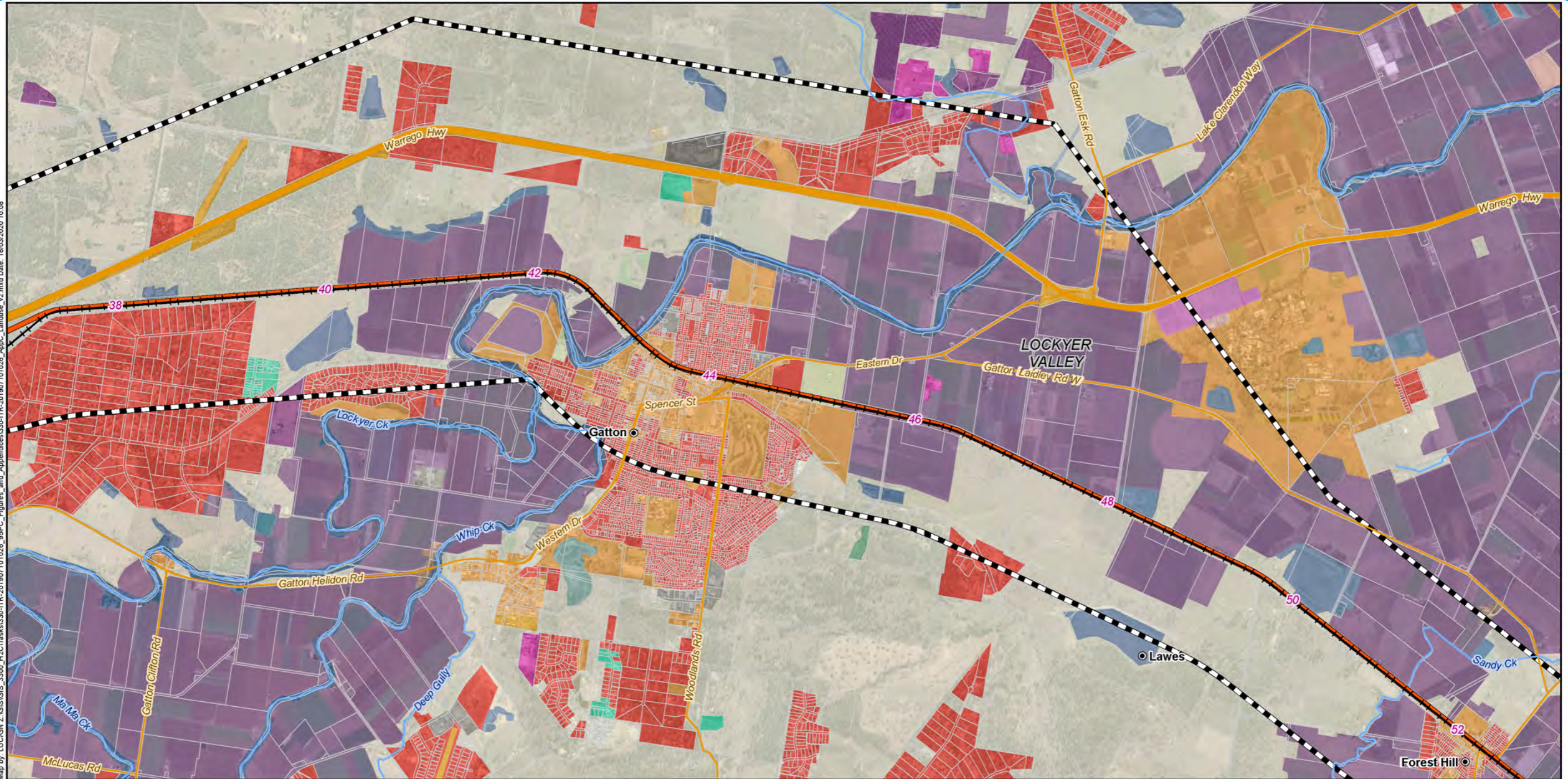
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Issue date: 12/03/2020 Version: 2  
 Coordinate System: GDA 1994 MGA Zone 56

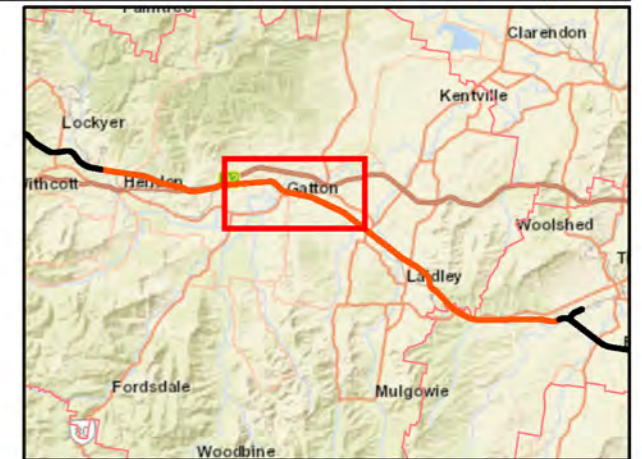


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**Legend**

- |                       |                            |                                  |                                 |                              |
|-----------------------|----------------------------|----------------------------------|---------------------------------|------------------------------|
| 5 Chainage (km)       | EIS investigation corridor | <b>Land use</b>                  | Irrigated seasonal horticulture | Transport and communication  |
| Localities            | Local Government Areas     | Nature conservation              | Irrigated land in transition    | Waste treatment and disposal |
| Existing rail         | Cadastre                   | Other minimal use                | Intensive horticulture          | Reservoir/dam                |
| H2C project alignment |                            | Grazing native vegetation        | Intensive animal husbandry      | River                        |
| Watercourses          |                            | Grazing modified pastures        | Manufacturing and industrial    | Channel/aqueduct             |
| Major roads           |                            | Perennial horticulture           | Residential                     | Marsh/wetland                |
| Minor roads           |                            | Land in transition               | Services                        |                              |
|                       |                            | Irrigated modified pastures      | Utilities                       |                              |
|                       |                            | Irrigated perennial horticulture |                                 |                              |

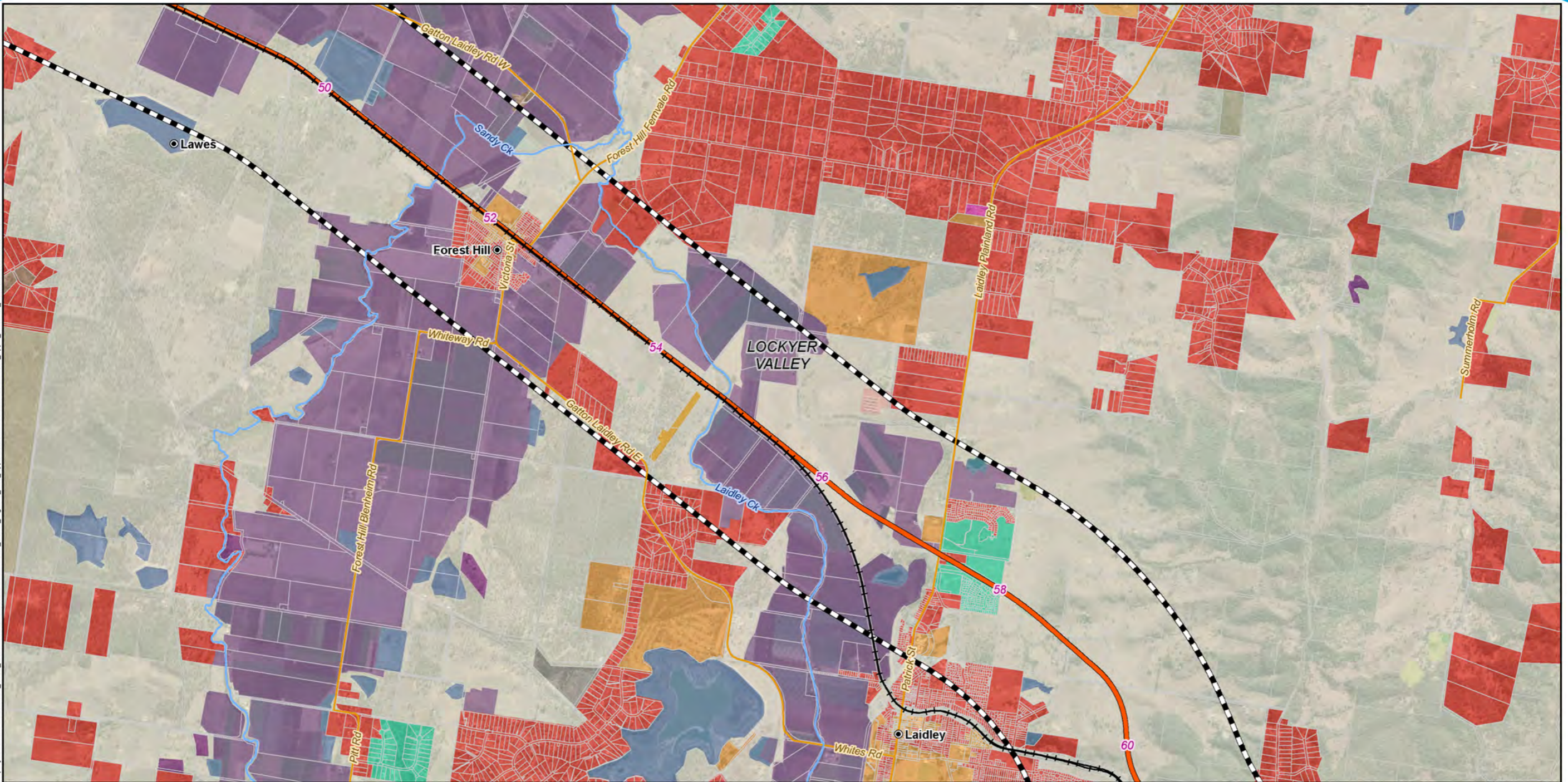


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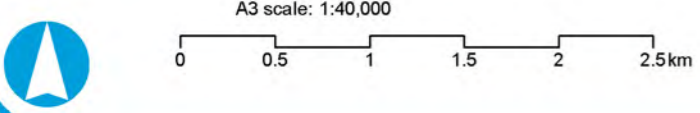
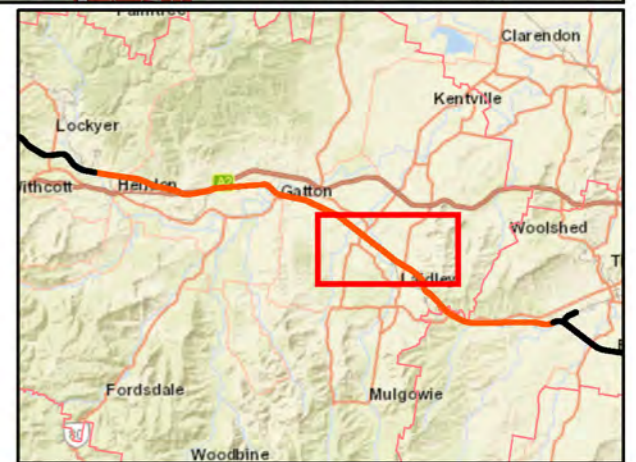
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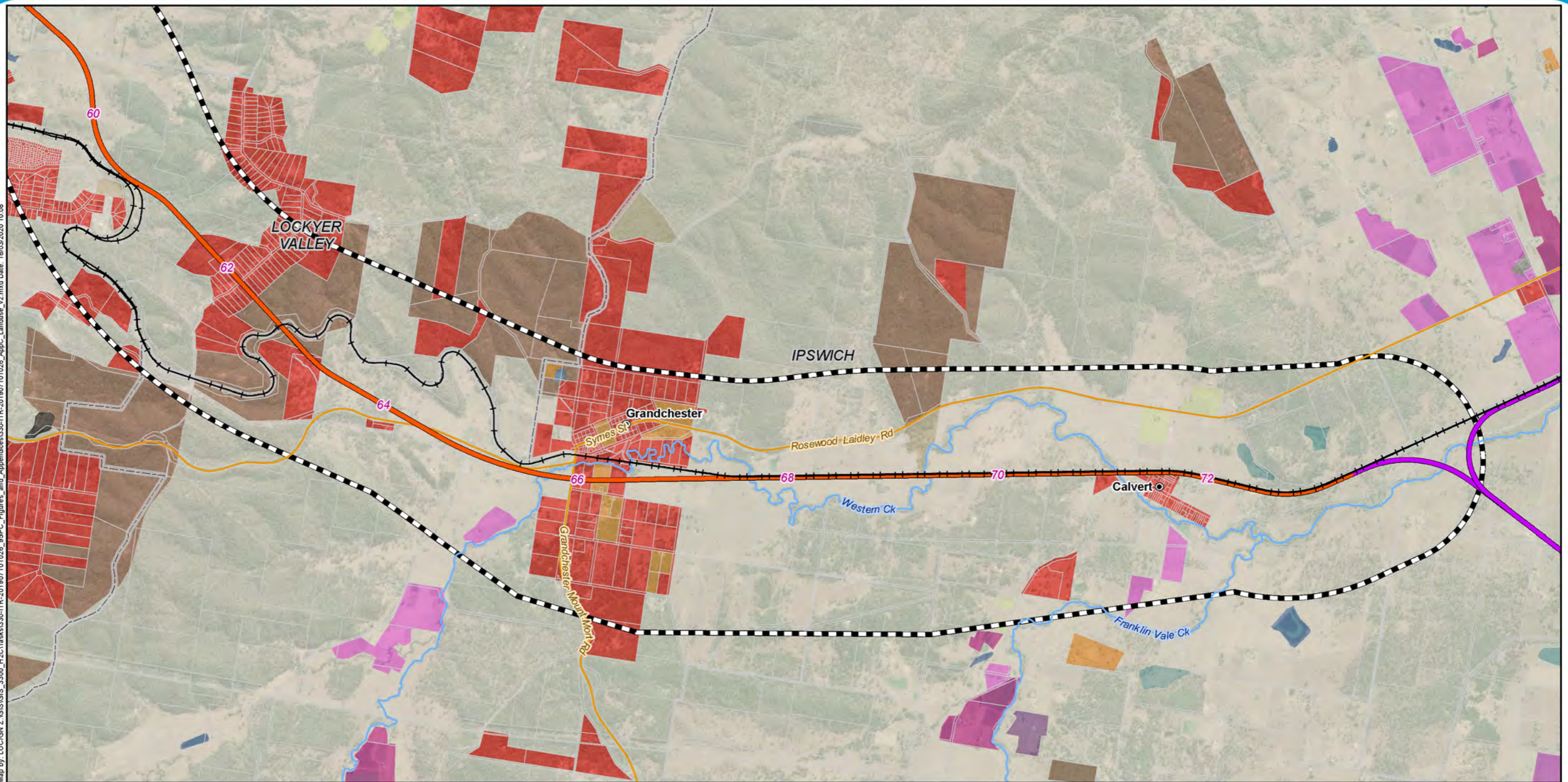
**Legend**

- |                       |                            |                           |                                  |                             |
|-----------------------|----------------------------|---------------------------|----------------------------------|-----------------------------|
| 5 Chainage (km)       | EIS investigation corridor | <b>Land use</b>           | Irrigated perennial horticulture | Residential                 |
| Localities            | Local Government Areas     | Nature conservation       | Irrigated seasonal horticulture  | Services                    |
| Existing rail         | Cadastre                   | Other minimal use         | Intensive horticulture           | Utilities                   |
| H2C project alignment |                            | Grazing native vegetation | Intensive animal husbandry       | Transport and communication |
| Watercourses          |                            | Grazing modified pastures | Manufacturing and industrial     | Reservoir/dam               |
| Minor roads           |                            | Land in transition        |                                  |                             |



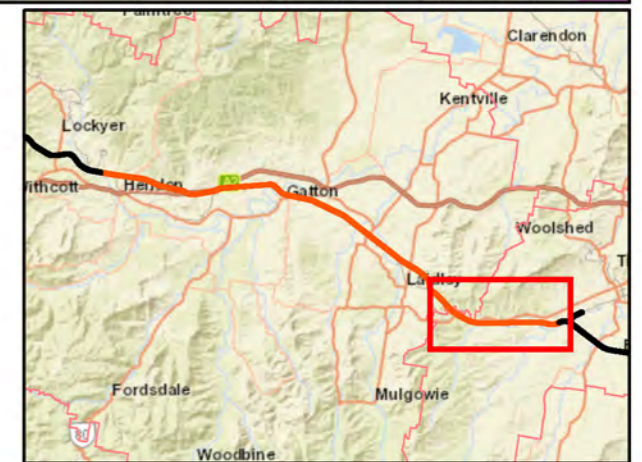


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**Legend**

- |   |                       |  |                            |  |                             |  |                                 |  |               |
|---|-----------------------|--|----------------------------|--|-----------------------------|--|---------------------------------|--|---------------|
| 5 | Chainage (km)         |  | EIS investigation corridor |  | Nature conservation         |  | Irrigated cropping              |  | Services      |
| ● | Localities            |  | Local Government Areas     |  | Other minimal use           |  | Irrigated seasonal horticulture |  | Mining        |
| + | Existing rail         |  | Cadastre                   |  | Grazing native vegetation   |  | Intensive animal husbandry      |  | Reservoir/dam |
|   | H2C project alignment |  |                            |  | Grazing modified pastures   |  | Manufacturing and industrial    |  | Marsh/wetland |
|   | C2K project alignment |  |                            |  | Irrigated modified pastures |  | Residential                     |  |               |
|   | Watercourses          |  |                            |  |                             |  |                                 |  |               |
|   | Minor roads           |  |                            |  |                             |  |                                 |  |               |



A3 scale: 1:40,000





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Traffic Impact Assessment

**Appendix D** Existing SAR and Pavement  
Impact Analysis

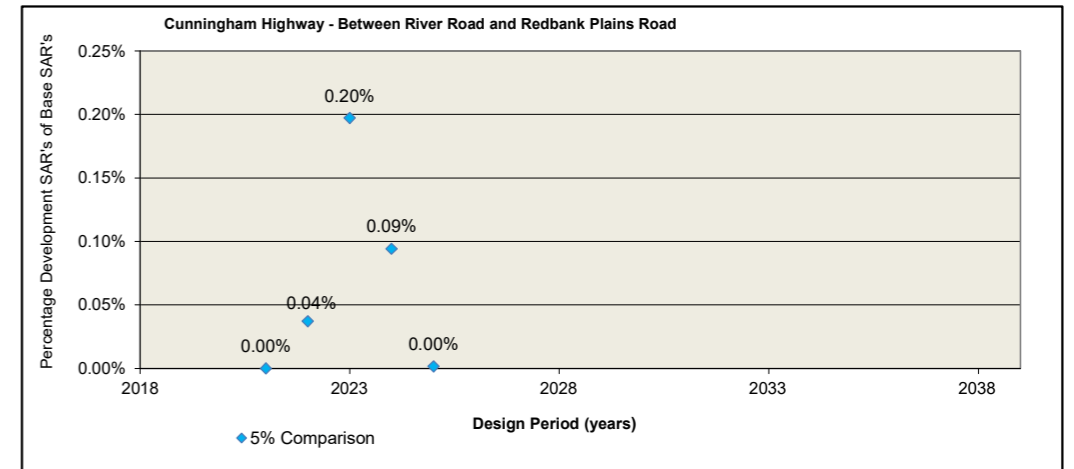
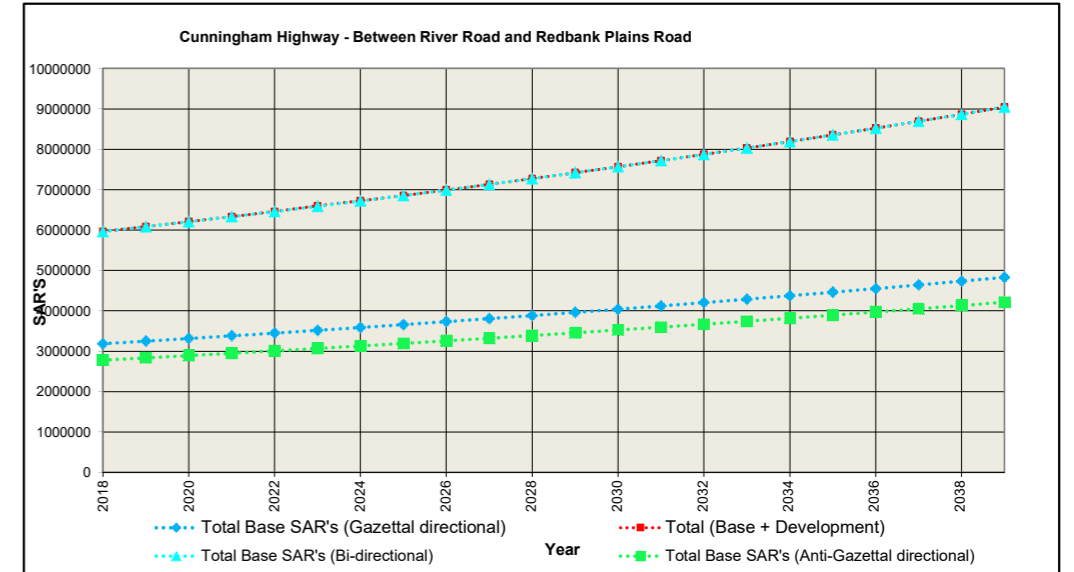
ARTC

The Australian Government is investing  
in infrastructure through the National  
Infrastructure Corridor (NIC) to  
improve growth and connectivity.

**Cunningham Highway - Between River Road and Redbank Plains Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

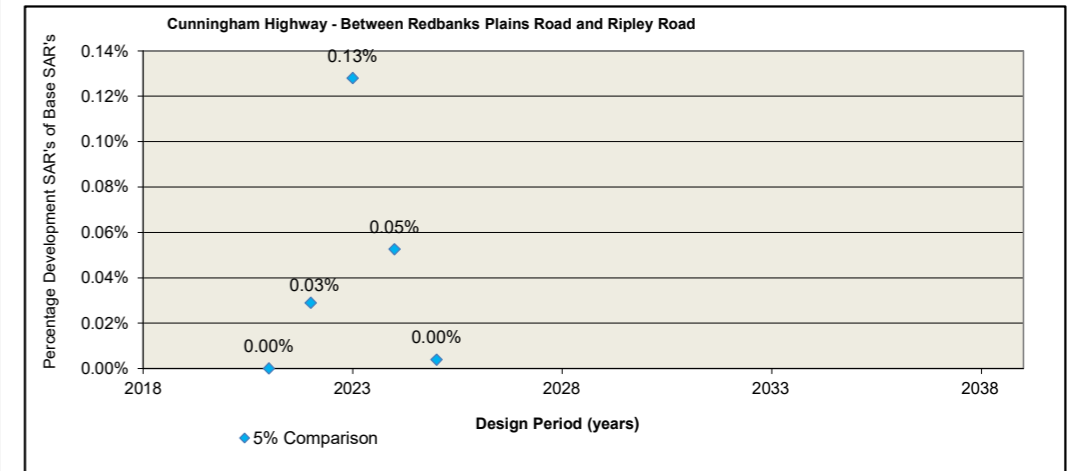
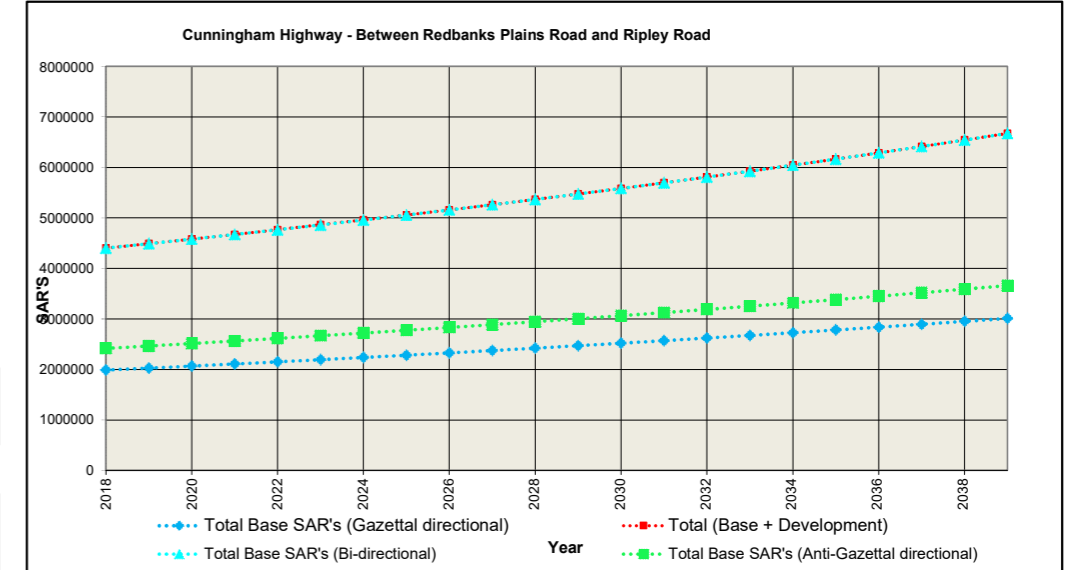
Cunningham Highway			Between River Road and Redbank Plains Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	2780831	3186597			5967428	
2019	2836447	3250329			6086776	
2020	2893176	3315336			6208512	
2021	2951040	3381642	0	0	6332682	0.00%
2022	3010060	3449275	1205	1205	6461745	0.04%
2023	3070262	3518261	6492	6492	6601507	0.20%
2024	3131667	3588626	3166	3166	6726626	0.09%
2025	3194300	3660398	58	58	6854815	0.00%
2026	3258186	3733606			6991793	
2027	3323350	3808278			7131628	
2028	3389817	3884444			7274261	
2029	3457613	3962133			7419746	
2030	3526766	4041376			7568141	
2031	3597301	4122203			7719504	
2032	3669247	4204647			7873894	
2033	3742632	4288740			8031372	
2034	3817485	4374515			8191999	
2035	3893834	4462005			8355839	
2036	3971711	4551245			8522956	
2037	4051145	4642270			8693415	
2038	4132168	4735116			8867284	
2039	4214811	4829818			9044629	



**Cunningham Highway - Between Redbanks Plains Road and Ripley Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

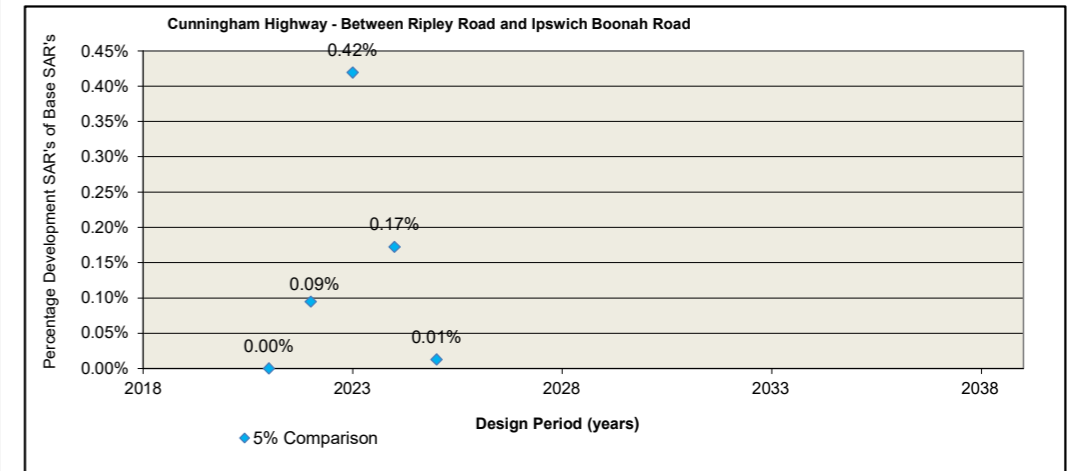
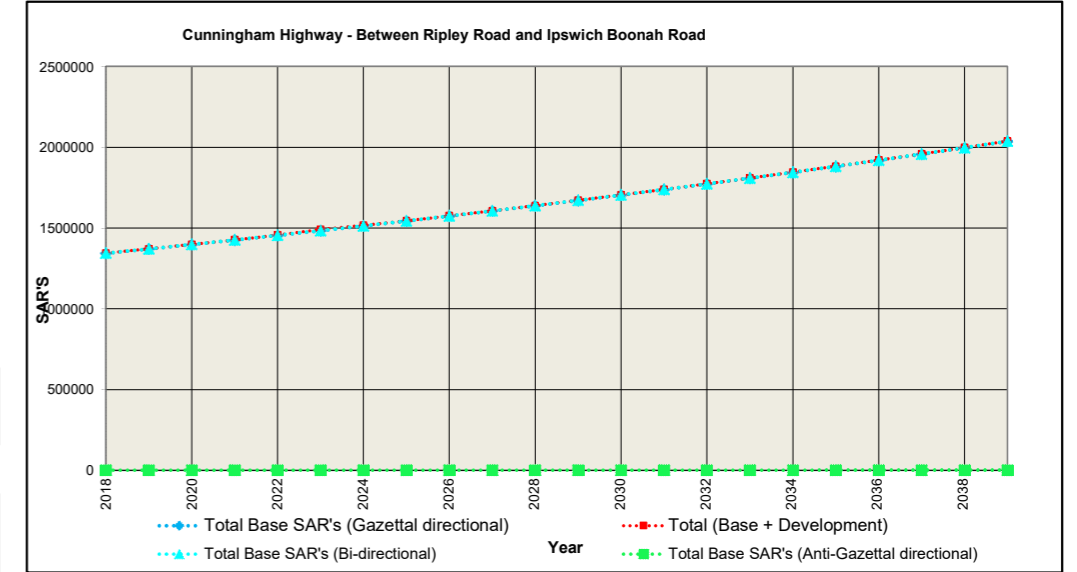
Cunningham Highway			Between Redbanks Plains Road and Ripley Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	2416590	1986987			4403576	
2019	2464921	2026727			4491648	
2020	2514220	2067261			4581481	
2021	2564504	2108606	0	0	4673111	0.00%
2022	2615794	2150778	690	690	4767953	0.03%
2023	2668110	2193794	3112	3112	4868128	0.13%
2024	2721472	2237670	1304	1304	4961750	0.05%
2025	2775902	2282423	100	100	5058525	0.00%
2026	2831420	2328072			5159492	
2027	2888048	2374633			5262681	
2028	2945809	2422126			5367935	
2029	3004725	2470568			5475294	
2030	3064820	2519980			5584800	
2031	3126116	2570379			5696496	
2032	3188639	2621787			5810426	
2033	3252411	2674223			5926634	
2034	3317460	2727707			6045167	
2035	3383809	2782261			6166070	
2036	3451485	2837906			6289391	
2037	3520515	2894665			6415179	
2038	3590925	2952558			6543483	
2039	3662744	3011609			6674353	



**Cunningham Highway - Between Ripley Road and Ipswich Boonah Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

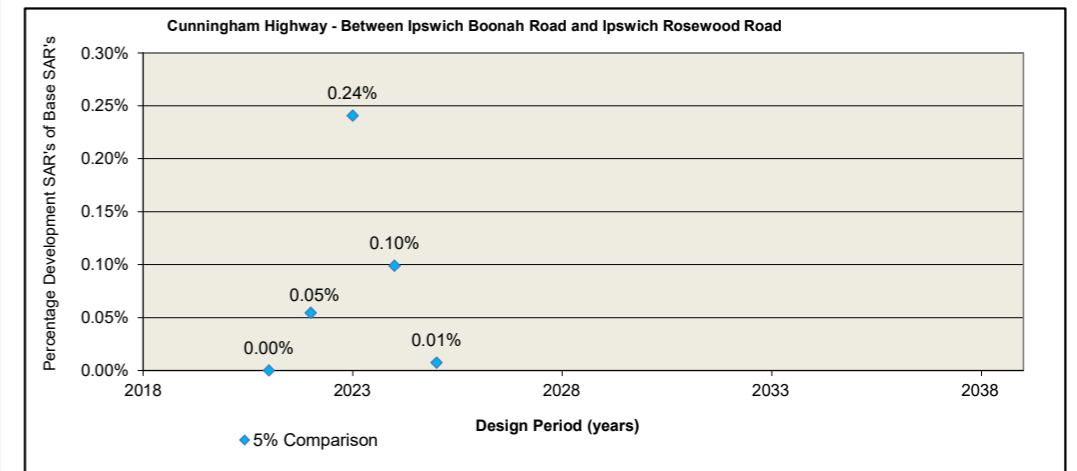
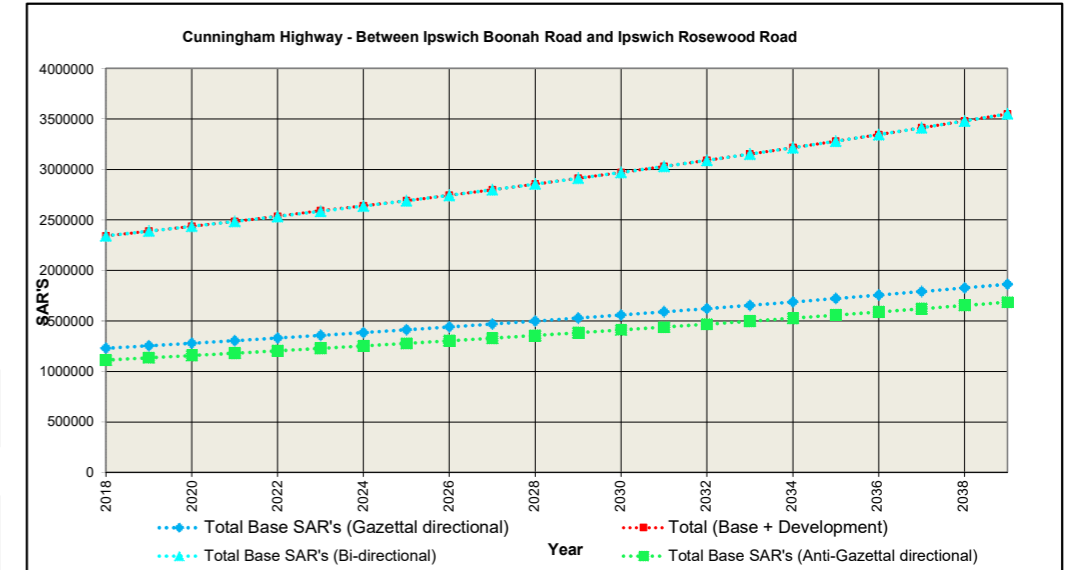
Cunningham Highway Base SAR's			Between Ripley Road and Ipswich Boonah Road			
Year	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
			Unloaded	Loaded		
2018	1699	1343122			1344821	
2019	1733	1369984			1371717	
2020	1767	1397384			1399151	
2021	1803	1425332	0	0	1427134	0.00%
2022	1839	1453838	690	690	1457058	0.09%
2023	1875	1482915	3112	3112	1491014	0.42%
2024	1913	1512574	1304	1304	1517095	0.17%
2025	1951	1542825	100	100	1544976	0.01%
2026	1990	1573681			1575672	
2027	2030	1605155			1607185	
2028	2071	1637258			1639329	
2029	2112	1670003			1672115	
2030	2154	1703403			1705558	
2031	2197	1737472			1739669	
2032	2241	1772221			1774462	
2033	2286	1807665			1809952	
2034	2332	1843819			1846151	
2035	2379	1880695			1883074	
2036	2426	1918309			1920735	
2037	2475	1956675			1959150	
2038	2524	1995809			1998333	
2039	2575	2035725			2038299	



**Cunningham Highway - Between Ipswich Boonah Road and Ipswich Rosewood Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

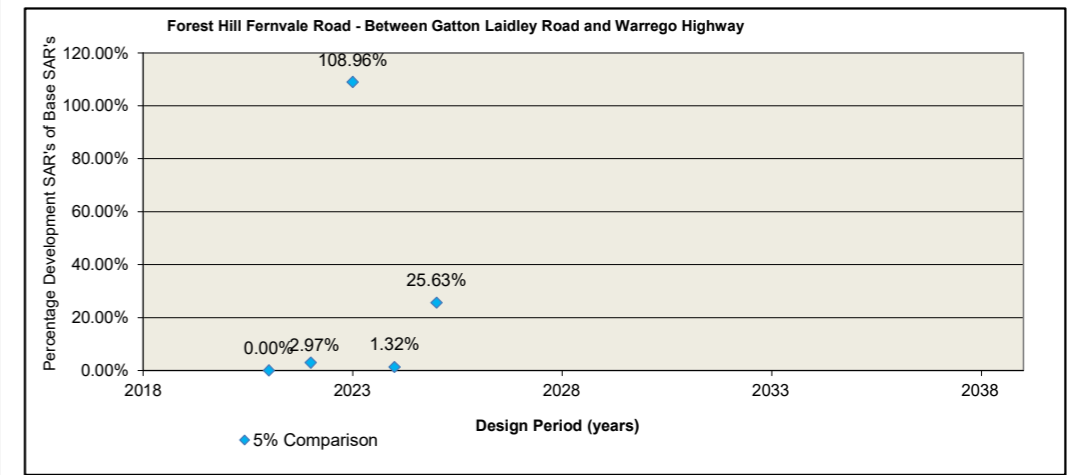
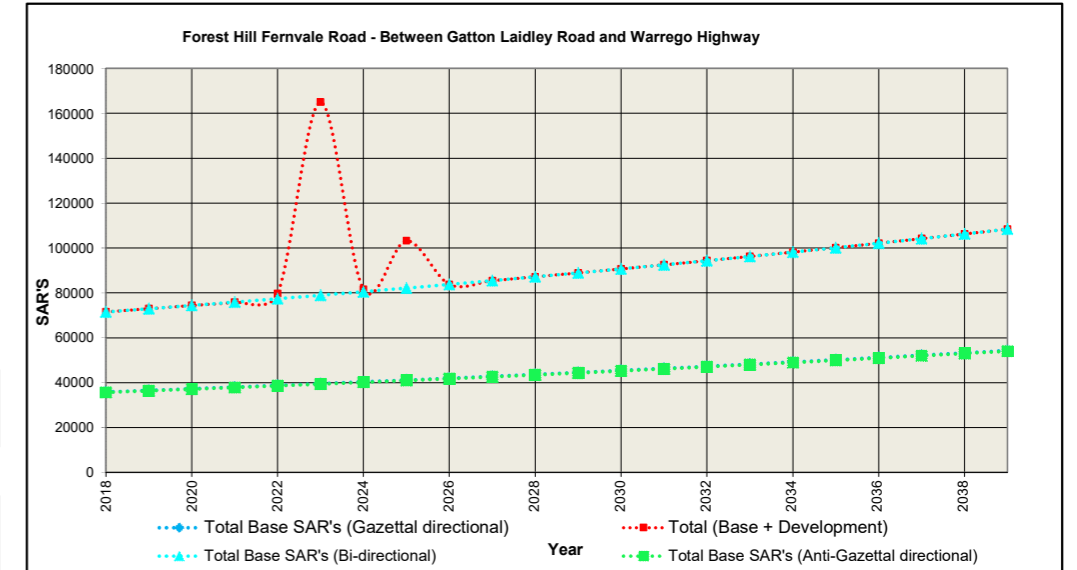
Cunningham Highway Base SAR's			Between Ipswich Boonah Road and Ipswich Rosewood Road				
Year	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Development SAR's		Total (Base + Development)	5% Comparison
				Unloaded	Loaded		
2018	1112721	1229716	2342437			2342437	
2019	1134976	1254310	2389286			2389286	
2020	1157675	1279396	2437071			2437071	
2021	1180829	1304984	2485813	0	0	2485813	0.00%
2022	1204445	1331084	2535529	690	690	2536910	0.05%
2023	1228534	1357706	2586240	3112	3112	2592464	0.24%
2024	1253105	1384860	2637964	1304	1304	2640573	0.10%
2025	1278167	1412557	2690724	100	100	2690924	0.01%
2026	1303730	1440808	2744538			2744538	
2027	1329805	1469624	2799429			2799429	
2028	1356401	1499017	2855418			2855418	
2029	1383529	1528997	2912526			2912526	
2030	1411200	1559577	2970776			2970776	
2031	1439424	1590768	3030192			3030192	
2032	1468212	1622584	3090796			3090796	
2033	1497576	1655035	3152612			3152612	
2034	1527528	1688136	3215664			3215664	
2035	1558078	1721899	3279977			3279977	
2036	1589240	1756337	3345577			3345577	
2037	1621025	1791464	3412488			3412488	
2038	1653445	1827293	3480738			3480738	
2039	1686514	1863839	3550353			3550353	



**Forest Hill Fernvale Road - Between Gatton Laidley Road and Warrego Highway**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

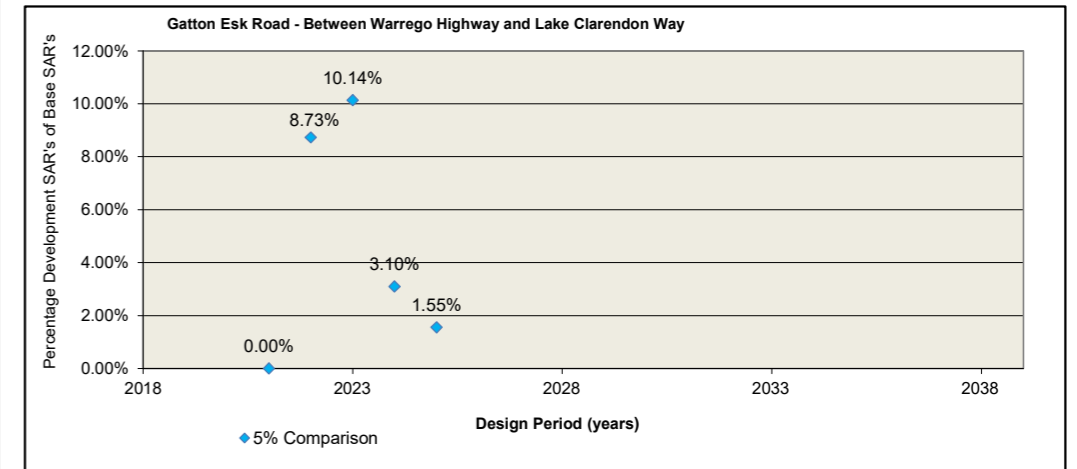
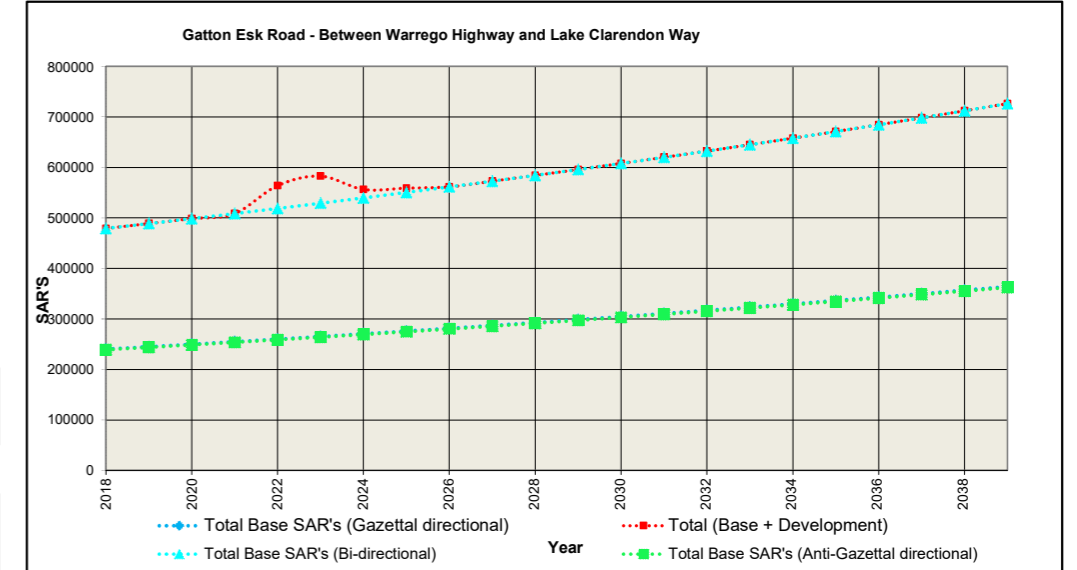
Forest Hill Fernvale Road			Between Gatton Laidley Road and Warrego Highway				5% Comparison
Base SAR's			Development SAR's		Total (Base + Development)		
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded			
2018	35662	35858			71519		
2019	36375	36575			72949		
2020	37102	37306			74408		
2021	37844	38052			75897	0	0.00%
2022	38601	38813		1149	79712	1149	2.97%
2023	39373	39590		43018	164998	43018	108.96%
2024	40161	40381		531	81604	531	1.32%
2025	40964	41189		10530	103212	10530	25.63%
2026	41783	42013			83796		
2027	42619	42853			85472		
2028	43471	43710			87181		
2029	44341	44584			88925		
2030	45227	45476			90704		
2031	46132	46386			92518		
2032	47055	47313			94368		
2033	47996	48260			96255		
2034	48956	49225			98180		
2035	49935	50209			100144		
2036	50933	51213			102147		
2037	51952	52238			104190		
2038	52991	53283			106274		
2039	54051	54348			108399		



**Gatton Esk Road - Between Warrego Highway and Lake Clarendon Way**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

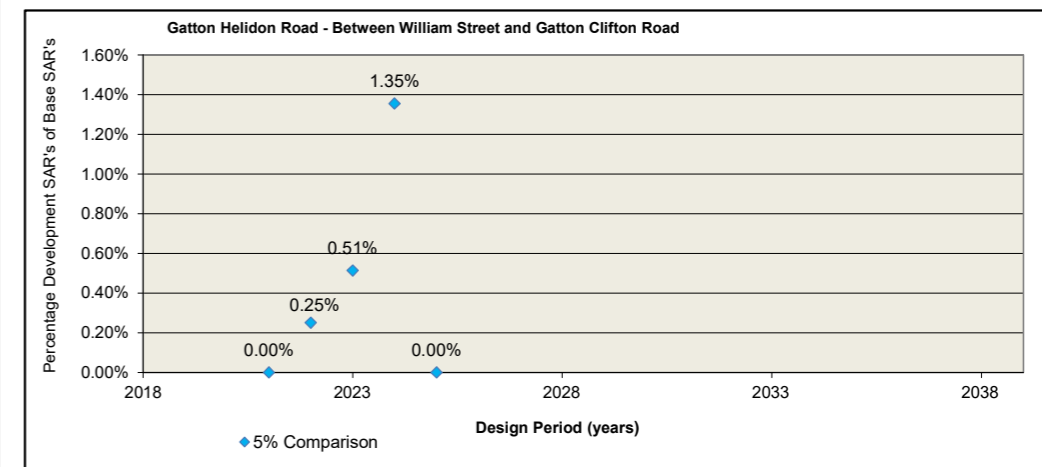
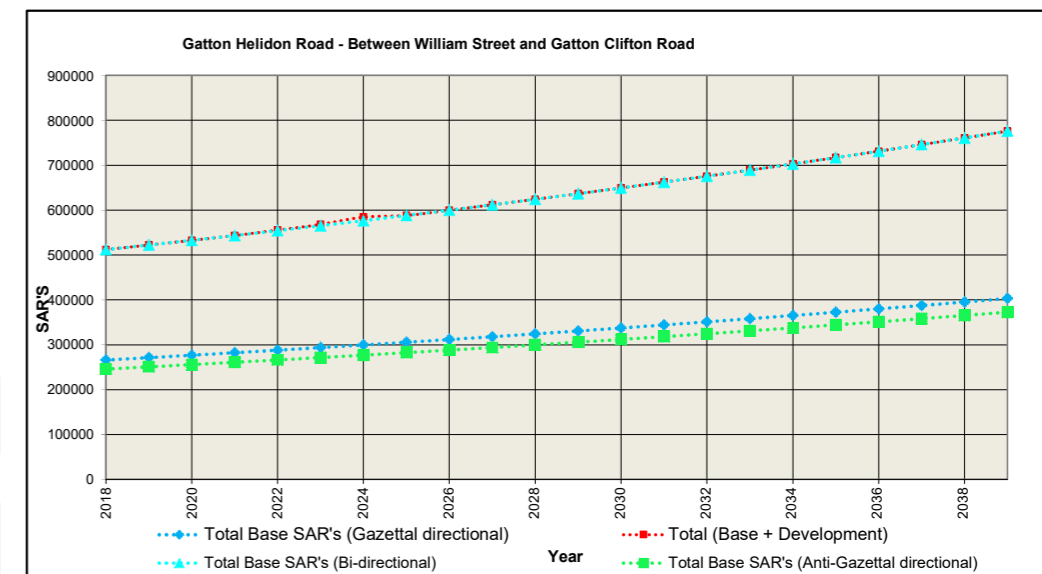
Gatton Esk Road			Between Warrego Highway and Lake Clarendon Way			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	239022	240336			479358	
2019	243802	245143			488945	
2020	248678	250046			498724	
2021	253652	255047			508699	0.00%
2022	258725	260148	22641	22641	564154	8.73%
2023	263899	265351	26823	26823	582895	10.14%
2024	269177	270658	8370	8370	556575	3.10%
2025	274561	276071	4277	4277	559186	1.55%
2026	280052	281592			561644	
2027	285653	287224			572877	
2028	291366	292968			584335	
2029	297194	298828			596021	
2030	303137	304804			607942	
2031	309200	309900			620101	
2032	315384	317118			632503	
2033	321692	323461			645153	
2034	328126	329930			658056	
2035	334688	336529			671217	
2036	341382	343259			684641	
2037	348210	350124			698334	
2038	355174	357127			712301	
2039	362277	364269			726547	



**Gatton Helidon Road - Between William Street and Gatton Clifton Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

Gatton Helidon Road			Between William Street and Gatton Clifton Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	245971	266097			512068	
2019	250891	271419			522310	
2020	255908	276847			532756	
2021	261027	282384			543411	0.00%
2022	266247	288032			555669	0.25%
2023	271572	293793			568271	0.51%
2024	277004	299669			584481	1.35%
2025	282544	305662			588206	0.00%
2026	288194	311775			599970	
2027	293958	318011			611969	
2028	299838	324371			624208	
2029	305834	330858			636693	
2030	311951	337476			649426	
2031	318190	344225			662415	
2032	324554	351110			675663	
2033	331045	358132			689177	
2034	337666	365294			702960	
2035	344419	372600			717019	
2036	351307	380052			731360	
2037	358334	387653			745987	
2038	365500	395406			760907	
2039	372810	403314			776125	

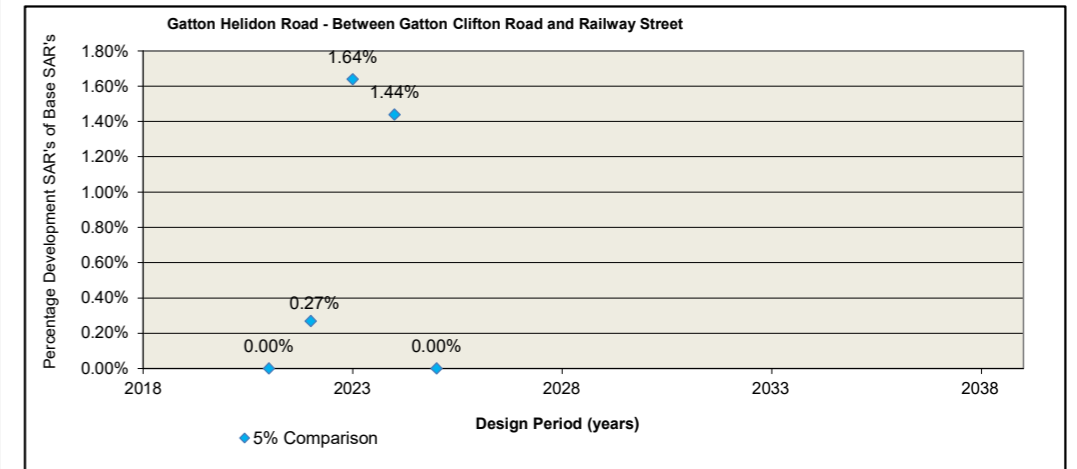
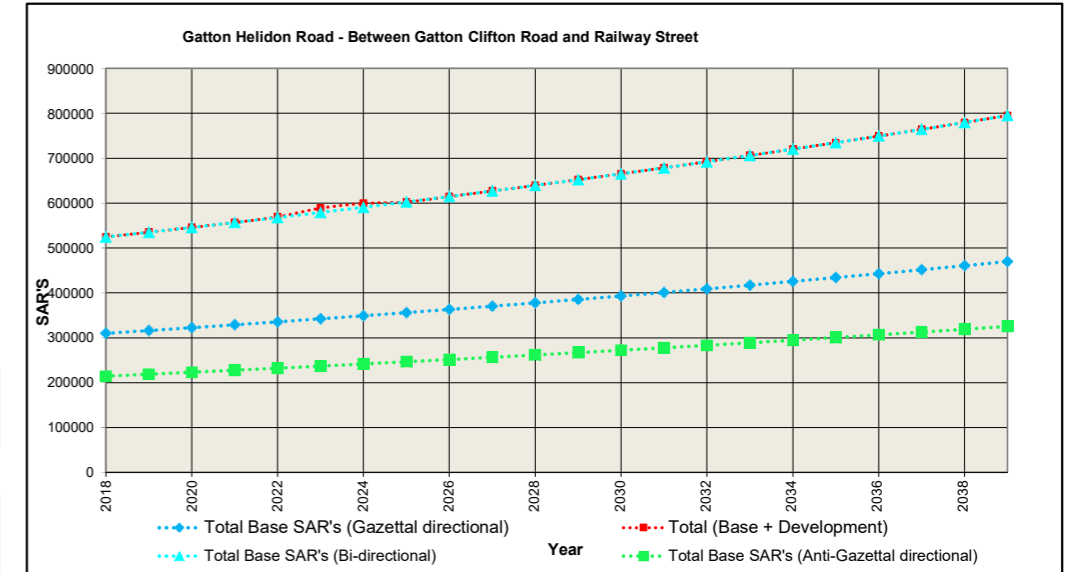




**Gatton Helidon Road - Between Gatton Clifton Road and Railway Street**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

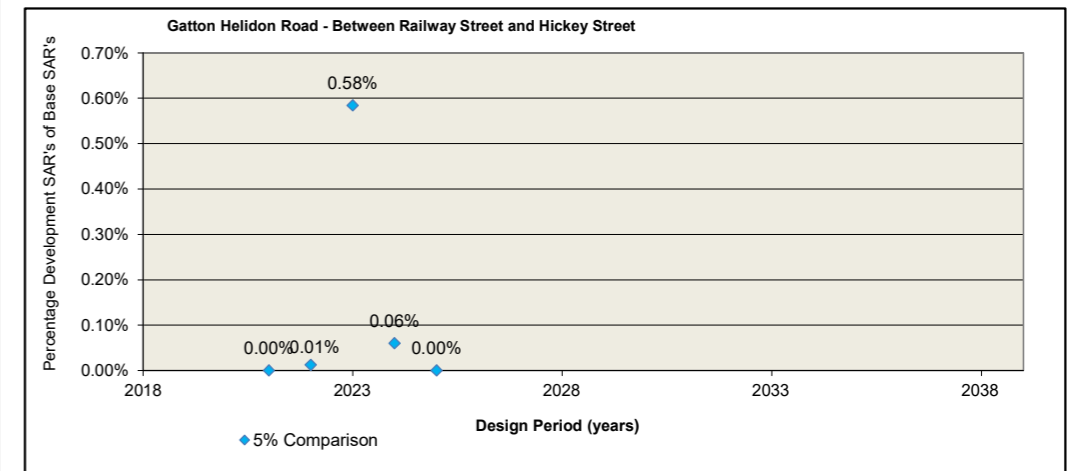
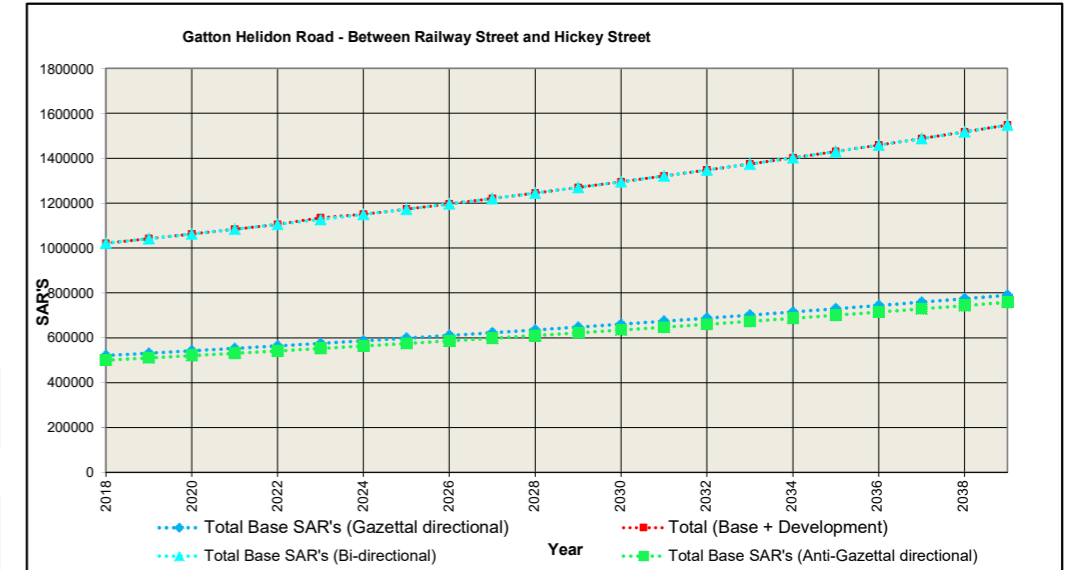
Gatton Helidon Road			Between Gatton Clifton Road and Railway Street			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	214680	310028			524708	
2019	218974	316228			535202	
2020	223353	322553			545906	
2021	227820	329004	0	0	556824	0.00%
2022	232377	335584	764	764	569489	0.27%
2023	237024	342296	4747	4747	588813	1.64%
2024	241765	349142	4250	4250	599406	1.44%
2025	246600	356124	0	0	602725	0.00%
2026	251532	363247			614779	
2027	256563	370512			627075	
2028	261694	377922			639616	
2029	266928	385480			652408	
2030	272267	393190			665457	
2031	277712	401054			678766	
2032	283266	409075			692341	
2033	288931	417256			706188	
2034	294710	425602			720312	
2035	300604	434114			734718	
2036	306616	442796			749412	
2037	312749	451652			764400	
2038	319004	460685			779688	
2039	325384	469899			795282	



**Gatton Helidon Road - Between Railway Street and Hickey Street**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

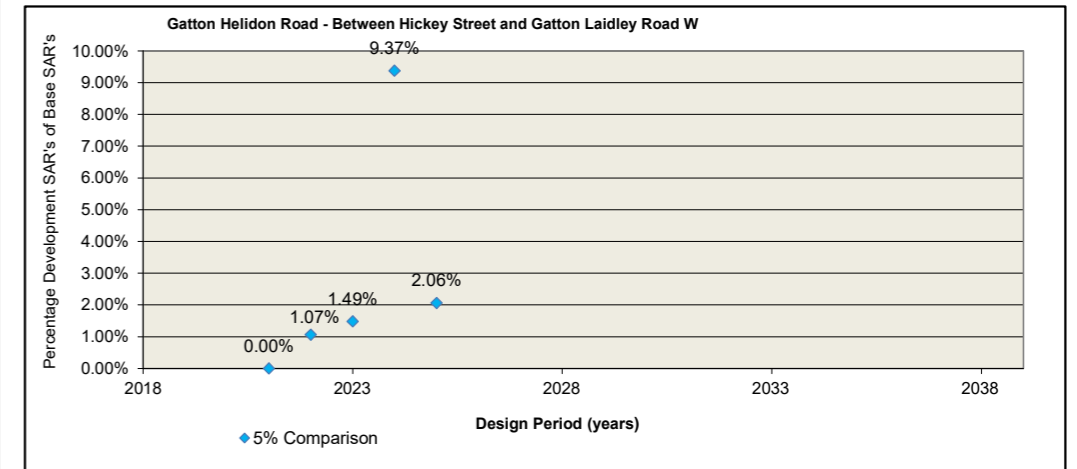
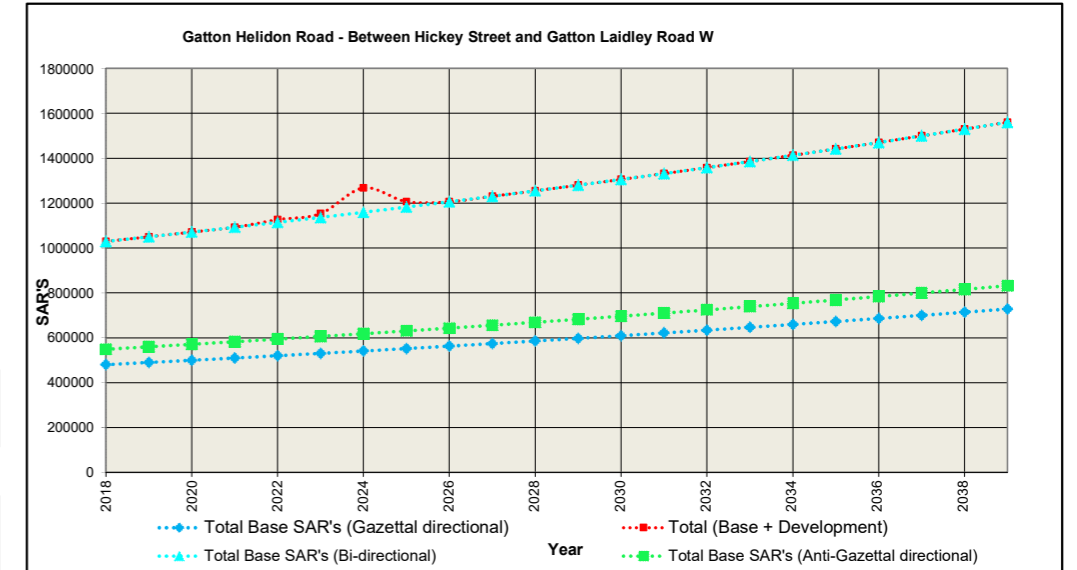
Gatton Helidon Road			Between Railway Street and Hickey Street			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	500347	521004			1021350	
2019	510354	531424			1041777	
2020	520561	542052			1062613	
2021	530972	552893	0	0	1083865	0.00%
2022	541591	563951	70	70	1105682	0.01%
2023	552423	575230	3293	3293	1134240	0.58%
2024	563472	586735	345	345	1150897	0.06%
2025	574741	598470	0	0	1173211	0.00%
2026	586236	610439			1196675	
2027	597961	622648			1220608	
2028	609920	635101			1245021	
2029	622118	647803			1269921	
2030	634561	660759			1295319	
2031	647252	673974			1321226	
2032	660197	687453			1347650	
2033	673401	701203			1374603	
2034	686869	715227			1402095	
2035	700606	729531			1430137	
2036	714618	744122			1458740	
2037	728911	759004			1487915	
2038	743489	774184			1517673	
2039	758359	789668			1548027	



**Gatton Helidon Road - Between Hickey Street and Gatton Laidley Road W**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

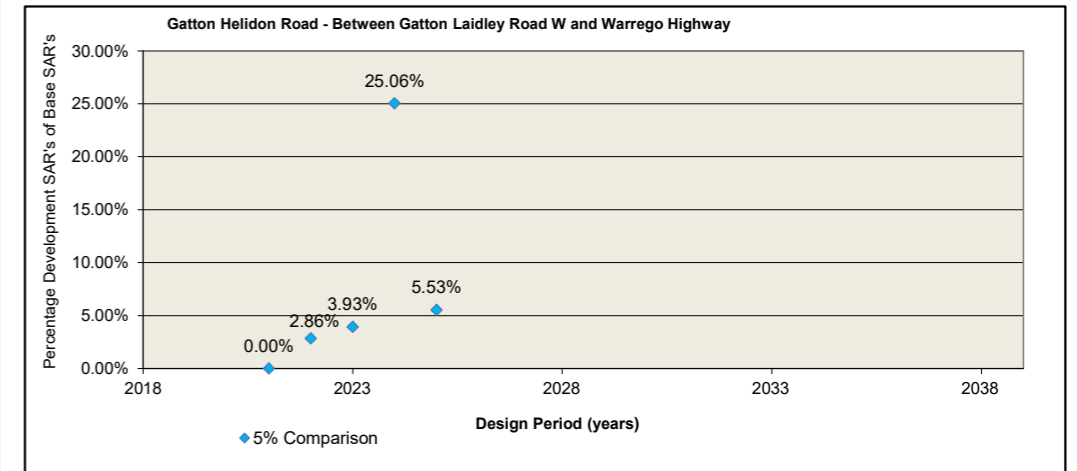
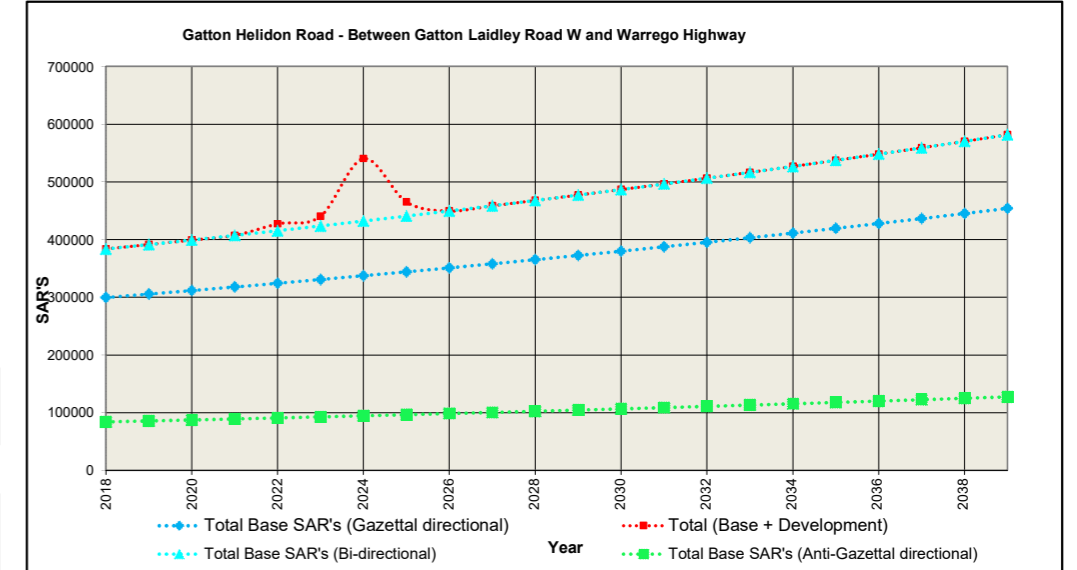
Gatton Helidon Road			Between Hickey Street and Gatton Laidley Road W				5% Comparison
Base SAR's			Development SAR's		Total (Base + Development)		
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded			
2018	548950	480516			1029466		
2019	559929	490126			1050055		
2020	571128	499929			1071057		
2021	582550	509927			1092478	0.00%	
2022	594201	520126	5934	5934	1126196	1.07%	
2023	606086	530528	8440	8440	1153493	1.49%	
2024	618207	541139	54320	54320	1267986	9.37%	
2025	630571	551962	12195	12195	1206923	2.06%	
2026	643183	563001			1206184		
2027	656046	574261			1230307		
2028	669167	585746			1254913		
2029	682551	597461			1280012		
2030	696202	609410			1305612		
2031	710126	621598			1331724		
2032	724328	634030			1358359		
2033	738815	646711			1385526		
2034	753591	659645			1413236		
2035	768663	672838			1441501		
2036	784036	686295			1470331		
2037	799717	700021			1499738		
2038	815711	714021			1529732		
2039	832026	728302			1560327		



**Gatton Helidon Road - Between Gatton Laidley Road W and Warrego Highway**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

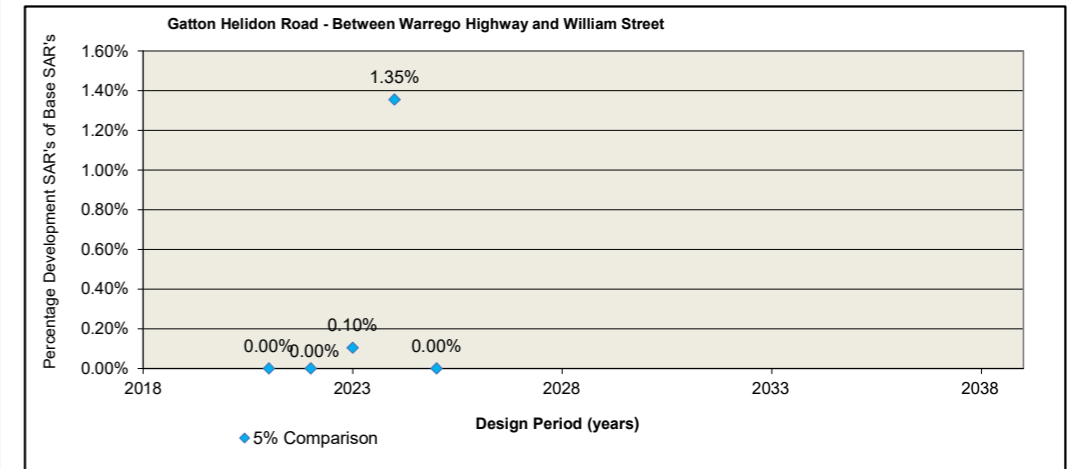
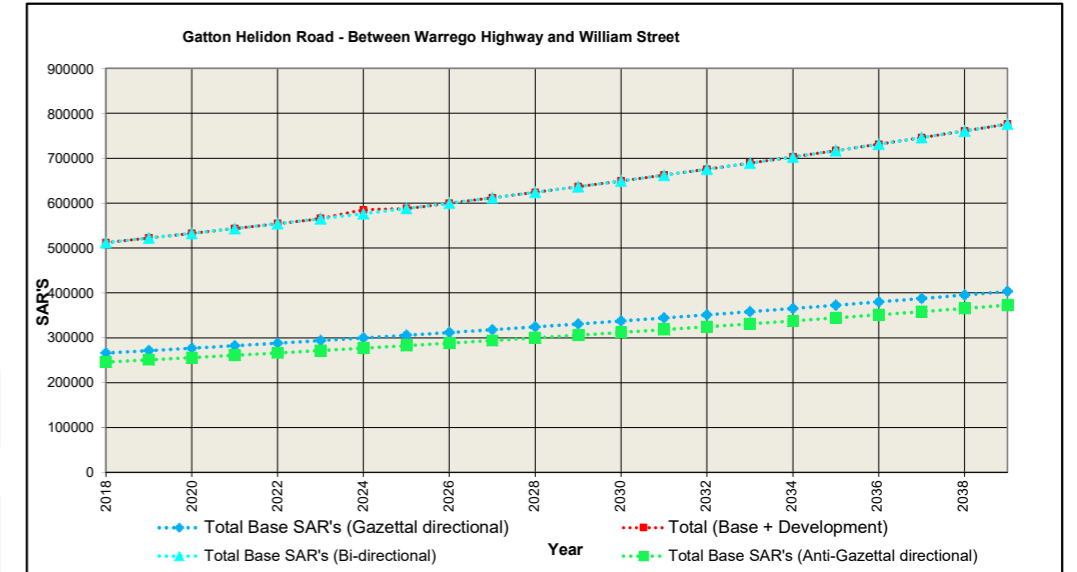
Gatton Helidon Road			Between Gatton Laidley Road W and Warrego Highway			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	84145	299622			383767	
2019	85828	305615			391443	
2020	87545	311727			399272	
2021	89296	317961	0	0	407257	0.00%
2022	91082	324321	5934	5934	427271	2.86%
2023	92903	330807	8333	8333	440376	3.93%
2024	94761	337423	54142	54142	540468	25.06%
2025	96656	344172	12195	12195	465218	5.53%
2026	98590	351055			449645	
2027	100561	358076			458638	
2028	102573	365238			467810	
2029	104624	372542			477166	
2030	106717	379993			486710	
2031	108851	387593			496444	
2032	111028	395345			506373	
2033	113248	403252			516500	
2034	115513	411317			526830	
2035	117824	419543			537367	
2036	120180	427934			548114	
2037	122584	436493			559077	
2038	125035	445223			570258	
2039	127536	454127			581663	



**Gatton Helidon Road - Between Warrego Highway and William Street**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

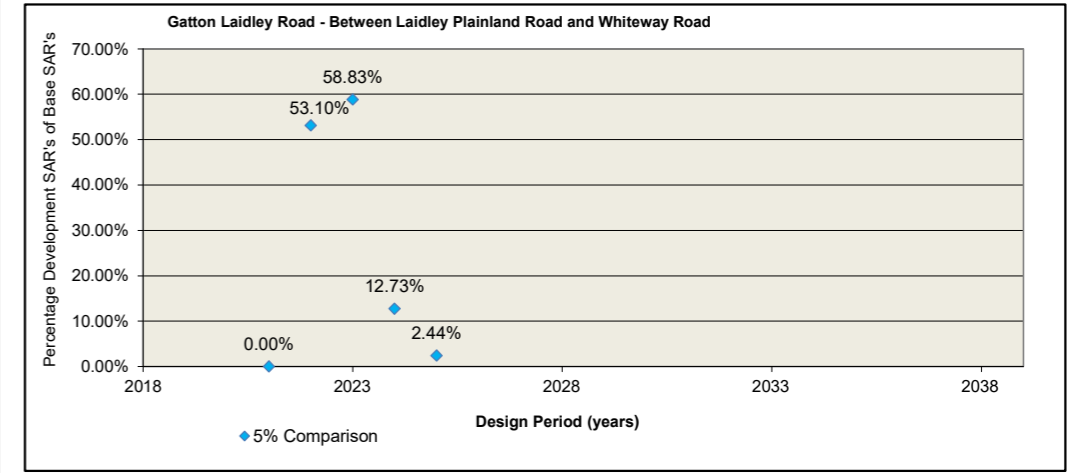
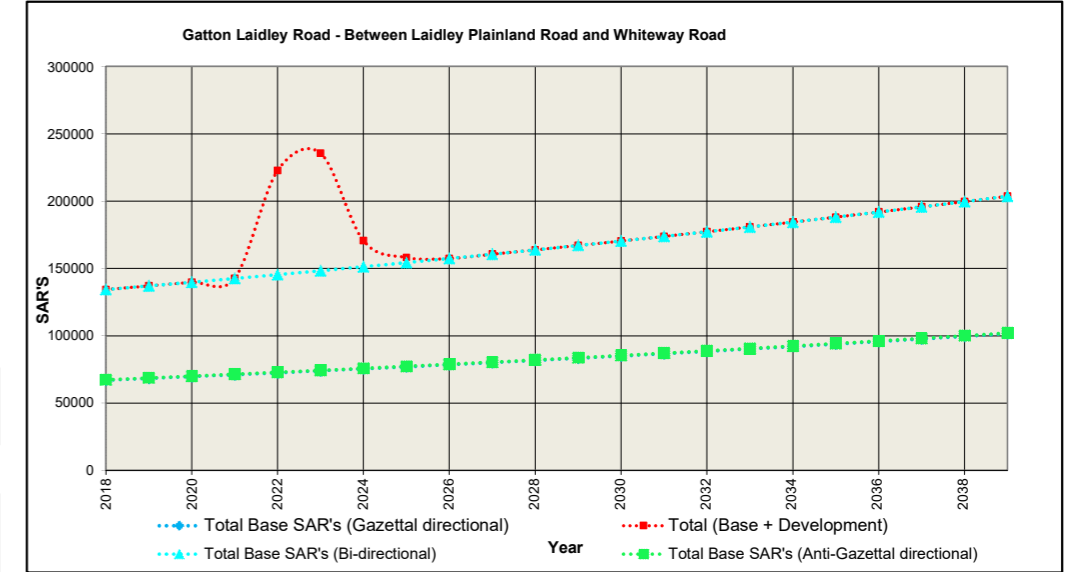
Gatton Helidon Road			Between Warrego Highway and William Street			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	245971	266097			512068	
2019	250891	271419			522310	
2020	255908	276847			532756	
2021	261027	282384			543411	0.00%
2022	266247	288032			554279	0.00%
2023	271572	293793	295	295	565956	0.10%
2024	277004	299669	3904	3904	584481	1.35%
2025	282544	305662	0	0	588206	0.00%
2026	288194	311775			599970	
2027	293958	318011			611969	
2028	299838	324371			624208	
2029	305834	330858			636693	
2030	311951	337476			649426	
2031	318190	344225			662415	
2032	324554	351110			675663	
2033	331045	358132			689177	
2034	337666	365294			702960	
2035	344419	372600			717019	
2036	351307	380052			731360	
2037	358334	387653			745987	
2038	365500	395406			760907	
2039	372810	403314			776125	



**Gatton Laidley Road - Between Laidley Plainland Road and Whiteway Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

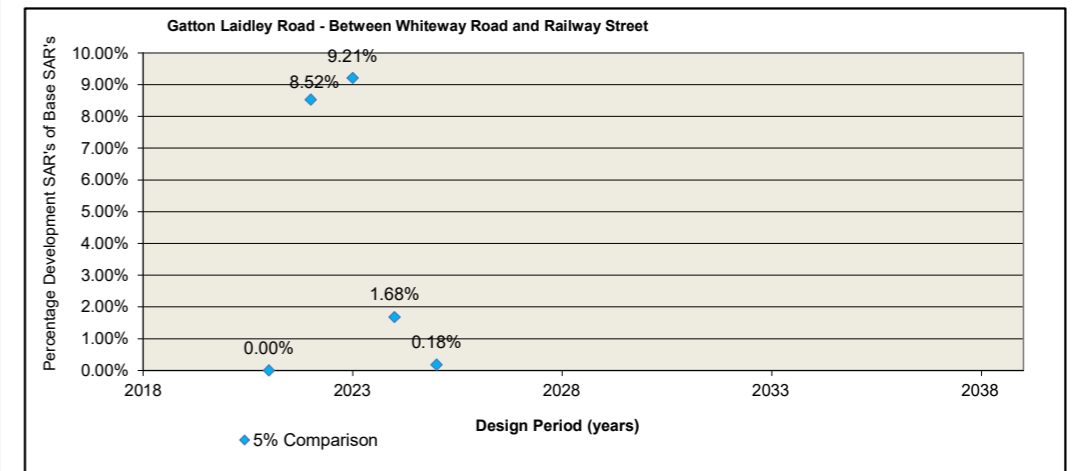
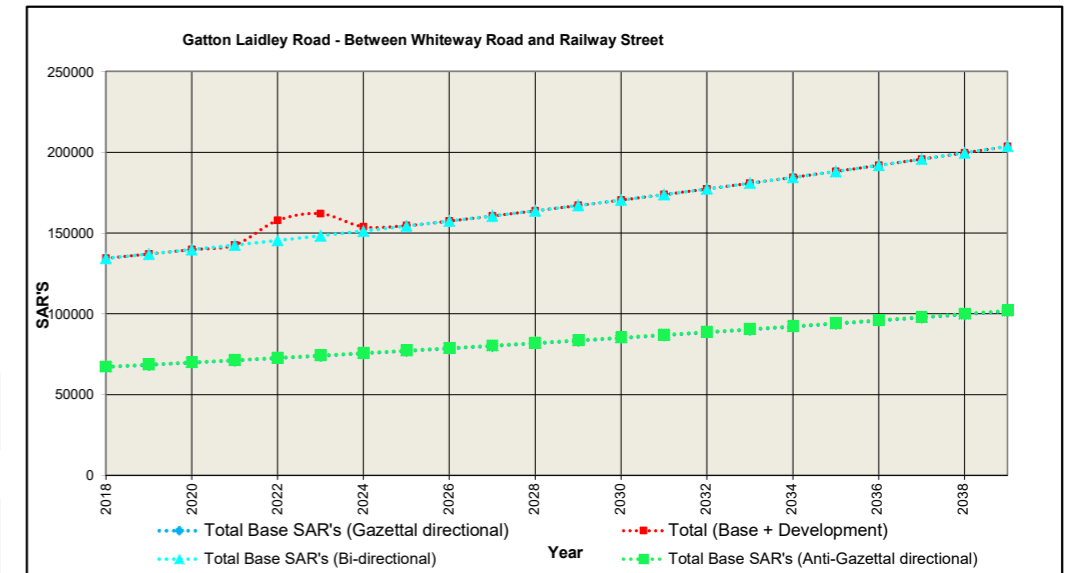
Gatton Laidley Road			Between Laidley Plainland Road and Whiteway Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	67322	67043			134366	
2019	68669	68384			137053	
2020	70042	69752			139794	
2021	71443	71147			142590	0.00%
2022	72872	72570	38613	38613	222668	53.10%
2023	74329	74021	43639	43639	235629	58.83%
2024	75816	75502	9634	9634	170586	12.73%
2025	77332	77012	1880	1880	158105	2.44%
2026	78879	78552			157431	
2027	80456	80123			160579	
2028	82065	81726			163791	
2029	83707	83360			167067	
2030	85381	85027			170408	
2031	87088	86728			173816	
2032	88830	88462			177293	
2033	90607	90232			180838	
2034	92419	92036			184455	
2035	94267	93877			188144	
2036	96153	95755			191907	
2037	98076	97670			195745	
2038	100037	99623			199660	
2039	102038	101616			203653	



**Gatton Laidley Road - Between Whiteway Road and Railway Street**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

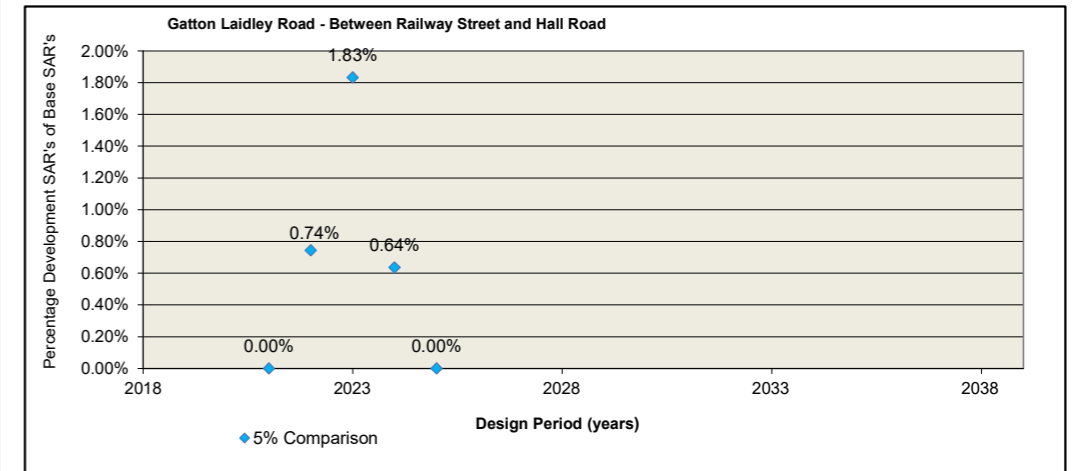
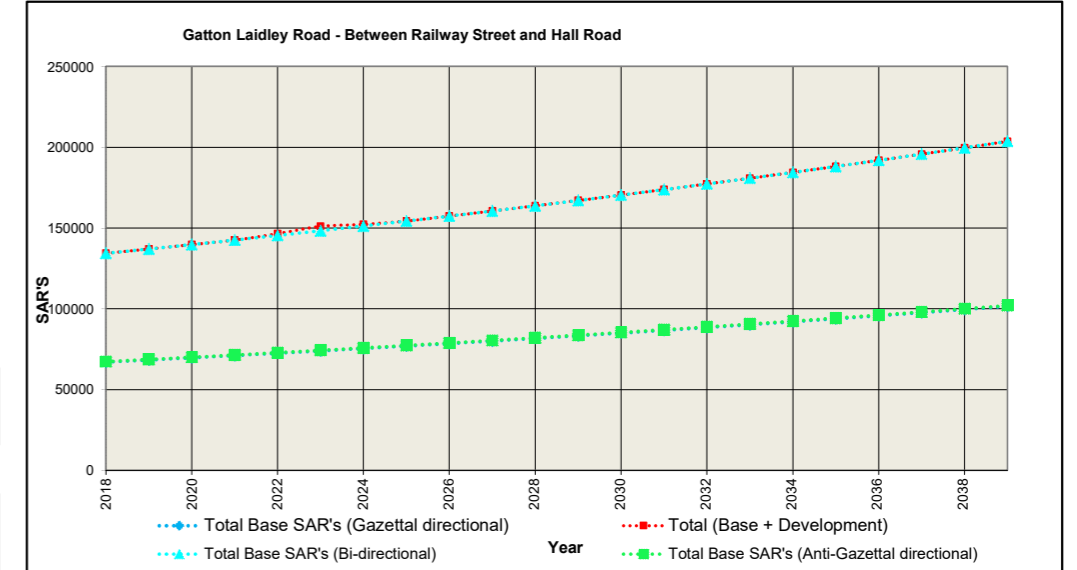
Gatton Laidley Road			Between Whiteway Road and Railway Street			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	67322	67043			134366	
2019	68669	68384			137053	
2020	70042	69752			139794	
2021	71443	71147	0	0	142590	0.00%
2022	72872	72570	6198	6198	157837	8.52%
2023	74329	74021	6832	6832	162015	9.21%
2024	75816	75502	1271	1271	153860	1.68%
2025	77332	77012	142	142	154628	0.18%
2026	78879	78552			157431	
2027	80456	80123			160579	
2028	82065	81726			163791	
2029	83707	83360			167067	
2030	85381	85027			170408	
2031	87088	86728			173816	
2032	88830	88462			177293	
2033	90607	90232			180838	
2034	92419	92036			184455	
2035	94267	93877			188144	
2036	96153	95755			191907	
2037	98076	97670			195745	
2038	100037	99623			199660	
2039	102038	101616			203653	



**Gatton Laidley Road - Between Railway Street and Hall Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

Gatton Laidley Road			Between Railway Street and Hall Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	67322	67043			134366	
2019	68669	68384			137053	
2020	70042	69752			139794	
2021	71443	71147	0	0	142590	0.00%
2022	72872	72570	541	541	146524	0.74%
2023	74329	74021	1359	1359	151068	1.83%
2024	75816	75502	481	481	152280	0.64%
2025	77332	77012	0	0	154344	0.00%
2026	78879	78552			157431	
2027	80456	80123			160579	
2028	82065	81726			163791	
2029	83707	83360			167067	
2030	85381	85027			170408	
2031	87088	86728			173816	
2032	88830	88462			177293	
2033	90607	90232			180838	
2034	92419	92036			184455	
2035	94267	93877			188144	
2036	96153	95755			191907	
2037	98076	97670			195745	
2038	100037	99623			199660	
2039	102038	101616			203653	

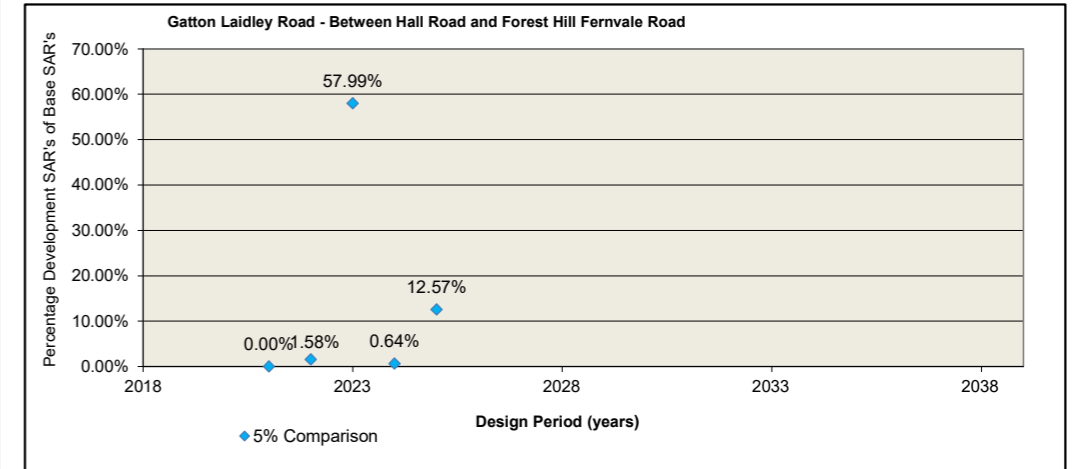
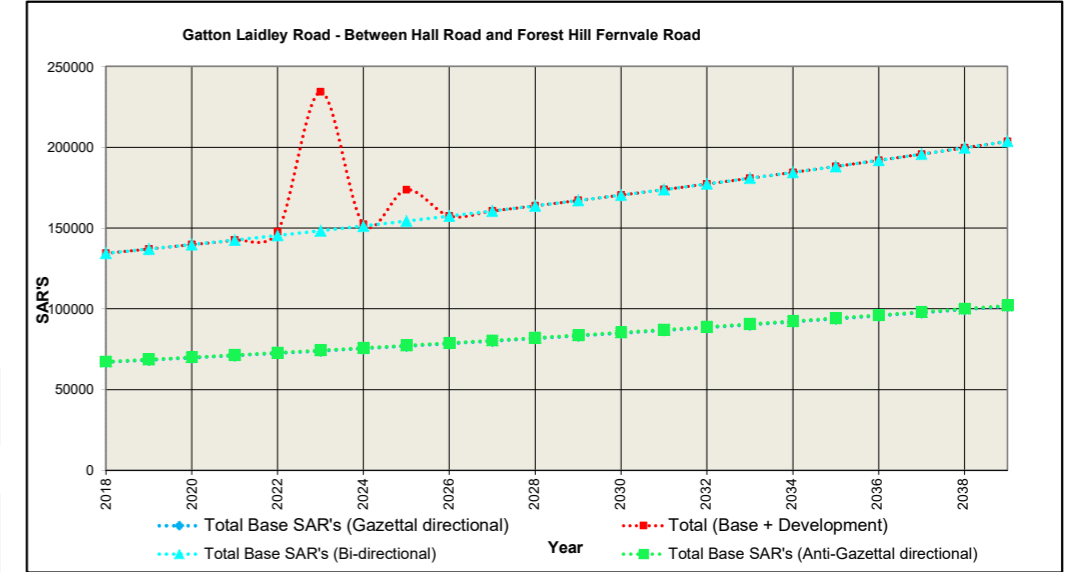




**Gatton Laidley Road - Between Hall Road and Forest Hill Fernvale Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

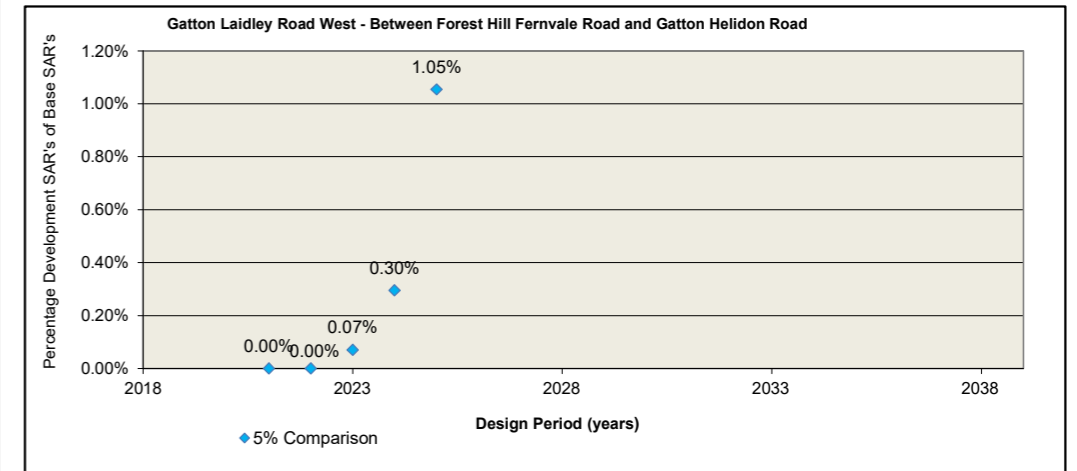
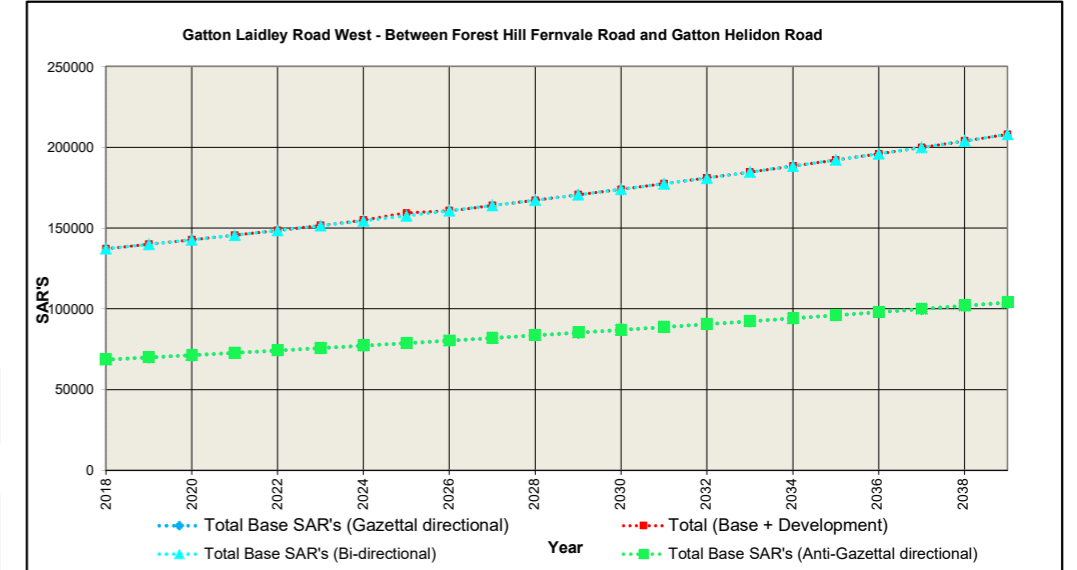
Year	Gatton Laidley Road Base SAR's			Between Hall Road and Forest Hill Fernvale Road Development SAR's			Total (Base + Development)	5% Comparison
	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded			
2018	67322	67043	134366			134366		
2019	68669	68384	137053			137053		
2020	70042	69752	139794			139794		
2021	71443	71147	142590	0	0	142590	0.00%	
2022	72872	72570	145442	1149	1149	147739	1.58%	
2023	74329	74021	148350	43018	43018	234386	57.99%	
2024	75816	75502	151318	481	481	152280	0.64%	
2025	77332	77012	154344	9699	9699	173742	12.57%	
2026	78879	78552	157431			157431		
2027	80456	80123	160579			160579		
2028	82065	81726	163791			163791		
2029	83707	83360	167067			167067		
2030	85381	85027	170408			170408		
2031	87088	86728	173816			173816		
2032	88830	88462	177293			177293		
2033	90607	90232	180838			180838		
2034	92419	92036	184455			184455		
2035	94267	93877	188144			188144		
2036	96153	95755	191907			191907		
2037	98076	97670	195745			195745		
2038	100037	99623	199660			199660		
2039	102038	101616	203653			203653		



**Gatton Laidley Road West - Between Forest Hill Fernvale Road and Gatton Helidon Road**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

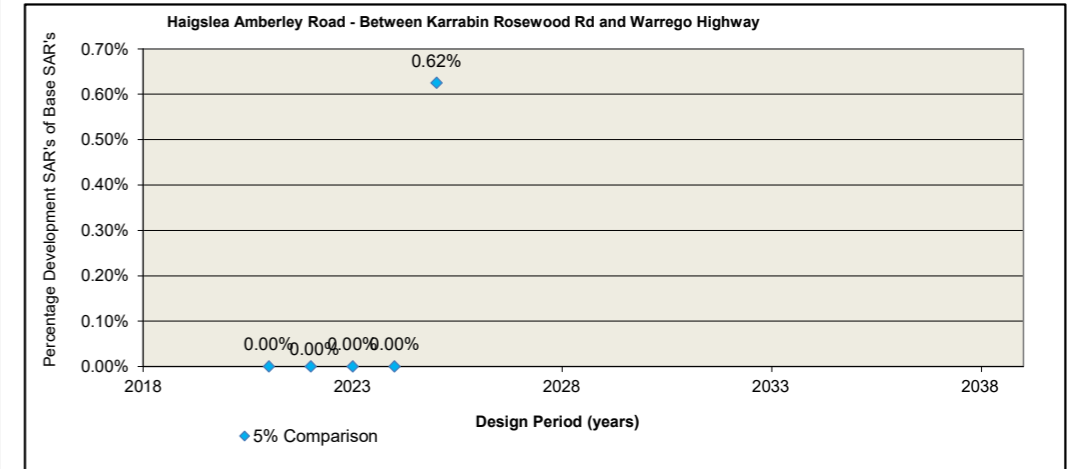
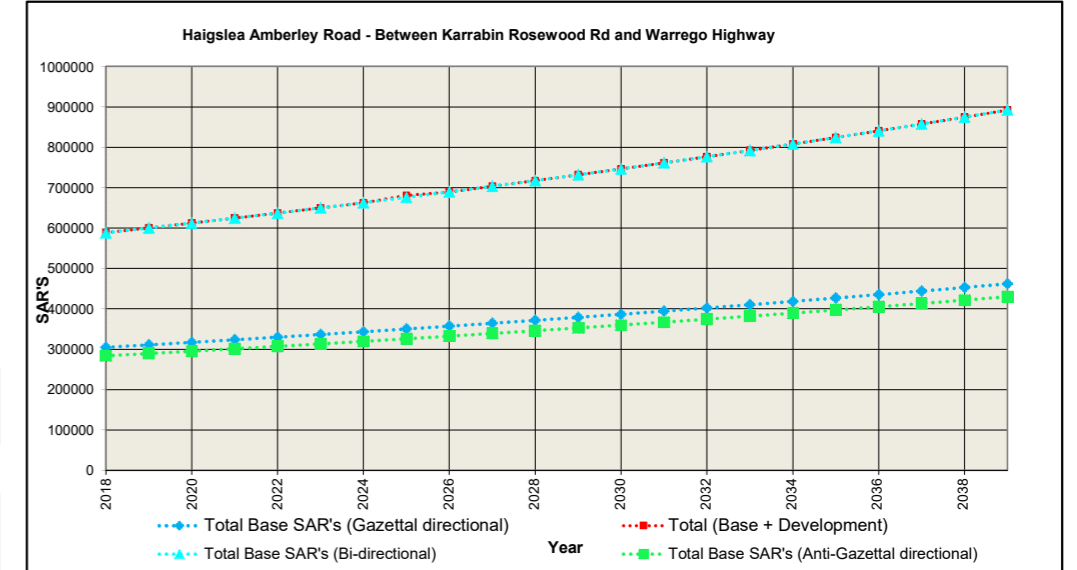
Gatton Laidley Road West			Between Forest Hill Fernvale Road and Gatton Helidon Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	68672	68537			137210	
2019	70046	69908			139954	
2020	71447	71306			142753	
2021	72876	72732	0	0	145608	0.00%
2022	74333	74187	0	0	148520	0.00%
2023	75820	75671	54	54	151598	0.07%
2024	77336	77184	228	228	154977	0.30%
2025	78883	78728	831	831	159273	1.05%
2026	80461	80302			160763	
2027	82070	81909			163978	
2028	83711	83547			167258	
2029	85386	85218			170603	
2030	87093	86922			174015	
2031	88835	88660			177496	
2032	90612	90434			181046	
2033	92424	92242			184666	
2034	94273	94087			188360	
2035	96158	95969			192127	
2036	98081	97888			195969	
2037	100043	99846			199889	
2038	102044	101843			203887	
2039	104085	103880			207964	



**Haigslea Amberley Road - Between Karrabin Rosewood Rd and Warrego Highway**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

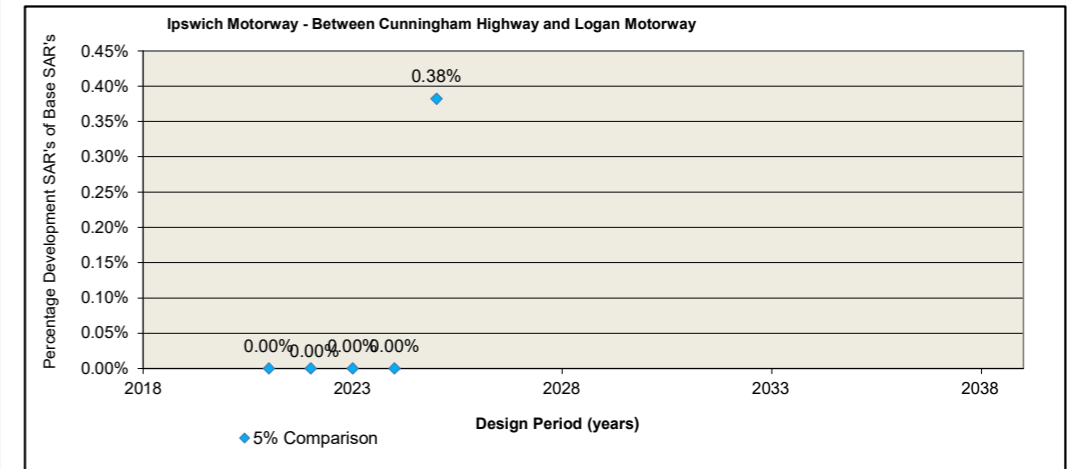
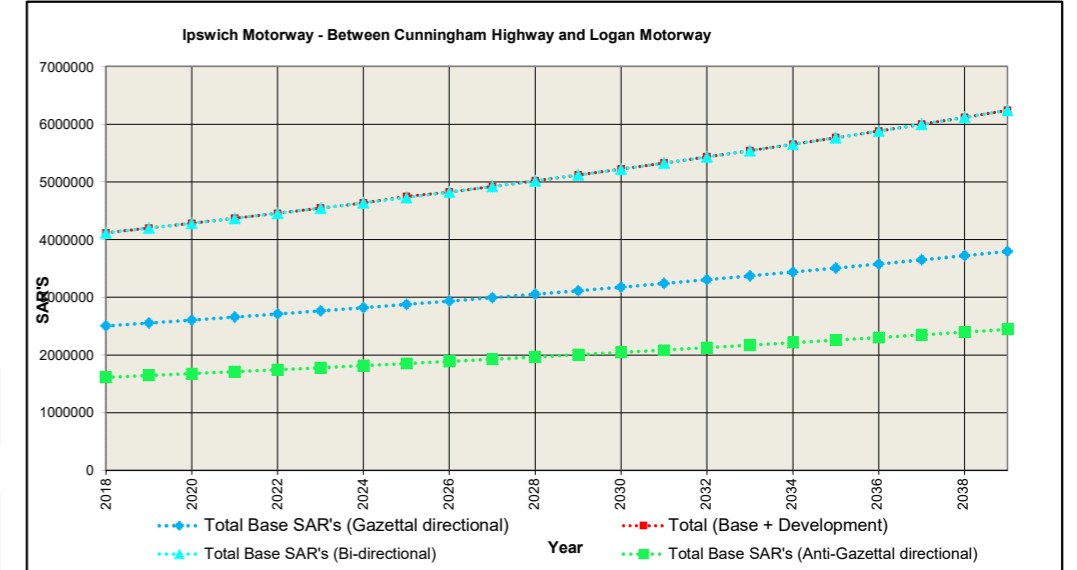
Haigslea Amberley Road			Between Karrabin Rosewood Rd and Warrego Highway			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	283773	304855			588628	
2019	289449	310952			600401	
2020	295238	317171			612409	
2021	301143	323514			624657	0.00%
2022	307165	329985			637150	0.00%
2023	313309	336584			649893	0.00%
2024	319575	343316			662891	0.00%
2025	325966	350182		2113	680374	0.62%
2026	332486	357186			689672	
2027	339135	364330			703465	
2028	345918	371616			717534	
2029	352836	379049			731885	
2030	359893	386630			746523	
2031	367091	394362			761453	
2032	374433	402249			776682	
2033	381922	410294			792216	
2034	389560	418500			808060	
2035	397351	426870			824221	
2036	405298	435408			840706	
2037	413404	444116			857520	
2038	421672	452998			874670	
2039	430106	462058			892164	



Ipswich Motorway - Between Cunningham Highway and Logan Motorway

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

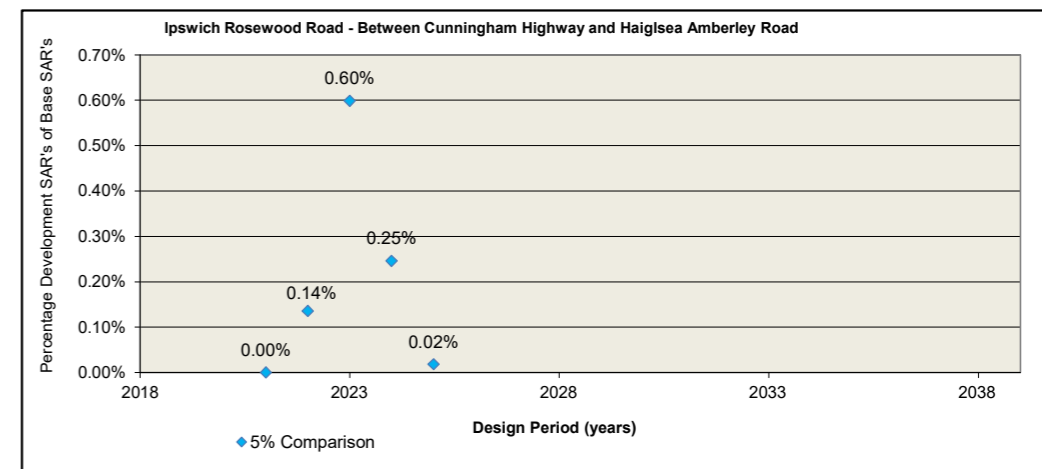
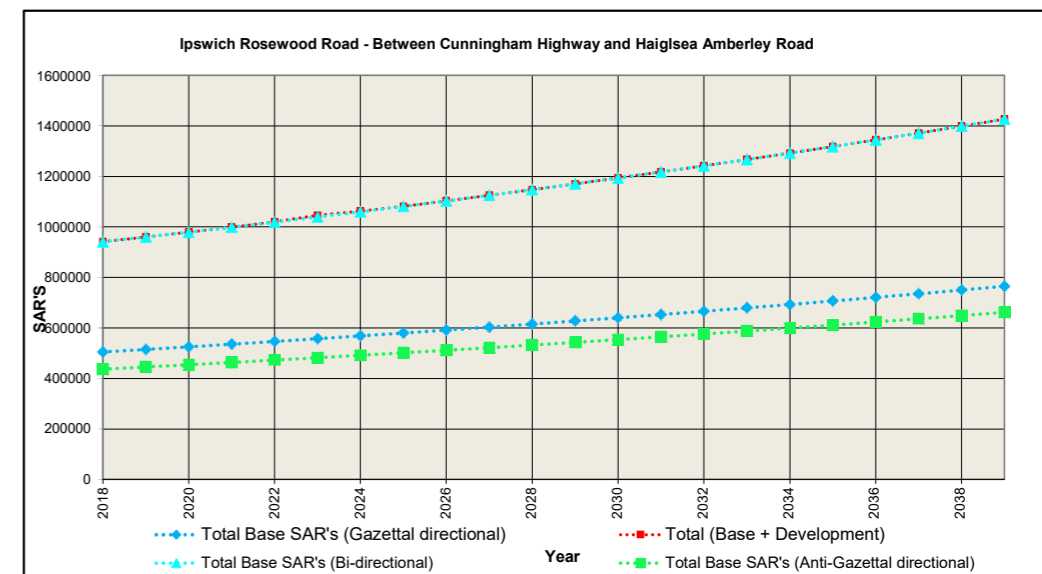
Ipswich Motorway Base SAR's			Between Cunningham Highway and Logan Motorway Development SAR's				Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded				
2018	1612986	2504644			4117630	4117630		
2019	1645246	2554737			4199983	4199983		
2020	1678151	2605831			4283982	4283982		
2021	1711714	2657948		0	4369662	4369662	0.00%	
2022	1745948	2711107		0	4457055	4457055	0.00%	
2023	1780867	2765329		0	4546196	4546196	0.00%	
2024	1816485	2820636		0	4637120	4637120	0.00%	
2025	1852814	2877048		9037	4729863	4747936	0.38%	
2026	1889871	2934589			4824460	4824460		
2027	1927668	2993281			4920949	4920949		
2028	1966221	3053147			5019368	5019368		
2029	2005546	3114210			5119756	5119756		
2030	2045657	3176494			5222151	5222151		
2031	2086570	3240024			5326594	5326594		
2032	2128301	3304824			5433126	5433126		
2033	2170867	3370921			5541788	5541788		
2034	2214285	3438339			5652624	5652624		
2035	2258570	3507106			5765676	5765676		
2036	2303742	3577248			5880990	5880990		
2037	2349817	3648793			5998610	5998610		
2038	2396813	3721769			6118582	6118582		
2039	2444749	3796204			6240954	6240954		



Ipswich Rosewood Road - Between Cunningham Highway and Haiglse Amberley Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

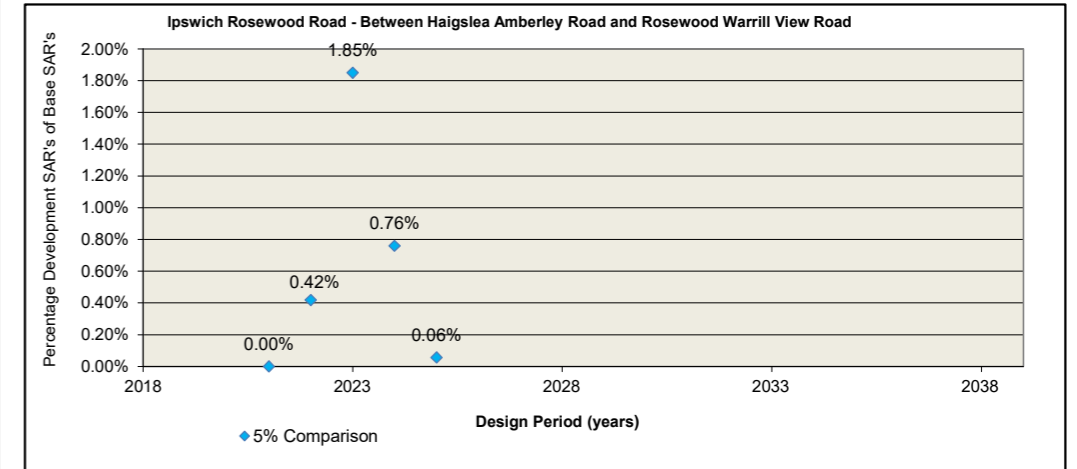
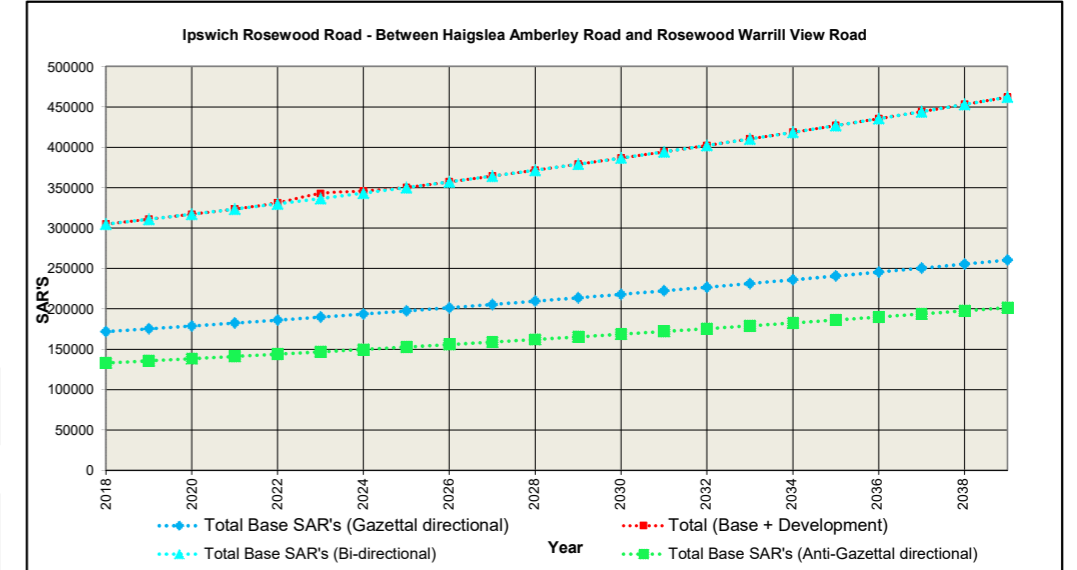
Ipswich Rosewood Road			Between Cunningham Highway and Haiglse Amberley Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	436719	504920			941639	
2019	445454	515018			960471	
2020	454363	525318			979681	
2021	463450	535825	0	0	999275	0.00%
2022	472719	546541	690	690	1020640	0.14%
2023	482173	557472	3112	3112	1045869	0.60%
2024	491817	568621	1304	1304	1063046	0.25%
2025	501653	579994	100	100	1081847	0.02%
2026	511686	591594			1103280	
2027	521920	603426			1125345	
2028	532358	615494			1147852	
2029	543005	627804			1170809	
2030	553866	640360			1194226	
2031	564943	653167			1218110	
2032	576242	666231			1242472	
2033	587767	679555			1267322	
2034	599522	693146			1292668	
2035	611512	707009			1318521	
2036	623743	721149			1344892	
2037	636217	735572			1371790	
2038	648942	750284			1399226	
2039	661921	765290			1427210	



Ipswich Rosewood Road - Between Haigslea Amberley Road and Rosewood Warrill View Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

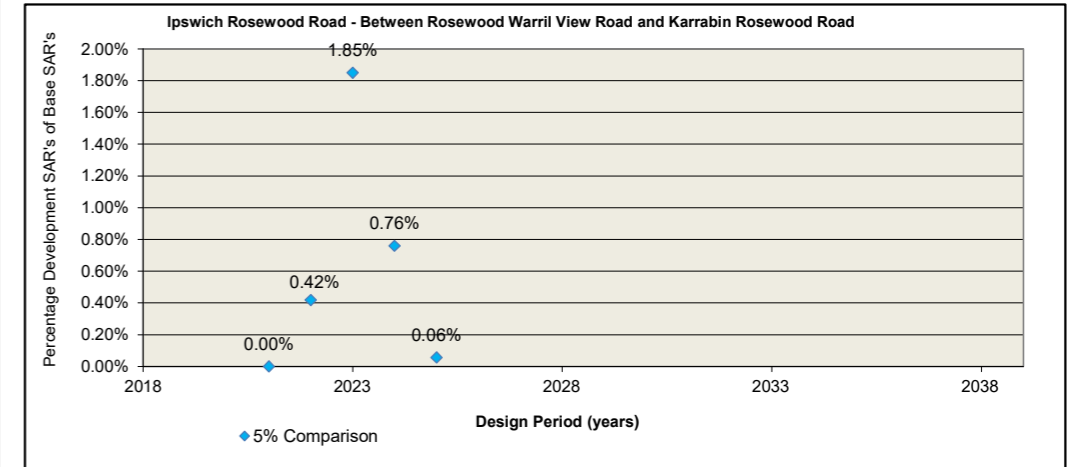
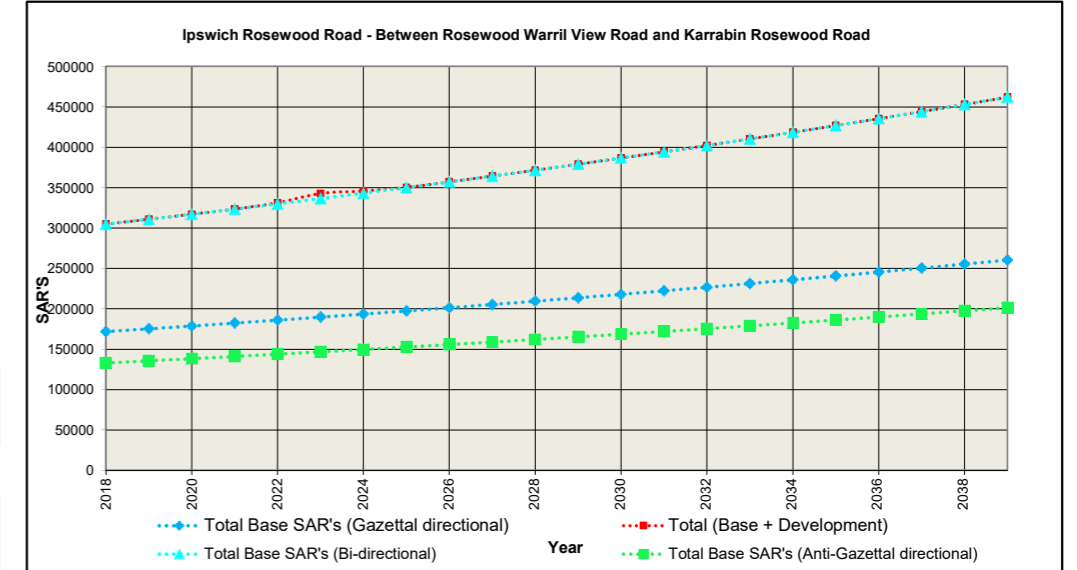
Ipswich Rosewood Road			Between Haigslea Amberley Road and Rosewood Warrill View Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	132984	171883			304867	
2019	135644	175320			310964	
2020	138357	178827			317184	
2021	141124	182403	0	0	323527	0.00%
2022	143947	186051	690	690	331378	0.42%
2023	146825	189773	3112	3112	342822	1.85%
2024	149762	193568	1304	1304	345938	0.76%
2025	152757	197439	100	100	350397	0.06%
2026	155812	201388			357200	
2027	158929	205416			364344	
2028	162107	209524			371631	
2029	165349	213715			379064	
2030	168656	217989			386645	
2031	172029	222349			394378	
2032	175470	226796			402266	
2033	178979	231332			410311	
2034	182559	235958			418517	
2035	186210	240677			426888	
2036	189934	245491			435425	
2037	193733	250401			444134	
2038	197608	255409			453017	
2039	201560	260517			462077	



Ipswich Rosewood Road - Between Rosewood Warril View Road and Karrabin Rosewood Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

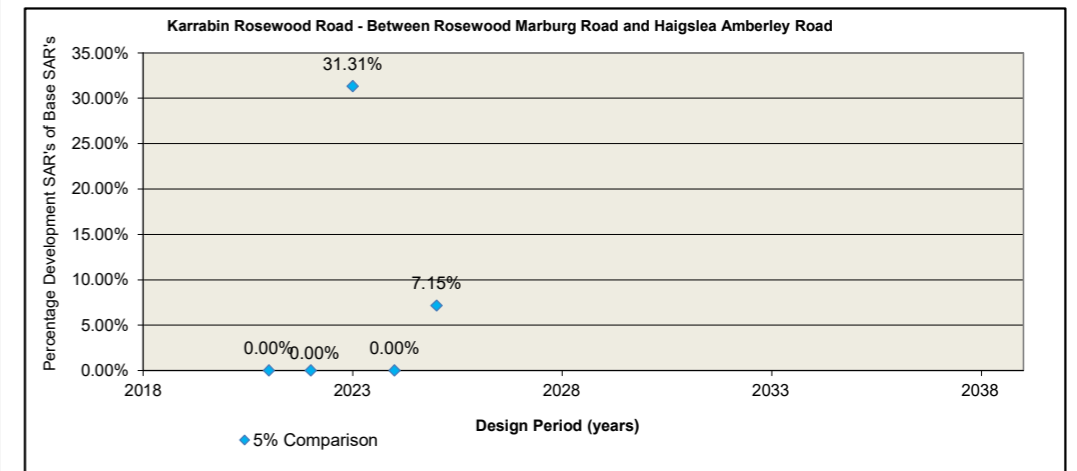
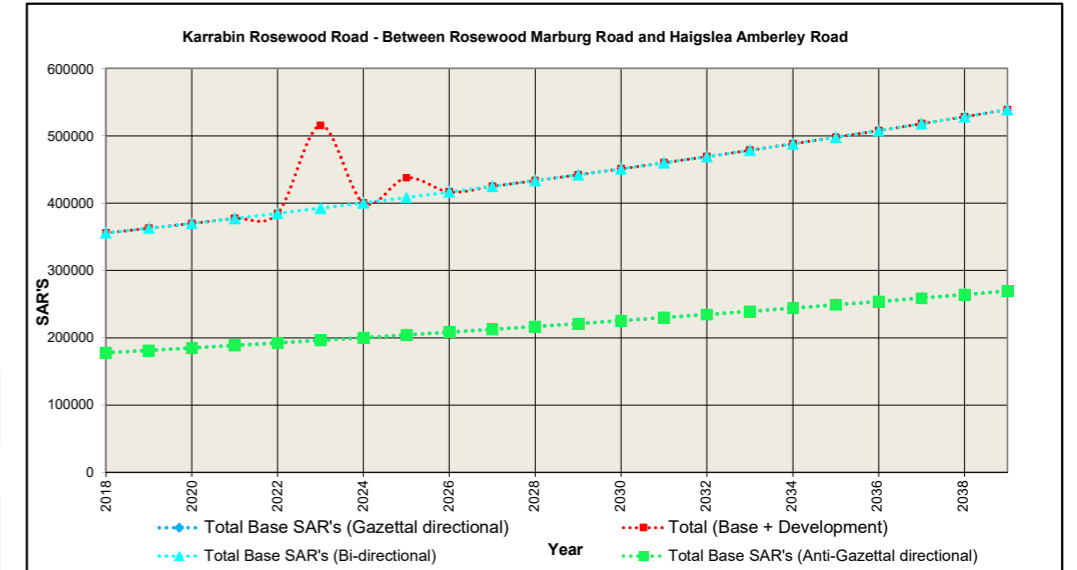
Ipswich Rosewood Road			Between Rosewood Warril View Road and Karrabin Rosewood Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	132984	171883			304867	
2019	135644	175320			310964	
2020	138357	178827			317184	
2021	141124	182403	0	0	323527	0.00%
2022	143947	186051	690	690	331378	0.42%
2023	146825	189773	3112	3112	342822	1.85%
2024	149762	193568	1304	1304	345938	0.76%
2025	152757	197439	100	100	350397	0.06%
2026	155812	201388			357200	
2027	158929	205416			364344	
2028	162107	209524			371631	
2029	165349	213715			379064	
2030	168656	217989			386645	
2031	172029	222349			394378	
2032	175470	226796			402266	
2033	178979	231332			410311	
2034	182559	235958			418517	
2035	186210	240677			426888	
2036	189934	245491			435425	
2037	193733	250401			444134	
2038	197608	255409			453017	
2039	201560	260517			462077	



Karrabin Rosewood Road - Between Rosewood Marburg Road and Haigslea Amberley Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

Karrabin Rosewood Road			Between Rosewood Marburg Road and Haigslea Amberley Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	177627	177928			355555	
2019	181180	181487			362666	
2020	184803	185117			369920	
2021	188499	188819		0	377318	0.00%
2022	192269	192595		0	384864	0.00%
2023	196115	196447		61461	515483	31.31%
2024	200037	200376		0	400413	0.00%
2025	204038	204384		14601	437623	7.15%
2026	208118	208471			416590	
2027	212281	212641			424921	
2028	216526	216894			433420	
2029	220857	221231			442088	
2030	225274	225656			450930	
2031	229779	230169			459949	
2032	234375	234773			469148	
2033	239063	239468			478531	
2034	243844	244257			488101	
2035	248721	249143			497863	
2036	253695	254125			507820	
2037	258769	259208			517977	
2038	263944	264392			528336	
2039	269223	269680			538903	

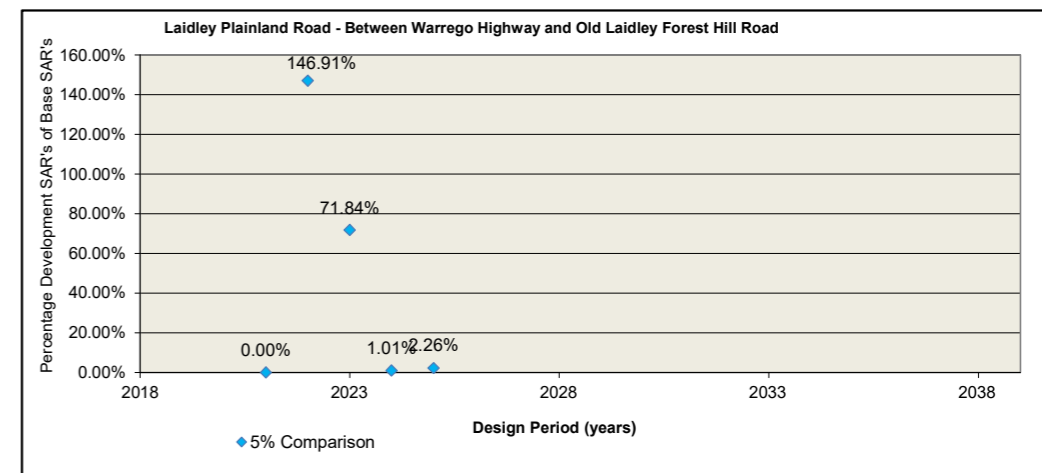
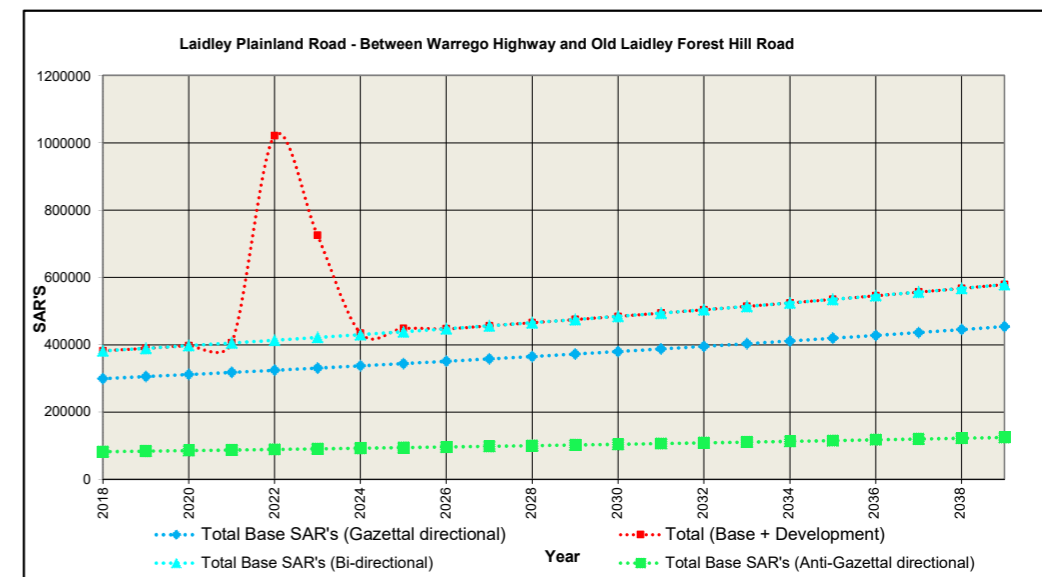




Laidley Plainland Road - Between Warrego Highway and Old Laidley Forest Hill Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

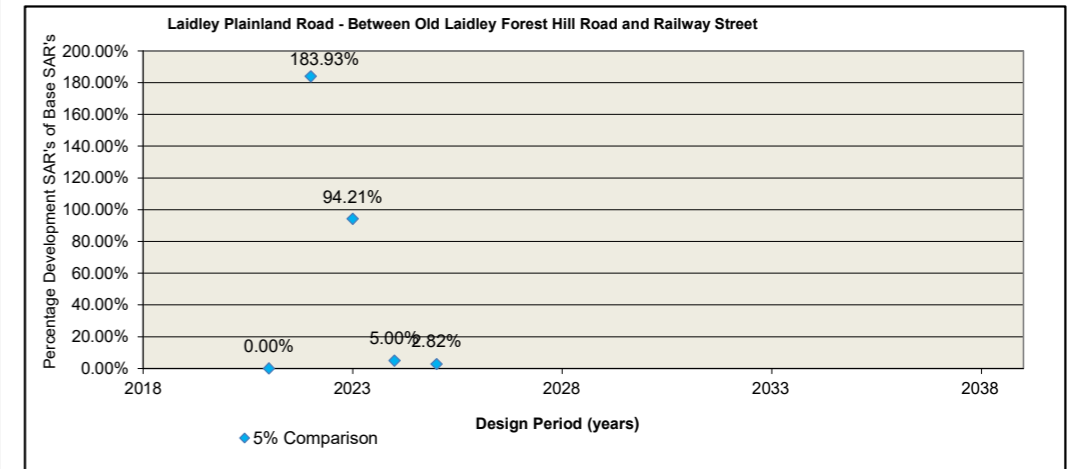
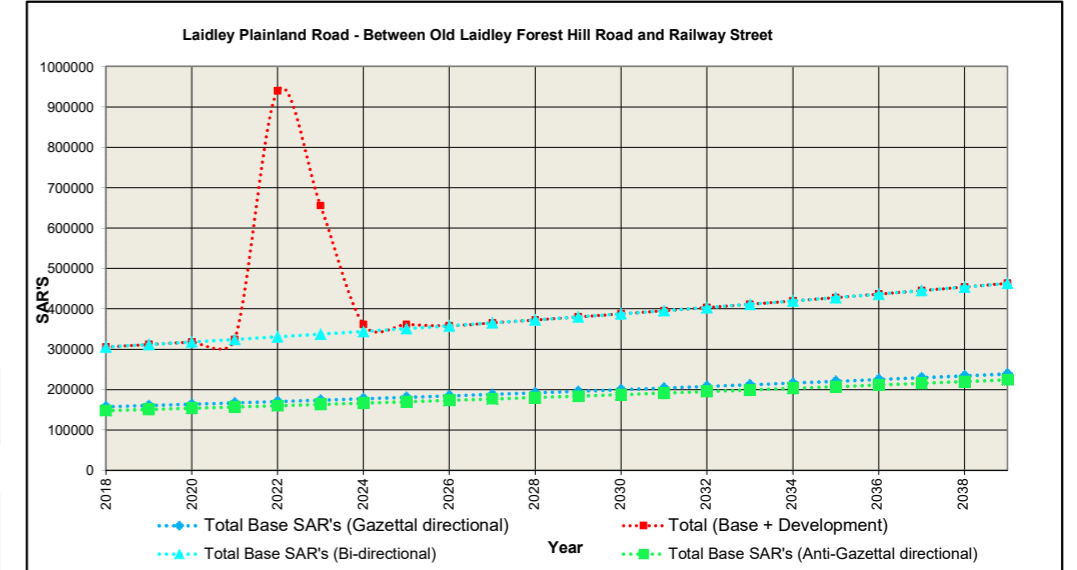
Laidley Plainland Road			Between Warrego Highway and Old Laidley Forest Hill Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	82392	299622			382014	
2019	84040	305615			389655	
2020	85721	311727			397448	
2021	87435	317961	0	0	405397	0.00%
2022	89184	324321	303748	303748	1021000	146.91%
2023	90968	330807	151491	151491	724757	71.84%
2024	92787	337423	2169	2169	434549	1.01%
2025	94643	344172	4950	4950	448715	2.26%
2026	96536	351055			447591	
2027	98466	358076			456543	
2028	100436	365238			465673	
2029	102444	372542			474987	
2030	104493	379993			484487	
2031	106583	387593			494176	
2032	108715	395345			504060	
2033	110889	403252			514141	
2034	113107	411317			524424	
2035	115369	419543			534912	
2036	117676	427934			545611	
2037	120030	436493			556523	
2038	122431	445223			567653	
2039	124879	454127			579006	



Laidley Plainland Road - Between Old Laidley Forest Hill Road and Railway Street

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

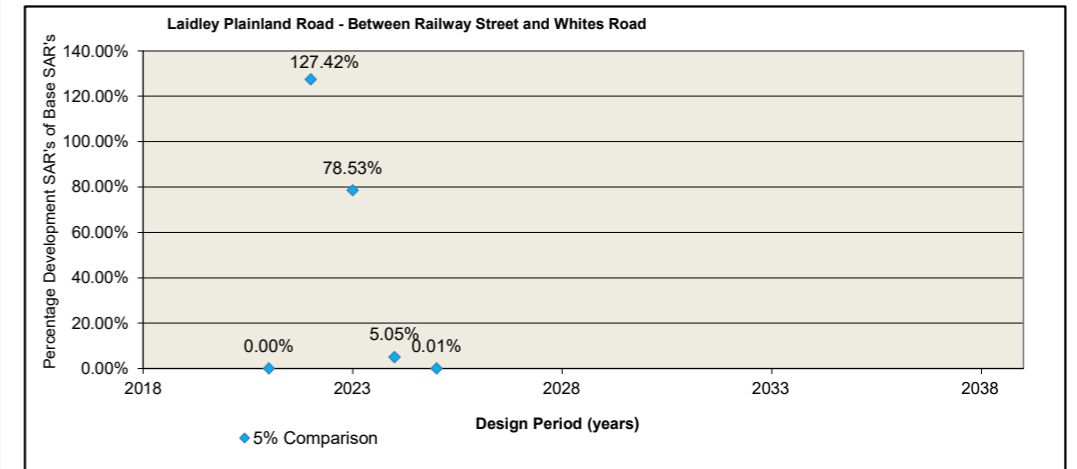
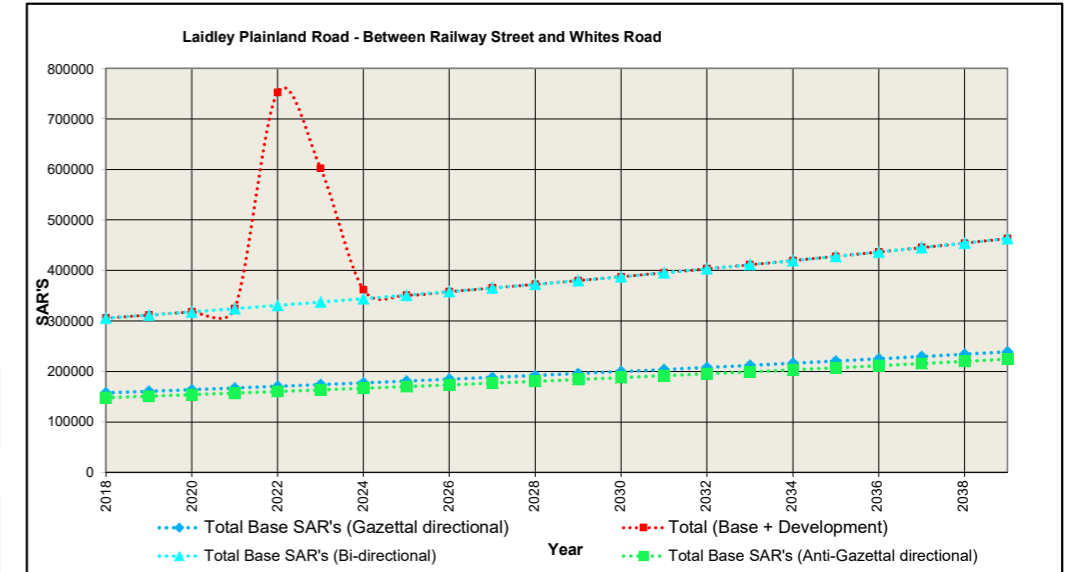
Laidley Plainland Road			Between Old Laidley Forest Hill Road and Railway Street			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	148048	157593			305641	
2019	151009	160745			311754	
2020	154029	163960			317989	
2021	157109	167239	0	0	324349	0.00%
2022	160252	170584	304252	304252	939339	183.93%
2023	163457	173996	158951	158951	655355	94.21%
2024	166726	177476	8597	8597	361395	5.00%
2025	170060	181025	4950	4950	360986	2.82%
2026	173462	184646			358107	
2027	176931	188339			365269	
2028	180469	192105			372575	
2029	184079	195948			380026	
2030	187760	199866			387627	
2031	191516	203864			395379	
2032	195346	207941			403287	
2033	199253	212100			411353	
2034	203238	216342			419580	
2035	207303	220669			427971	
2036	211449	225082			436531	
2037	215678	229584			445261	
2038	219991	234175			454167	
2039	224391	238859			463250	



Laidley Plainland Road - Between Railway Street and Whites Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

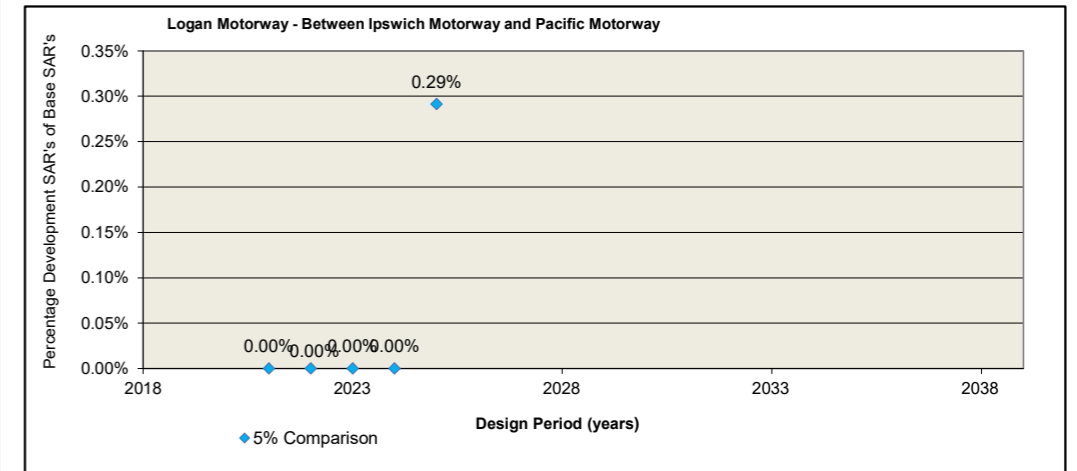
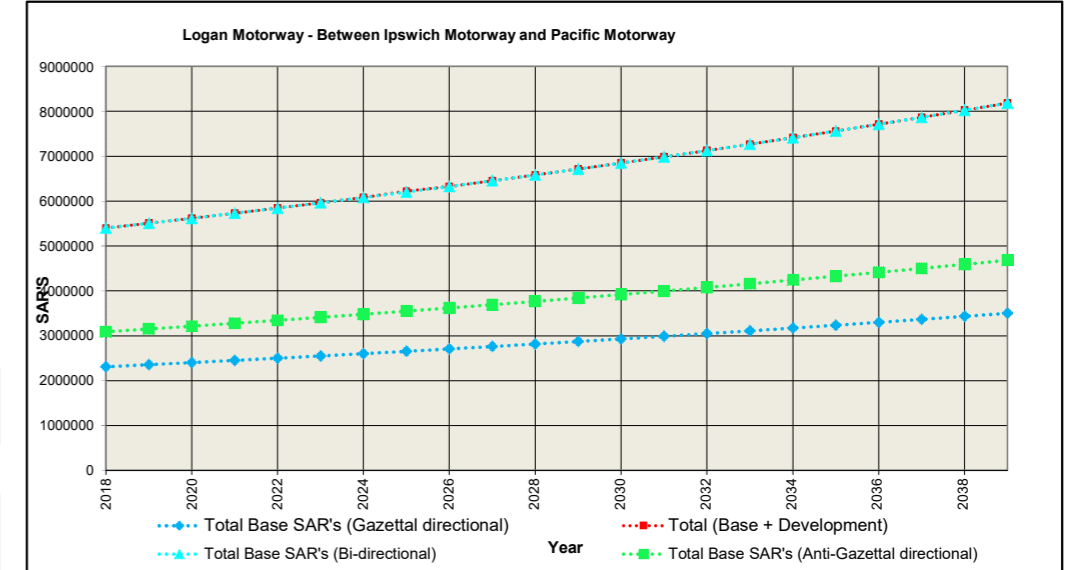
Laidley Plainland Road			Between Railway Street and Whites Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	148048	157593			305641	
2019	151009	160745			311754	
2020	154029	163960			317989	
2021	157109	167239			324349	0.00%
2022	160252	170584	210778	210778	752391	127.42%
2023	163457	173996	132499	132499	602451	78.53%
2024	166726	177476	8687	8687	361576	5.05%
2025	170060	181025	17	17	351120	0.01%
2026	173462	184646			358107	
2027	176931	188339			365269	
2028	180469	192105			372575	
2029	184079	195948			380026	
2030	187760	199866			387627	
2031	191516	203864			395379	
2032	195346	207941			403287	
2033	199253	212100			411353	
2034	203238	216342			419580	
2035	207303	220669			427971	
2036	211449	225082			436531	
2037	215678	229584			445261	
2038	219991	234175			454167	
2039	224391	238859			463250	



Logan Motorway - Between Ipswich Motorway and Pacific Motorway

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

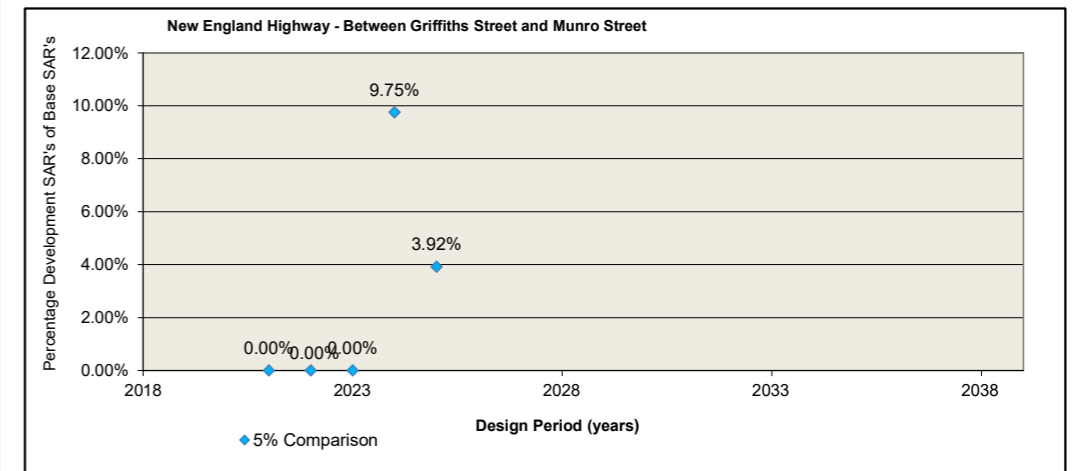
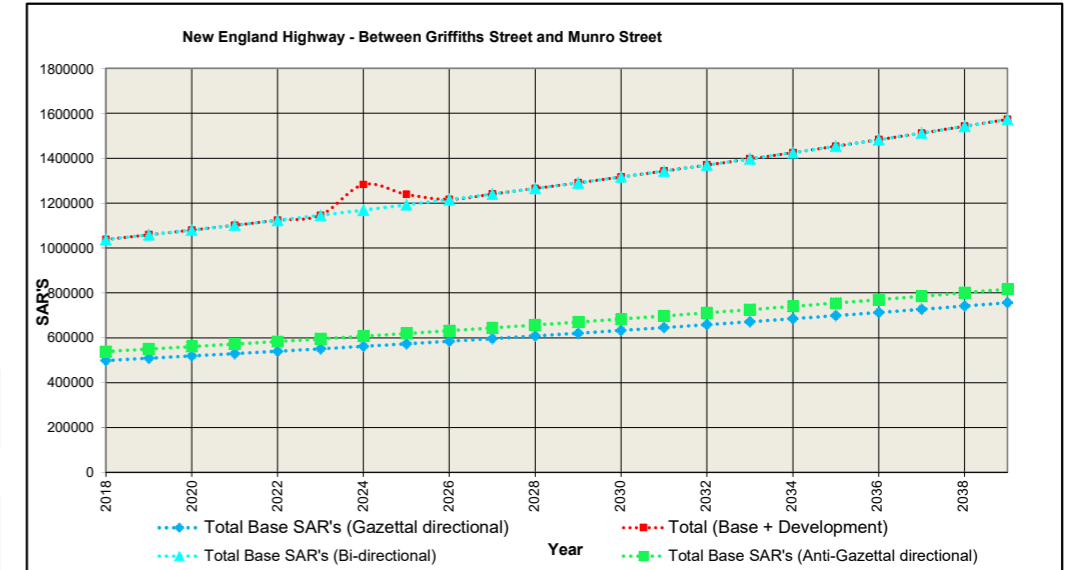
Logan Motorway Base SAR's			Between Ipswich Motorway and Pacific Motorway Development SAR's				Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded				
2018	3090012	2310557			5400569	5400569		
2019	3151812	2356768			5508581	5508581		
2020	3214849	2403904			5618752	5618752		
2021	3279146	2451982		0	5731127	5731127	0.00%	
2022	3344729	2501021		0	5845750	5845750	0.00%	
2023	3411623	2551042		0	5962665	5962665	0.00%	
2024	3479856	2602063		0	6081918	6081918	0.00%	
2025	3549453	2654104		9037	6203556	6221630	0.29%	
2026	3620442	2707186			6327628	6327628		
2027	3692851	2761330			6454180	6454180		
2028	3766708	2816556			6583264	6583264		
2029	3842042	2872887			6714929	6714929		
2030	3918883	2930345			6849228	6849228		
2031	3997260	2988952			6986212	6986212		
2032	4077205	3048731			7125936	7125936		
2033	4158750	3109706			7268455	7268455		
2034	4241925	3171900			7413824	7413824		
2035	4326763	3235338			7562101	7562101		
2036	4413298	3300044			7713343	7713343		
2037	4501564	3366045			7867610	7867610		
2038	4591596	3433366			8024962	8024962		
2039	4683427	3502034			8185461	8185461		



**New England Highway - Between Griffiths Street and Munro Street**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

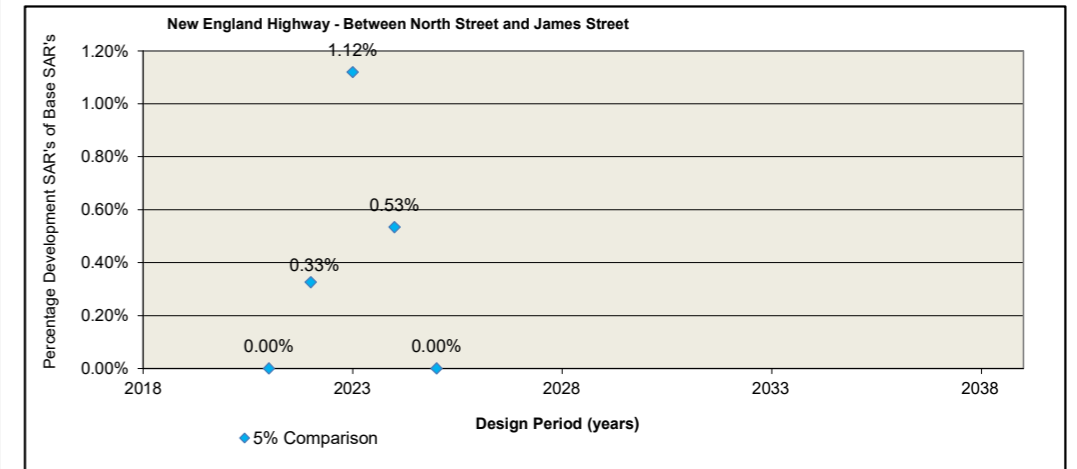
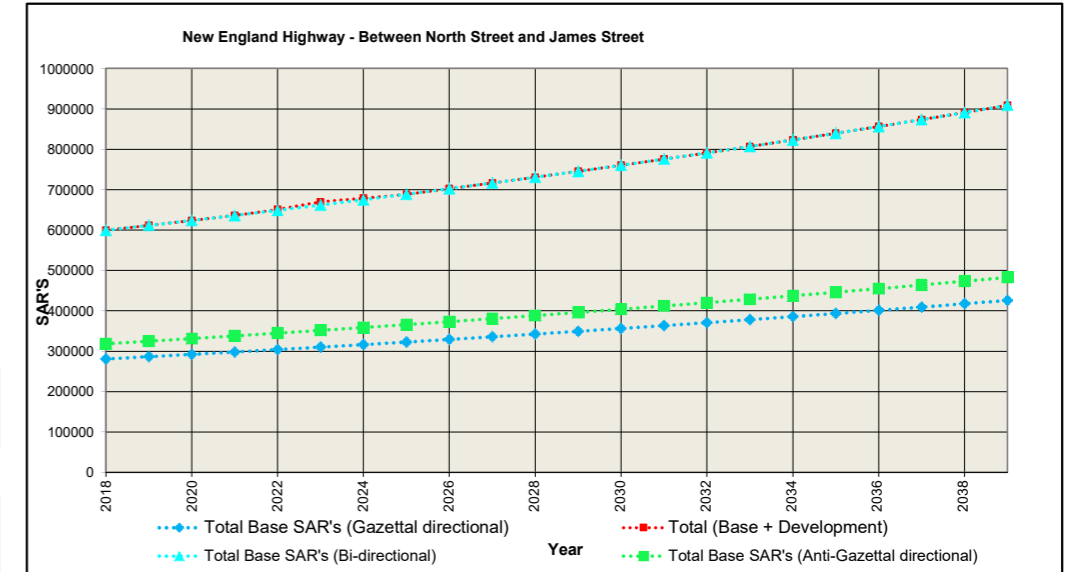
New England Highway Base SAR's			Between Griffiths Street and Munro Street			
Year	Total Base SAR's (Anti-Gazettal directional)	Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
			Unloaded	Loaded		
2018	539084	499028			1038112	
2019	549866	509008			1058874	
2020	560863	519188			1080052	
2021	572081	529572	0	0	1101653	0.00%
2022	583522	540164	0	0	1123686	0.00%
2023	595193	550967	0	0	1146160	0.00%
2024	607097	561986	56982	56982	1283046	9.75%
2025	619239	573226	23358	23358	1239180	3.92%
2026	631623	584690			1216314	
2027	644256	596384			1240640	
2028	657141	608312			1265453	
2029	670284	620478			1290762	
2030	683689	632888			1316577	
2031	697363	645545			1342909	
2032	711311	658456			1369767	
2033	725537	671625			1397162	
2034	740047	685058			1425105	
2035	754848	698759			1453607	
2036	769945	712734			1482680	
2037	785344	726989			1512333	
2038	801051	741529			1542580	
2039	817072	756359			1573432	



**New England Highway - Between North Street and James Street**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

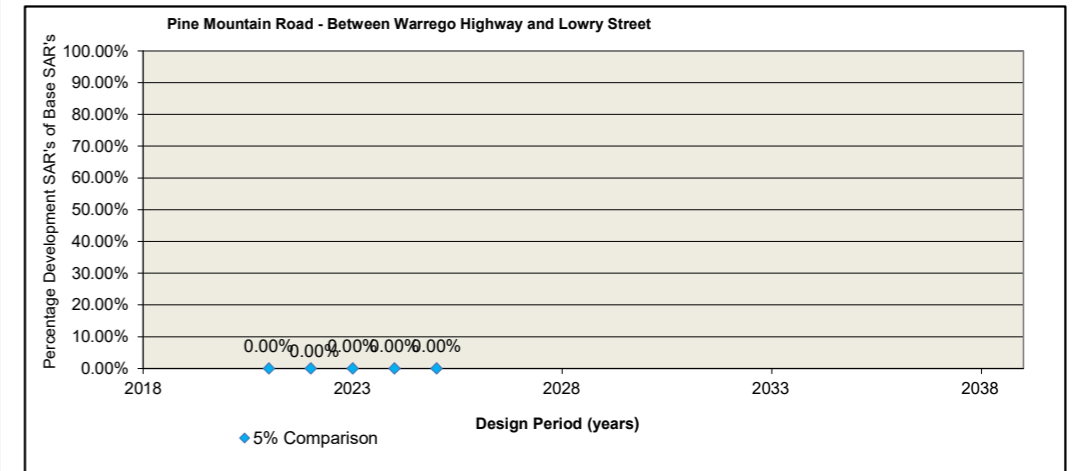
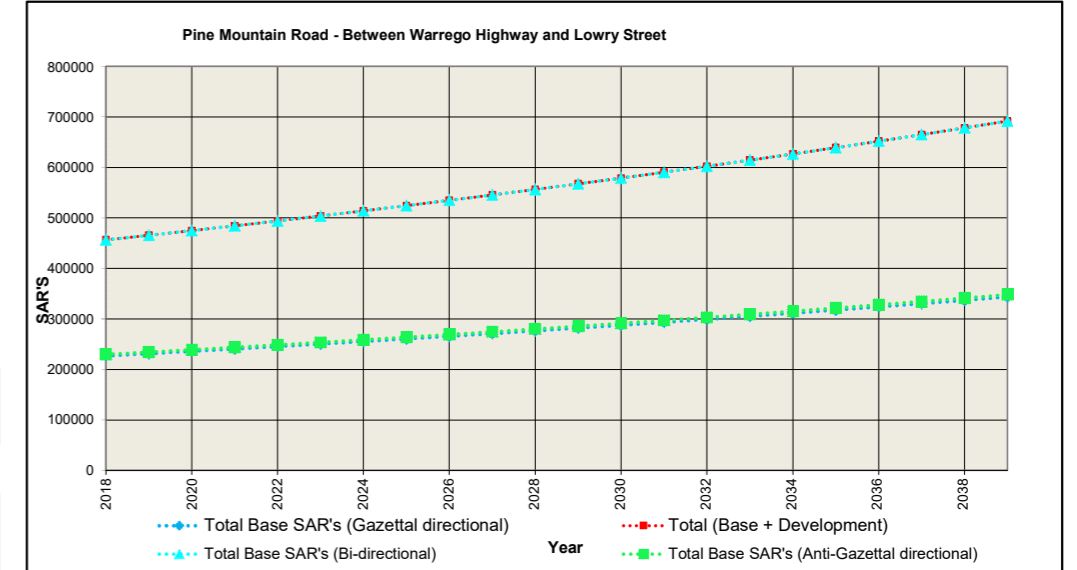
New England Highway Base SAR's			Between North Street and James Street			
Year	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
			Unloaded	Loaded		
2018	318567	281011			599578	
2019	324938	286632			611570	
2020	331437	292364			623801	
2021	338066	298211	0	0	636277	0.00%
2022	344827	304176	1058	1058	651119	0.33%
2023	351724	310259	3706	3706	669396	1.12%
2024	358758	316464	1802	1802	678827	0.53%
2025	365933	322794	0	0	688727	0.00%
2026	373252	329250			702502	
2027	380717	335834			716552	
2028	388332	342551			730883	
2029	396098	349402			745500	
2030	404020	356390			760410	
2031	412101	363518			775619	
2032	420343	370788			791131	
2033	428749	378204			806954	
2034	437324	385768			823093	
2035	446071	393484			839555	
2036	454992	401353			856346	
2037	464092	409380			873473	
2038	473374	417568			890942	
2039	482841	425919			908761	



Pine Mountain Road - Between Warrego Highway and Lowry Street

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

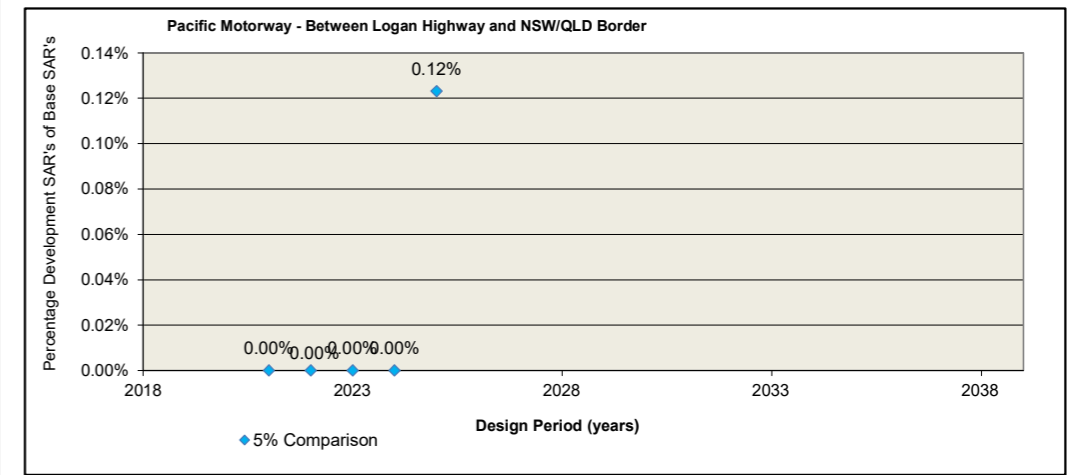
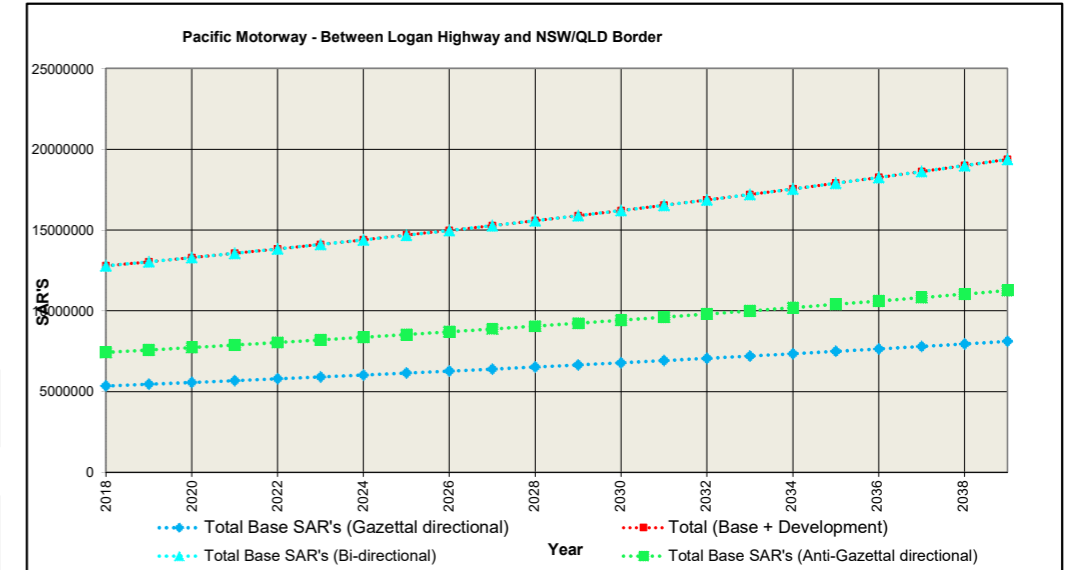
Pine Mountain Road			Between Warrego Highway and Lowry Street			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	229731	226810			456541	
2019	234325	231347			465672	
2020	239012	235974			474985	
2021	243792	240693		0	484485	0.00%
2022	248668	245507		0	494175	0.00%
2023	253641	250417		0	504058	0.00%
2024	258714	255425		0	514139	0.00%
2025	263888	260534		0	524422	0.00%
2026	269166	265745			534911	
2027	274549	271059			545609	
2028	280040	276481			556521	
2029	285641	282010			567651	
2030	291354	287650			579004	
2031	297181	293403			590585	
2032	303125	299272			602396	
2033	309187	305257			614444	
2034	315371	311362			626733	
2035	321678	317589			639268	
2036	328112	323941			652053	
2037	334674	330420			665094	
2038	341368	337028			678396	
2039	348195	343769			691964	



Pacific Motorway - Between Logan Highway and NSW/QLD Border

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

Pacific Motorway Base SAR's			Between Logan Highway and NSW/QLD Border			
Year	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
			Unloaded	Loaded		
2018	7429605	5352231			12781836	
2019	7578197	5459276			13037473	
2020	7729761	5568461			13298222	
2021	7884356	5679830	0	0	13564187	0.00%
2022	8042043	5793427	0	0	13835470	0.00%
2023	8202884	5909296	0	0	14112180	0.00%
2024	8366942	6027481	0	0	14394423	0.00%
2025	8534281	6148031	9037	9037	14700385	0.12%
2026	8704967	6270992			14975958	
2027	8879066	6396412			15275477	
2028	9056647	6524340			15580987	
2029	9237780	6654827			15892607	
2030	9422536	6787923			16210459	
2031	9610986	6923682			16534668	
2032	9803206	7062155			16865361	
2033	9999270	7203398			17202669	
2034	10199256	7347466			17546722	
2035	10403241	7494416			17897656	
2036	10611306	7644304			18255609	
2037	10823532	7797190			18620722	
2038	11040002	7953134			18993136	
2039	11260802	8112196			19372999	

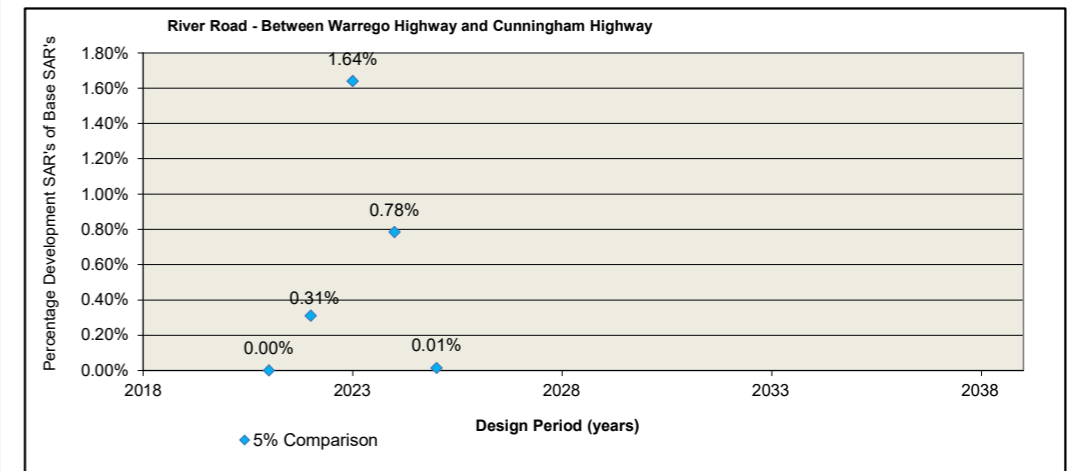
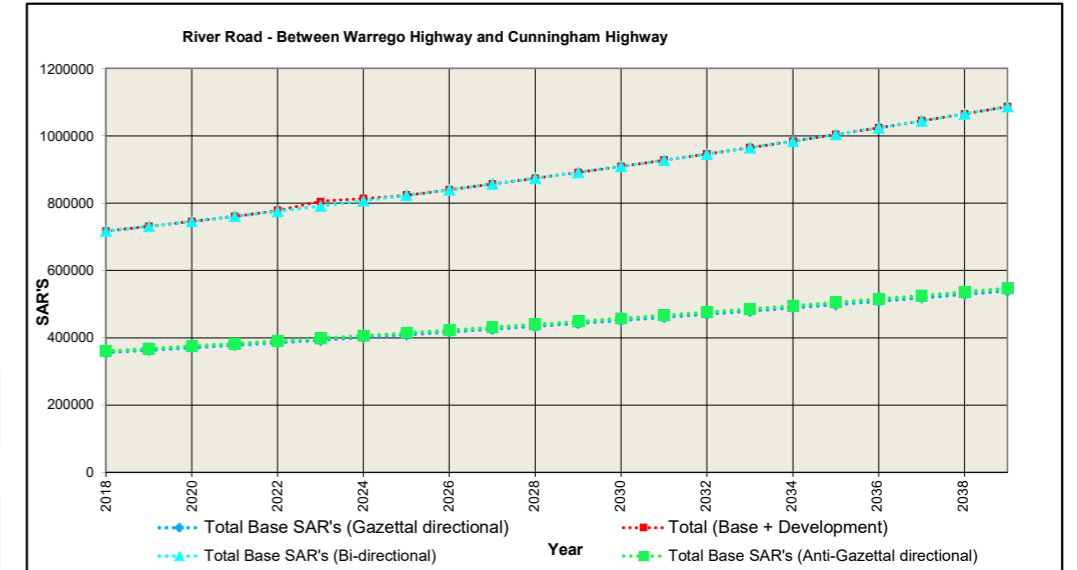




River Road - Between Warrego Highway and Cunningham Highway

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

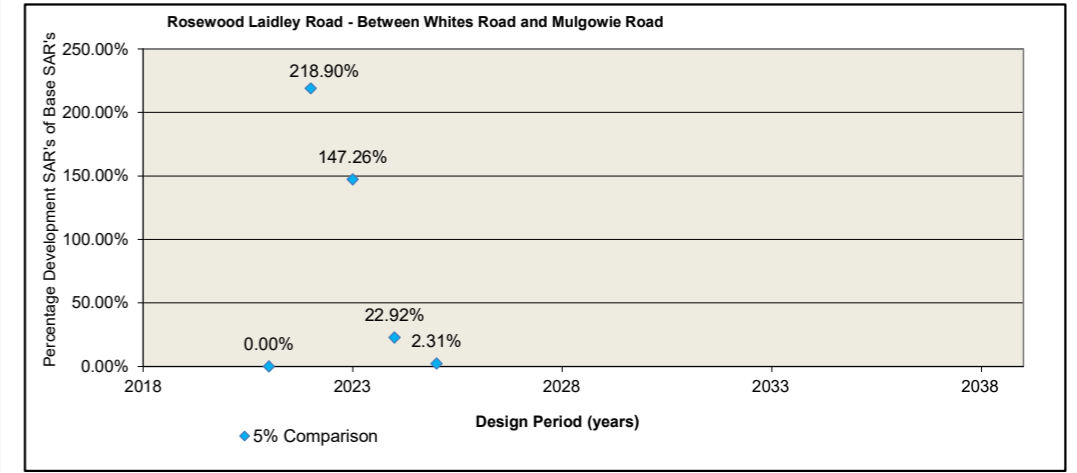
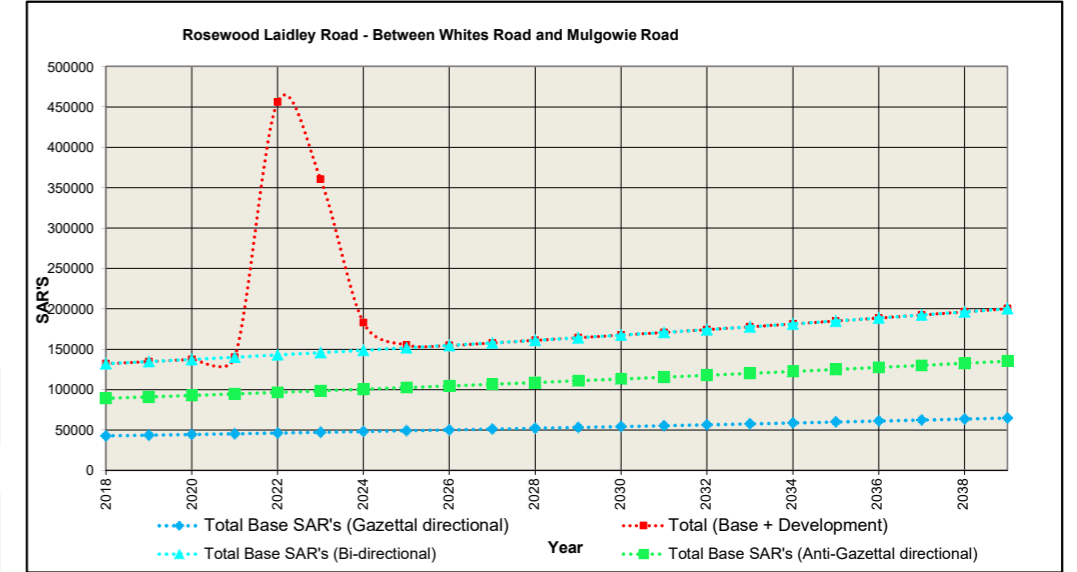
River Road			Between Warrego Highway and Cunningham Highway			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	360730	356145			716874	
2019	367945	363267			731212	
2020	375303	370533			745836	
2021	382809	377943			760753	0.00%
2022	390466	385502	1205	1205	778377	0.31%
2023	398275	393212	6492	6492	804472	1.64%
2024	406240	401077	3166	3166	813650	0.78%
2025	414365	409098	58	58	823580	0.01%
2026	422653	417280			839933	
2027	431106	425626			856731	
2028	439728	434138			873866	
2029	448522	442821			891343	
2030	457493	451677			909170	
2031	466643	460711			927354	
2032	475975	469925			945901	
2033	485495	479324			964819	
2034	495205	488910			984115	
2035	505109	498688			1003797	
2036	515211	508662			1023873	
2037	525515	518835			1044351	
2038	536026	529212			1065238	
2039	546746	539796			1086543	



Rosewood Laidley Road - Between Whites Road and Mulgowie Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

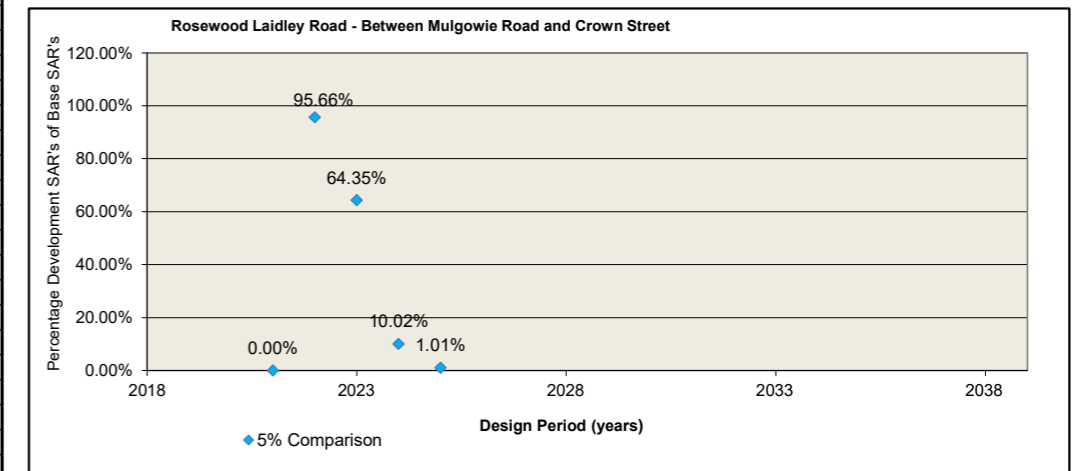
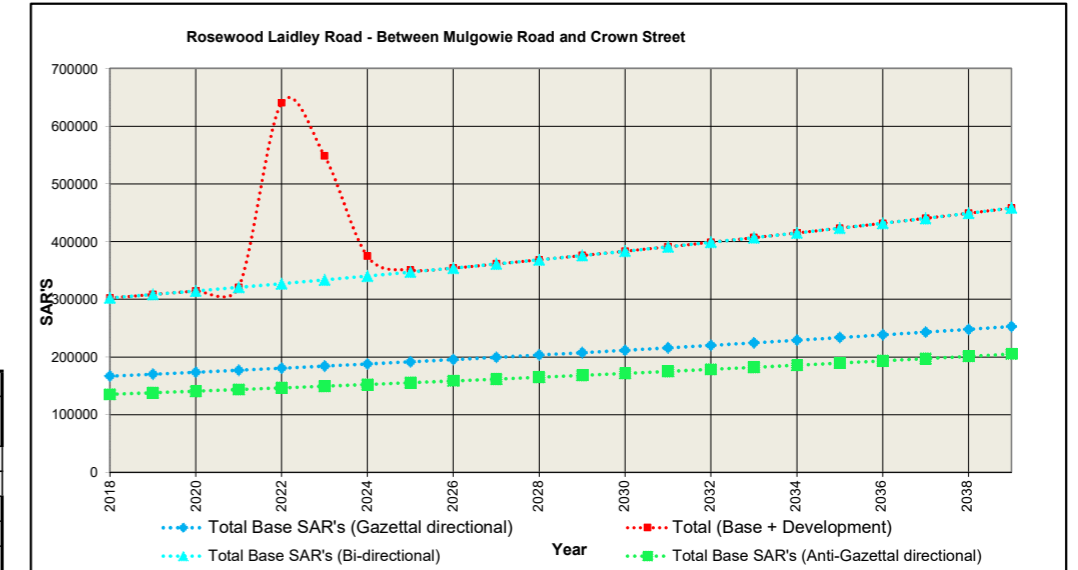
Rosewood Laidley Road			Between Whites Road and Mulgowie Road				5% Comparison
Base SAR's			Development SAR's		Total (Base + Development)		
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded			
2018	89283	42822			132105		
2019	91069	43679			134747		
2020	92890	44552			137442		
2021	94748	45443			140191	0	0.00%
2022	96643	46352			142995	156510	218.90%
2023	98576	47279			145855	107390	147.26%
2024	100547	48225			148772	17050	22.92%
2025	102558	49189			151747	1756	2.31%
2026	104609	50173			154782		
2027	106701	51177			157878		
2028	108835	52200			161036		
2029	111012	53244			164256		
2030	113232	54309			167541		
2031	115497	55395			170892		
2032	117807	56503			174310		
2033	120163	57633			177796		
2034	122566	58786			181352		
2035	125018	59962			184979		
2036	127518	61161			188679		
2037	130068	62384			192452		
2038	132670	63632			196301		
2039	135323	64904			200227		



Rosewood Laidley Road - Between Mulgowie Road and Crown Street

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

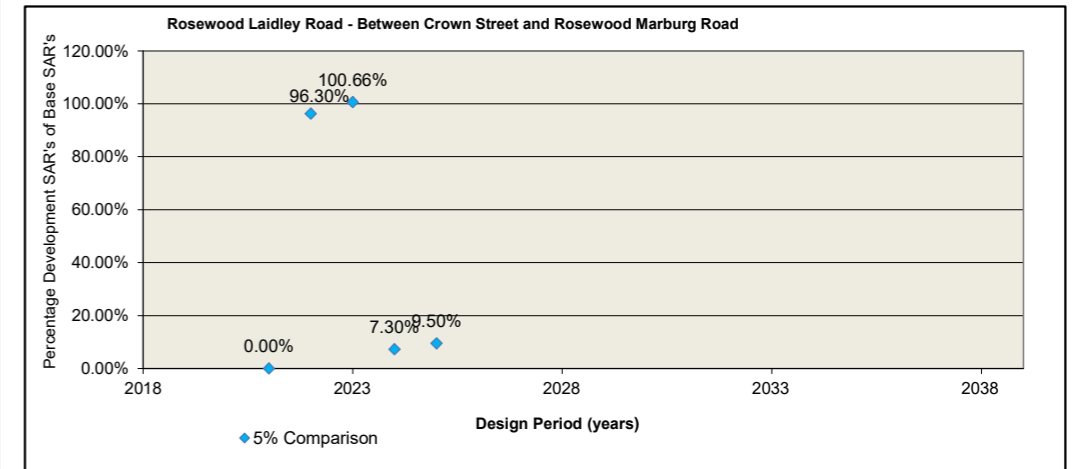
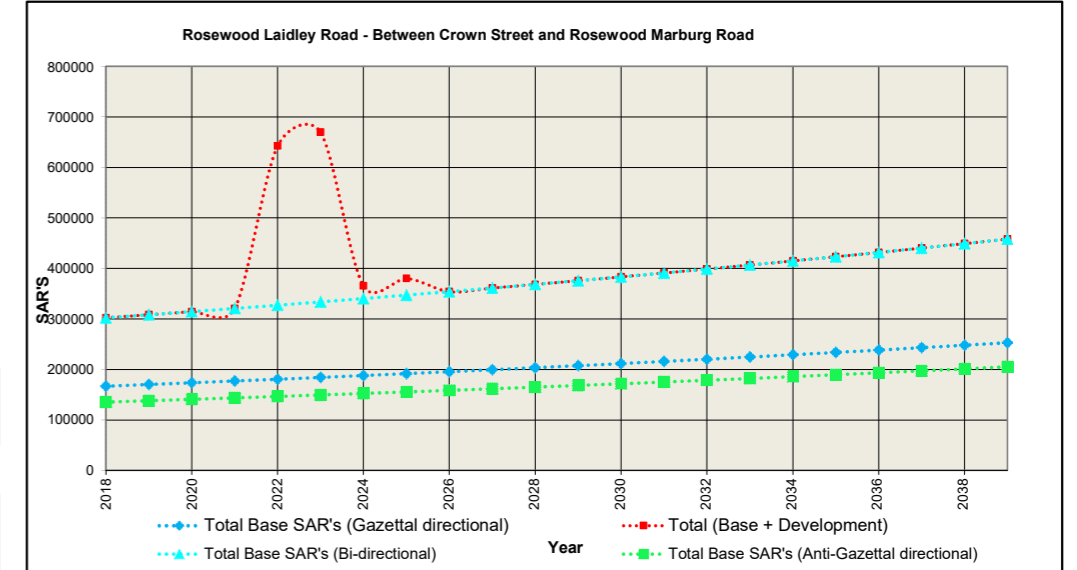
Rosewood Laidley Road			Between Mulgowie Road and Crown Street			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	135377	166915			302292	
2019	138085	170253			308338	
2020	140846	173659			314505	
2021	143663	177132			320795	0.00%
2022	146537	180674	156510	156510	640231	95.66%
2023	149467	184288	107390	107390	548534	64.35%
2024	152457	187974	17050	17050	374531	10.02%
2025	155506	191733	1756	1756	350750	1.01%
2026	158616	195568			354184	
2027	161788	199479			361267	
2028	165024	203469			368493	
2029	168324	207538			375862	
2030	171691	211689			383380	
2031	175125	215923			391047	
2032	178627	220241			398868	
2033	182200	224646			406846	
2034	185844	229139			414983	
2035	189561	233721			423282	
2036	193352	238396			431748	
2037	197219	243164			440383	
2038	201163	248027			449190	
2039	205187	252988			458174	



Rosewood Laidley Road - Between Crown Street and Rosewood Marburg Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

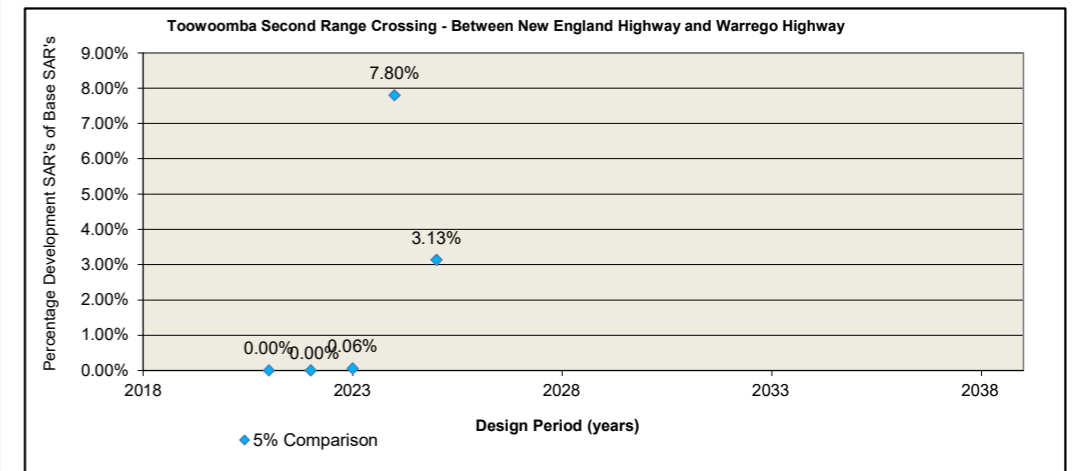
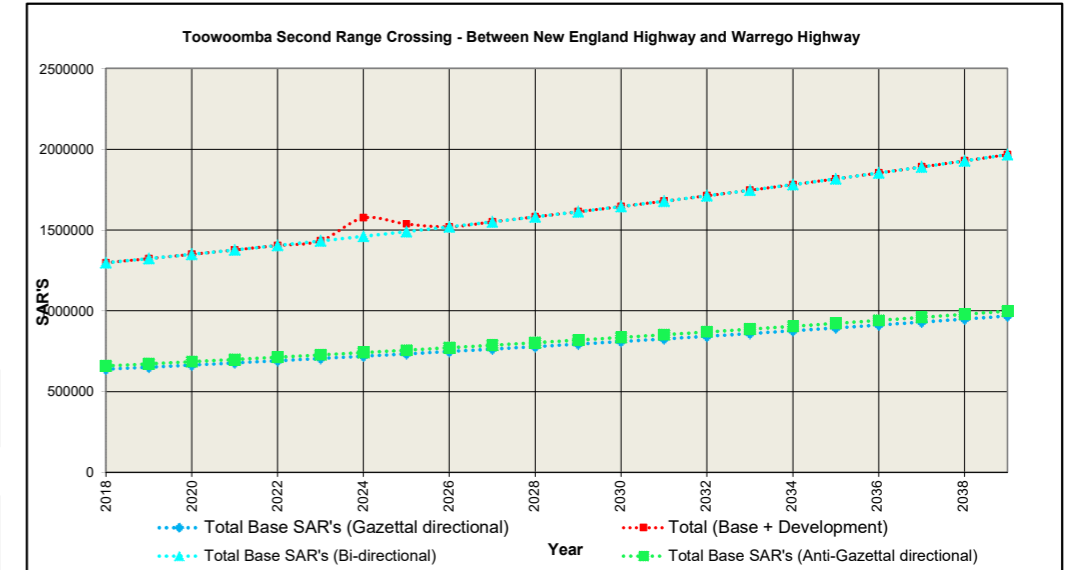
Rosewood Laidley Road Base SAR's			Between Crown Street and Rosewood Marburg Road			
Total Base SAR's (Anti-Gazettal direction)		Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
		Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	135377	166915			302292	
2019	138085	170253			308338	
2020	140846	173659			314505	
2021	143663	177132	0	0	320795	0.00%
2022	146537	180674	157556	157556	642322	96.30%
2023	149467	184288	167985	167985	669724	100.66%
2024	152457	187974	12419	12419	365267	7.30%
2025	155506	191733	16493	16493	380225	9.50%
2026	158616	195568			354184	
2027	161788	199479			361267	
2028	165024	203469			368493	
2029	168324	207538			375862	
2030	171691	211689			383380	
2031	175125	215923			391047	
2032	178627	220241			398868	
2033	182200	224646			406846	
2034	185844	229139			414983	
2035	189561	233721			423282	
2036	193352	238396			431748	
2037	197219	243164			440383	
2038	201163	248027			449190	
2039	205187	252988			458174	



**Toowoomba Second Range Crossing - Between New England Highway and Warrego Highway**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

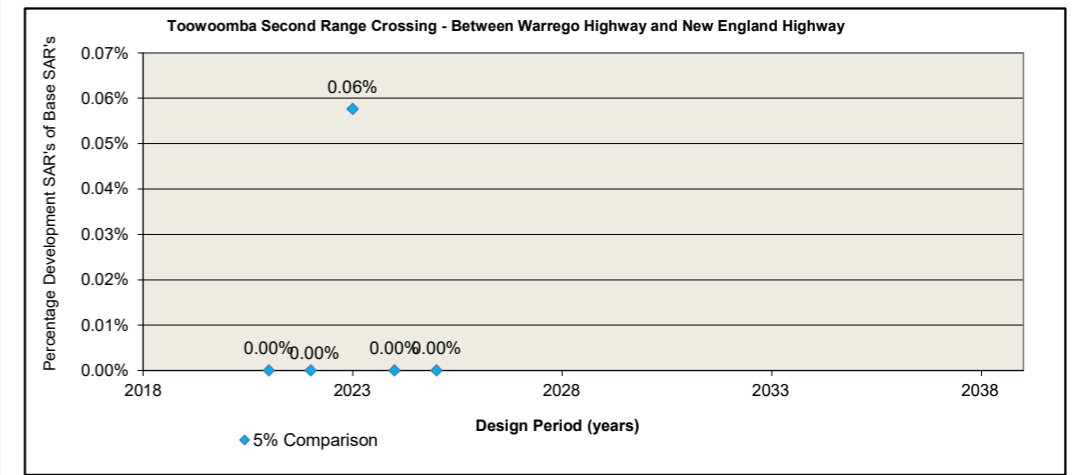
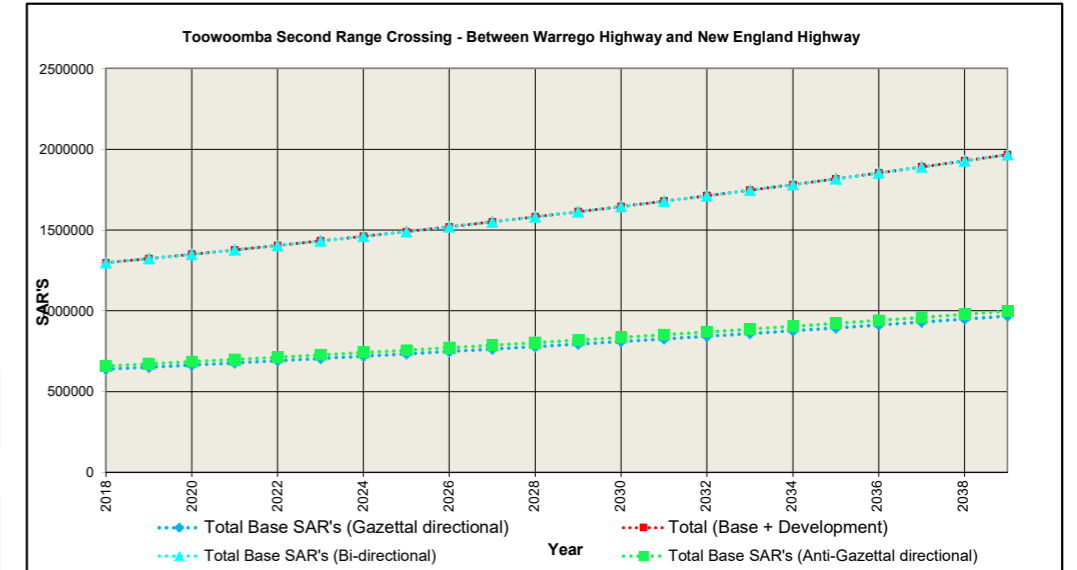
Toowoomba Second Range Crossing			Between New England Highway and Warrego Highway			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	658849	638858			1297706	
2019	672026	651635			1323661	
2020	685466	664668			1350134	
2021	699175	677961			1377136	0.00%
2022	713159	691520			1404679	0.00%
2023	727422	705351	413	413	1433599	0.06%
2024	741971	719458	56982	56982	1575391	7.80%
2025	756810	733847	23358	23358	1537372	3.13%
2026	771946	748524			1520470	
2027	787385	763494			1550879	
2028	803133	778764			1581897	
2029	819196	794339			1613535	
2030	835579	810226			1645806	
2031	852291	826431			1678722	
2032	869337	842959			1712296	
2033	886724	859818			1746542	
2034	904458	877015			1781473	
2035	922547	894555			1817102	
2036	940998	912446			1853444	
2037	959818	930695			1890513	
2038	979014	949309			1928323	
2039	998595	968295			1966890	



**Toowoomba Second Range Crossing - Between Warrego Highway and New England Highway**

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

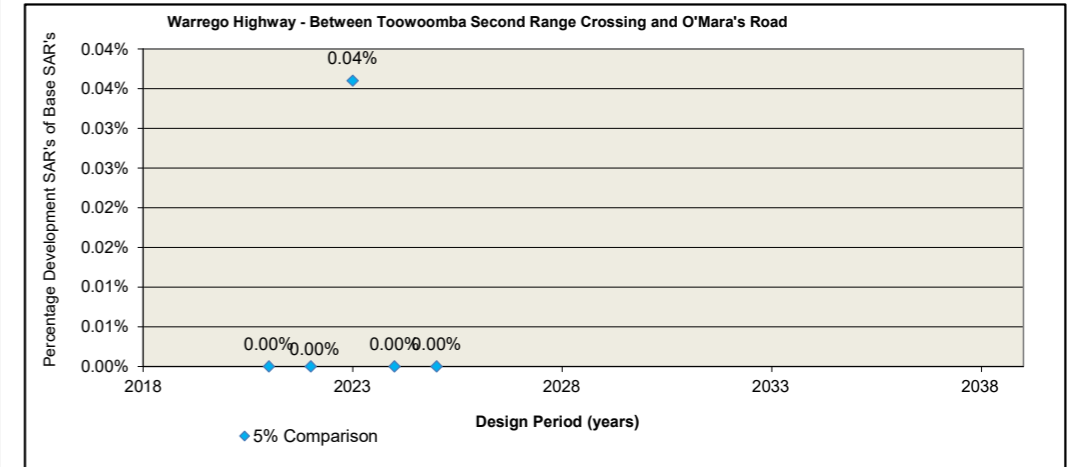
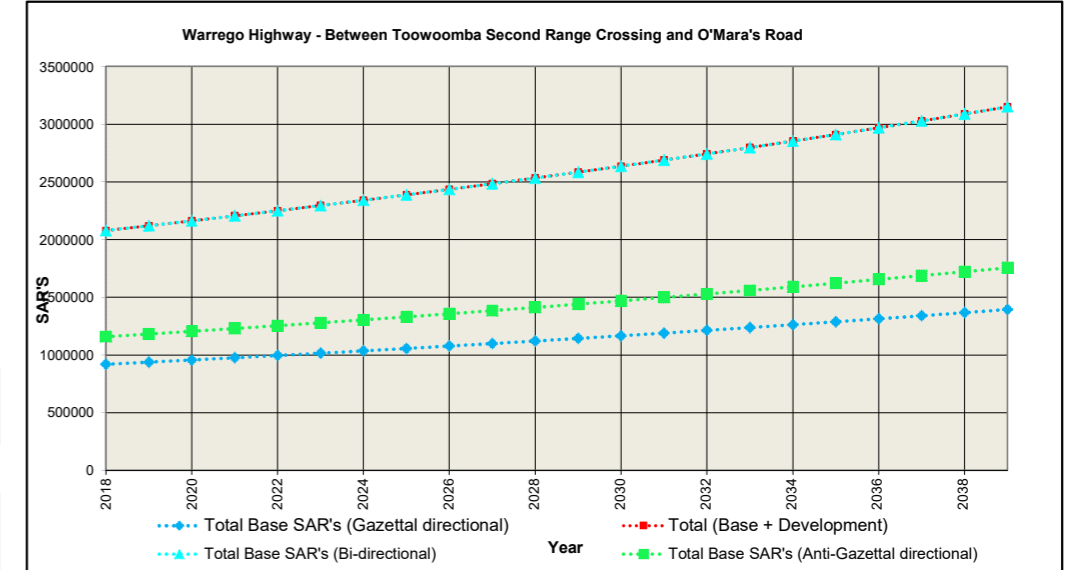
Toowoomba Second Range Crossing			Between Warrego Highway and New England Highway			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	658849	638858			1297706	
2019	672026	651635			1323661	
2020	685466	664668			1350134	
2021	699175	677961	0	0	1377136	0.00%
2022	713159	691520	0	0	1404679	0.00%
2023	727422	705351	413	413	1433599	0.06%
2024	741971	719458	0	0	1461428	0.00%
2025	756810	733847	0	0	1490657	0.00%
2026	771946	748524			1520470	
2027	787385	763494			1550879	
2028	803133	778764			1581897	
2029	819196	794339			1613535	
2030	835579	810226			1645806	
2031	852291	826431			1678722	
2032	869337	842959			1712296	
2033	886724	859818			1746542	
2034	904458	877015			1781473	
2035	922547	894555			1817102	
2036	940998	912446			1853444	
2037	959818	930695			1890513	
2038	979014	949309			1928323	
2039	998595	968295			1966890	



Warrego Highway - Between Toowoomba Second Range Crossing and O'Mara's Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

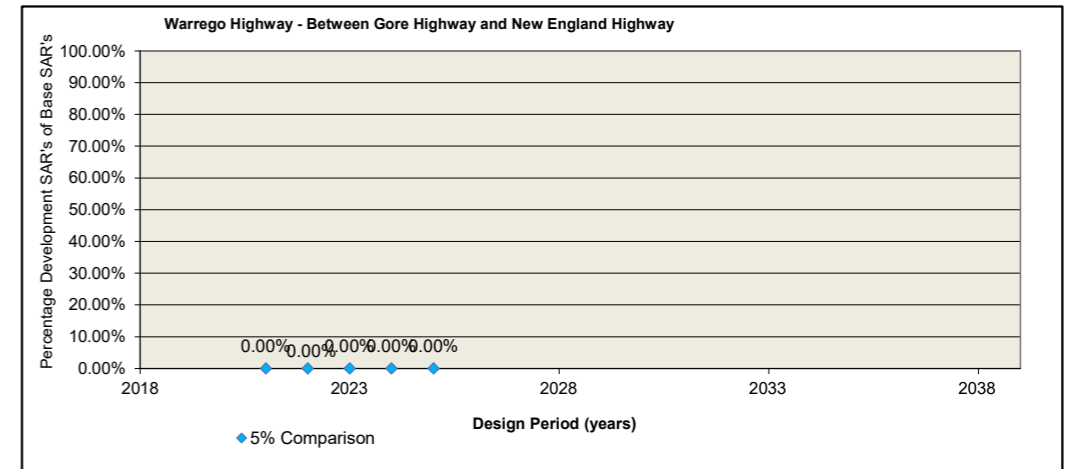
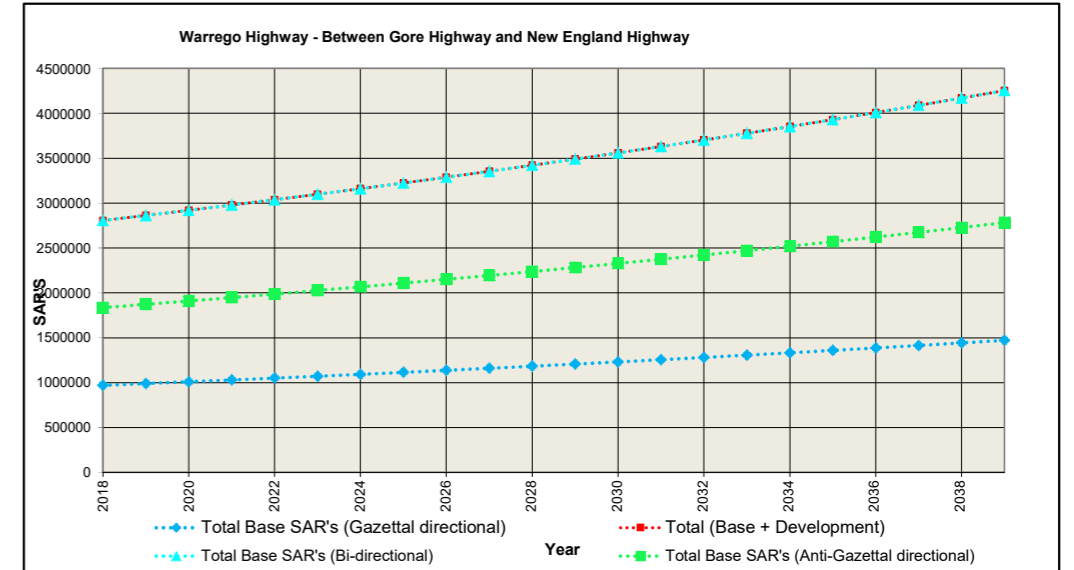
Warrego Highway Base SAR's			Between Toowoomba Second Range Crossing and O'Mara's Road				
Year	Total Base SAR's (Anti-Gazettal directional)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Development SAR's		Total (Base + Development)	5% Comparison
				Unloaded	Loaded		
2018	1158709	920015	2078724			2078724	
2019	1181883	938416	2120298			2120298	
2020	1205521	957184	2162704			2162704	
2021	1229631	976328	2205959	0	0	2205959	0.00%
2022	1254224	995854	2250078	0	0	2250078	0.00%
2023	1279308	1015771	2295079	413	413	2295905	0.04%
2024	1304894	1036087	2340981	0	0	2340981	0.00%
2025	1330992	1056808	2387800	0	0	2387800	0.00%
2026	1357612	1077944	2435556			2435556	
2027	1384764	1099503	2484268			2484268	
2028	1412459	1121493	2533953			2533953	
2029	1440709	1143923	2584632			2584632	
2030	1469523	1166802	2636325			2636325	
2031	1498913	1190138	2689051			2689051	
2032	1528892	1213941	2742832			2742832	
2033	1559469	1238219	2797689			2797689	
2034	1590659	1262984	2853643			2853643	
2035	1622472	1288243	2910715			2910715	
2036	1654921	1314008	2968930			2968930	
2037	1688020	1340288	3028308			3028308	
2038	1721780	1367094	3088874			3088874	
2039	1756216	1394436	3150652			3150652	



Warrego Highway - Between Gore Highway and New England Highway

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

Warrego Highway Base SAR's			Between Gore Highway and New England Highway Development SAR's				Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded				
2018	1836030	971035				2807064		
2019	1872750	990455				2863206		
2020	1910205	1010264				2920470		
2021	1948409	1030470	0	0		2978879	0.00%	
2022	1987378	1051079	0	0		3038457	0.00%	
2023	2027125	1072101	0	0		3099226	0.00%	
2024	2067668	1093543	0	0		3161210	0.00%	
2025	2109021	1115413	0	0		3224434	0.00%	
2026	2151201	1137722				3288923		
2027	2194226	1160476				3354702		
2028	2238110	1183686				3421796		
2029	2282872	1207359				3490232		
2030	2328530	1231507				3560036		
2031	2375100	1256137				3631237		
2032	2422602	1281259				3703862		
2033	2471054	1306885				3777939		
2034	2520475	1333022				3853498		
2035	2570885	1359683				3930568		
2036	2622303	1386876				4009179		
2037	2674749	1414614				4089363		
2038	2728244	1442906				4171150		
2039	2782808	1471764				4254573		

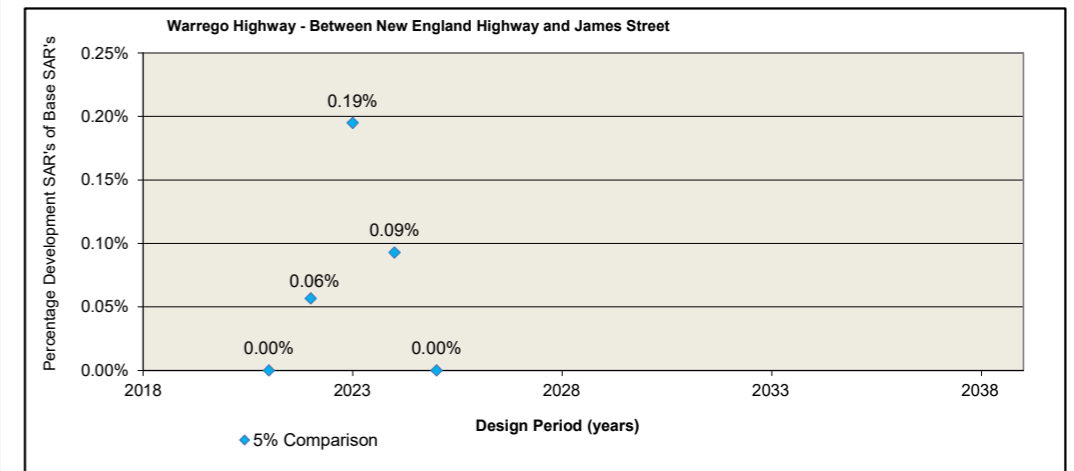
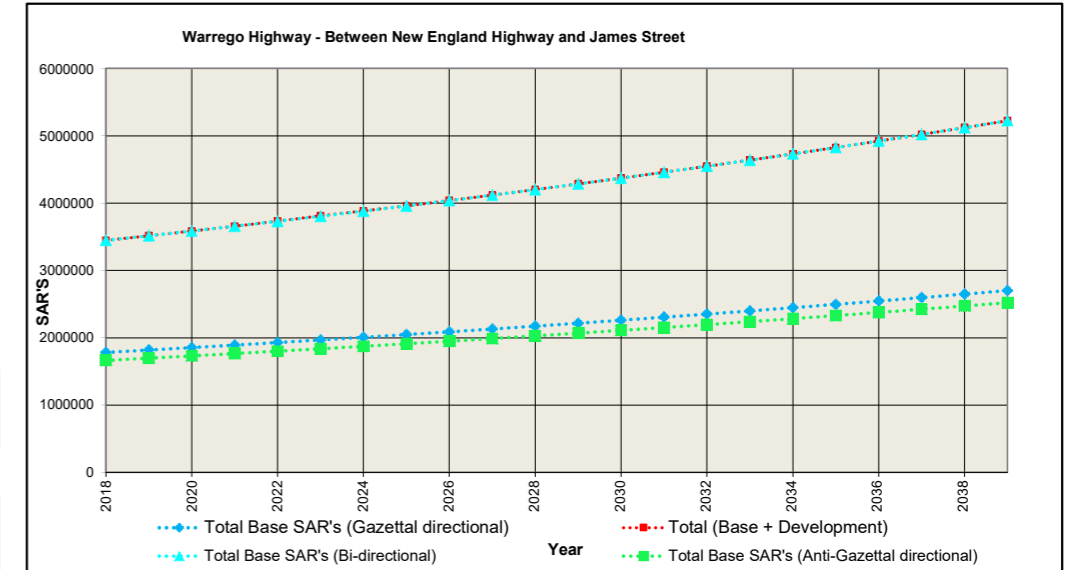




Warrego Highway - Between New England Highway and James Street

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

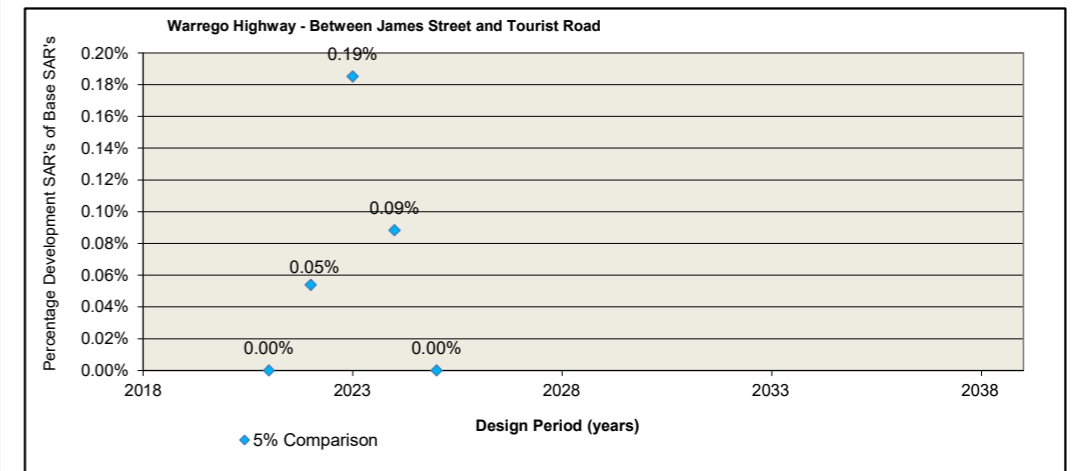
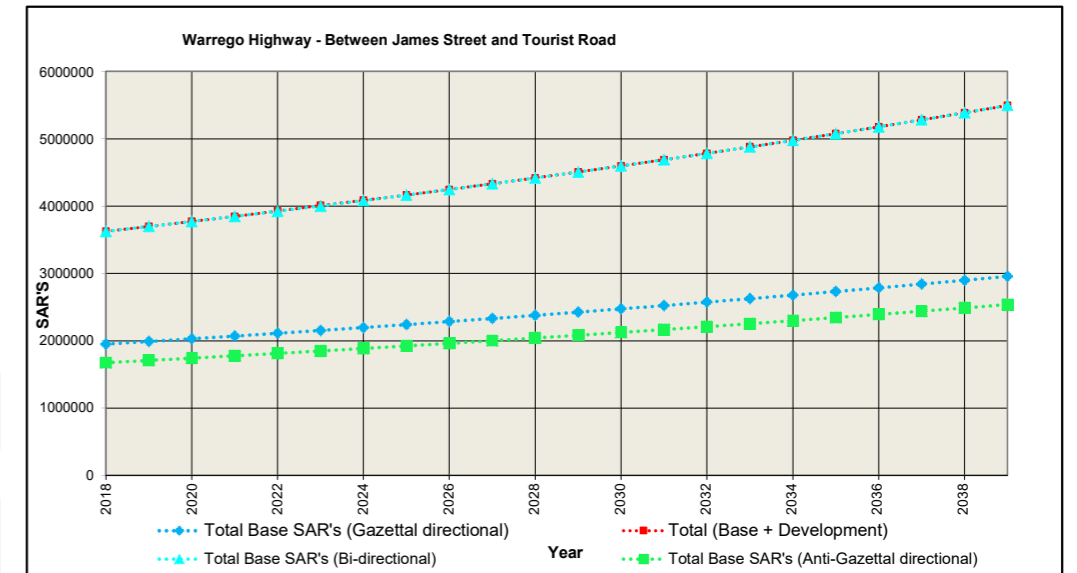
Warrego Highway Base SAR's			Between New England Highway and James Street Development SAR's				Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded				
2018	1664060	1782789				3446849		
2019	1697341	1818445				3515786		
2020	1731288	1854814				3586101		
2021	1765913	1891910	0	0		3657823	0.00%	
2022	1801232	1929748	1058	1058		3733096	0.06%	
2023	1837256	1968343	3706	3706		3813012	0.19%	
2024	1874001	2007710	1802	1802		3885315	0.09%	
2025	1911481	2047864	0	0		3959346	0.00%	
2026	1949711	2088822				4038533		
2027	1988705	2130598				4119303		
2028	2028479	2173210				4201689		
2029	2069049	2216674				4285723		
2030	2110430	2261008				4371438		
2031	2152638	2306228				4458866		
2032	2195691	2352352				4548044		
2033	2239605	2399399				4639004		
2034	2284397	2447387				4731785		
2035	2330085	2496335				4826420		
2036	2376687	2546262				4922949		
2037	2424220	2597187				5021408		
2038	2472705	2649131				5121836		
2039	2522159	2702114				5224273		



Warrego Highway - Between James Street and Tourist Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

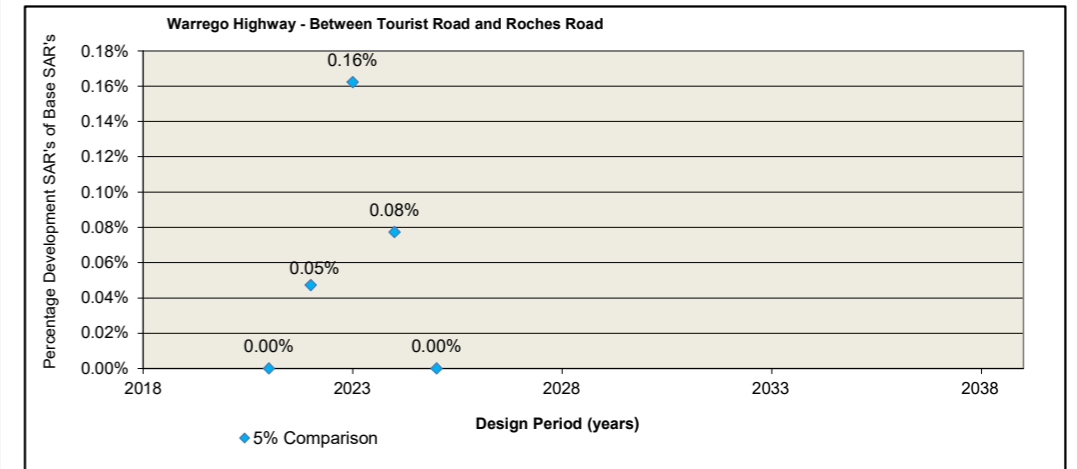
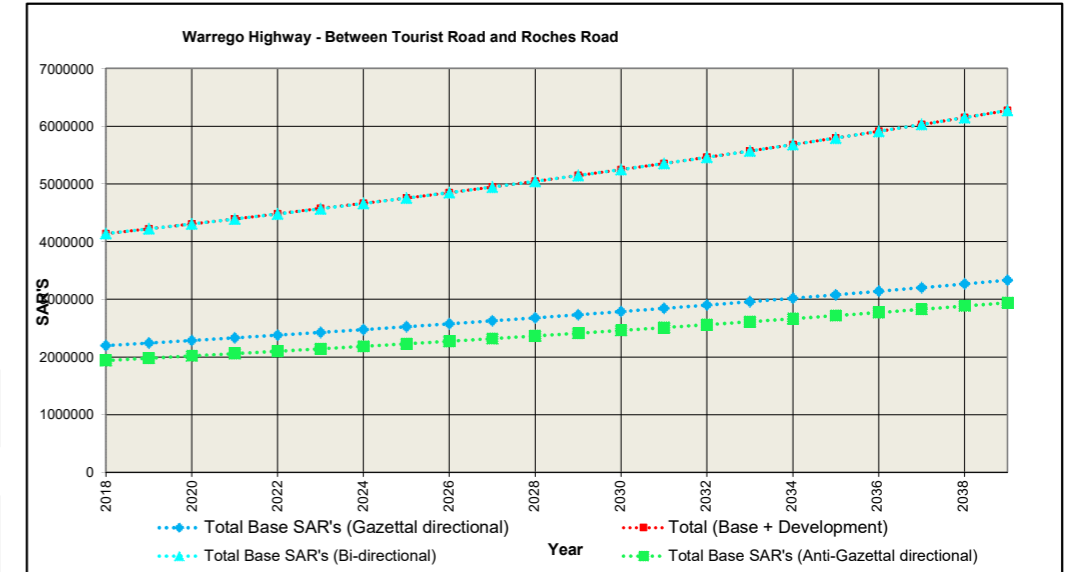
Warrego Highway Base SAR's			Between James Street and Tourist Road			
			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	1674710	1950925			3625635	
2019	1708204	1989944			3698148	
2020	1742368	2029742			3772111	
2021	1777216	2070337	0	0	3847553	0.00%
2022	1812760	2111744	1058	1058	3926620	0.05%
2023	1849015	2153979	3706	3706	4010407	0.19%
2024	1885996	2197058	1802	1802	4086658	0.09%
2025	1923715	2241000	0	0	4164715	0.00%
2026	1962190	2285820			4248009	
2027	2001434	2331536			4332970	
2028	2041462	2378167			4419629	
2029	2082291	2425730			4508022	
2030	2123937	2474245			4598182	
2031	2166416	2523730			4690146	
2032	2209744	2574204			4783949	
2033	2253939	2625688			4879628	
2034	2299018	2678202			4977220	
2035	2344998	2731766			5076764	
2036	2391898	2786401			5178300	
2037	2439736	2842129			5281866	
2038	2488531	2898972			5387503	
2039	2538302	2956951			5495253	



Warrego Highway - Between Tourist Road and Roches Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

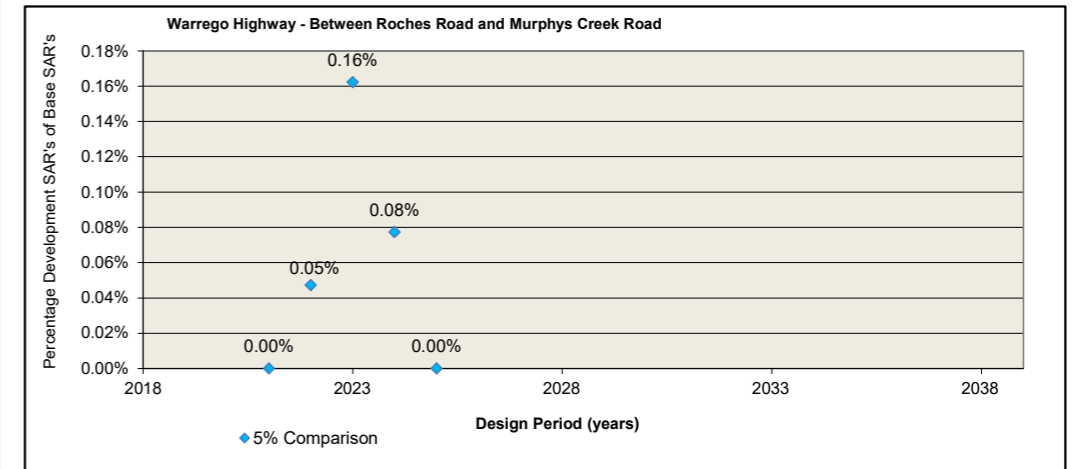
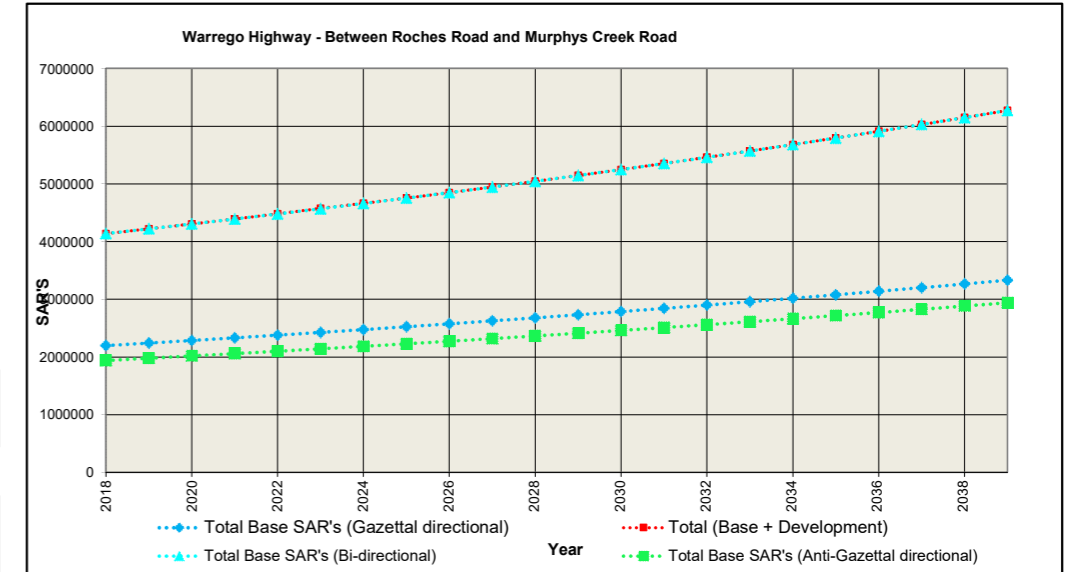
Warrego Highway			Between Tourist Road and Roches Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	1940519	2198218			4138738	
2019	1979330	2242183			4221513	
2020	2018916	2287026			4305943	
2021	2059295	2332767	0	0	4392062	0.00%
2022	2100481	2379422	1058	1058	4482019	0.05%
2023	2142490	2427011	3706	3706	4576914	0.16%
2024	2185340	2475551	1802	1802	4664495	0.08%
2025	2229047	2525062	0	0	4754109	0.00%
2026	2273628	2575563			4849191	
2027	2319100	2627074			4946175	
2028	2365482	2679616			5045098	
2029	2412792	2733208			5146000	
2030	2461048	2787872			5248920	
2031	2510269	2843630			5353899	
2032	2560474	2900502			5460977	
2033	2611684	2958513			5570196	
2034	2663917	3017683			5681600	
2035	2717196	3078036			5795232	
2036	2771540	3139597			5911137	
2037	2826970	3202389			6029359	
2038	2883510	3266437			6149947	
2039	2941180	3331766			6272946	



Warrego Highway - Between Roches Road and Murphys Creek Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

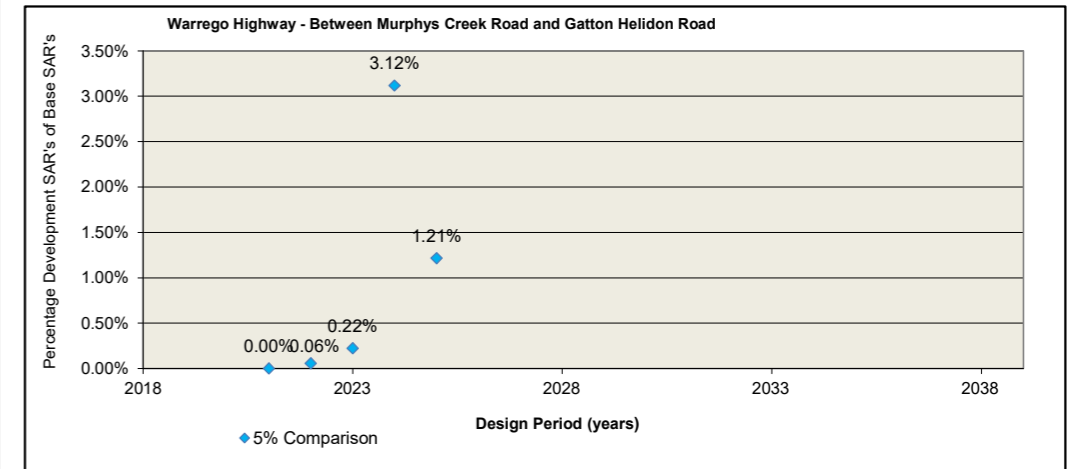
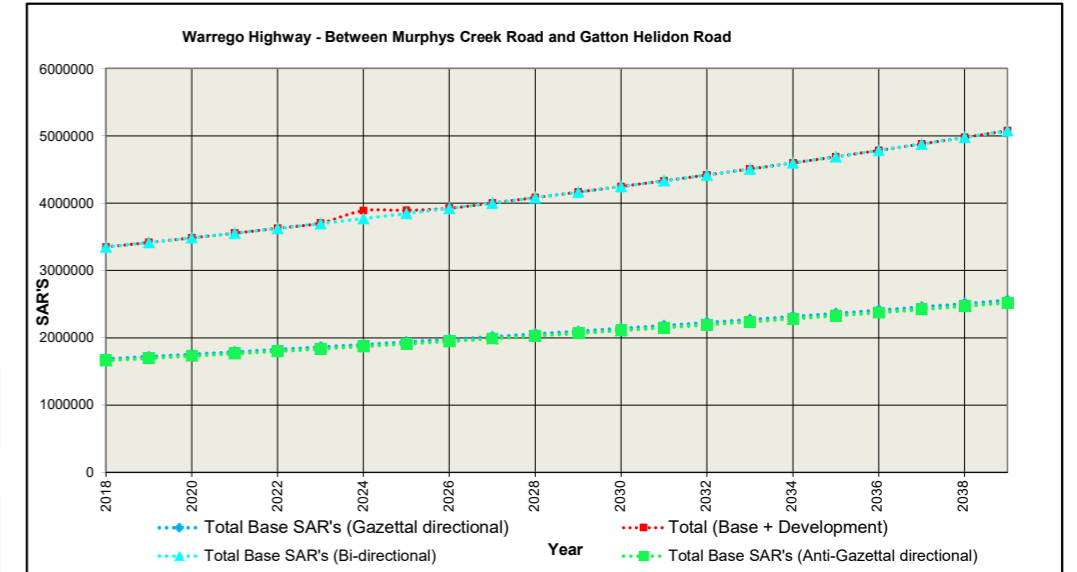
Warrego Highway			Between Roches Road and Murphys Creek Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	1940519	2198218			4138738	
2019	1979330	2242183			4221513	
2020	2018916	2287026			4305943	
2021	2059295	2332767	0	0	4392062	0.00%
2022	2100481	2379422	1058	1058	4482019	0.05%
2023	2142490	2427011	3706	3706	4576914	0.16%
2024	2185340	2475551	1802	1802	4664495	0.08%
2025	2229047	2525062	0	0	4754109	0.00%
2026	2273628	2575563			4849191	
2027	2319100	2627074			4946175	
2028	2365482	2679616			5045098	
2029	2412792	2733208			5146000	
2030	2461048	2787872			5248920	
2031	2510269	2843630			5353899	
2032	2560474	2900502			5460977	
2033	2611684	2958513			5570196	
2034	2663917	3017683			5681600	
2035	2717196	3078036			5795232	
2036	2771540	3139597			5911137	
2037	2826970	3202389			6029359	
2038	2883510	3266437			6149947	
2039	2941180	3331766			6272946	



Warrego Highway - Between Murphys Creek Road and Gatton Helidon Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

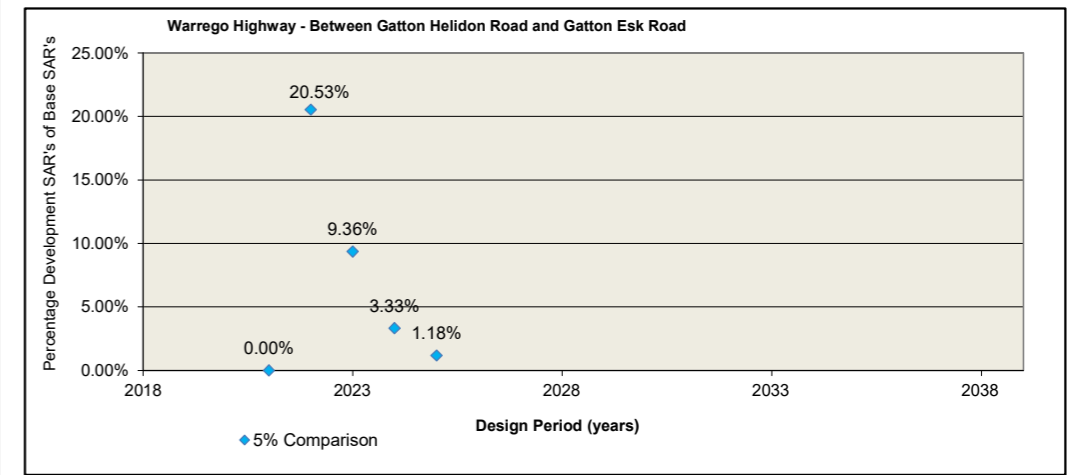
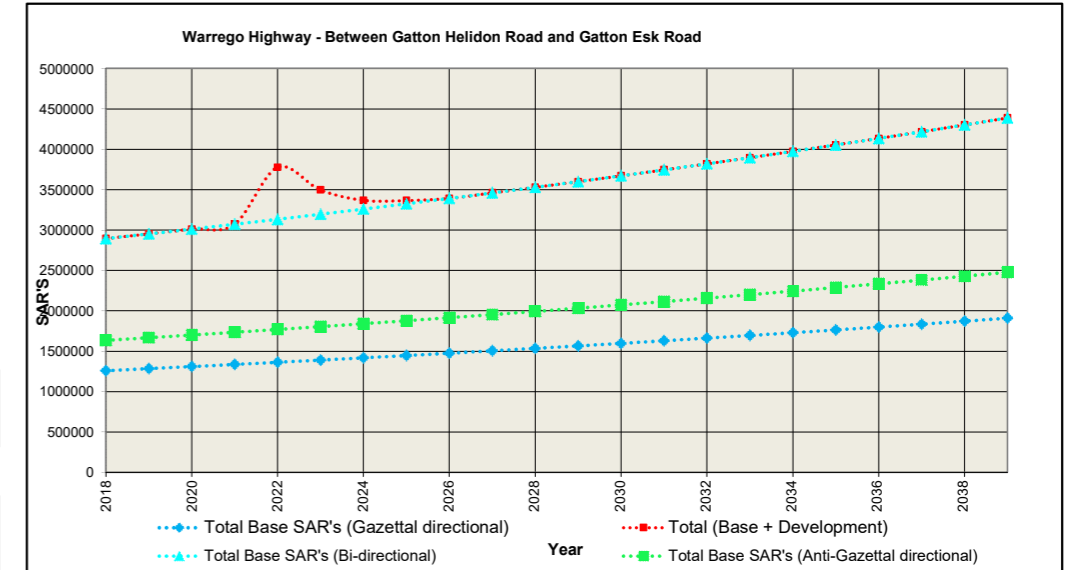
Warrego Highway Base SAR's			Between Murphys Creek Road and Gatton Helidon Road			
Year	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
			Unloaded	Loaded		
2018	1662277	1686658			3348936	
2019	1695523	1720391			3415914	
2020	1729433	1754799			3484233	
2021	1764022	1789895	0	0	3553917	0.00%
2022	1799302	1825693	1058	1058	3627112	0.06%
2023	1835288	1862207	4119	4119	3705734	0.22%
2024	1871994	1899451	58784	58784	3889012	3.12%
2025	1909434	1937440	23358	23358	3893590	1.21%
2026	1947623	1976189			3923812	
2027	1986575	2015713			4002288	
2028	2026307	2056027			4082334	
2029	2066833	2097148			4163980	
2030	2108170	2139090			4247260	
2031	2150333	2181872			4332205	
2032	2193340	2225510			4418849	
2033	2237206	2270020			4507226	
2034	2281951	2315420			4597371	
2035	2327590	2361729			4689318	
2036	2374141	2408963			4783105	
2037	2421624	2457143			4878767	
2038	2470057	2506285			4976342	
2039	2519458	2556411			5075869	



Warrego Highway - Between Gatton Helidon Road and Gatton Esk Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

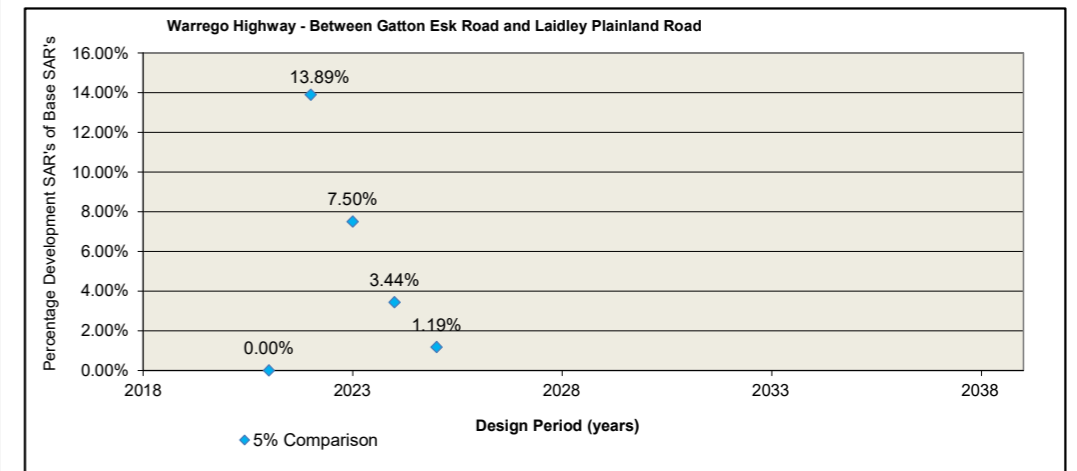
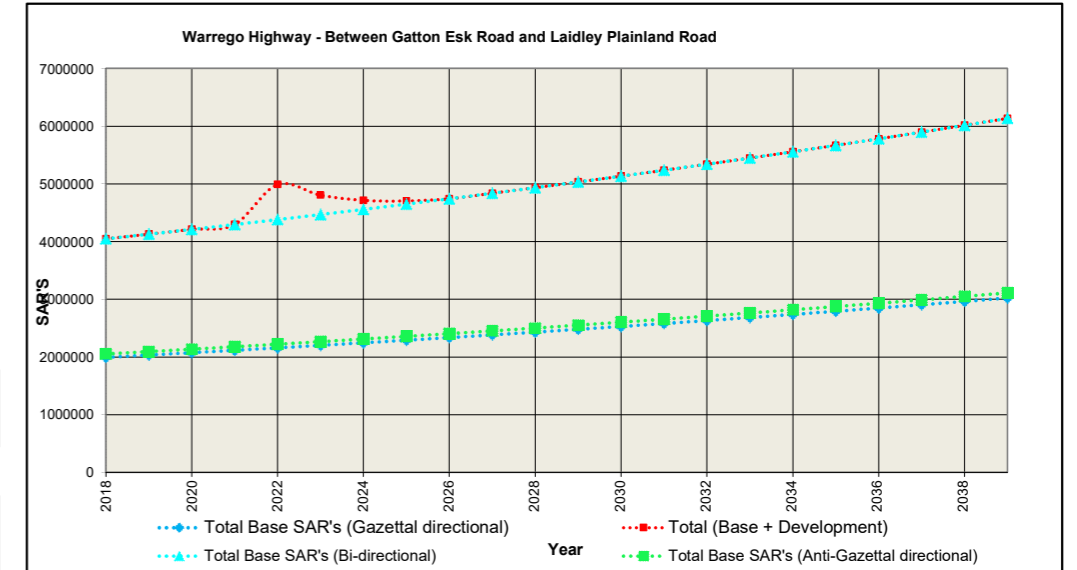
Warrego Highway Base SAR's			Between Gatton Helidon Road and Gatton Esk Road			
Year	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
			Unloaded	Loaded		
2018	1635048	1259890			2894938	
2019	1667748	1285088			2952836	
2020	1701103	1310790			3011893	
2021	1735126	1337005	0	0	3072131	0.00%
2022	1769828	1363746	321711	321711	3776995	20.53%
2023	1805225	1391020	149565	149565	3495374	9.36%
2024	1841329	1418841	54270	54270	3368711	3.33%
2025	1878156	1447218	19613	19613	3364598	1.18%
2026	1915719	1476162			3391881	
2027	1954033	1505685			3459718	
2028	1993114	1535799			3528913	
2029	2032976	1566515			3599491	
2030	2073636	1597845			3671481	
2031	2115108	1629802			3744911	
2032	2157411	1662398			3819809	
2033	2200559	1695646			3896205	
2034	2244570	1729559			3974129	
2035	2289461	1764150			4053612	
2036	2335251	1799433			4134684	
2037	2381956	1835422			4217377	
2038	2429595	1872130			4301725	
2039	2478187	1909573			4387760	



Warrego Highway - Between Gatton Esk Road and Laidley Plainland Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

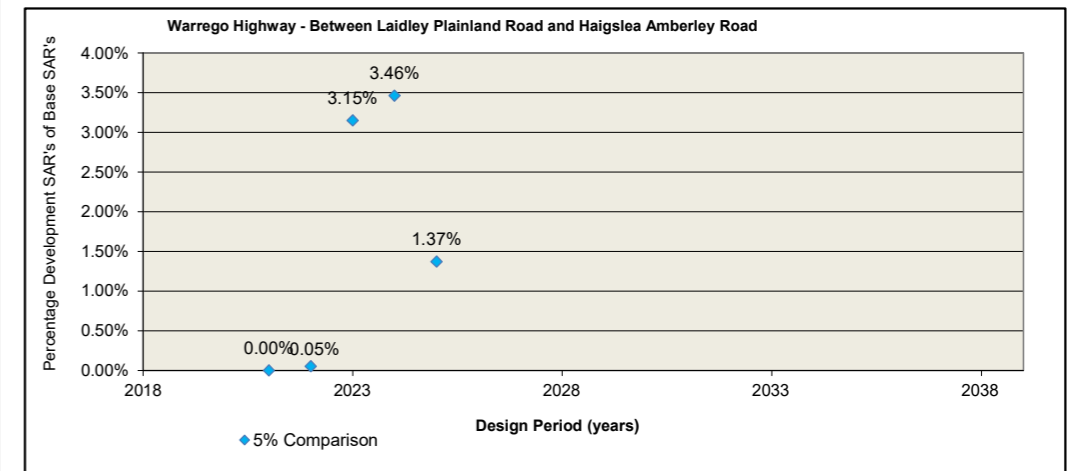
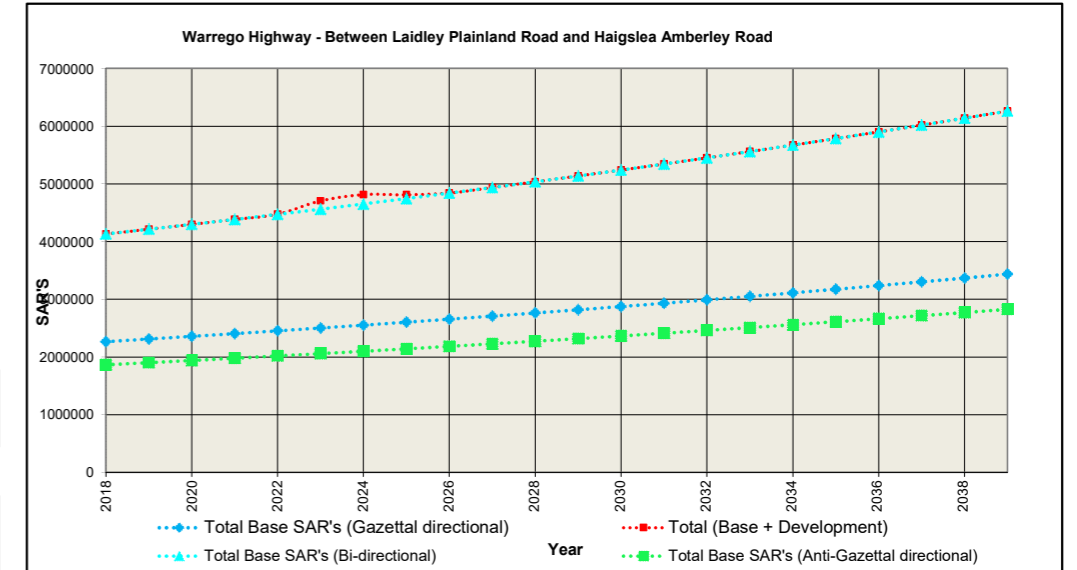
Warrego Highway			Between Gatton Esk Road and Laidley Plainland Road			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	2052903	1995055			4047959	
2019	2093961	2034957			4128918	
2020	2135841	2075656			4211496	
2021	2178557	2117169			4295726	0.00%
2022	2222128	2159512	304320	304320	4990281	13.89%
2023	2266571	2202702	167551	167551	4804375	7.50%
2024	2311902	2246756	78361	78361	4715382	3.44%
2025	2358141	2291692	27600	27600	4705032	1.19%
2026	2405303	2337525			4742829	
2027	2453409	2384276			4837685	
2028	2502478	2431961			4934439	
2029	2552527	2480601			5033128	
2030	2603578	2530213			5133790	
2031	2655649	2580817			5236466	
2032	2708762	2632433			5341196	
2033	2762937	2685082			5448019	
2034	2818196	2738784			5556980	
2035	2874560	2793559			5668119	
2036	2932051	2849430			5781482	
2037	2990692	2906419			5897111	
2038	3050506	2964547			6015054	
2039	3111516	3023838			6135355	



Warrego Highway - Between Laidley Plainland Road and Haigslea Amberley Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

Warrego Highway Base SAR's			Between Laidley Plainland Road and Haigslea Amberley Road			
Year	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
			Unloaded	Loaded		
2018	1864939	2267011			4131950	
2019	1902238	2312351			4214589	
2020	1940283	2358598			4298881	
2021	1979088	2405770	0	0	4384858	0.00%
2022	2018670	2453885	1205	1205	4474965	0.05%
2023	2059044	2502963	71828	71828	4705662	3.15%
2024	2100224	2553022	80531	80531	4814308	3.46%
2025	2142229	2604083	32550	32550	4811412	1.37%
2026	2185074	2656164			4841238	
2027	2228775	2709288			4938063	
2028	2273350	2763473			5036824	
2029	2318817	2818743			5137560	
2030	2365194	2875118			5240312	
2031	2412498	2932620			5345118	
2032	2460748	2991273			5452020	
2033	2509963	3051098			5561061	
2034	2560162	3112120			5672282	
2035	2611365	3174362			5785727	
2036	2663592	3237850			5901442	
2037	2716864	3302607			6019471	
2038	2771202	3368659			6139860	
2039	2826626	3436032			6262657	

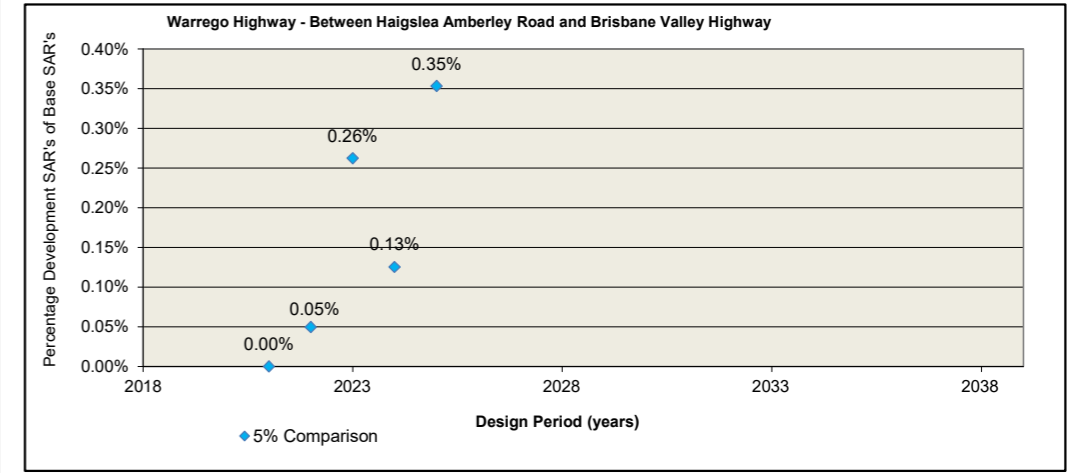
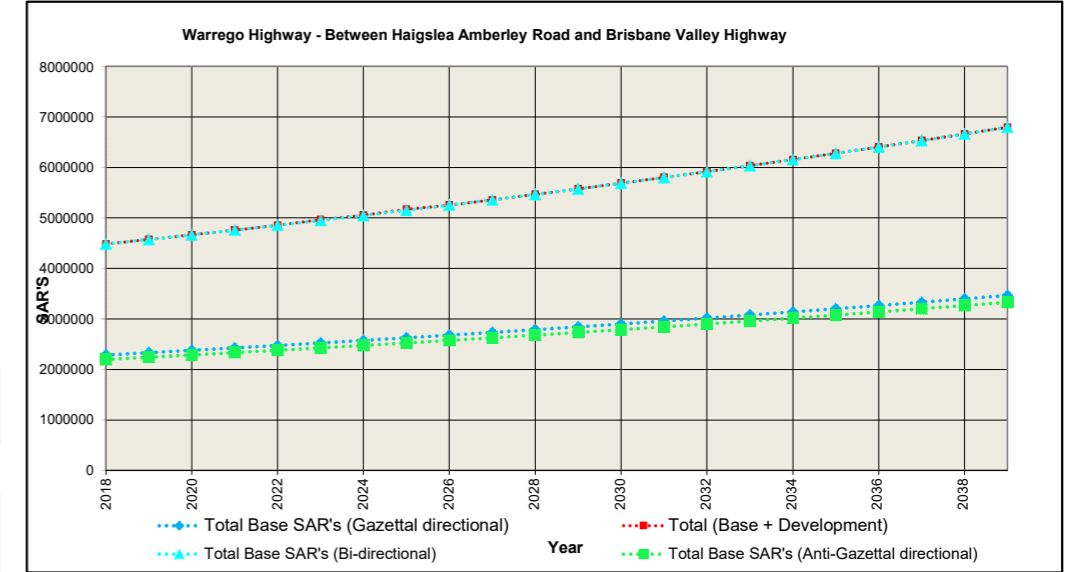




Warrego Highway - Between Haigslea Amberley Road and Brisbane Valley Highway

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

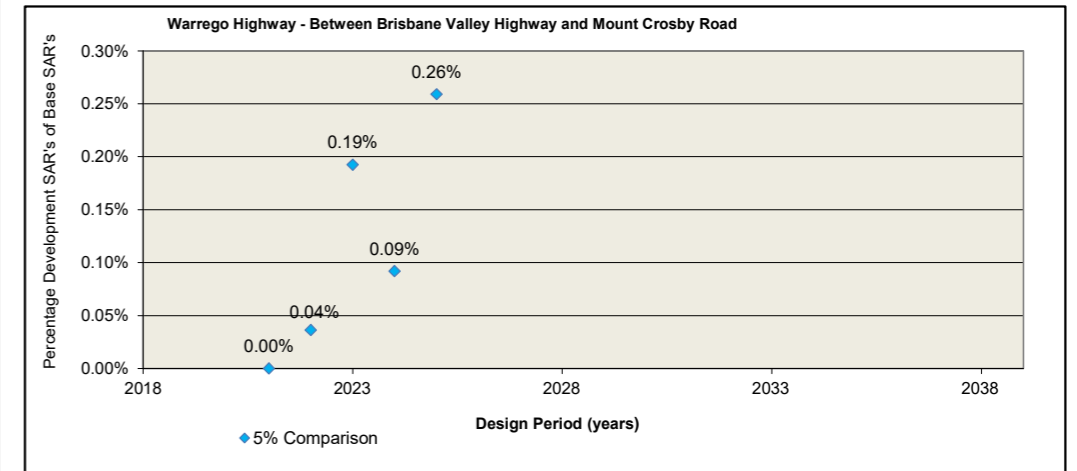
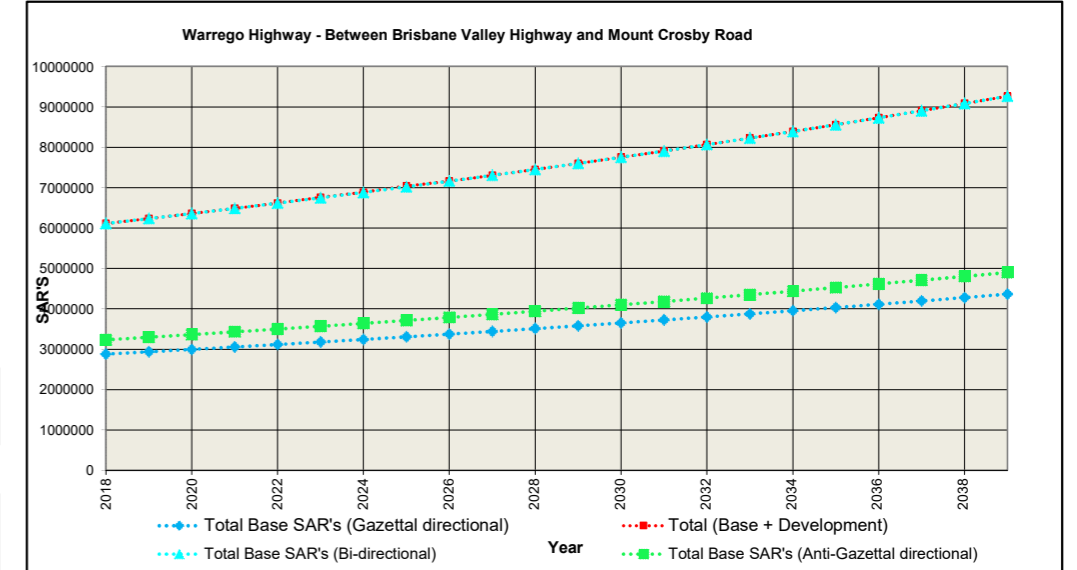
Warrego Highway Base SAR's			Between Haigslea Amberley Road and Brisbane Valley Highway Development SAR's				Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded				
2018	2198000	2287181			4485181			
2019	2241960	2332925			4574885			
2020	2286799	2379583			4666382			
2021	2332535	2427175		0	4759710	0	0.00%	
2022	2379186	2475719		1205	4857313	1205	0.05%	
2023	2426769	2525233		6492	4964987	6492	0.26%	
2024	2475305	2575738		3166	5057375	3166	0.13%	
2025	2524811	2627252		9095	5170253	9095	0.35%	
2026	2575307	2679797			5255104			
2027	2626813	2733393			5360207			
2028	2679349	2788061			5467411			
2029	2732936	2843822			5576759			
2030	2787595	2900699			5688294			
2031	2843347	2958713			5802060			
2032	2900214	3017887			5918101			
2033	2958218	3078245			6036463			
2034	3017383	3139810			6157192			
2035	3077730	3202606			6280336			
2036	3139285	3266658			6405943			
2037	3202071	3331991			6534062			
2038	3266112	3398631			6664743			
2039	3331434	3466604			6798038			



Warrego Highway - Between Brisbane Valley Highway and Mount Crosby Road

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

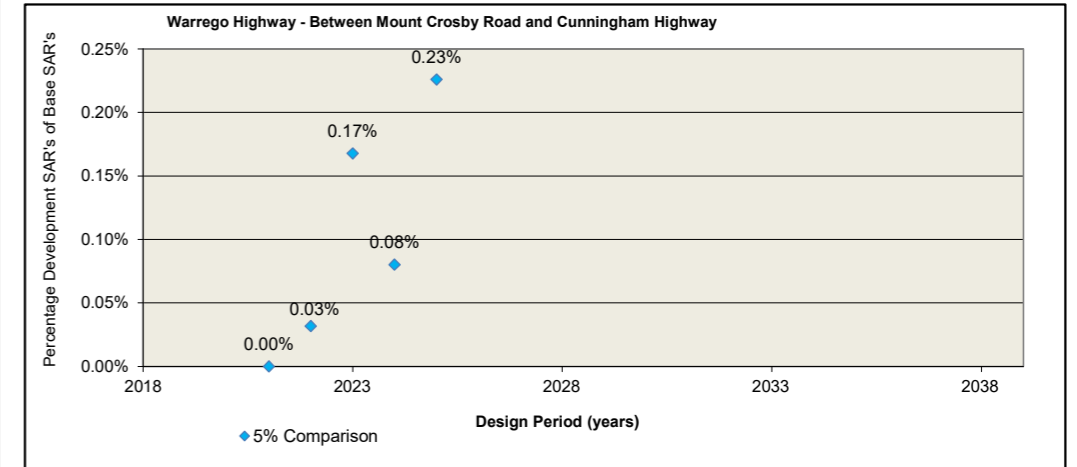
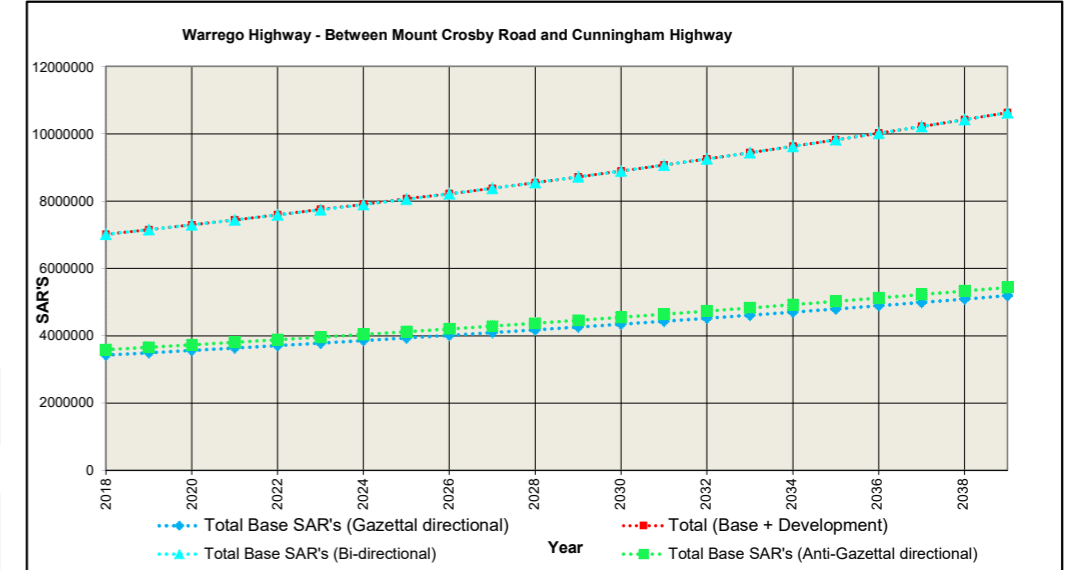
Warrego Highway Base SAR's			Between Brisbane Valley Highway and Mount Crosby Road			
Year	Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparison
			Unloaded	Loaded		
2018	3233022	2879794			6112815	
2019	3297682	2937389			6235071	
2020	3363636	2996137			6359773	
2021	3430908	3056060	0	0	6486968	0.00%
2022	3499526	3117181	1205	1205	6619117	0.04%
2023	3569517	3179525	6492	6492	6762026	0.19%
2024	3640907	3243115	3166	3166	6890355	0.09%
2025	3713725	3307978	9095	9095	7039893	0.26%
2026	3788000	3374137			7162137	
2027	3863760	3441620			7305380	
2028	3941035	3510452			7451487	
2029	4019856	3580661			7600517	
2030	4100253	3652275			7752528	
2031	4182258	3725320			7907578	
2032	4265903	3799826			8065730	
2033	4351221	3875823			8227044	
2034	4438246	3953339			8391585	
2035	4527011	4032406			8559417	
2036	4617551	4113054			8730605	
2037	4709902	4195315			8905217	
2038	4804100	4279222			9083322	
2039	4900182	4364806			9264988	



Warrego Highway - Between Mount Crosby Road and Cunningham Highway

SAR's per heavy vehicle - Development	Loaded
Class 3	n/a
Class 4	n/a
Class 5	4.087
Class 6	n/a
Class 7	5.02
Class 8	n/a
Class 9	n/a
Class 10	7.72
Class 11	n/a
Class 12	n/a
Special Class	12.21

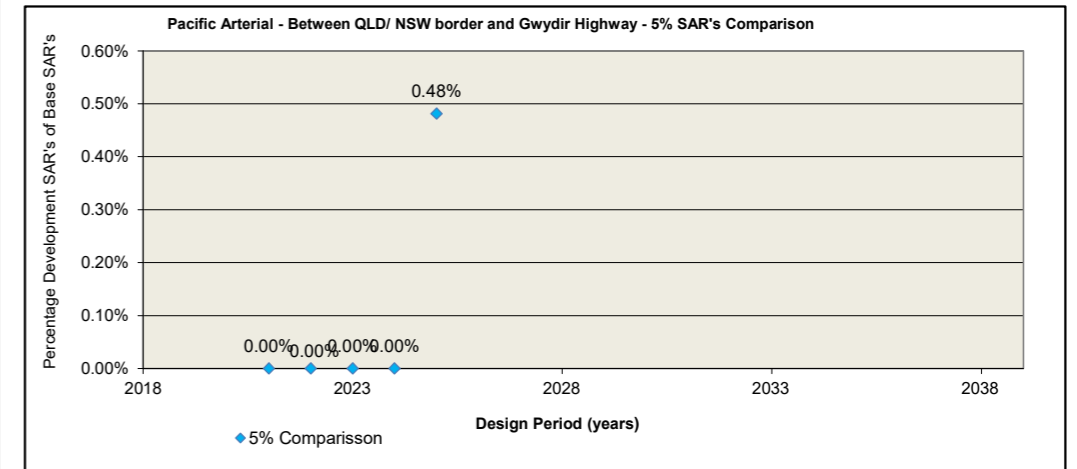
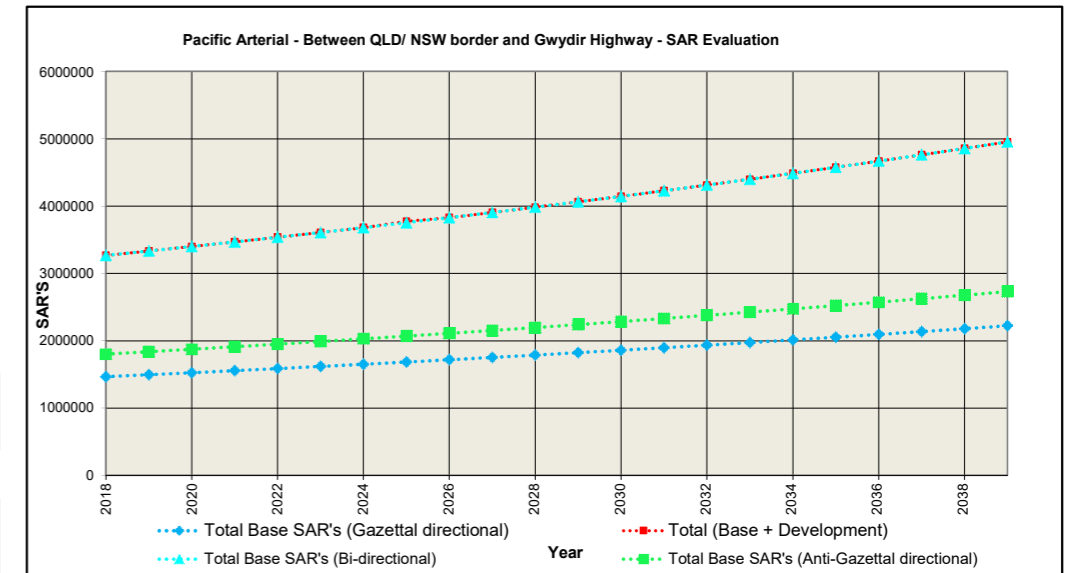
Warrego Highway Base SAR's			Between Mount Crosby Road and Cunningham Highway Development SAR's				Total (Base + Development)	5% Comparison
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded				
2018	3587489	3426223			7013712	7013712		
2019	3659239	3494747			7153986	7153986		
2020	3732424	3564642			7297066	7297066		
2021	3807072	3635935		0	7443008	7443008	0.00%	
2022	3883214	3708654		1205	7591868	7594277	0.03%	
2023	3960878	3782827		6492	7743705	7756690	0.17%	
2024	4040096	3858483		3166	7898579	7904912	0.08%	
2025	4120898	3935653		9095	8056551	8074741	0.23%	
2026	4203315	4014366			8217682	8217682		
2027	4287382	4094654			8382035	8382035		
2028	4373129	4176547			8549676	8549676		
2029	4460592	4260078			8720670	8720670		
2030	4549804	4345279			8895083	8895083		
2031	4640800	4432185			9072985	9072985		
2032	4733616	4520828			9254444	9254444		
2033	4828288	4611245			9439533	9439533		
2034	4924854	4703470			9628324	9628324		
2035	5023351	4797539			9820890	9820890		
2036	5123818	4893490			10017308	10017308		
2037	5226294	4991360			10217654	10217654		
2038	5330820	5091187			10422007	10422007		
2039	5437437	5193011			10630448	10630448		



Pacific Arterial - Between QLD/ NSW border and Gwydir Highway

SAR's per heavy vehicle - Development	Loaded	Unloaded
Class 3	n/a	n/a
Class 4	n/a	0.51
Class 5	4.087	n/a
Class 6	n/a	n/a
Class 7	5.02	n/a
Class 8	n/a	n/a
Class 9	n/a	1.68
Class 10	7.72	1.67
Class 11	n/a	n/a
Class 12	n/a	n/a
Special Class	12.21	n/a

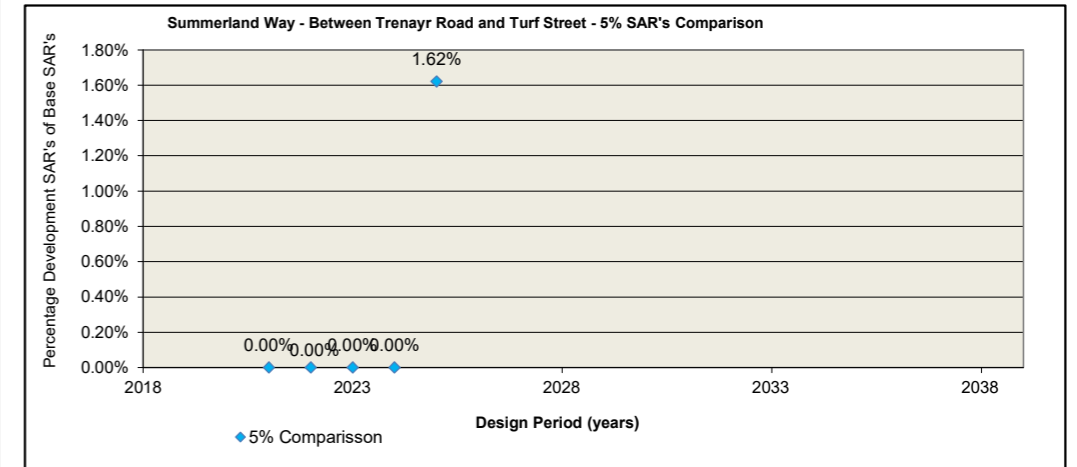
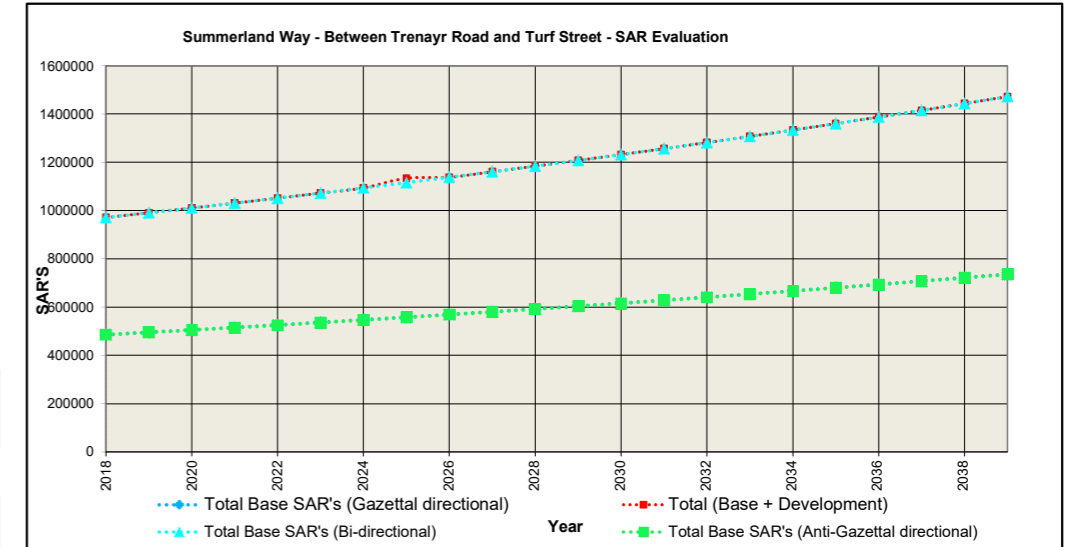
Pacific Arterial Base SAR's			Between QLD/ NSW border and Gwydir Highway			
Total Base SAR's (Anti-Gazettal direction)		Total Base SAR's (Gazettal directional)	Development SAR's		Total (Base + Development)	5% Comparisson
		Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	1802046	1466825			3268871	
2019	1838087	1496161			3334248	
2020	1874849	1526084			3400933	
2021	1912346	1556606	0	0	3468952	0.00%
2022	1950593	1587738	0	0	3538331	0.00%
2023	1989605	1619493	0	0	3609098	0.00%
2024	2029397	1651883	0	0	3681280	0.00%
2025	2069985	1684921	9037	9037	3772979	0.48%
2026	2111384	1718619			3830003	
2027	2153612	1752991			3906603	
2028	2196684	1788051			3984736	
2029	2240618	1823812			4064430	
2030	2285430	1860288			4145719	
2031	2331139	1897494			4228633	
2032	2377762	1935444			4313206	
2033	2425317	1974153			4399470	
2034	2473823	2013636			4487459	
2035	2523300	2053909			4577209	
2036	2573766	2094987			4668753	
2037	2625241	2136887			4762128	
2038	2677746	2179624			4857370	
2039	2731301	2223217			4954518	



**Summerland Way - Between Trenayr Road and Turf Street**

SAR's per heavy vehicle - Development	Loaded	Unloaded
Class 3	n/a	n/a
Class 4	n/a	0.51
Class 5	4.087	n/a
Class 6	n/a	n/a
Class 7	5.02	n/a
Class 8	n/a	n/a
Class 9	n/a	1.68
Class 10	7.72	1.67
Class 11	n/a	n/a
Class 12	n/a	n/a
Special Class	12.21	n/a

Summerland Way			Between Trenayr Road and Turf Street			
Base SAR's			Development SAR's		Total (Base + Development)	5% Comparisson
Total Base SAR's (Anti-Gazettal direction)	Total Base SAR's (Gazettal directional)	Total Base SAR's (Bi-directional)	Unloaded	Loaded		
2018	485113	486042			971155	
2019	494815	495763			990578	
2020	504711	505678			1010390	
2021	514806	515792	0	0	1030597	0.00%
2022	525102	526108	0	0	1051209	0.00%
2023	535604	536630	0	0	1072234	0.00%
2024	546316	547362	0	0	1093678	0.00%
2025	557242	558310	9037	9037	1133625	1.62%
2026	568387	569476			1137863	
2027	579755	580865			1160620	
2028	591350	592483			1183832	
2029	603177	604332			1207509	
2030	615240	616419			1231659	
2031	627545	628747			1256293	
2032	640096	641322			1281418	
2033	652898	654149			1307047	
2034	665956	667232			1333188	
2035	679275	680576			1359851	
2036	692861	694188			1387048	
2037	706718	708072			1414789	
2038	720852	722233			1443085	
2039	735269	736678			1471947	





APPENDIX

U

Traffic Impact Assessment

**Appendix E** Existing Construction  
Route Crashes



ARTC

The Australian Government is investing  
in infrastructure through the Australian  
Rail Track Corporation (ARTC) to  
improve growth in our economy.





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35

**Legend**

- |                         |                     |
|-------------------------|---------------------|
| ● Localities            | <b>QLD crashes</b>  |
| — Construction Routes   | ● Hospitalisation   |
| — Existing rail         | ● Medical treatment |
| — G2H project alignment | ● Minor injury      |
| — Major roads           |                     |
| — Minor roads           |                     |



A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CTasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

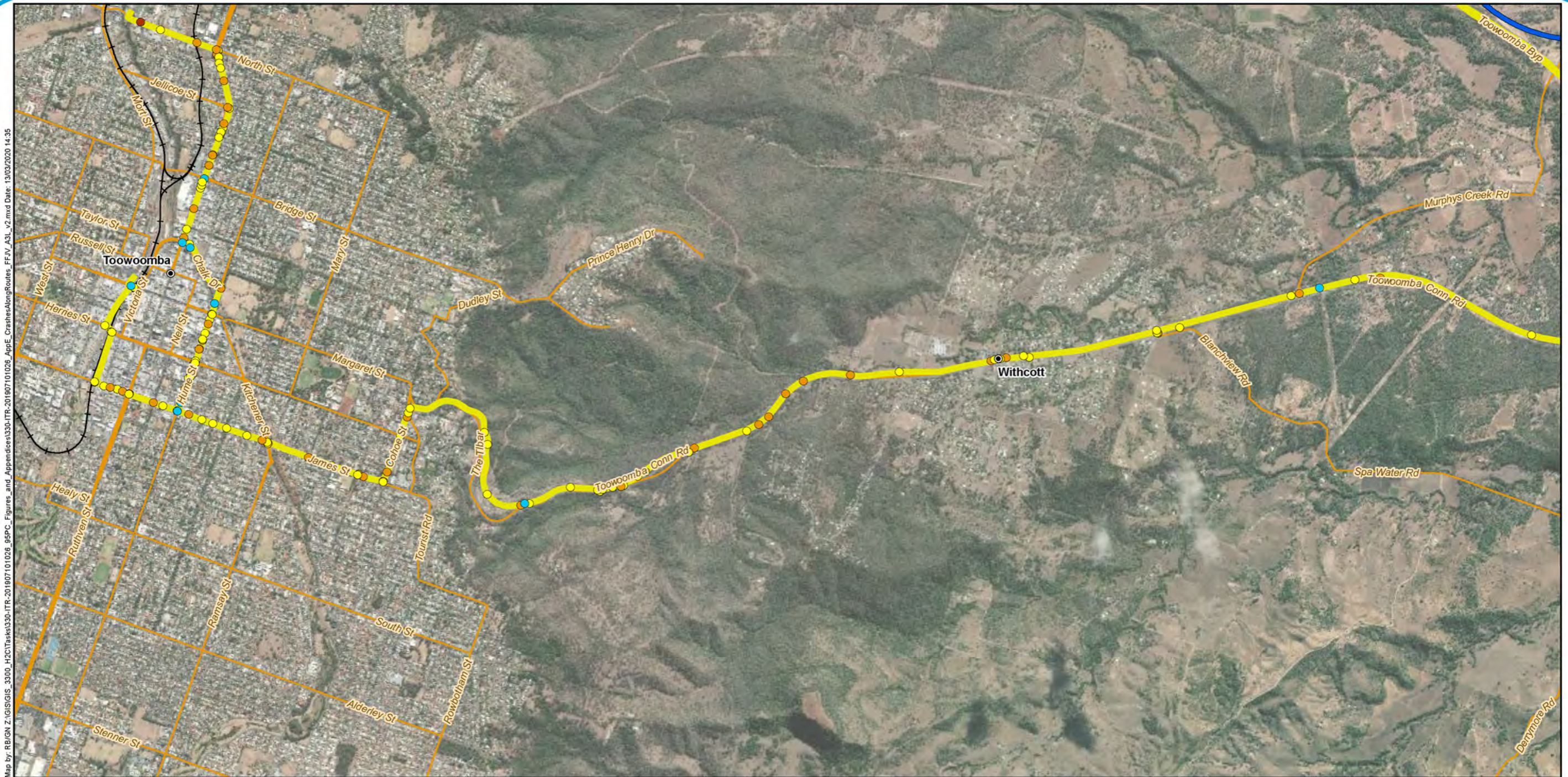
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|-------------------------|---------------------|
| ● Localities            | <b>QLD crashes</b>  |
| — Construction Routes   | ● Hospitalisation   |
| — Existing rail         | ● Medical treatment |
| — G2H project alignment | ● Minor injury      |
| — Major roads           |                     |
| — Minor roads           |                     |



A3 scale: 1:35,000







Map by: RE/IGN Z:\GIS\GIS\_3300\_H2CTasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35

**Legend**

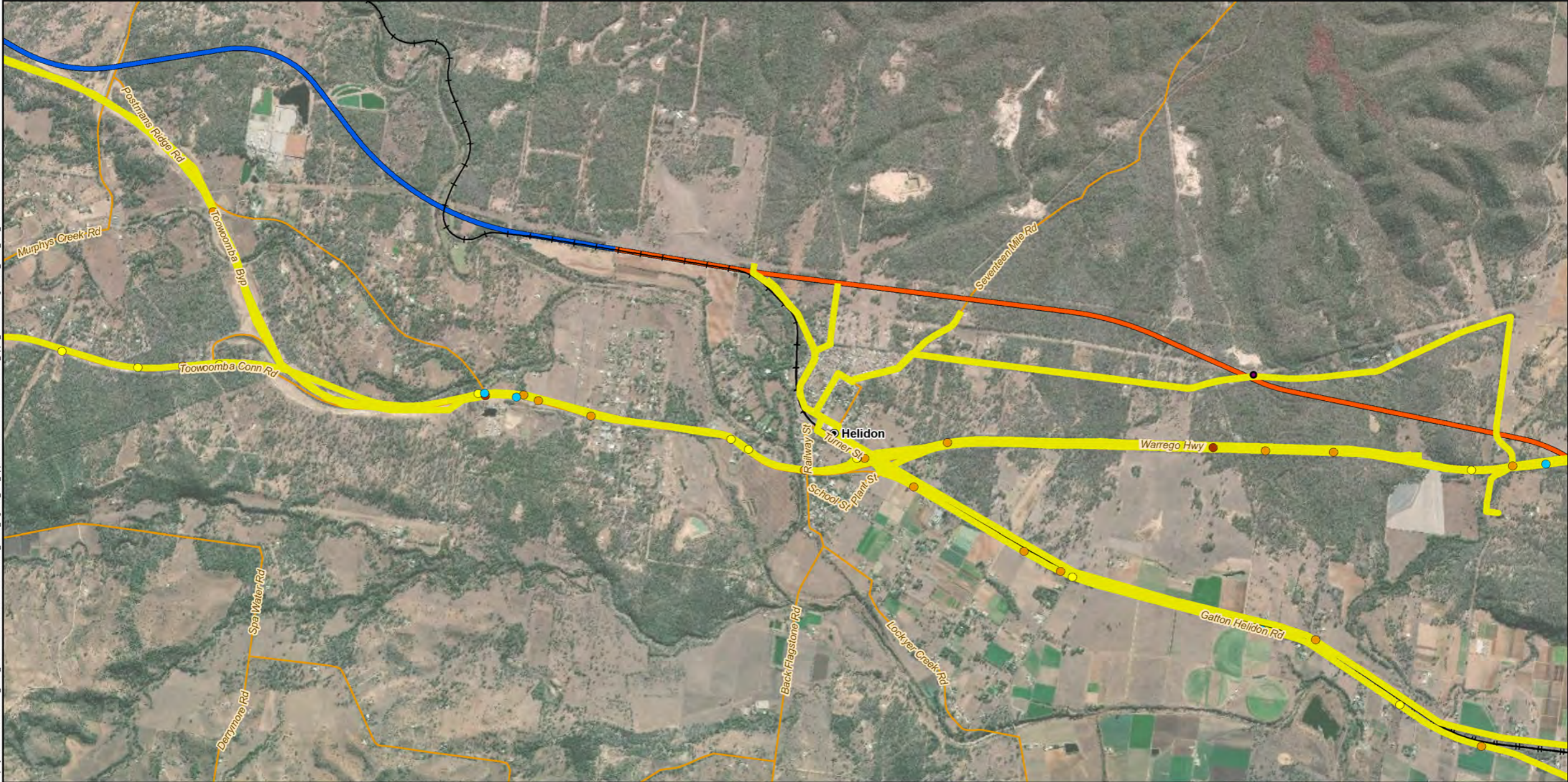
- |                         |                     |
|-------------------------|---------------------|
| ● Localities            | <b>QLD crashes</b>  |
| — Construction Routes   | ● Fatal             |
| — Existing rail         | ● Hospitalisation   |
| — G2H project alignment | ● Medical treatment |
| — Major roads           | ● Minor injury      |
| — Minor roads           |                     |



A3 scale: 1:35,000







Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35

**Legend**

- Localities
  - Construction Routes
  - Existing rail
  - G2H project alignment
  - H2C project alignment
  - Major roads
  - Minor roads
- QLD crashes**
  - Fatal
  - Hospitalisation
  - Medical treatment
  - Minor injury

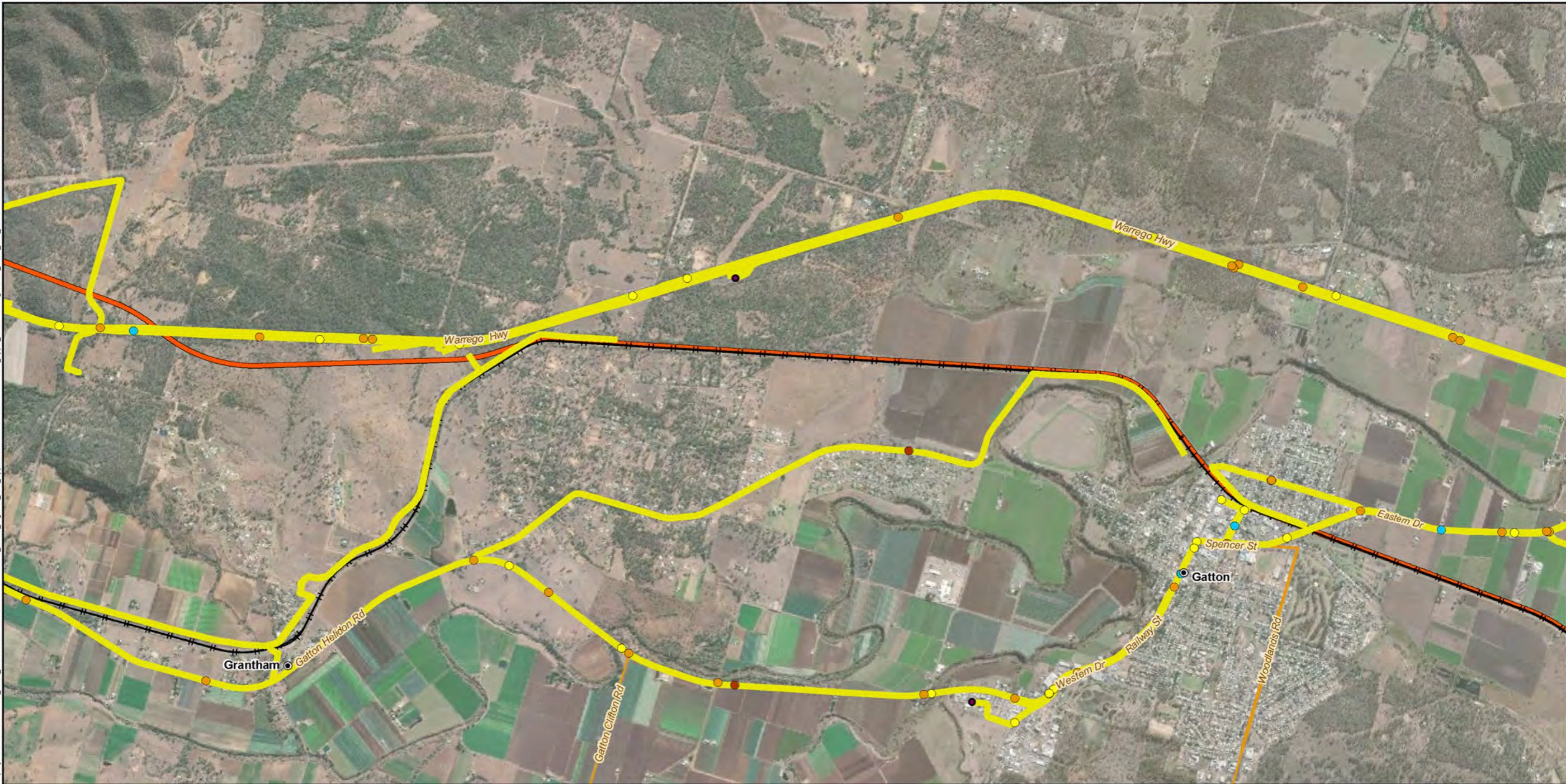


A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- |                         |                     |
|-------------------------|---------------------|
| ● Localities            | <b>QLD crashes</b>  |
| — Construction Routes   | ● Fatal             |
| — Existing rail         | ● Hospitalisation   |
| — H2C project alignment | ● Medical treatment |
| — Major roads           | ● Minor injury      |
| — Minor roads           |                     |



A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Existing rail
- H2C project alignment
- Major roads
- Minor roads

**QLD crashes**

- Fatal
- Hospitalisation
- Medical treatment
- Minor injury



A3 scale: 1:35,000



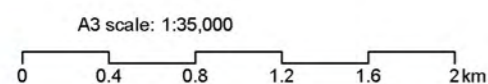


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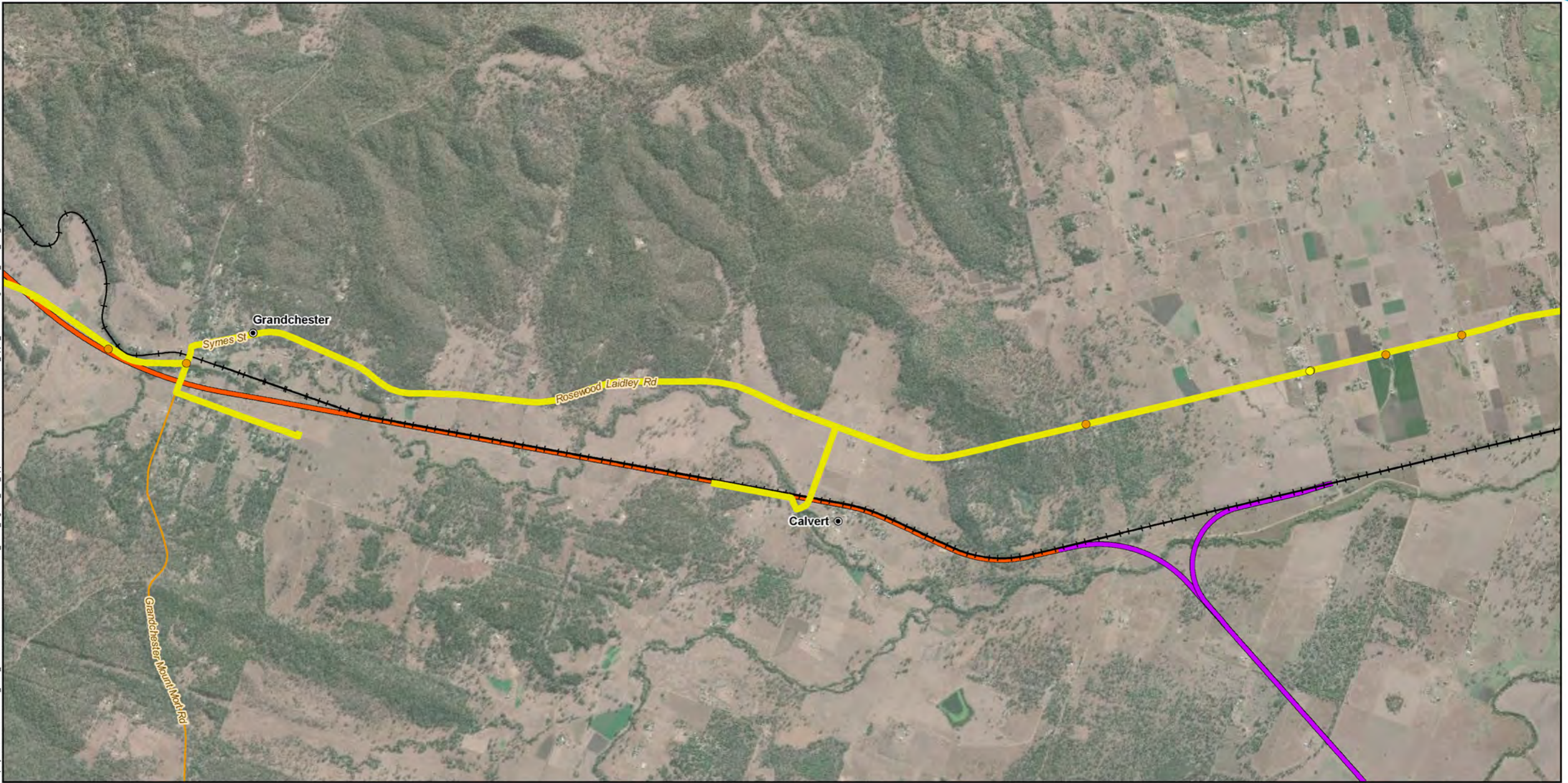
**Legend**

- |                         |                     |
|-------------------------|---------------------|
| ● Localities            | <b>QLD crashes</b>  |
| — Construction Routes   | ● Fatal             |
| — Existing rail         | ● Hospitalisation   |
| — H2C project alignment | ● Medical treatment |
| — Minor roads           | ● Minor injury      |





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Localities
  - Construction Routes
  - Existing rail
  - H2C project alignment
  - C2K project alignment
  - Minor roads
- QLD crashes**
  - Hospitalisation
  - Medical treatment

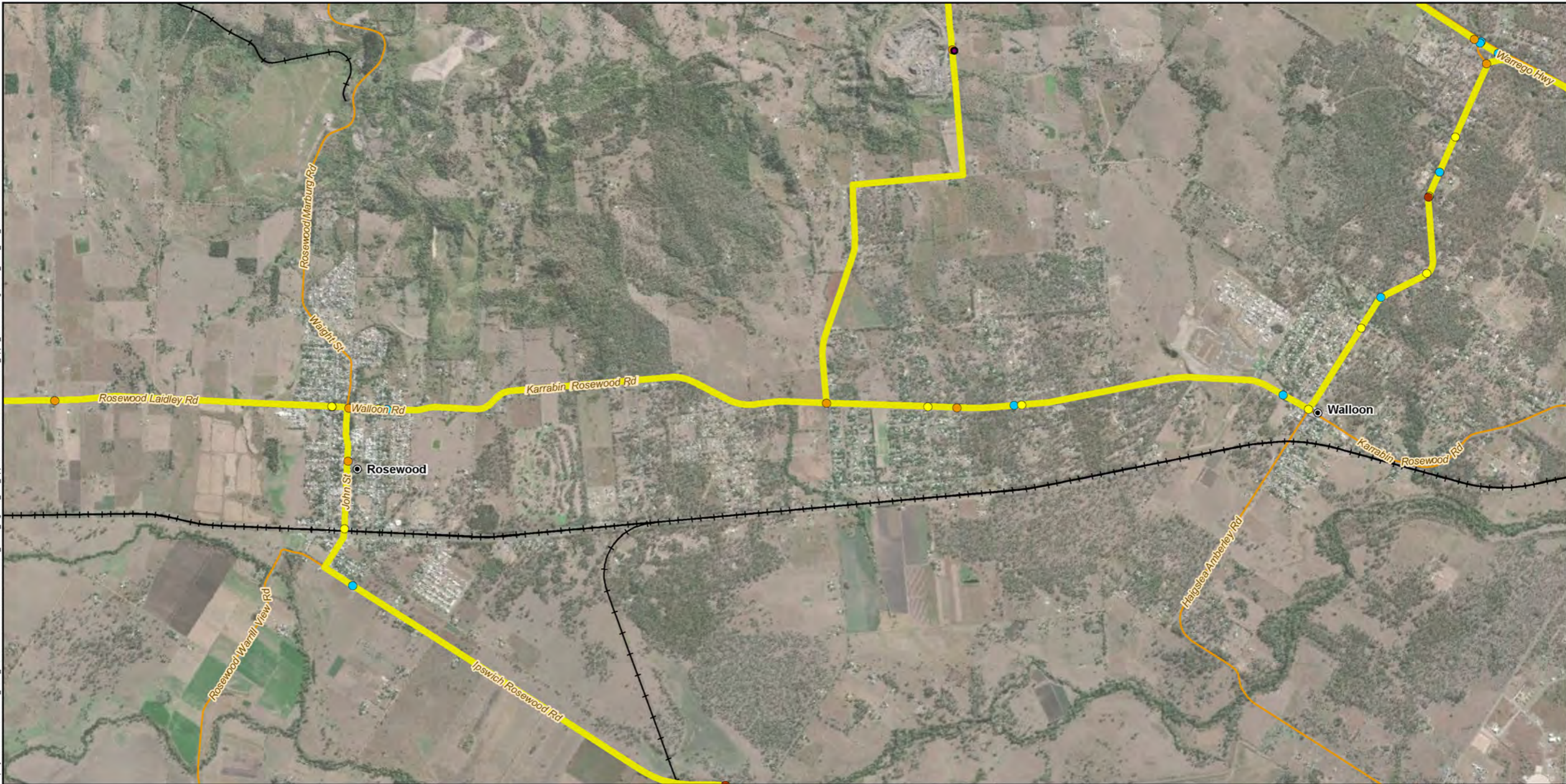


A3 scale: 1:35,000



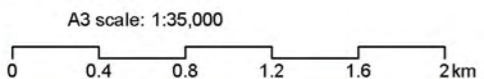


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**Legend**

- |                       |                     |
|-----------------------|---------------------|
| ● Localities          | <b>QLD crashes</b>  |
| — Construction Routes | ● Fatal             |
| — Existing rail       | ● Hospitalisation   |
| — Major roads         | ● Medical treatment |
| — Minor roads         | ● Minor injury      |





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CITasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- |                     |                    |
|---------------------|--------------------|
| Construction Routes | <b>QLD crashes</b> |
| Existing rail       | Fatal              |
| Major roads         | Hospitalisation    |
| Minor roads         | Medical treatment  |
|                     | Minor injury       |



A3 scale: 1:35,000

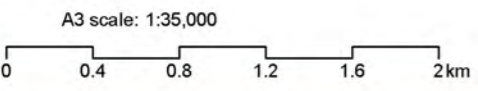






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- Legend**
- Construction Routes
  - +— Existing rail
  - Major roads
  - Minor roads
- QLD crashes**
- Hospitalisation
  - Medical treatment
  - Minor injury

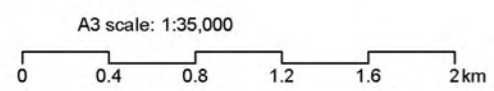






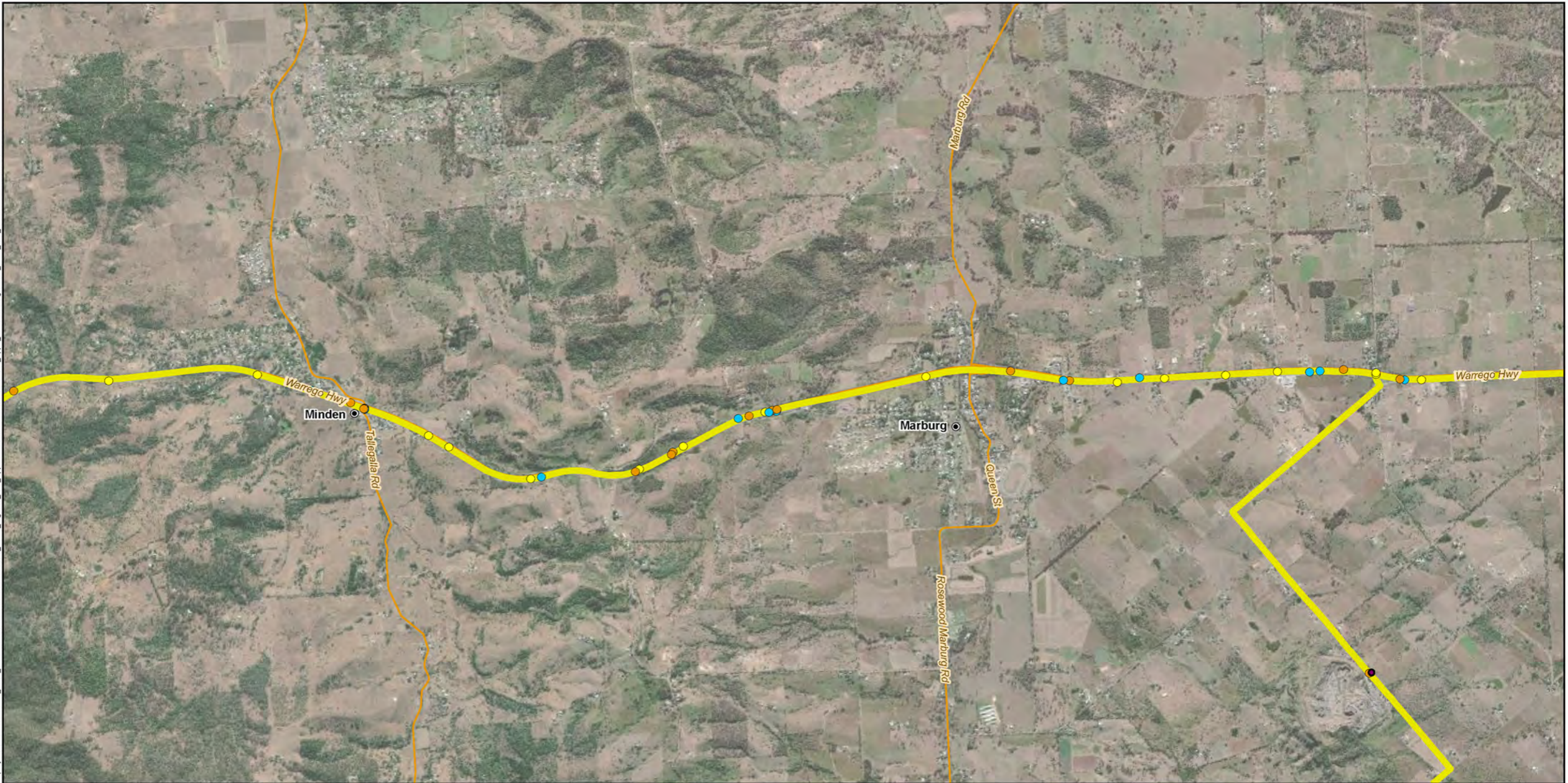
**Legend**

- |   |   |
|---|---|
|  Construction Routes | <b>QLD crashes</b>  |
|  Major roads         |  Fatal             |
|  Minor roads         |  Hospitalisation   |
|   |  Medical treatment |
|   |  Minor injury      |





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- |                       |                     |
|-----------------------|---------------------|
| ● Localities          | <b>QLD crashes</b>  |
| — Construction Routes | ● Hospitalisation   |
| — Major roads         | ● Medical treatment |
| — Minor roads         | ● Minor injury      |

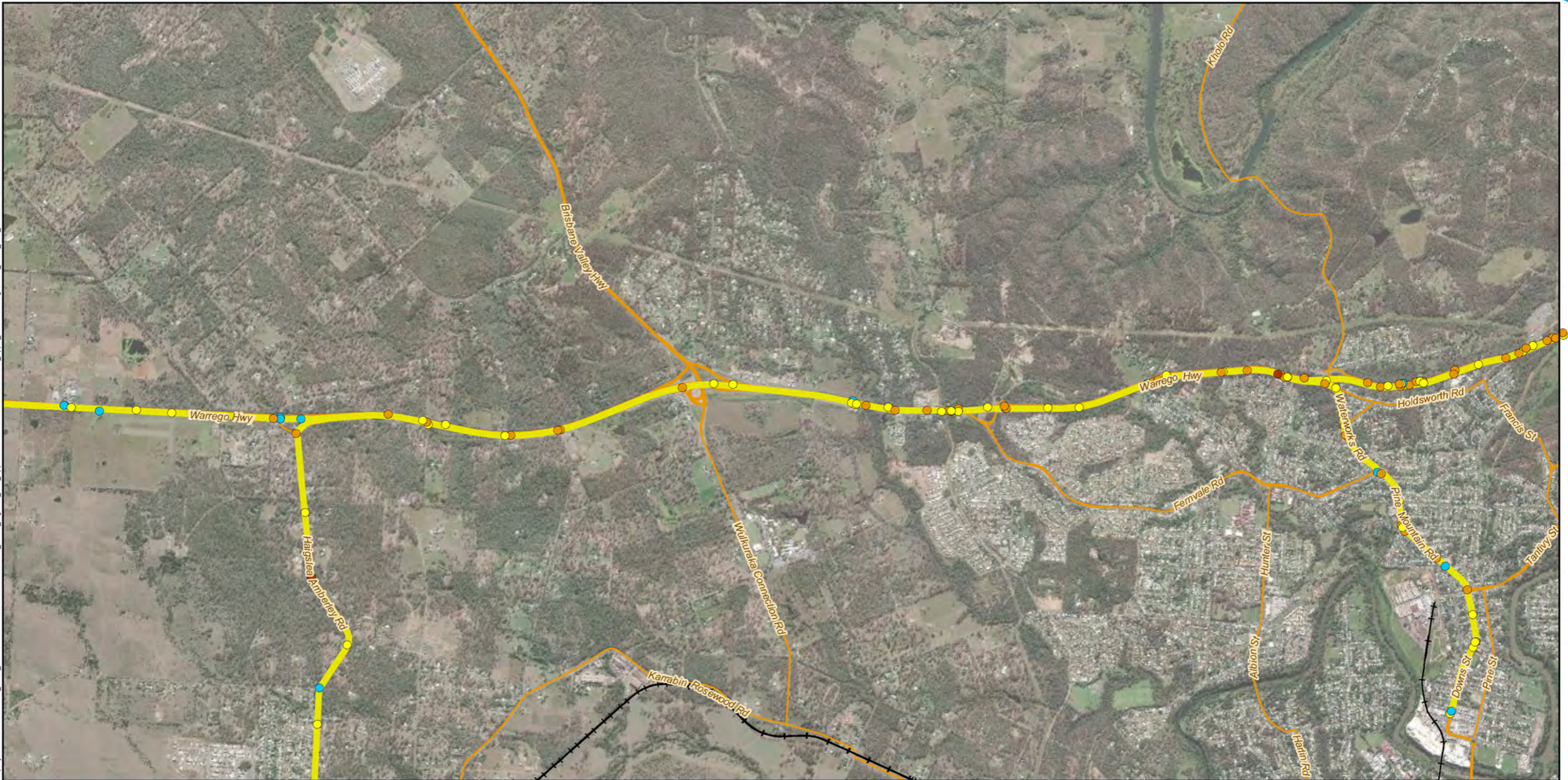


A3 scale: 1:35,000





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**Legend**

- |                     |                    |
|---------------------|--------------------|
| Construction Routes | <b>QLD crashes</b> |
| Existing rail       | Fatal              |
| Major roads         | Hospitalisation    |
| Minor roads         | Medical treatment  |
|                     | Minor injury       |



A3 scale: 1:35,000



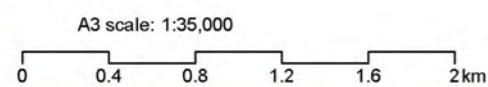


Map Doc: RE/IGN Z:\GIS\GIS\_3300\_H2CITasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



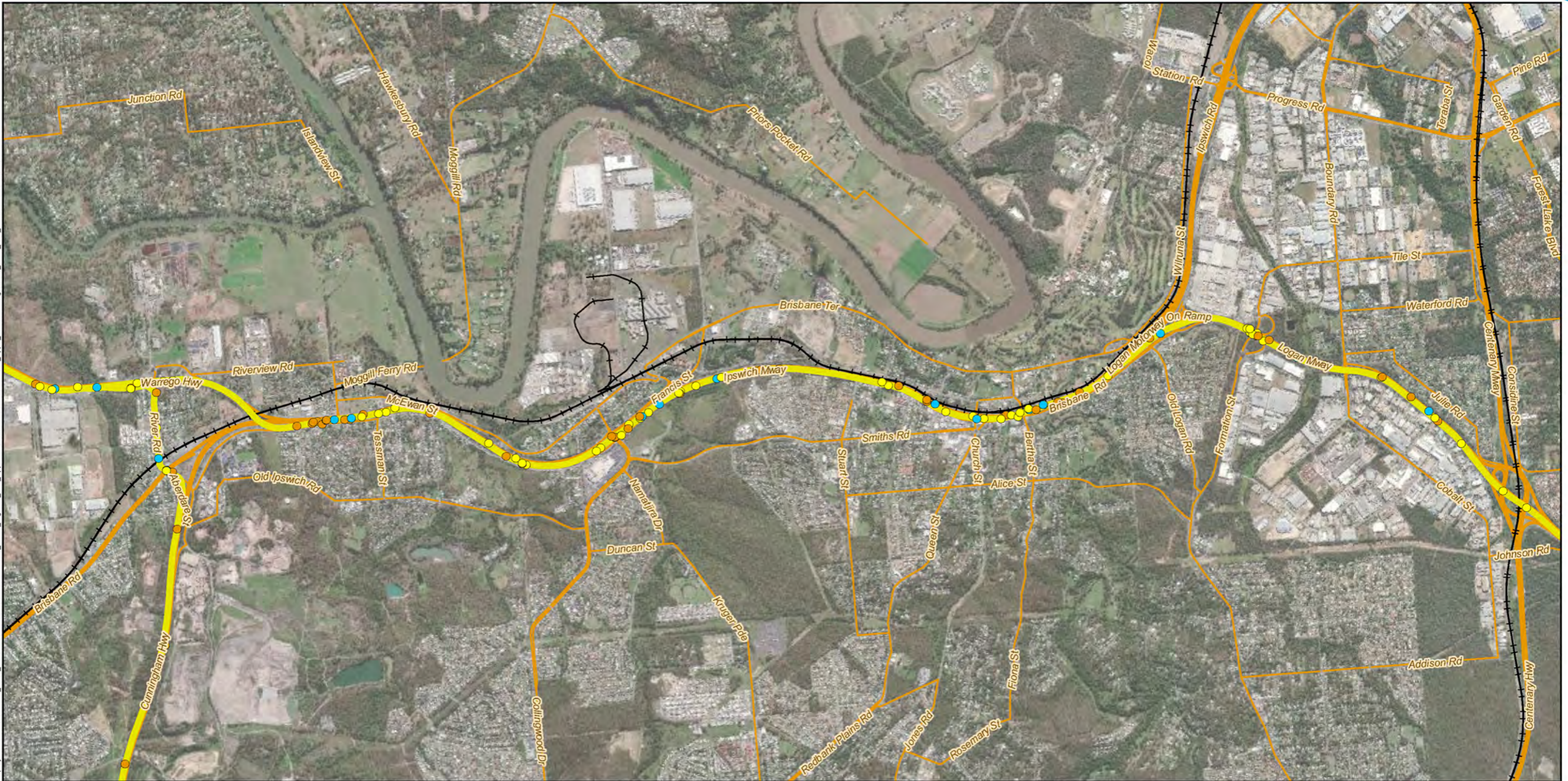
**Legend**

- |                       |                     |
|-----------------------|---------------------|
| ● Localities          | <b>QLD crashes</b>  |
| — Construction Routes | ● Hospitalisation   |
| — Existing rail       | ● Medical treatment |
| — Major roads         | ● Minor injury      |
| — Minor roads         |                     |





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CTasks\330-TR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

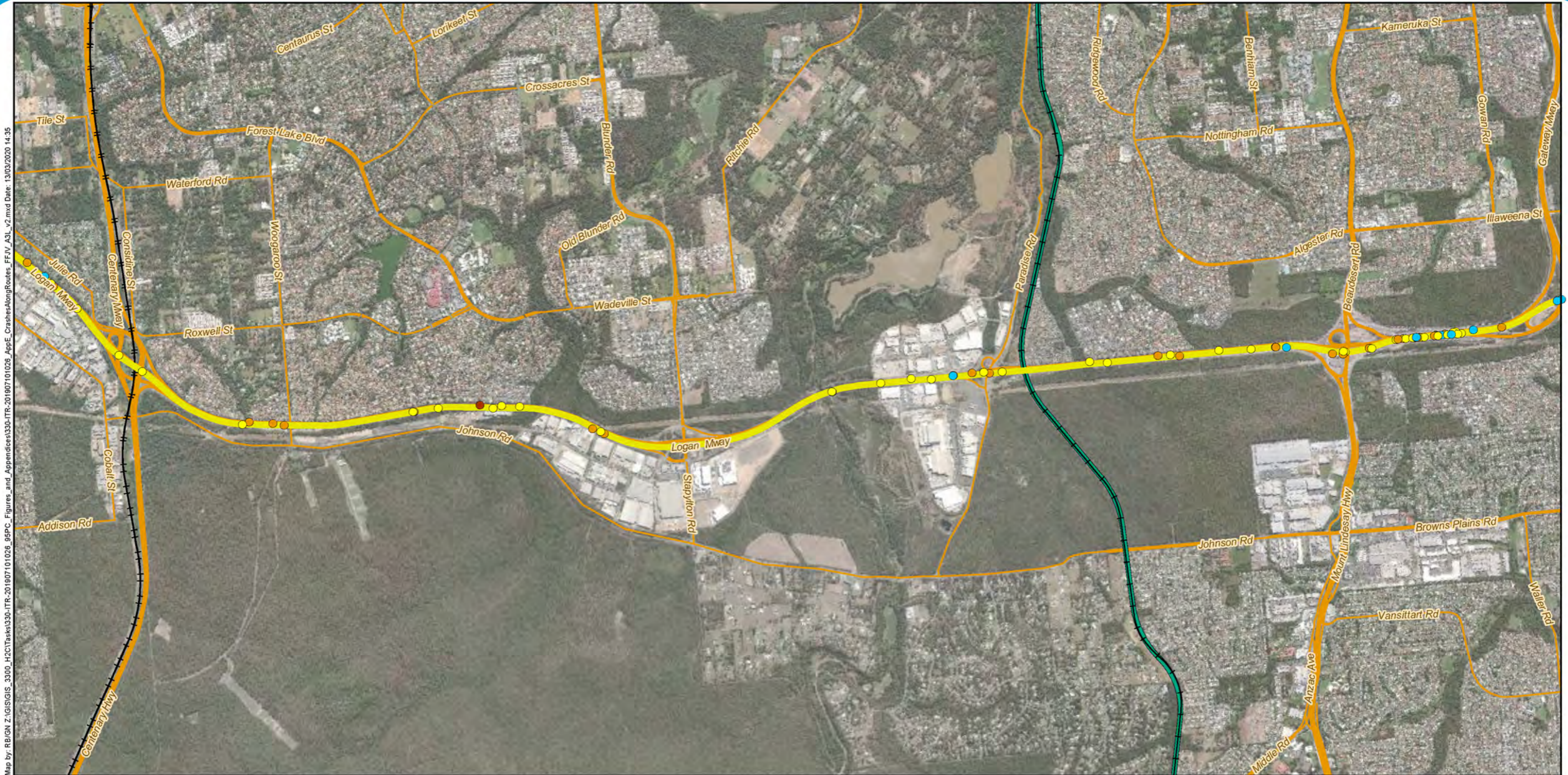
- |   |   |
|---|---|
|  Construction Routes | <b>QLD crashes</b>  |
|  Existing rail       |  Hospitalisation   |
|  Major roads         |  Medical treatment |
|  Minor roads         |  Minor injury      |



A3 scale: 1:35,000







Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35

**Legend**

- Construction Routes
- +— Existing rail
- K2ARB project alignment
- Major roads
- Minor roads

**QLD crashes**

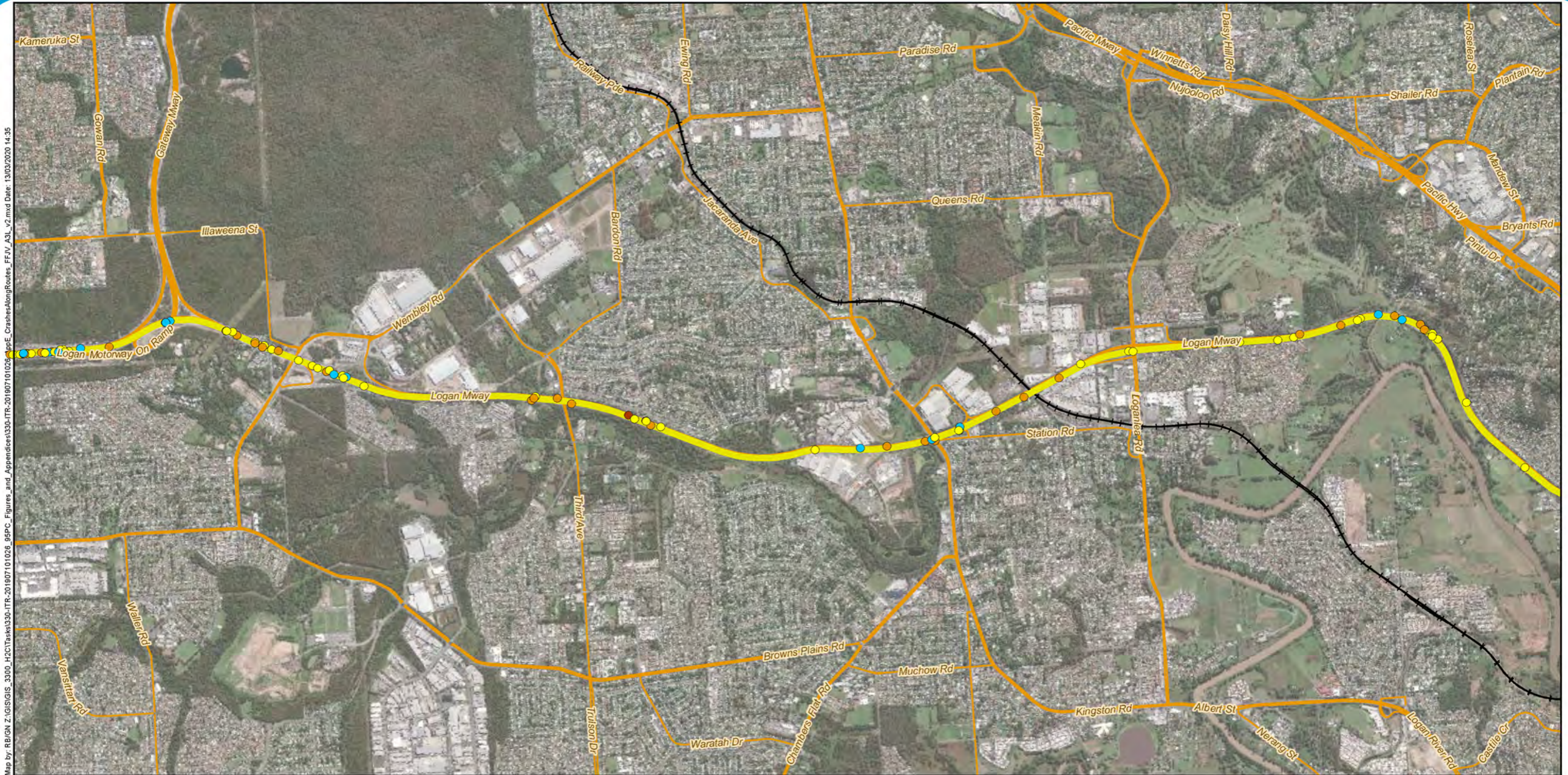
- Fatal
- Hospitalisation
- Medical treatment
- Minor injury



A3 scale: 1:35,000







Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Task\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_95PC\_E\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35

**Legend**

- |   |   |
|---|---|
|  Construction Routes | <b>QLD crashes</b>  |
|  Existing rail       |  Fatal             |
|  Major roads         |  Hospitalisation   |
|  Minor roads         |  Medical treatment |
|   |  Minor injury      |

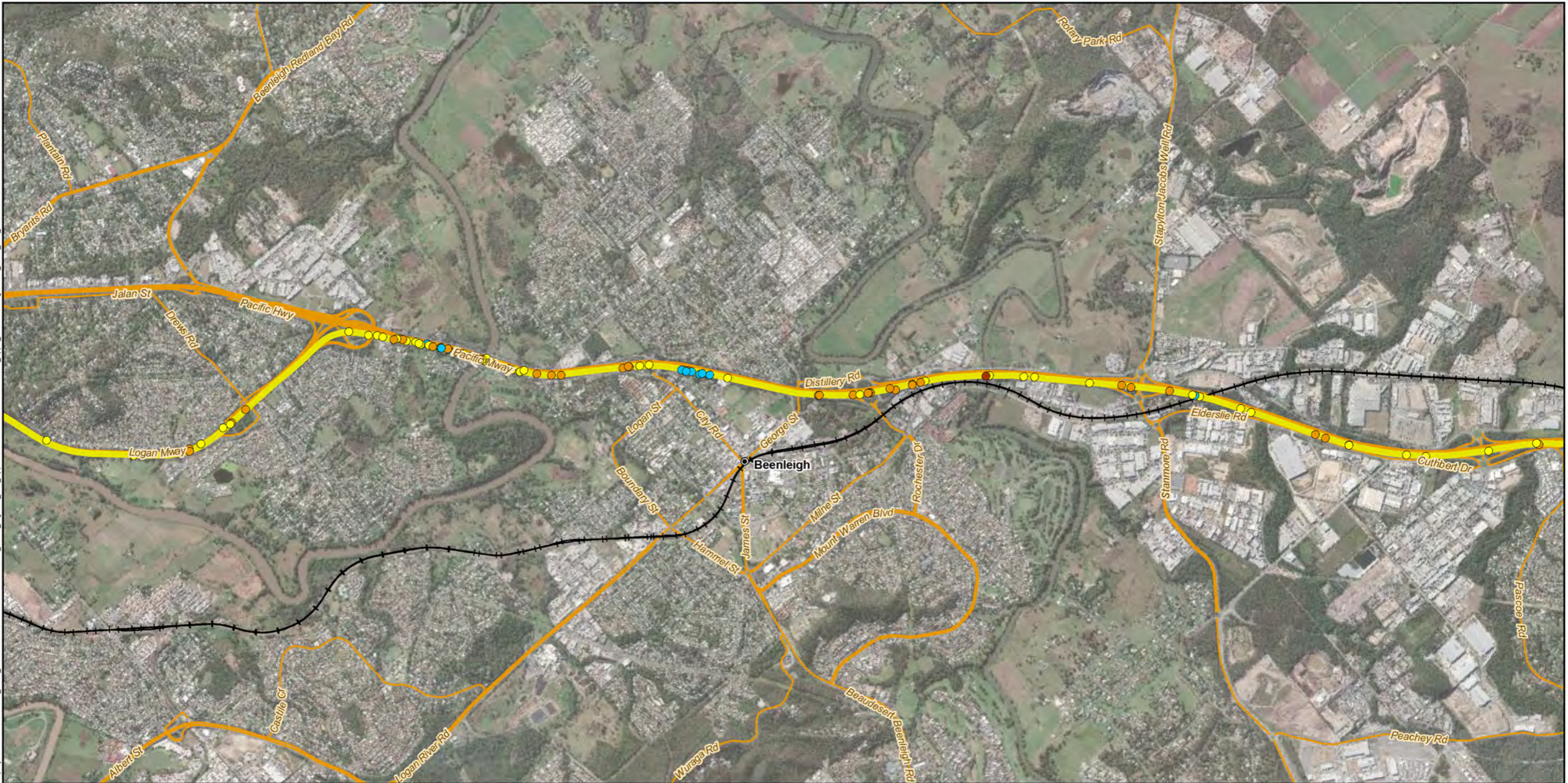


A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- |                       |                     |
|-----------------------|---------------------|
| ● Localities          | <b>QLD crashes</b>  |
| ▬ Construction Routes | ● Fatal             |
| — Existing rail       | ● Hospitalisation   |
| ▬ Major roads         | ● Medical treatment |
| ▬ Minor roads         | ● Minor injury      |



A3 scale: 1:35,000



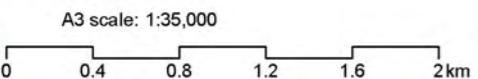




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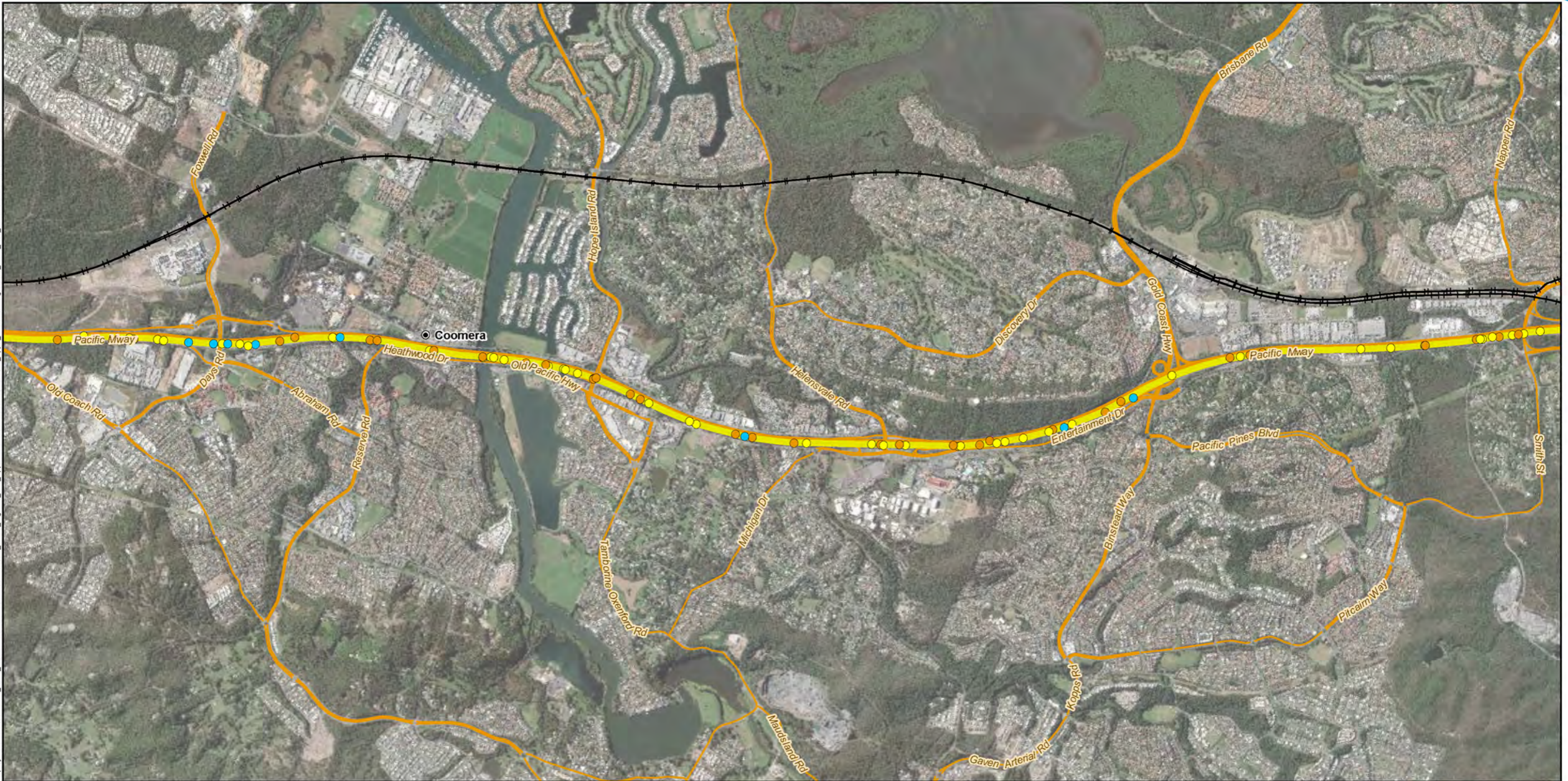
**Legend**

- Localities
  - Construction Routes
  - Existing rail
  - Major roads
  - Minor roads
- QLD crashes**
  - Hospitalisation
  - Medical treatment
  - Minor injury





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CTasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

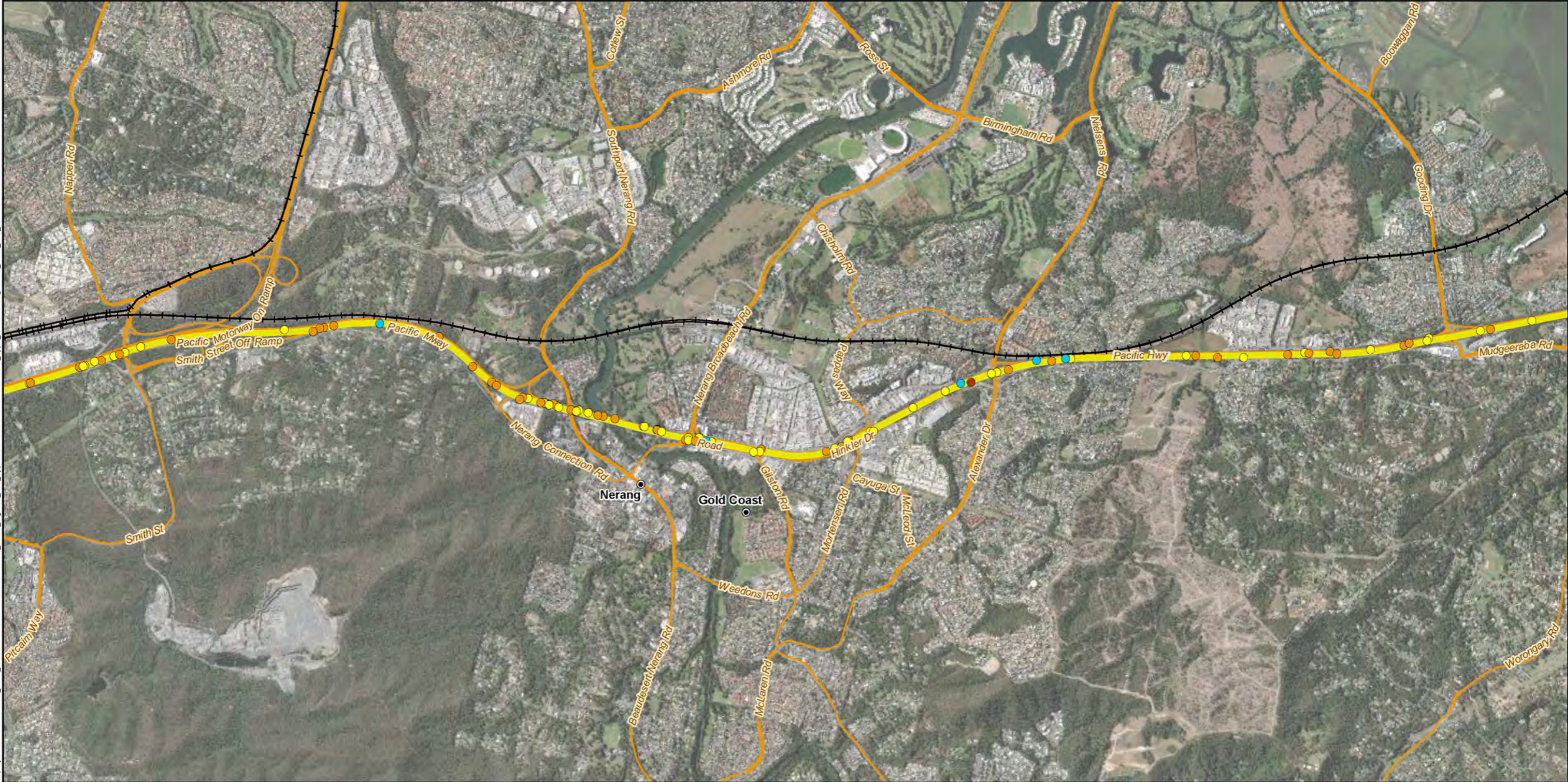
- |                       |                     |
|-----------------------|---------------------|
| ● Localities          | <b>QLD crashes</b>  |
| ▬ Construction Routes | ● Hospitalisation   |
| — Existing rail       | ● Medical treatment |
| ▬ Major roads         | ● Minor injury      |
| ▬ Minor roads         |                     |



A3 scale: 1:35,000

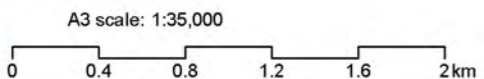






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- Legend**
- Localities
  - Construction Routes
  - Existing rail
  - Major roads
  - Minor roads
- QLD crashes**
- Fatal
  - Hospitalisation
  - Medical treatment
  - Minor injury





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Localities
  - Construction Routes
  - Existing rail
  - Major roads
  - Minor roads
- QLD crashes**
  - Hospitalisation
  - Medical treatment
  - Minor injury

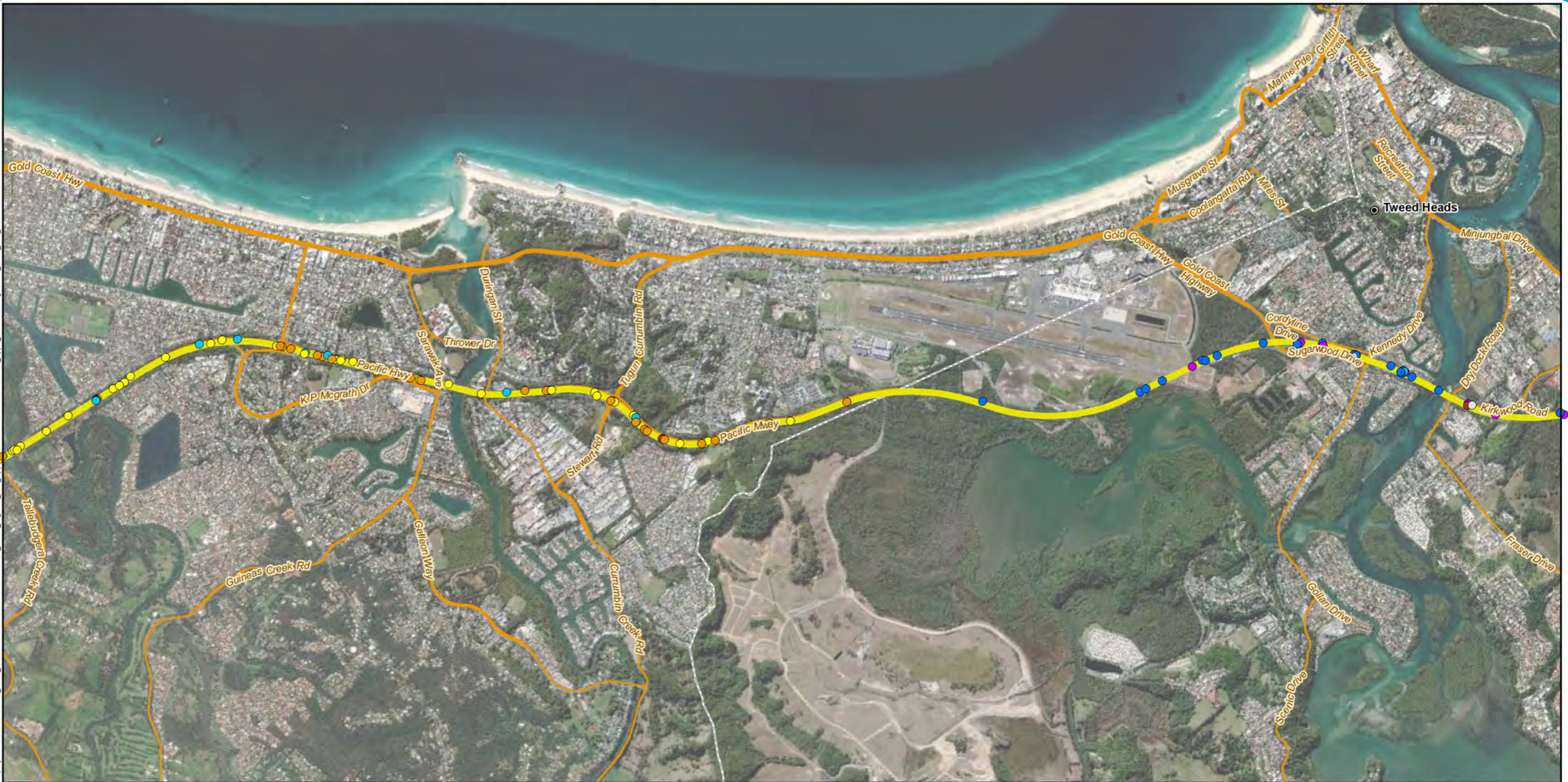


A3 scale: 1:35,000





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**Legend**

- |                       |                     |                        |
|-----------------------|---------------------|------------------------|
| ● Localities          | <b>QLD crashes</b>  | <b>NSW crashes</b>     |
| — Construction Routes | ● Fatal             | ● Fatal                |
| — Major roads         | ● Hospitalisation   | ● Minor/Other Injury   |
| — Minor roads         | ● Medical treatment | ● Moderate Injury      |
| --- QLD/NSW border    | ● Minor injury      | ● Serious Injury       |
|                       |                     | ● Uncategorised Injury |



A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CITask\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Major roads
- Minor roads

**NSW crashes**

- Fatal
- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorized Injury



A3 scale: 1:35,000





Map by: RB/IGN z:\GIS\GIS\_3300\_H2CTask\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

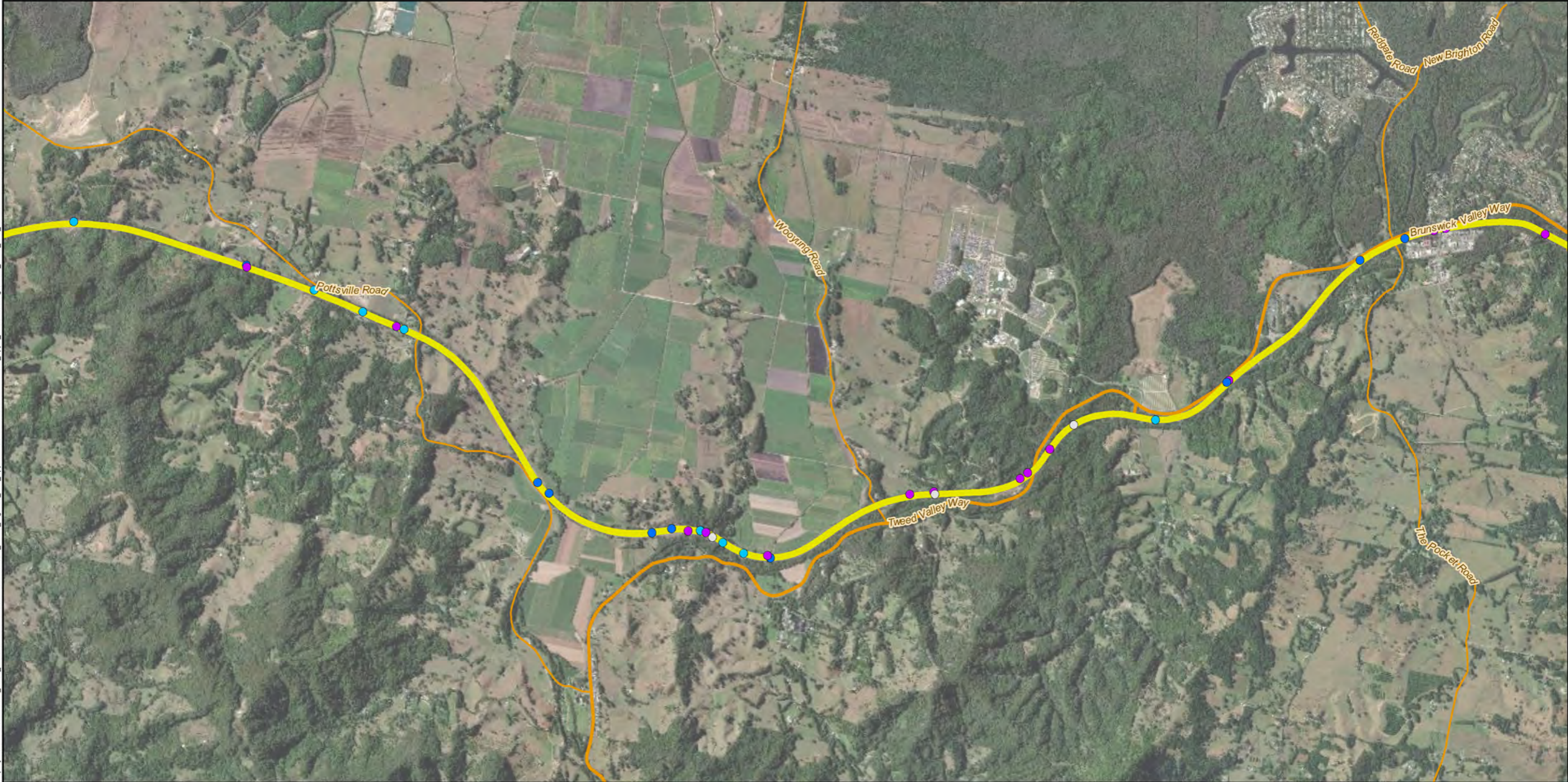
- Construction Routes
  - Minor roads
- NSW crashes**
- Fatal
  - Minor/Other Injury
  - Moderate Injury
  - Serious Injury
  - Uncategorised Injury



A3 scale: 1:35,000





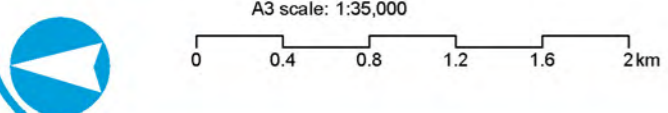


**Legend**

- Construction Routes
- Major roads
- Minor roads

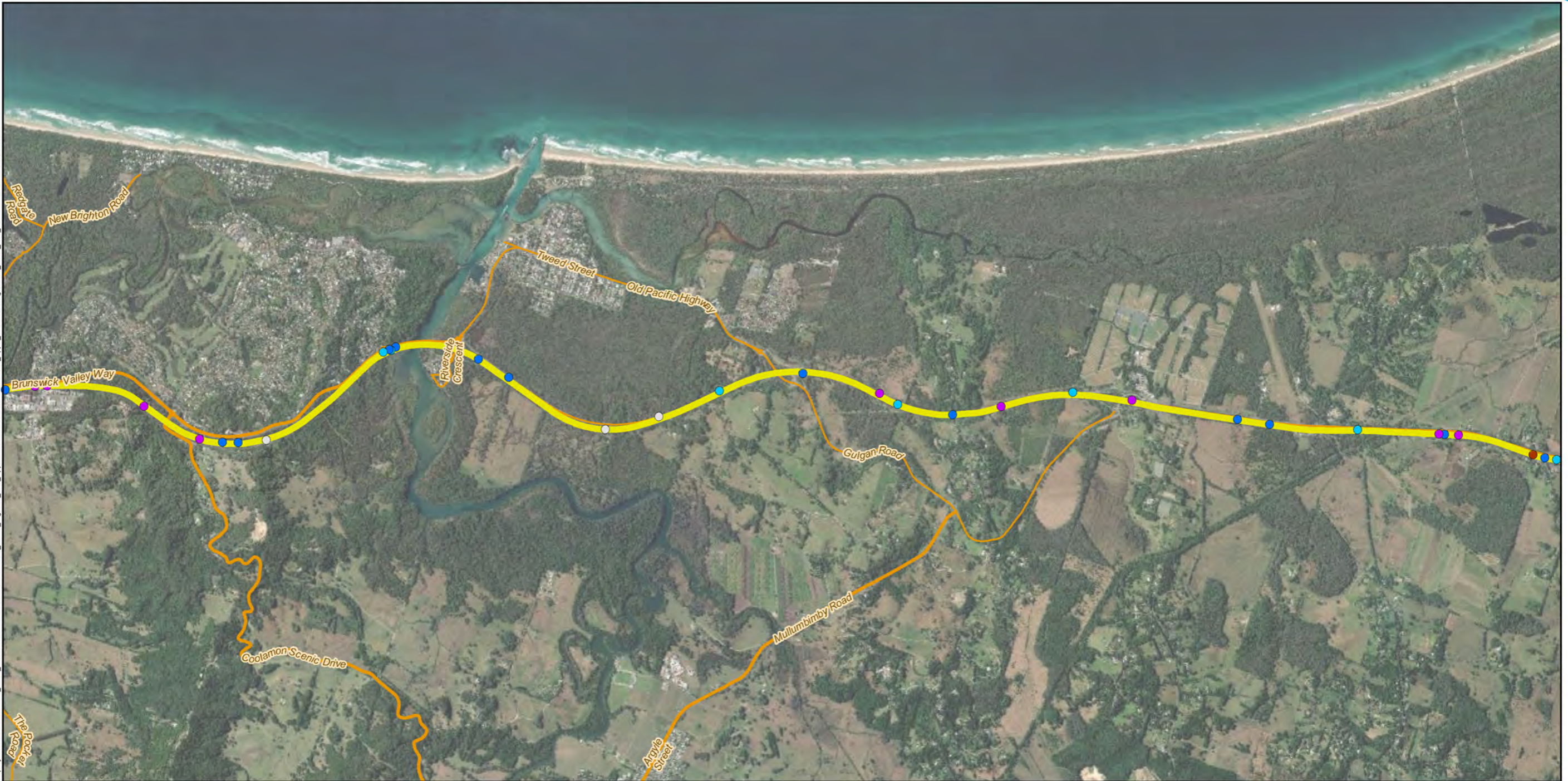
**NSW crashes**

- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorised Injury





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Major roads
- Minor roads

**NSW crashes**

- Fatal
- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorized Injury



A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CITask\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Localities
  - Construction Routes
  - Major roads
  - Minor roads
- NSW crashes**
- Fatal
  - Minor/Other Injury
  - Moderate Injury
  - Serious Injury
  - Uncategorized Injury

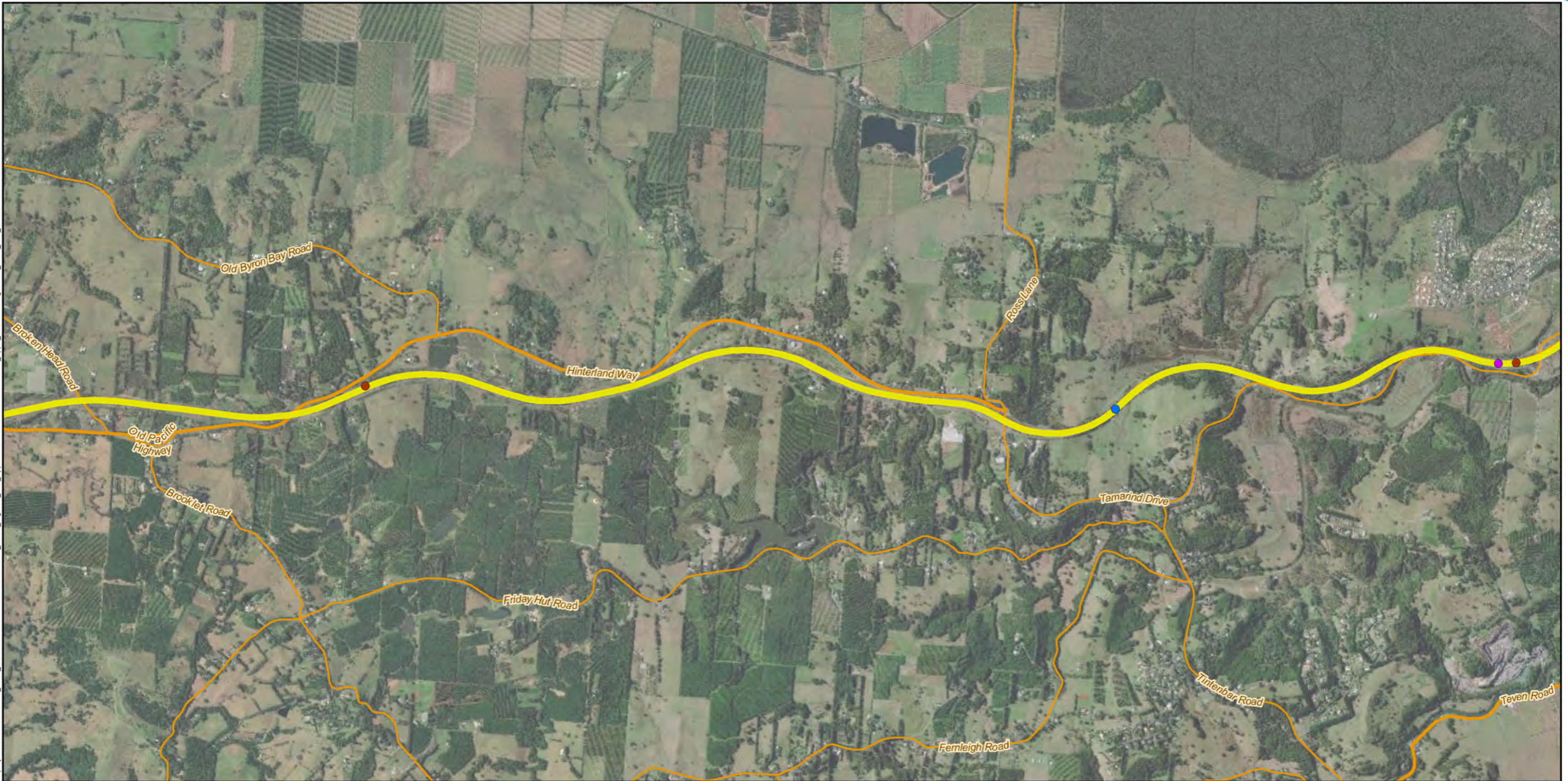


A3 scale: 1:35,000



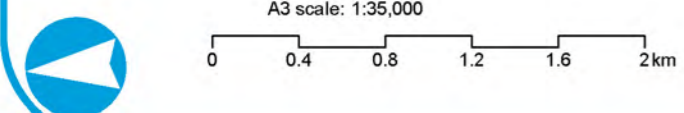


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**Legend**

- |   |   |
|---|---|
|  Construction Routes | <b>NSW crashes</b>  |
|  Major roads         |  Fatal           |
|  Minor roads         |  Moderate Injury |
|   |  Serious Injury  |

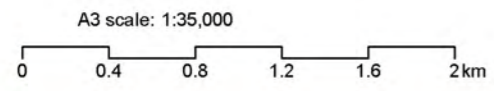






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- Legend**
- Localities
  - Construction Routes
  - Major roads
  - Minor roads
- NSW crashes**
- Fatal
  - Minor/Other Injury
  - Moderate Injury
  - Serious Injury





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CTasks\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Major roads
- Minor roads

**NSW crashes**

- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorised Injury



A3 scale: 1:35,000







Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35

**Legend**

- Localities
  - Construction Routes
  - Major roads
  - Minor roads
- NSW crashes**
- Fatal
  - Minor/Other Injury
  - Moderate Injury
  - Serious Injury
  - Uncategorized Injury



A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Localities
  - Construction Routes
  - Major roads
  - Minor roads
- NSW crashes**
- Fatal
  - Minor/Other Injury
  - Moderate Injury
  - Serious Injury
  - Uncategorized Injury



A3 scale: 1:35,000





Map by: RB/IGN z:\GIS\GIS\_3300\_H2CTasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\A3\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Minor roads

**NSW crashes**

- Fatal
- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorized Injury

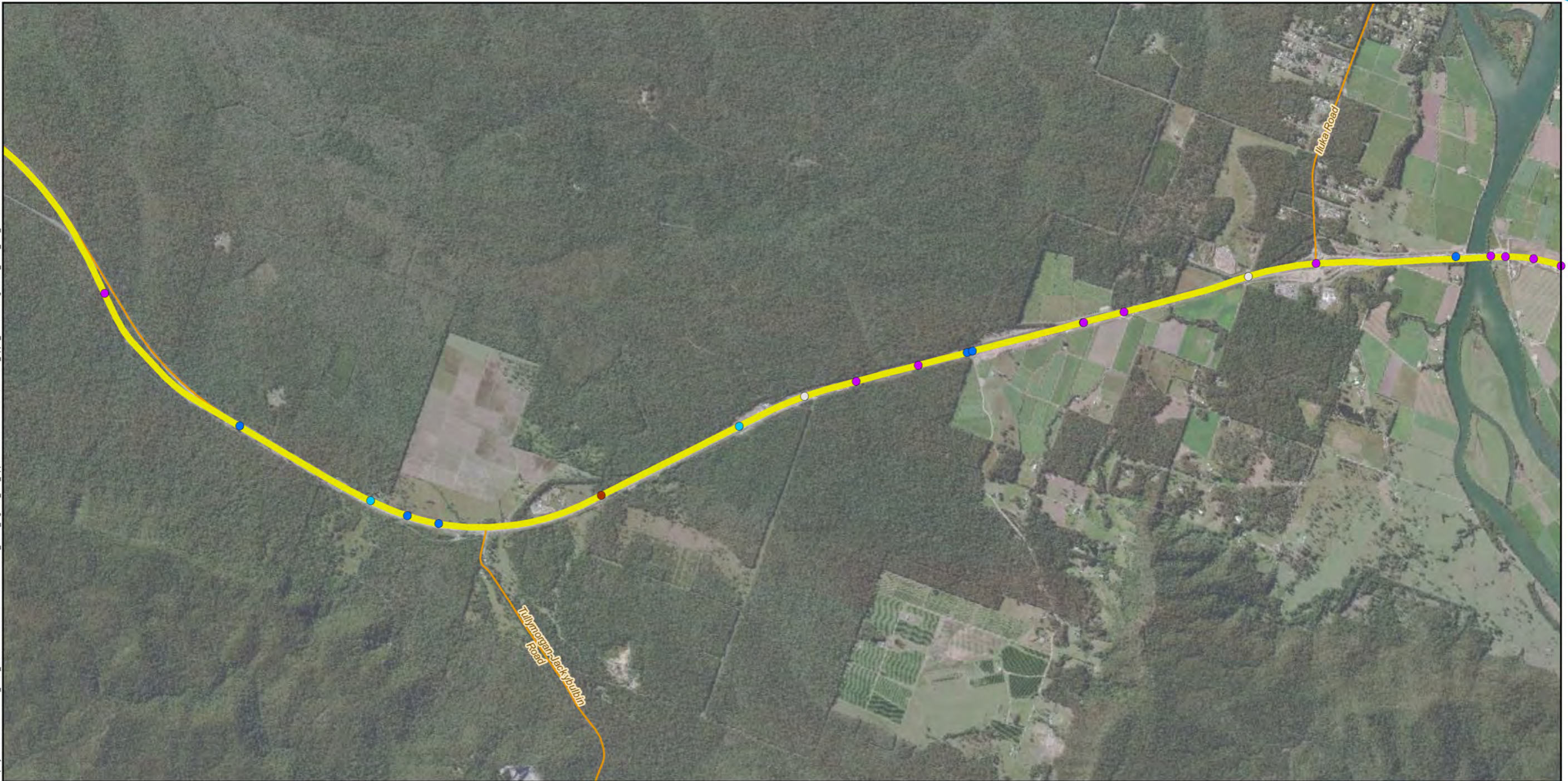


A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CTasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Minor roads

**NSW crashes**

- Fatal
- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorised Injury



A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CITasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Major roads
- Minor roads

**NSW crashes**

- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorised Injury



A3 scale: 1:35,000





Map by: RE/IGN z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Major roads
- Minor roads

**NSW crashes**

- Fatal
- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorized Injury



A3 scale: 1:35,000





Map by: RE/IGN Z:\GIS\GIS\_3300\_H2CITasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Construction Routes
- Major roads
- Minor roads

**NSW crashes**

- Fatal
- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorised Injury



A3 scale: 1:35,000





Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\V\_A3L\_v2.mxd Date: 13/03/2020 14:35

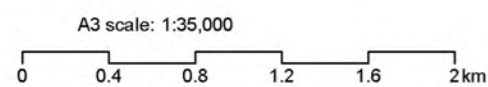


**Legend**

- Construction Routes
- Major roads
- Minor roads

**NSW crashes**

- Fatal
- Minor/Other Injury
- Moderate Injury
- Serious Injury
- Uncategorized Injury





Map by: RE/IGN z:\GIS\GIS\_3300\_H2CTasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppE\_CrashesAlongRoutes\_FF\_V\_A3L\_v2.mxd Date: 13/03/2020 14:35



**Legend**

- Localities
  - Construction Routes
  - Major roads
  - Minor roads
- NSW crashes**
- Minor/Other Injury
  - Moderate Injury
  - Serious Injury
  - Uncategorised Injury



A3 scale: 1:35,000





APPENDIX

U

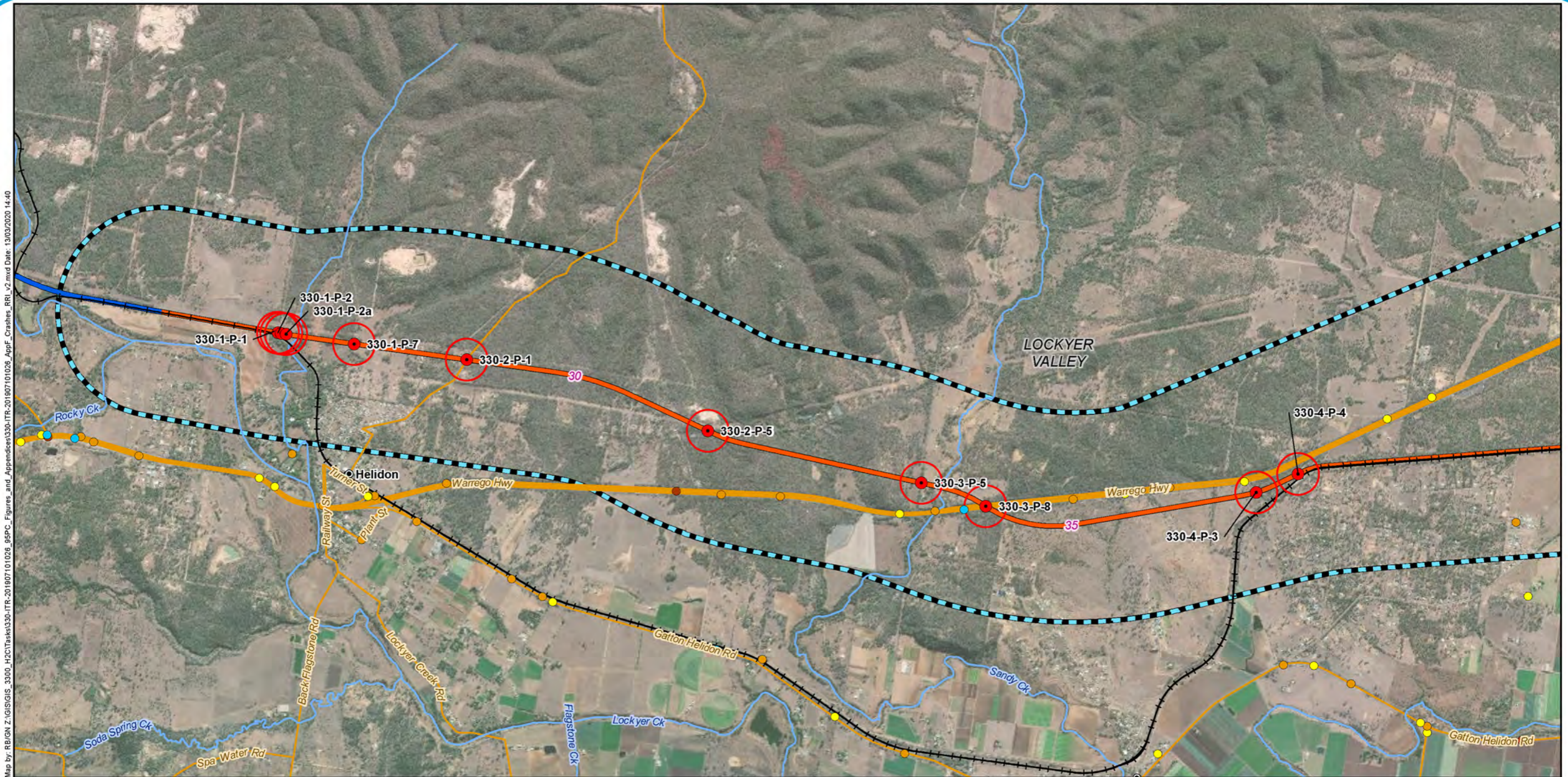
Traffic Impact Assessment

**Appendix F** Existing Road–Rail  
Interface Crashes

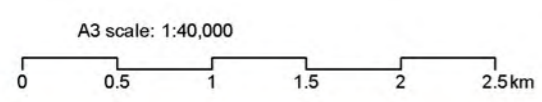
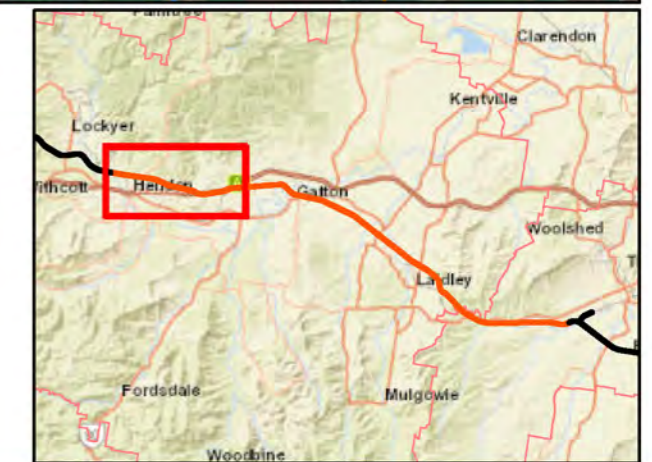
The logo for ARTC (Australian Rail Track Corporation) is located in the bottom right corner. It consists of the letters 'ARTC' in a bold, sans-serif font, with a stylized train track graphic integrated into the letter 'A'.

The Australian Government is investing  
in infrastructure through the Australian  
Rail Track Corporation (ARTC) in  
partnership with the private sector.

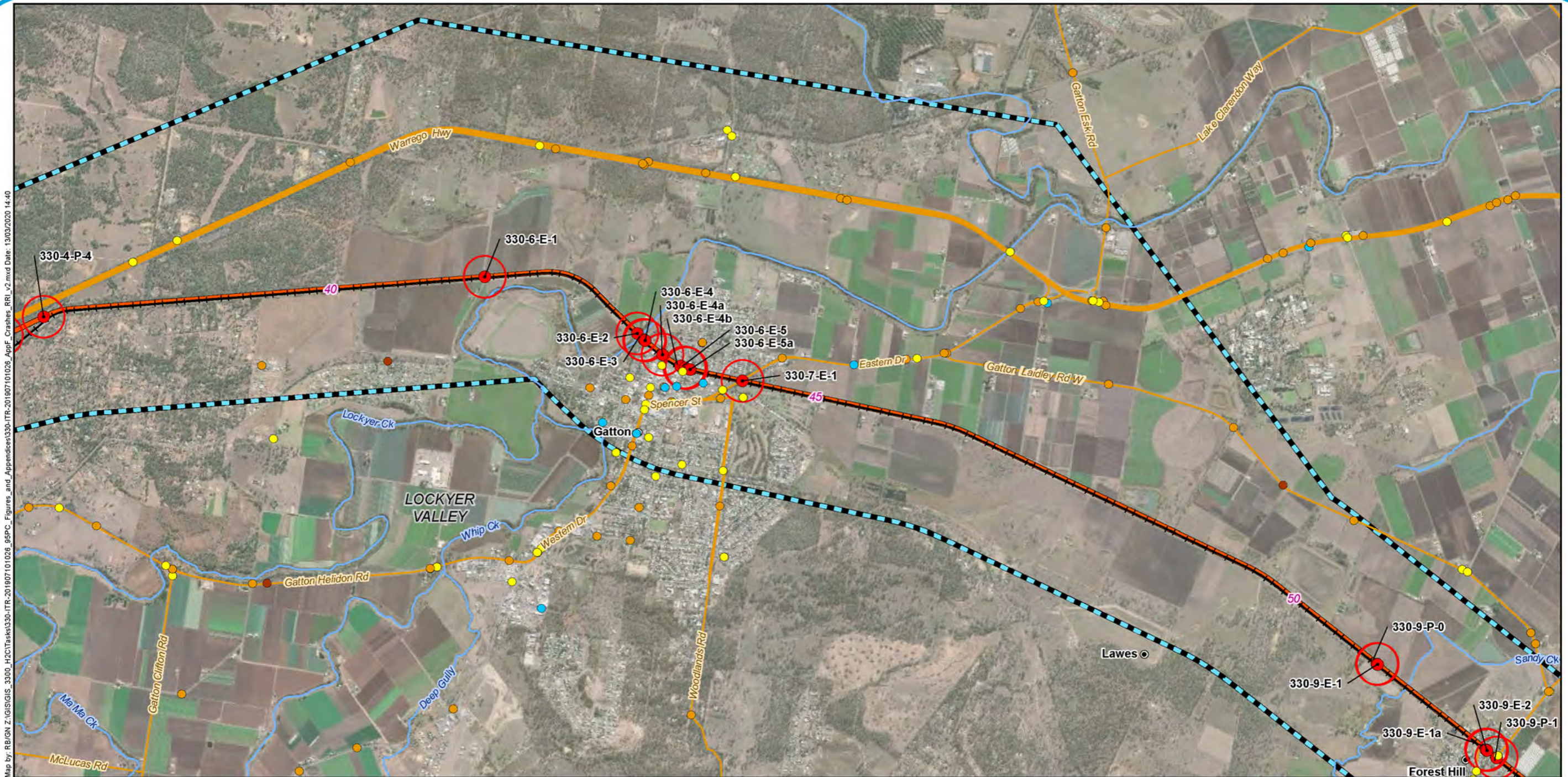




- Legend**
- Road Rail Interface
  - 5 Chainage (km)
  - Localities
  - Existing rail
  - G2H project alignment
  - H2C project alignment
  - Watercourses
  - Major roads
  - Minor roads
  - 200m buffer
  - ▭ EIS investigation corridor
  - ▭ Local Government Areas
- QLD crashes**
- Fatal
  - Hospitalisation
  - Medical treatment
  - Minor injury



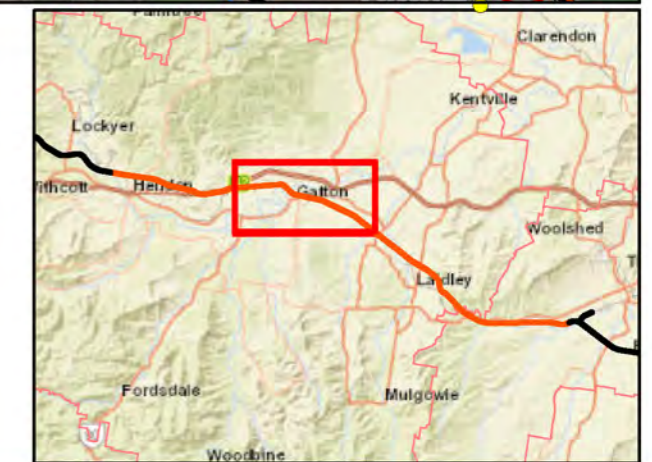




Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\330-TR-201907101026\_95PC\_Figures\_and\_Appendices\330-TR-201907101026\_AppF\_Crashes\_RRI\_v2.mxd Date: 13/03/2020 14:40

**Legend**

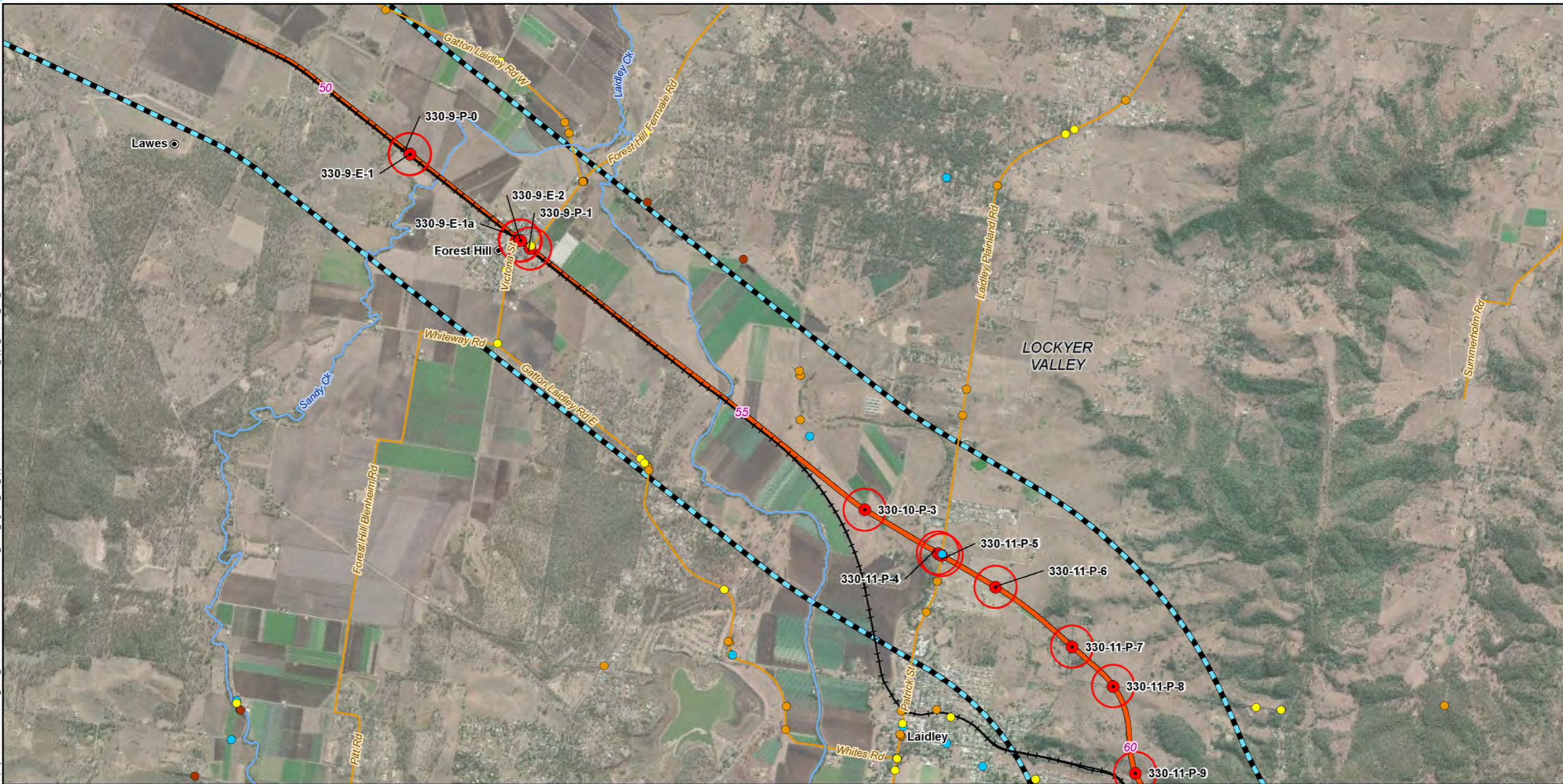
- |                         |                              |                     |
|-------------------------|------------------------------|---------------------|
| ● Road Rail Interface   | □ 200m buffer                | <b>QLD crashes</b>  |
| 5 Chainage (km)         | ▨ EIS investigation corridor | ● Fatal             |
| ● Localities            | ▭ Local Government Areas     | ● Hospitalisation   |
| — Existing rail         |                              | ● Medical treatment |
| — H2C project alignment |                              | ● Minor injury      |
| — Watercourses          |                              |                     |
| — Major roads           |                              |                     |
| — Minor roads           |                              |                     |



A3 scale: 1:40,000

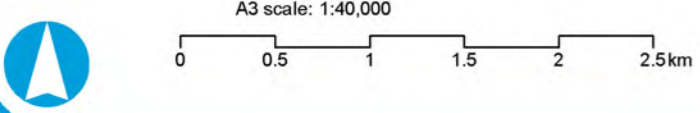
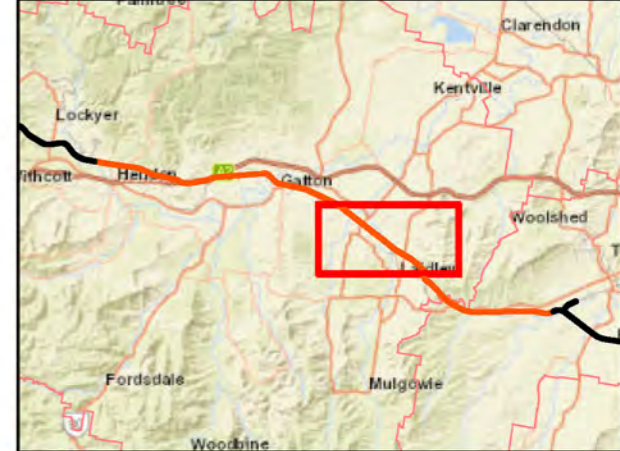




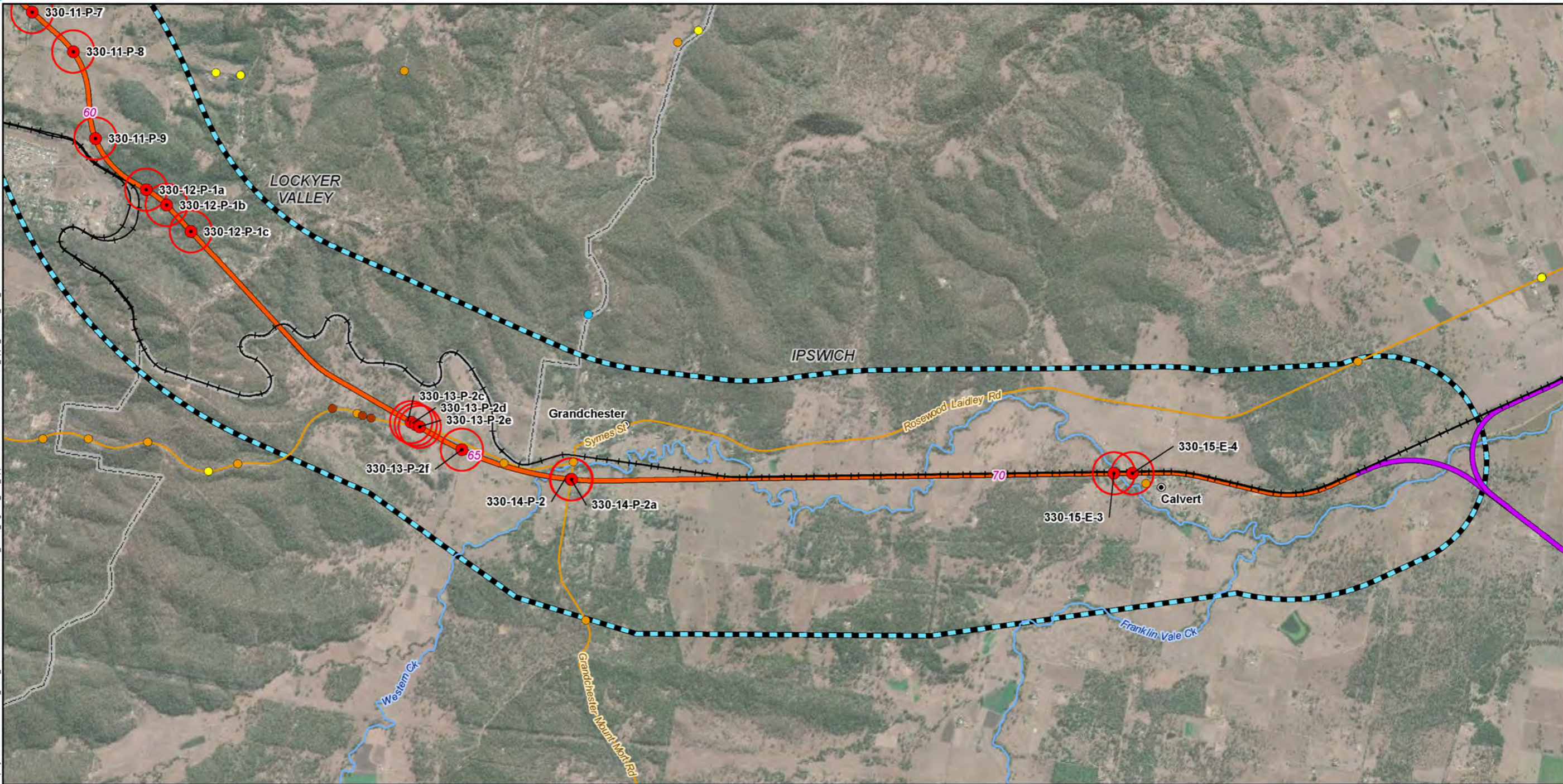


**Legend**

- Road Rail Interface
- 5 Chainage (km)
- Localities
- Existing rail
- H2C project alignment
- Watercourses
- Minor roads
- 200m buffer
- EIS investigation corridor
- Local Government Areas
- QLD crashes**
- Fatal
- Hospitalisation
- Medical treatment
- Minor injury

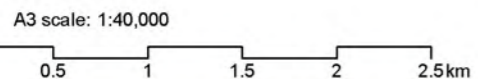
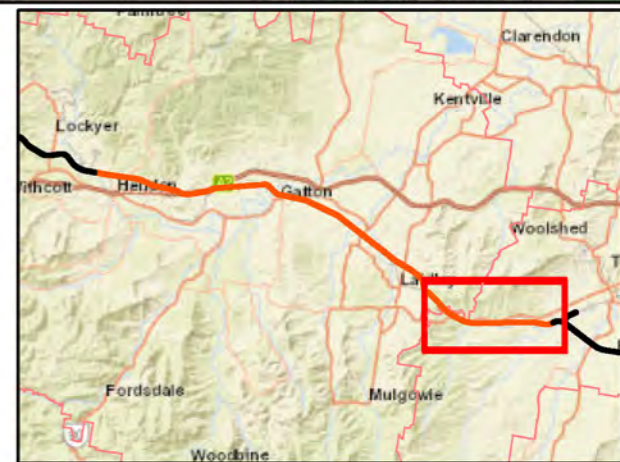






**Legend**

- Road Rail Interface
  - 5 Chainage (km)
  - Localities
  - Existing rail
  - H2C project alignment
  - C2K project alignment
  - Watercourses
  - Minor roads
  - 200m buffer
  - EIS investigation corridor
  - Local Government Areas
- QLD crashes**
- Fatal
  - Hospitalisation
  - Medical treatment
  - Minor injury





APPENDIX

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Traffic Impact Assessment

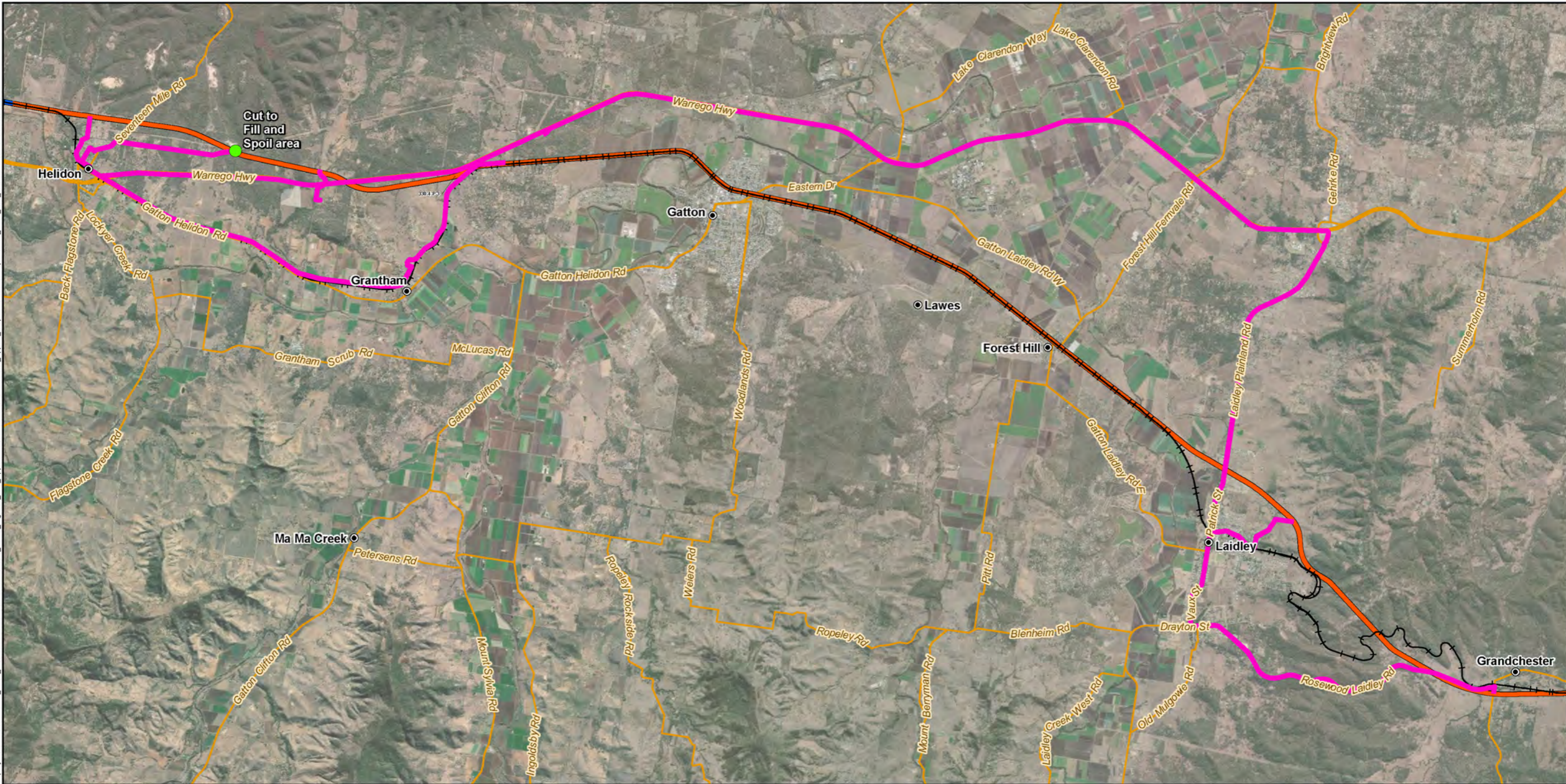
**Appendix G** Mass Haul Construction  
Traffic Routes

ARTC

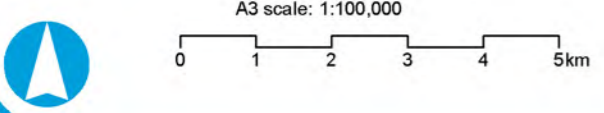
The Australian Government is investing  
in infrastructure through the Australian  
Infrastructure Corporation (AIC) in  
partnership with the private sector.



Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppXX\_ProposedConstTransporoutes\_FF\_V\_A3\_v2.mxd Date: 18/03/2020 09:59



- Legend**
- Localities
  - Mass Haul supplier
  - Mass Haul Construction Routes
  - Existing rail
  - Major roads
  - Minor roads
  - G2H project alignment
  - H2C project alignment





APPENDIX

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Traffic Impact Assessment

**Appendix H** Concrete Construction  
Traffic Routes

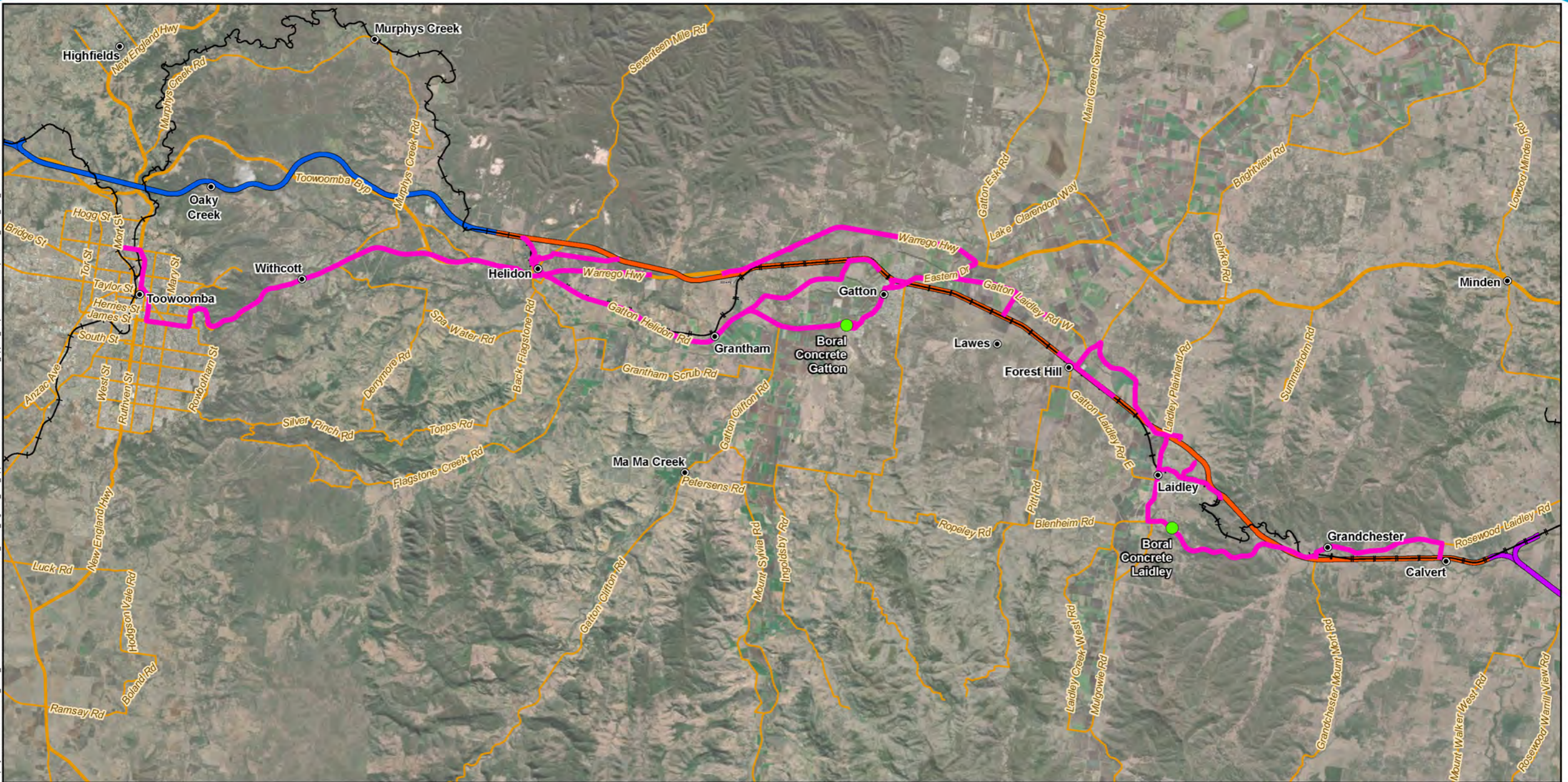


ARTC

The Australian Government is providing  
financial support through the Australian  
Rail Track Corporation (ARTC) in  
partnership with the rail industry.

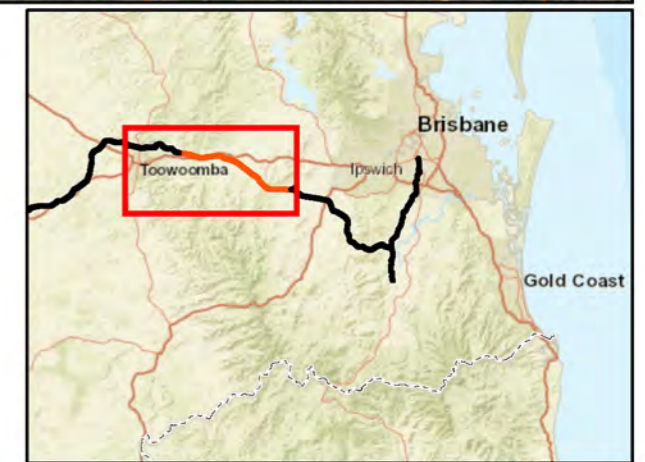


Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppX\_ProposedConstTransportRoutes\_FF\_V\_A3\_v2.mxd Date: 18/03/2020 10:16



**Legend**

- Localities
- Concrete supplier
- Concrete Construction Routes
- Existing rail
- Major roads
- Minor roads
- G2H project alignment
- H2C project alignment
- C2K project alignment



A3 scale: 1:180,000





APPENDIX

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Traffic Impact Assessment

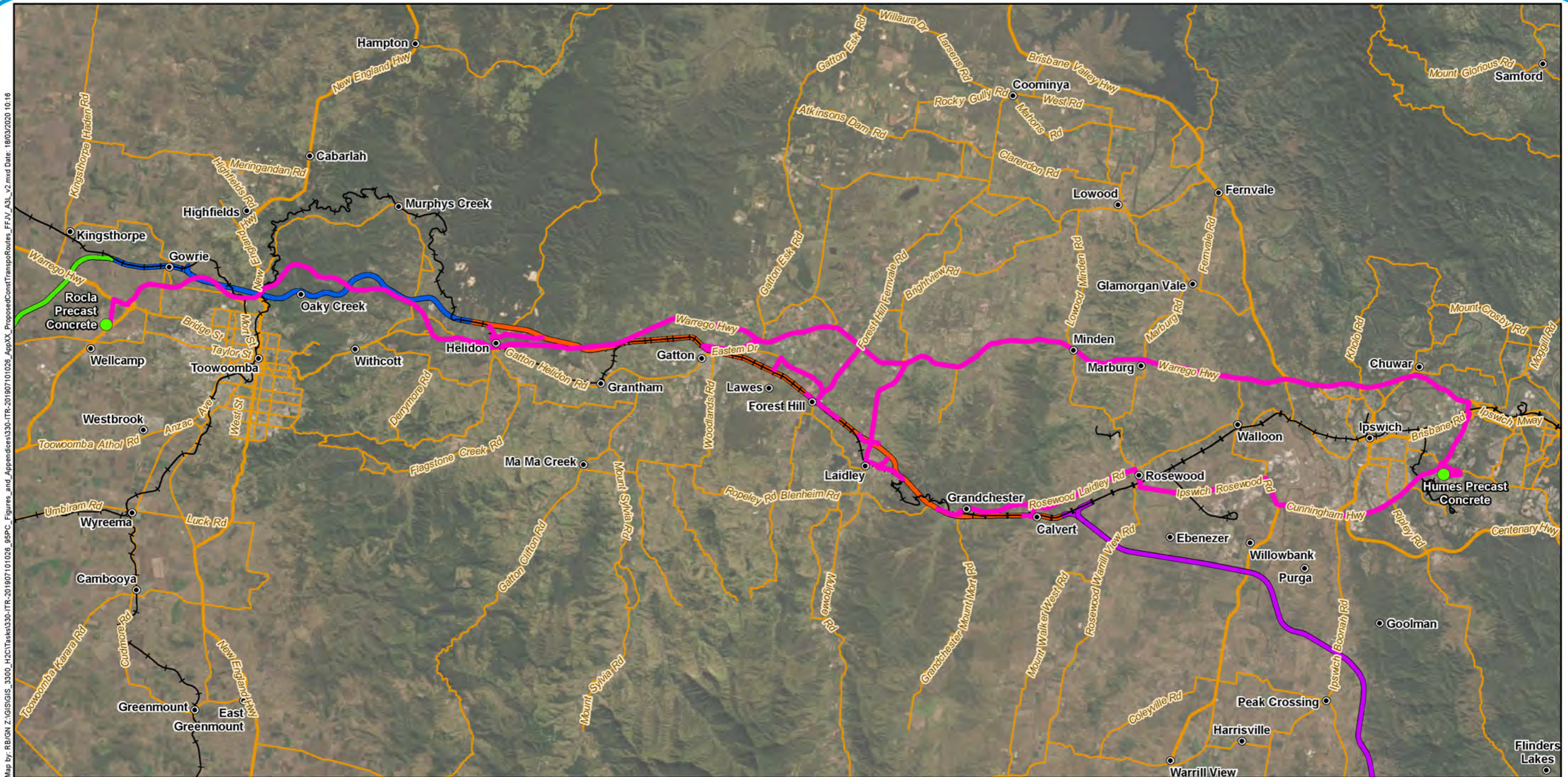
**Appendix I** Precast Concrete  
Construction Traffic  
Routes

ARTC

The Australian Government is investing  
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Rail Track Corporation (ARTC) to  
improve growth in our economy.

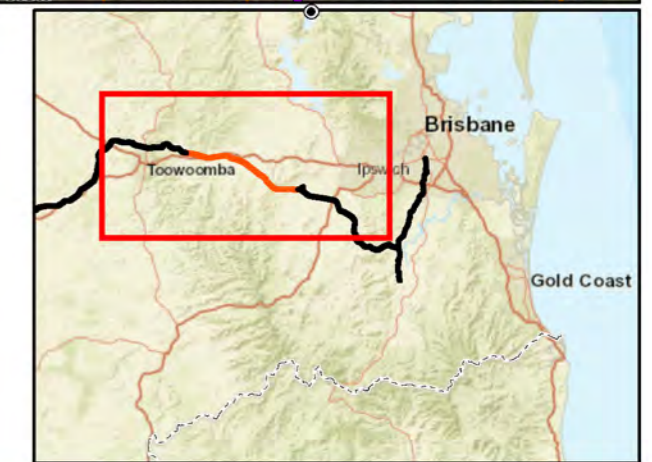


Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\3300-TR-201907101026\_95PC\_Figures\_and\_Appendices\3300-TR-201907101026\_AppX\_ProposedConstTransporRoutes\_FF\_V\_A3\_v2.mxd Date: 18/03/2020 10:16



**Legend**

- Localities
- Precast Concrete supplier
- Precast Concrete Construction Routes
- Existing rail
- Major roads
- Minor roads
- B2G project alignment
- G2H project alignment
- H2C project alignment
- C2K project alignment



A3 scale: 1:300,000





APPENDIX

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Traffic Impact Assessment

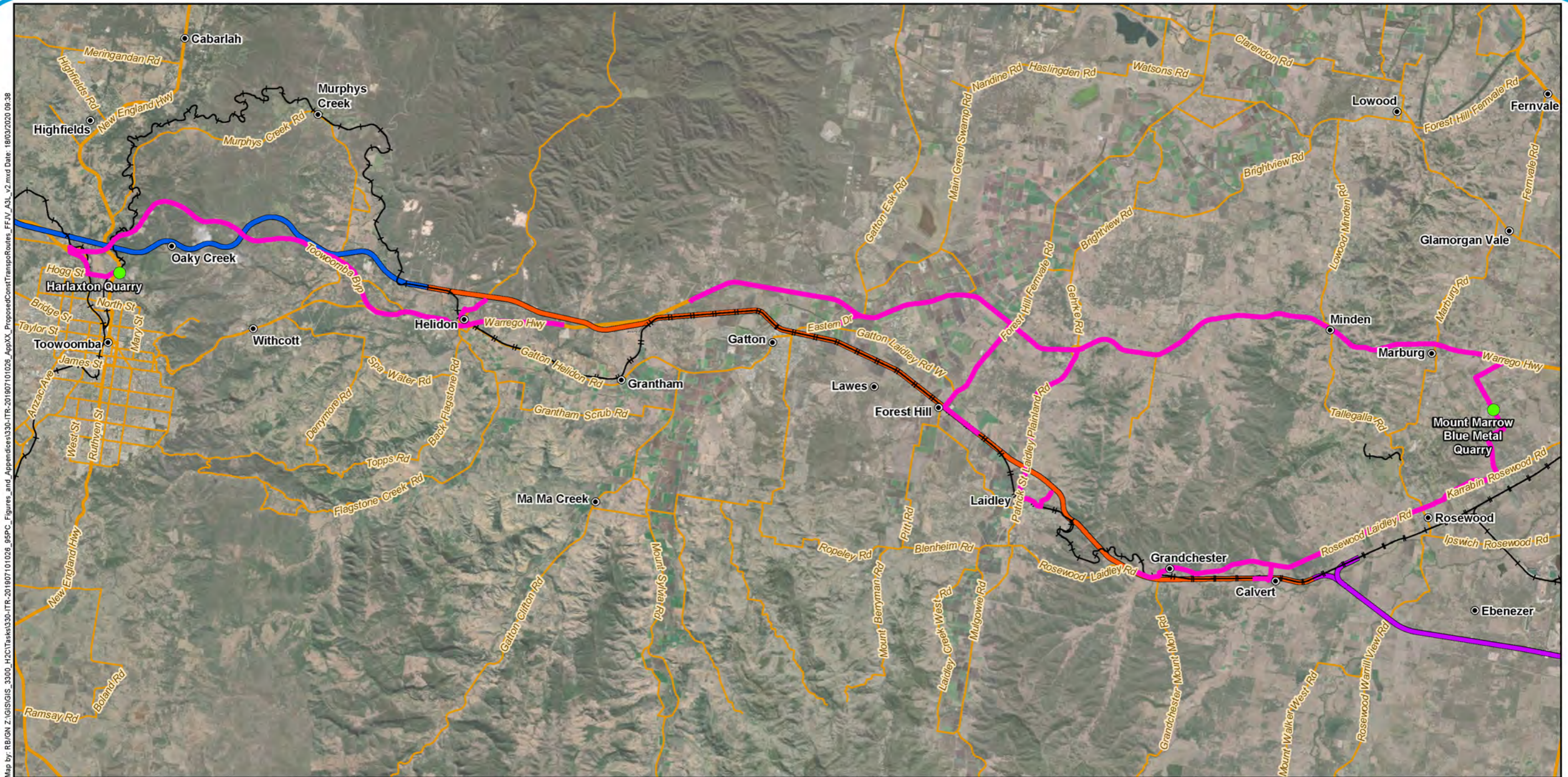
**Appendix J** Quarry Construction  
Traffic Routes

ARTC

The Australian Government is investing  
in infrastructure through the Australian  
Rail Track Corporation (ARTC) to  
improve growth in our economy.

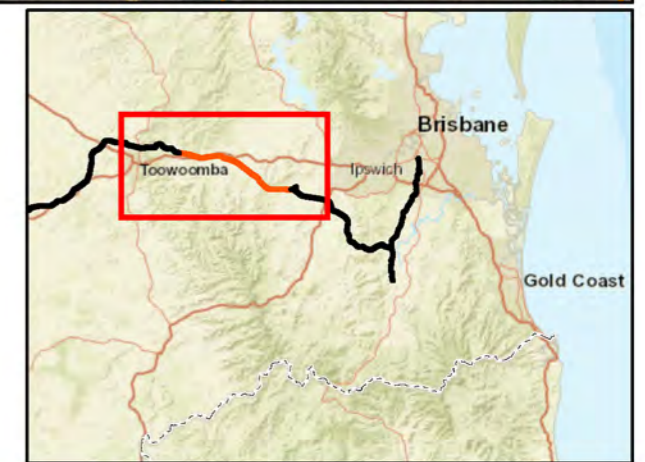


Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\3300-ITR-201907101026\_95PC\_Figures\_and\_Appendices\3300-ITR-201907101026\_AppX\_ProposedConstTranspoRoutes\_FF\_V\_A3L\_v2.mxd Date: 18/03/2020 09:38

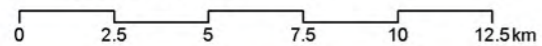


**Legend**

- Localities
- Quarry supplier
- Quarry Construction Routes
- Existing rail
- Major roads
- Minor roads
- G2H project alignment
- H2C project alignment
- C2K project alignment



A3 scale: 1:200,000





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Traffic Impact Assessment

**Appendix K** Sleeper Construction  
Traffic Routes

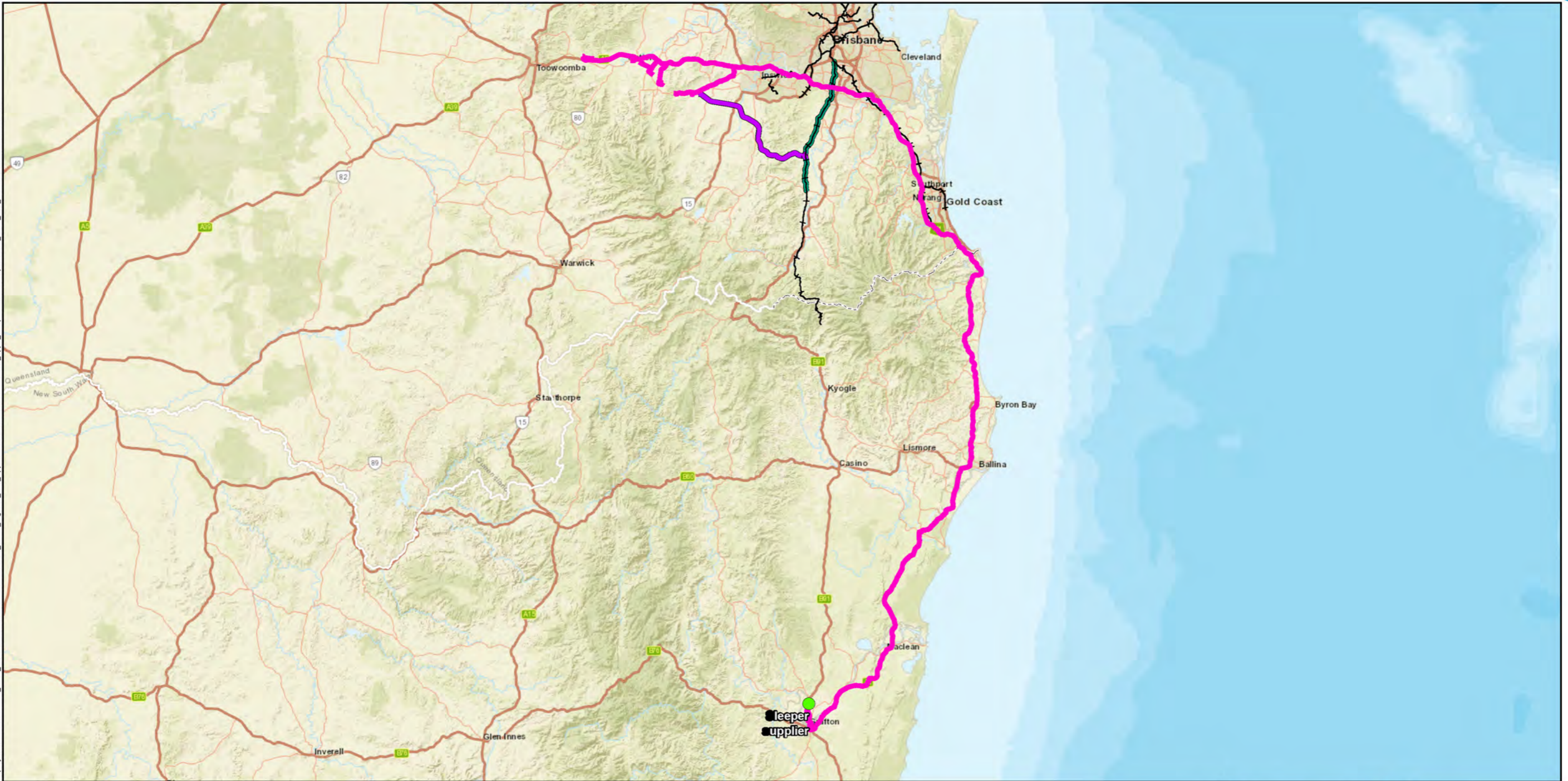


ARTC

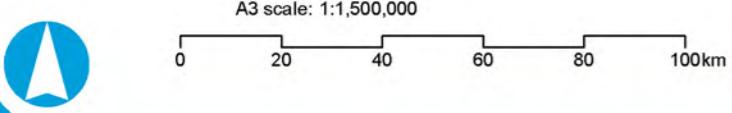
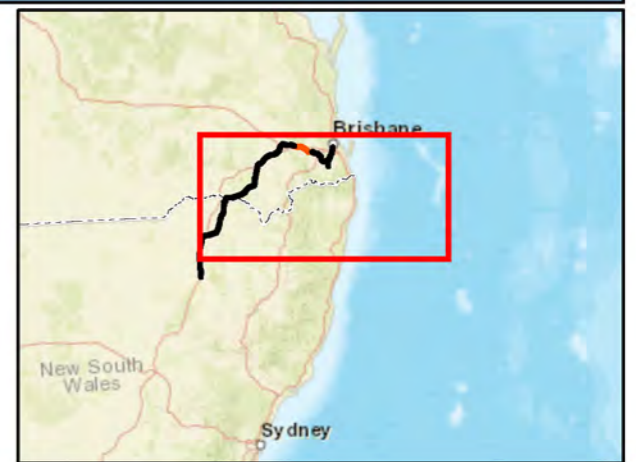
The Australian Government is investing  
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Rail Track Corporation (ARTC) to  
improve growth in our economy.



Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppK\_SleepersConstTranspoRoutes\_FF\_V\_A3L\_v2.mxd Date: 16/03/2020 15:44



- Sleepers Construction Routes
- Existing rail
- QLD/NSW border [inset]
- N2NS project alignment
- NS2B project alignment
- G2H project alignment
- H2C project alignment
- C2K project alignment
- K2ARB project alignment





APPENDIX

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Traffic Impact Assessment

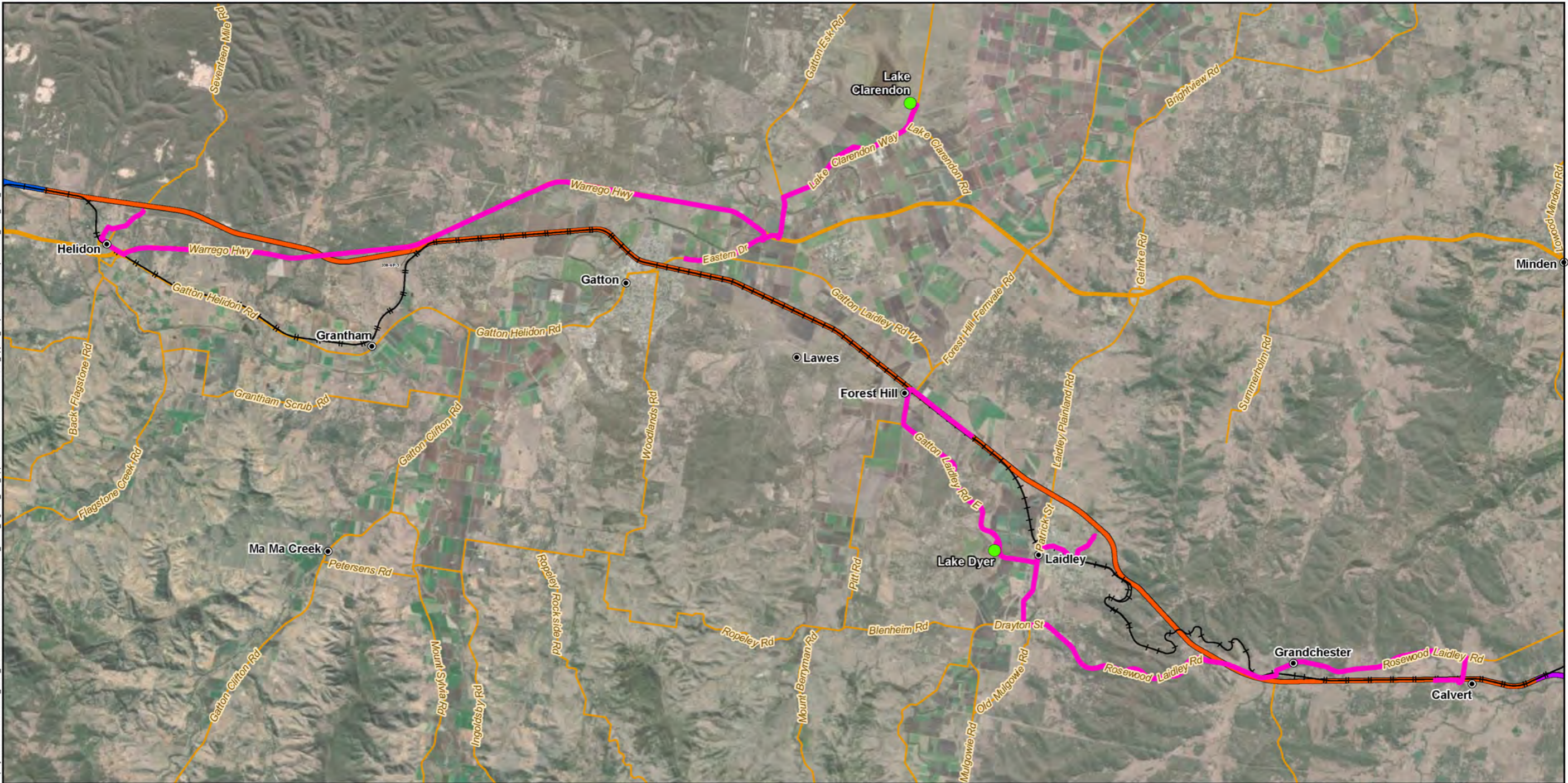
**Appendix L** Water Construction  
Traffic Routes

ARTC

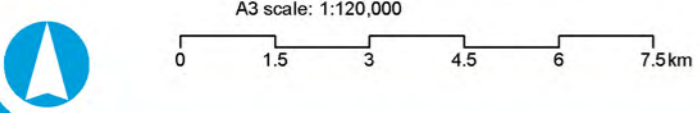
The Australian Government is providing  
financial support through the Australian  
Rail Track Corporation (ARTC) in  
partnership with the rail industry.



Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95PC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppX\_ProposedConstTransporRoutes\_FF\_V\_A3\_1\_v2.mxd Date: 18/03/2020 10:16



- Legend**
- Localities
  - Water supplier
  - Water Construction Routes
  - Existing rail
  - Major roads
  - Minor roads
  - G2H project alignment
  - H2C project alignment
  - C2K project alignment





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Traffic Impact Assessment

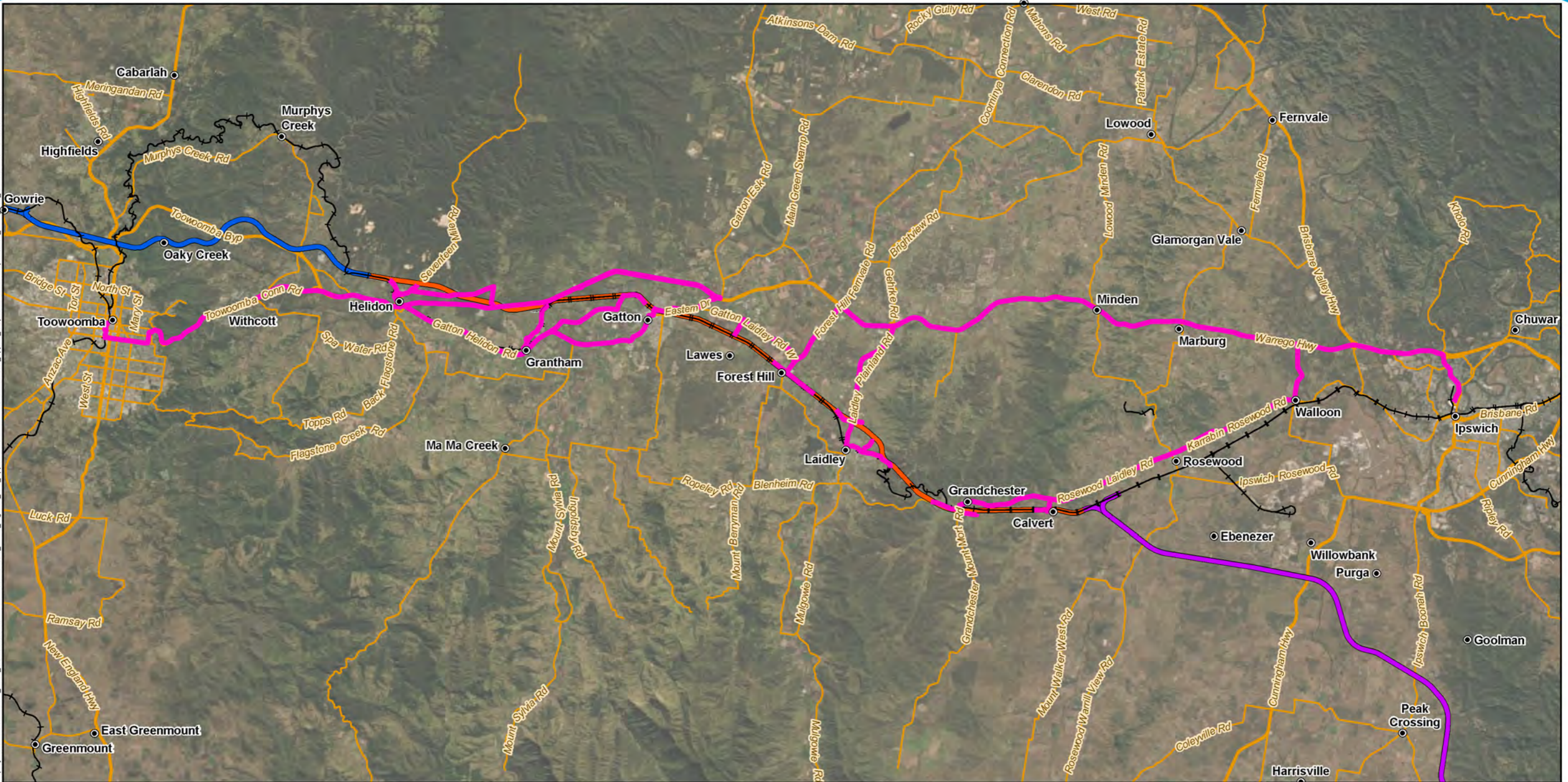
**Appendix M** Workforce Construction  
Traffic Routes



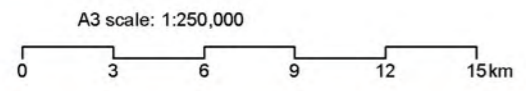
ARTC

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improve growth in our economy.





- Legend**
- Localities
  - Workforce Construction Routes
  - Existing rail
  - Major roads
  - Minor roads
  - G2H project alignment
  - H2C project alignment
  - C2K project alignment





APPENDIX

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Traffic Impact Assessment

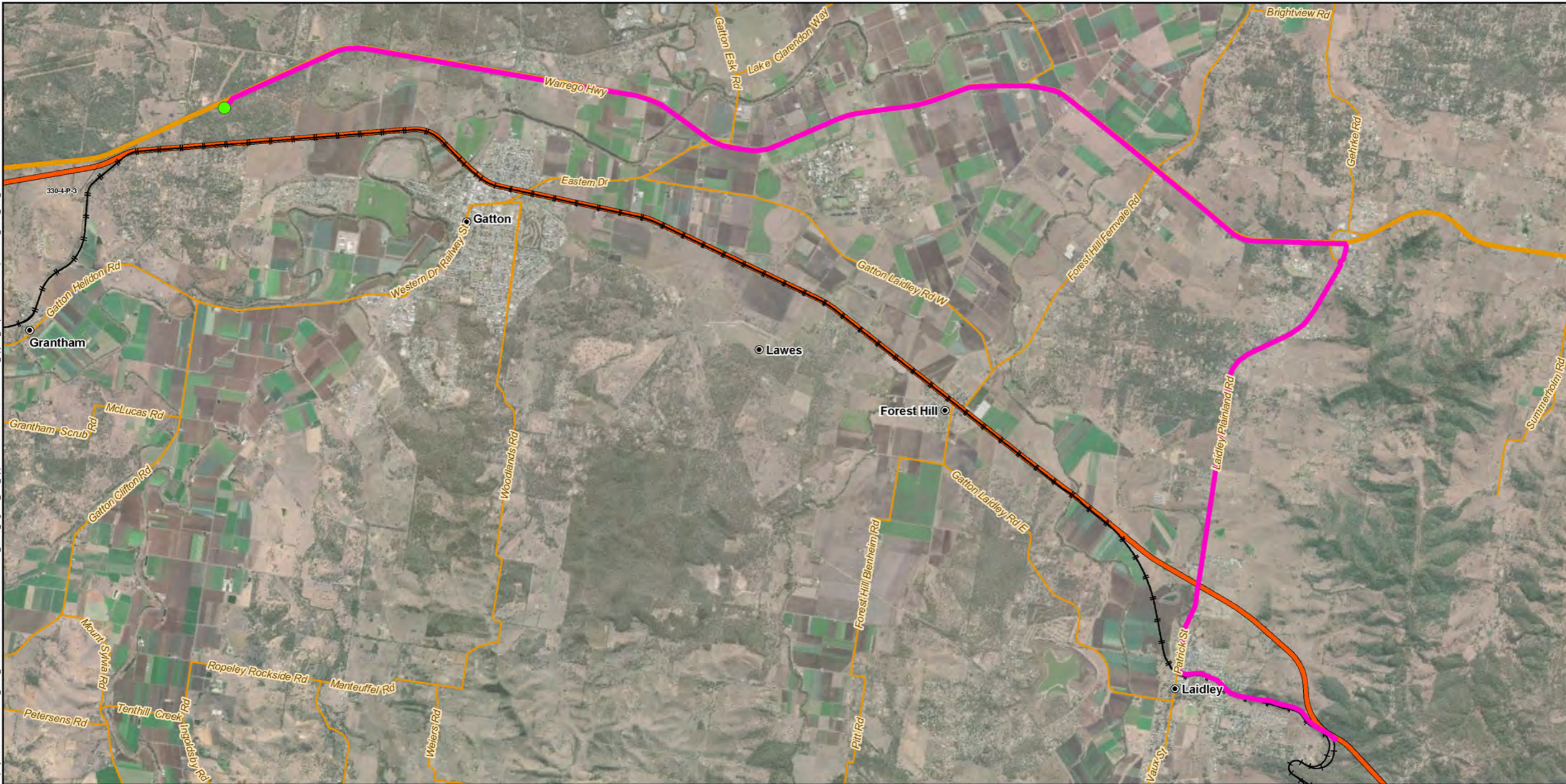
**Appendix N** Tunnel Spoil Construction  
Traffic Routes

ARTC

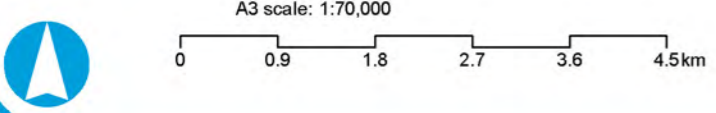
The Australian Government is delivering  
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partnership with its private industry partners.



Map by: RE/IGN Z:\GIS\GIS\_3300\_H2C\Tasks\3300-TR-201907101026\_95PC\_Figures\_and\_Appendices\3300-TR-201907101026\_AppX\_ProposedConstTranspoRoutes\_FF\_V\_A3\_v2.mxd Date: 18/03/2020 13:00



- Legend**
- Localities
  - Potential spoil reuse location
  - Tunnel Spoil Construction Routes
  - Existing rail
  - Major roads
  - Minor roads
  - H2C project alignment





APPENDIX

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Traffic Impact Assessment

**Appendix 0** Multi-Combination  
Heavy Vehicle Routes



ARTC

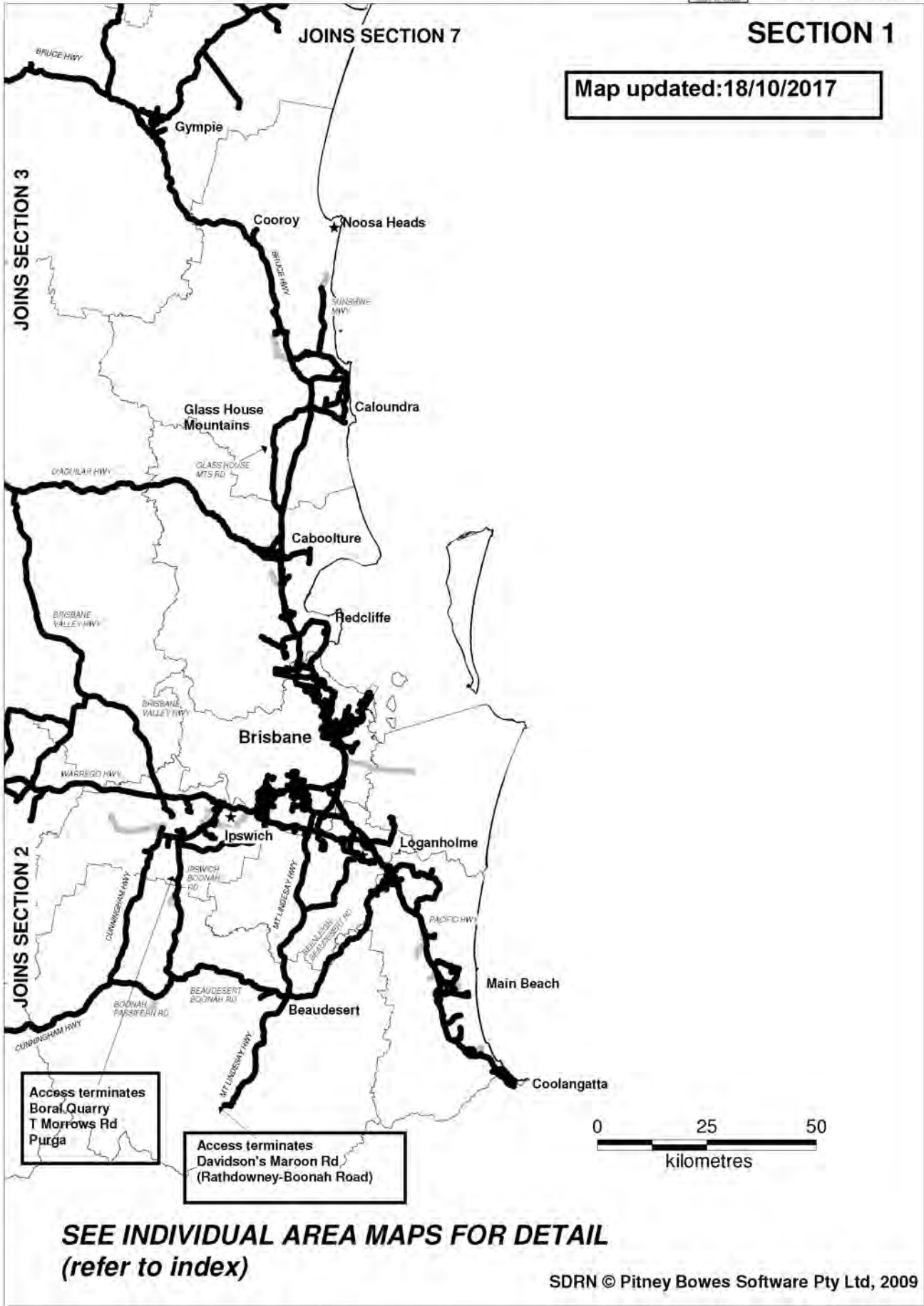
The Australian Government is investing  
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improve growth in our economy.





SECTION 1

Map updated: 18/10/2017



**SEE INDIVIDUAL AREA MAPS FOR DETAIL**  
(refer to index)

SDRN © Pitney Bowes Software Pty Ltd, 2009

<p><b>B-DOUBLES</b></p> <p> 23 metre routes</p> <p> 23 &amp; 25 metre routes</p>	<p><b>ROAD TRAINS</b></p> <p> Type 1 routes</p> <p> Type 1 &amp; 2 routes</p>	<p><b>NO ROAD TRAINS or B-DOUBLES</b></p> <p></p>
--	---	---

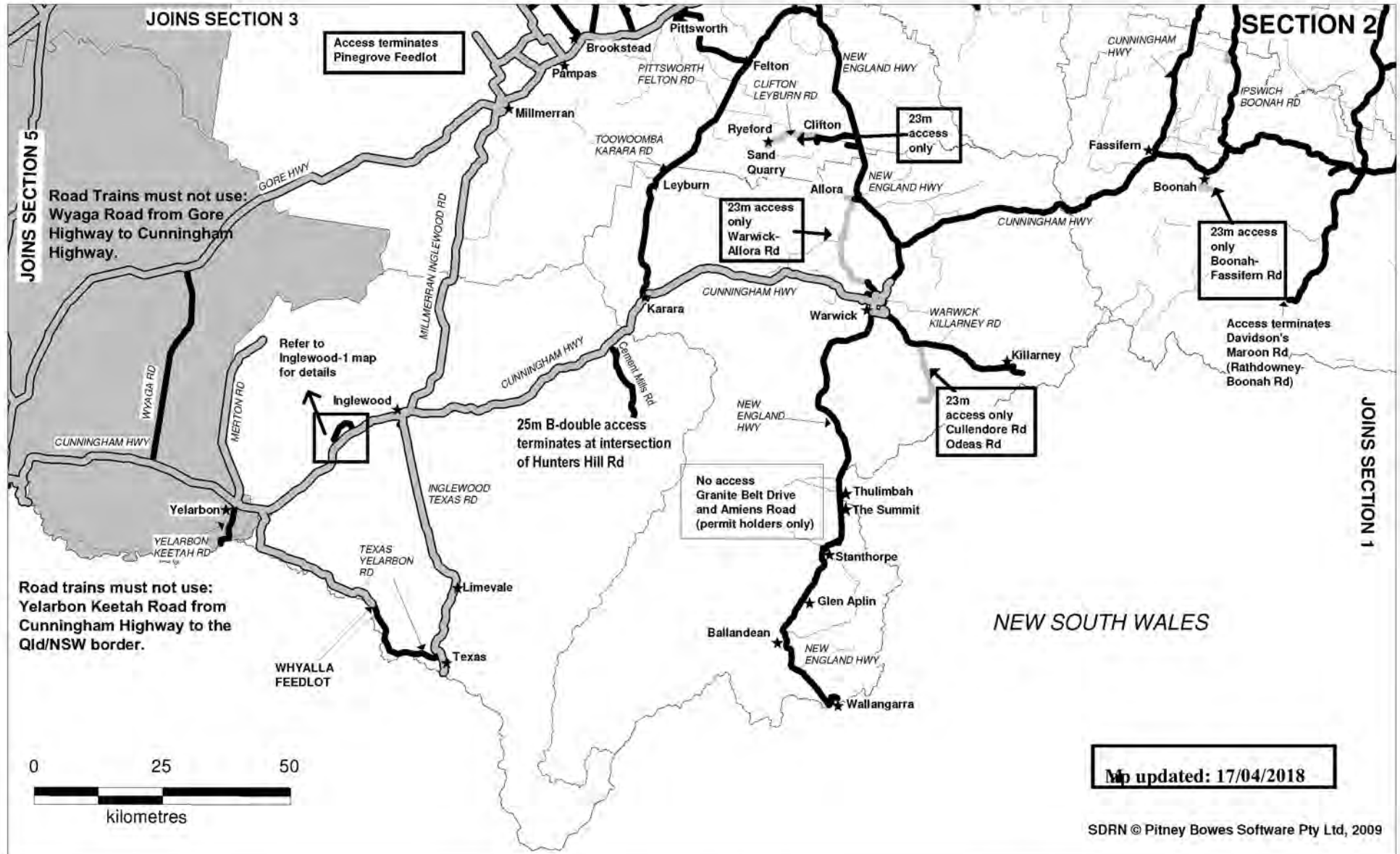
REFER TO LEGEND FOR DETAILS OF OPERATIONS IN THE SHADED AREA

Note: 23 & 25 metre B-doubles can access Type 1 & 2 road train routes





# MULTI-COMBINATION ROUTES IN QUEENSLAND



B-DOUBLES	
	23 metre routes
	23 & 25 metre routes

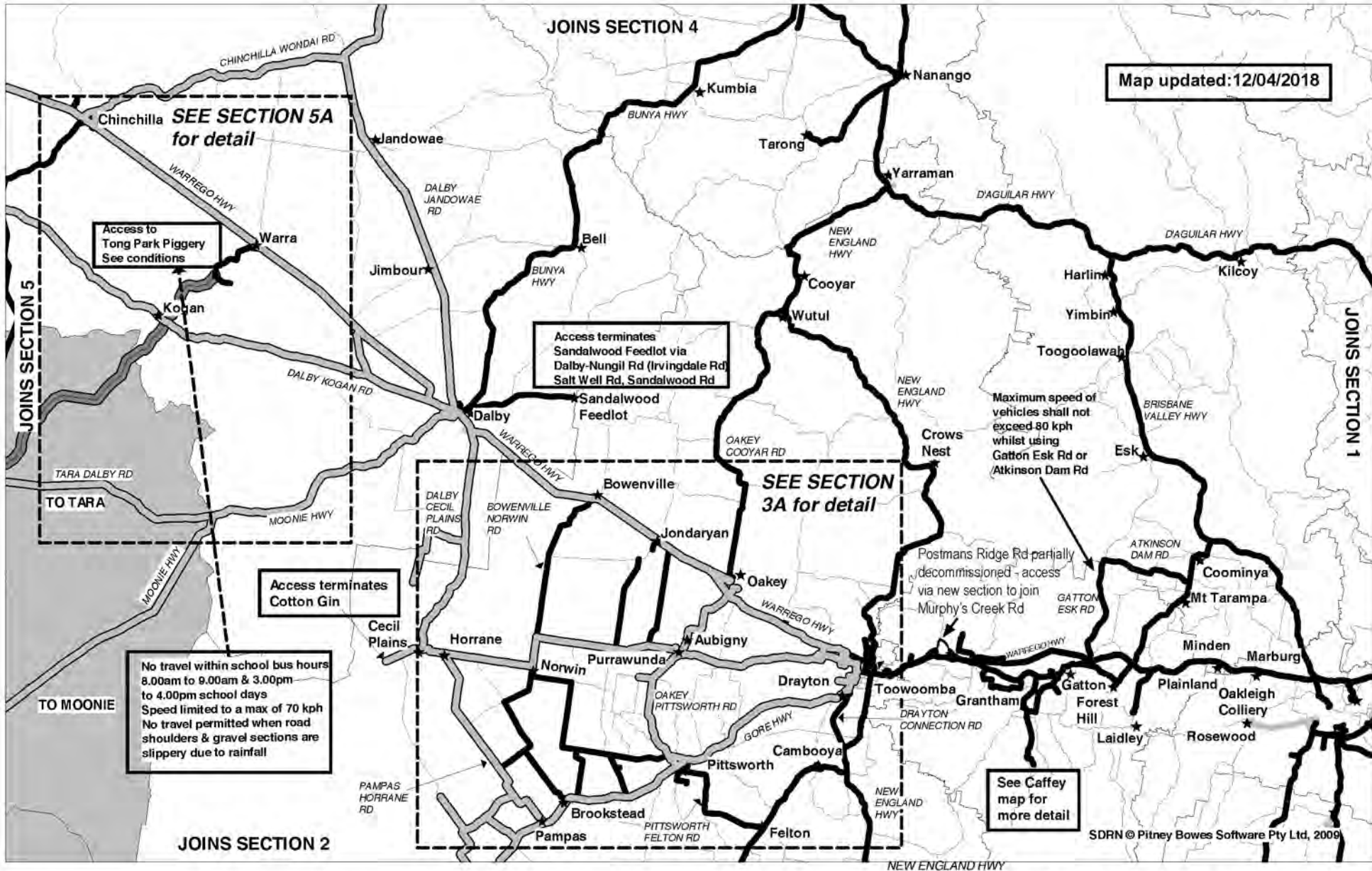
ROAD TRAINS	
	Type 1 routes
	Type 1 & 2 routes

NO ROAD TRAINS or B-DOUBLES	

**REFER TO LEGEND FOR DETAILS OF OPERATIONS IN THE SHADED AREAS**  
 Note: 23 & 25 metre B-doubles can access Type 1 & 2 road train routes



# MULTI-COMBINATION ROUTES IN QUEENSLAND



**B-DOUBLES**  
 — 23 metre routes  
 — 23 & 25 metre routes

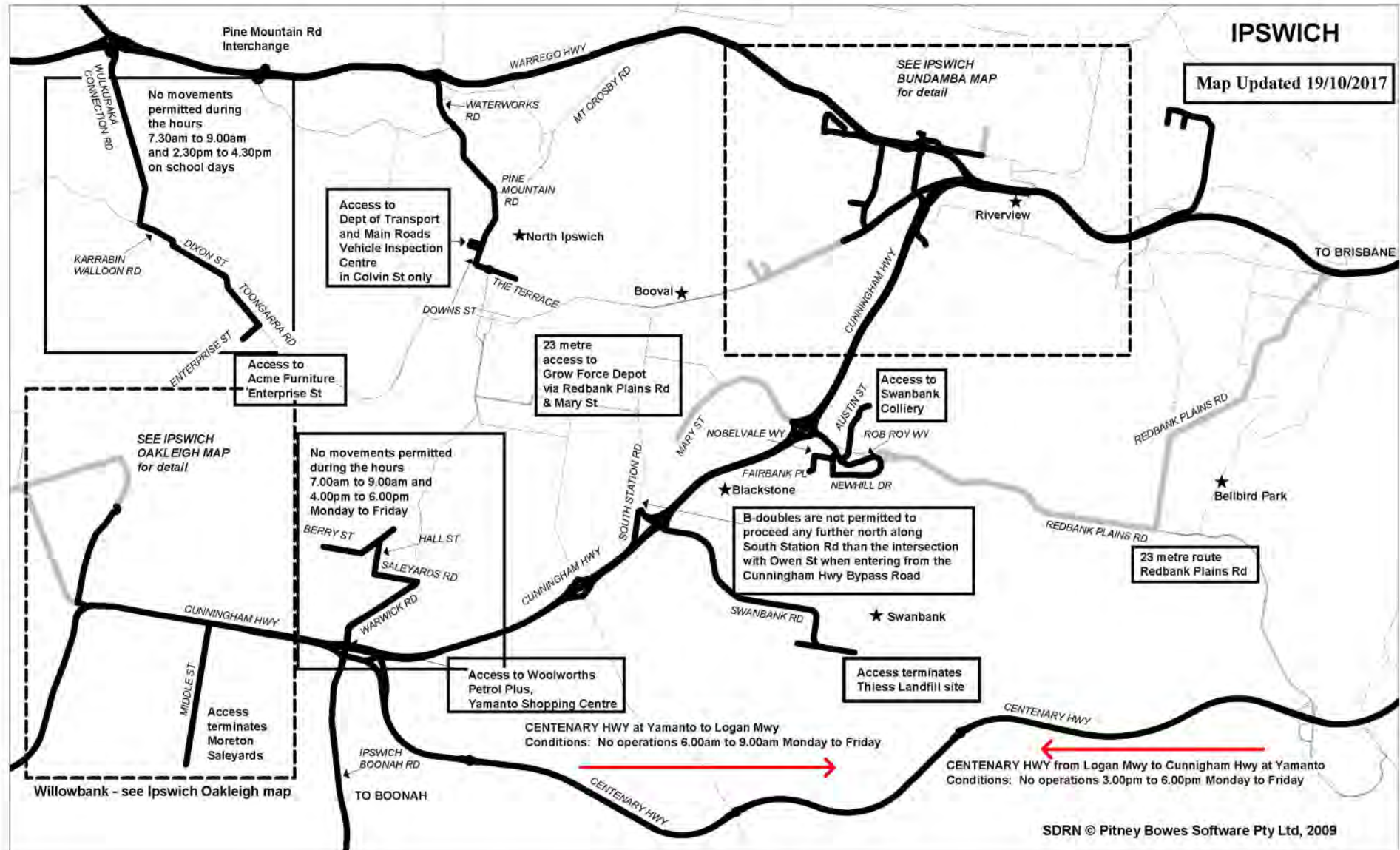
**ROAD TRAINS**  
 — Type 1 routes  
 — Type 1 & 2 routes

**NO ROAD TRAINS or B-DOUBLES**

**REFER TO LEGEND FOR DETAILS OF OPERATIONS IN THE SHADED AREAS**  
 Note: 23 & 25 metre B-doubles can access Type 1 & 2 road train routes



# MULTI-COMBINATION ROUTES IN QUEENSLAND



SDRN © Pitney Bowes Software Pty Ltd, 2009

**REFER TO LEGEND FOR DETAILS OF OPERATIONS IN THE SHADED AREAS**  
Note: 23 & 25 metre B-doubles can access Type 1 & 2 road train routes







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Traffic Impact Assessment

**Appendix P** Detailed Link Analysis

ARTC

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partnership with its rail industry partners.





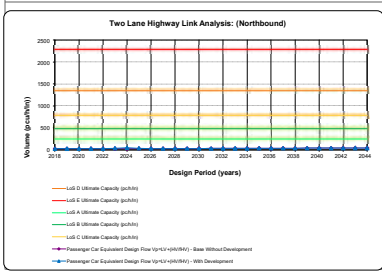


Section Route: Between Warrego Highway and Mount Marrow Quarry Road  
 Haigies Malabar Road

Link Locality:

Haigies Malabar Road - Between Warrego Highway and Mount Marrow Quarry RoadNorthbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Light Vehicle Volume (veh/h)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11		
Terrain Type (L = Level, R = Rolling, M = Mountaineous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
LoS B Ultimate Capacity (pc/h/mi)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250		
LoS B Ultimate Capacity (pc/h/mi)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480		
LoS C Ultimate Capacity (pc/h/mi)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790		
LoS D Ultimate Capacity (pc/h/mi)	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300		
LoS E Ultimate Capacity (pc/h/mi)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200		
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Number of Trucks (veh/h)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
Total vehicles (veh/h)	20	21	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	31	31	32	32	33	34	
Passenger Car Equivalent (E)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Percentage Trucks (PT)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47		
Heavy vehicle factor (HVF=(1+PT*(E-1)))	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81		
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Average Annual Daily Traffic (AADT)	202	206	210	214	218	223	227	232	237	241	245	251	256	261	267	272	277	283	289	294	300	306	312	318	323	328		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		
Design Hour Volume (DfV = 30th Highest Factor)	20	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	31	31	32	32	33	34		
Passenger Car Equivalent Design Flow Vp=(Vd*HVF)/PHF - Base Without Development	25	25	26	26	27	28	28	29	29	30	30	31	32	32	33	34	34	35	36	36	37	38	39	39	40	41	42	
Passenger Car Equivalent Design Flow Vp=(Vd*HVF)/PHF - With Development	25	25	26	26	27	27	28	28	29	29	30	30	31	32	32	33	34	34	35	36	36	37	38	39	39	40	41	42
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	



Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Light Vehicle Volume (veh/h)	11	11	11	11	12	12	12	12	13	13	13	14	14	14	14	15	15	15	16	16	16	16	17	17	17	18	18	
Terrain Type (L = Level, R = Rolling, M = Mountaineous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
LoS B Ultimate Capacity (pc/h/mi)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
LoS B Ultimate Capacity (pc/h/mi)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
LoS C Ultimate Capacity (pc/h/mi)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	
LoS D Ultimate Capacity (pc/h/mi)	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	
LoS E Ultimate Capacity (pc/h/mi)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	10	10	10	10	10	11	11	11	11	11	11	12	12	12	13	13	13	14	14	14	14	15	15	15	16	16	16	
Total vehicles (veh/h)	20	21	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	31	31	32	32	33	34	
Passenger Car Equivalent (E)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47		
Average Annual Daily Traffic (AADT)	202	206	210	214	218	223	227	232	237	241	245	251	256	261	267	272	277	283	289	294	300	306	312	318	323	328	333	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Passenger Car Equivalent Design Flow Vp=(Vd*HVF)/PHF - Base Without Development	25	25	26	26	27	28	28	29	29	30	30	31	32	32	33	34	34	35	36	36	37	38	39	39	40	41	42	
Passenger Car Equivalent Design Flow Vp=(Vd*HVF)/PHF - With Development	25	25	26	26	27	27	28	28	29	29	30	30	31	32	32	33	34	34	35	36	36	37	38	39	39	40	41	42
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	

Section Route: Between Warrego Highway and Mount Marrow Quarry Road  
 Haigies Malabar Road

Link Locality:

Haigies Malabar Road - Between Warrego Highway and Mount Marrow Quarry RoadSouthbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	12	12	12	12	13	13	13	13	14	14	14	14	14	15	15	15	16	16	16	17	17	17	18	18	18	19	19
Terrain Type (L = Level, R = Rolling, M = Mountaineous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS B Ultimate Capacity (pc/h/mi)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
LoS B Ultimate Capacity (pc/h/mi)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/mi)	790	790	790</																								



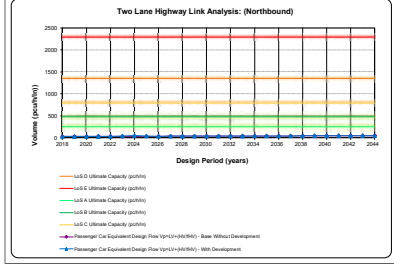




Section Between Hagiaea Malabar Road and Mount Marrow Quarry  
Route Link Locality: Mount Marrow Quarry Road

**Mount Marrow Quarry Road - Between Hagiaea Malabar Road and Mount Marrow Road - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288
Light Vehicle Volume (veh/h)	11	11	11	11	12	12	12	12	12	13	13	13	14	14	14	14	15	15	15	16	16	16	16	17	17	17	18
Terrain Type (L = Level, R = Rolling, M = Mountaintop)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484
Load C Ultimate Capacity (pc/h/ln)	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792
Load D Ultimate Capacity (pc/h/ln)	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342
Load E Ultimate Capacity (pc/h/ln)	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total vehicles (veh/h)	12	12	12	12	12	13	13	13	13	14	14	14	15	15	15	16	16	16	17	17	17	18	18	18	19	19	19
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Heavy vehicle factor (HV=1+(PT*(ET-1)))	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	202	206	210	214	219	223	227	232	237	241	246	251	256	261	267	272	277	283	289	294	300	306	312	319	325	331	338
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knoblock (30th Highest / AADT)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Design Hour Volume (ADT * 30th Highest Factor)	22	23	23	24	24	25	25	26	27	27	28	29	29	30	31	32	32	33	34	34	35	36	37	38	39	40	41
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - Base Without Development	28	29	29	30	30	31	32	32	33	33	34	35	36	36	37	38	38	39	40	41	42	43	44	44	45	46	47
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - With Development	28	29	29	30	30	31	32	32	33	33	34	35	36	36	37	38	38	39	40	41	42	43	44	44	45	46	47
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01



**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288
Light Vehicle Volume (veh/h)	11	11	11	11	12	12	12	12	12	13	13	13	14	14	14	14	15	15	15	16	16	16	16	17	17	17	18
Terrain Type (L = Level, R = Rolling, M = Mountaintop)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484
Load C Ultimate Capacity (pc/h/ln)	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792
Load D Ultimate Capacity (pc/h/ln)	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342	1342
Load E Ultimate Capacity (pc/h/ln)	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total vehicles (veh/h)	22	23	23	24	24	25	25	26	27	27	28	29	29	30	31	32	32	33	34	34	35	36	37	38	39	40	41
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Heavy vehicle factor (HV=1+(PT*(ET-1)))	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	202	206	210	214	219	223	227	232	237	241	246	251	256	261	267	272	277	283	289	294	300	306	312	319	325	331	338
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knoblock (30th Highest / AADT)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Design Hour Volume (ADT * 30th Highest Factor)	22	23	23	24	24	25	25	26	27	27	28	29	29	30	31	32	32	33	34	34	35	36	37	38	39	40	41
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - Base Without Development	28	29	29	30	30	31	32	32	33	33	34	35	36	36	37	38	38	39	40	41	42	43	44	44	45	46	47
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - With Development	28	29	29	30	30	31	32	32	33	33	34	35	36	36	37	38	38	39	40	41	42	43	44	44	45	46	47
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Section Between Hagiaea Malabar Road and Mount Marrow Quarry  
Route Link Locality: Mount Marrow Quarry Road

**Mount Marrow Quarry Road - Between Hagiaea Malabar Road and Mount Marrow Road - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288	2288
Light Vehicle Volume (veh/h)	12	12	12	12	12	13	13	13	13	14	14	14	15	15	15	16	16	16	17	17	17	18	18	18	19	19	19
Terrain Type (L = Level, R =																											









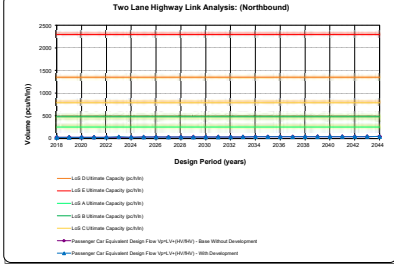


Not Done Yet

Section: Between Karrabin Rosewood Road and Schumanns Road  
Route: Thagoona Haigles Road

Thagoona Haigles Road - Between Karrabin Rosewood Road and Schumanns Road Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	20	21	21	22	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	33	34
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/mi)	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
LoS B Ultimate Capacity (pc/h/mi)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/mi)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/mi)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total vehicles (veh/h)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(L*PT*(E-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	159	162	165	169	172	176	179	183	186	190	194	198	202	206	210	214	218	223	227	232	236	241	246	251	256	261	266
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knoblock (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	24	24	25	25	26	26	27	27	28	28	29	29	30	31	31	32	33	34	35	35	36	37	38	39	40	41	42
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	26	26	27	27	28	28	29	29	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40	40	41	42	43
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	26	26	27	27	28	28	29	29	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40	40	41	42	43
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01



Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	20	21	21	22	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	33	34
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/mi)	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
LoS B Ultimate Capacity (pc/h/mi)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/mi)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/mi)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total vehicles (veh/h)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(L*PT*(E-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	159	162	165	169	172	176	179	183	186	190	194	198	202	206	210	214	218	223	227	232	236	241	246	251	256	261	266
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knoblock (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	24	24	25	25	26	26	27	27	28	28	29	29	30	31	31	32	33	34	35	35	36	37	38	39	40	41	42
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	26	26	27	27	28	28	29	29	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40	40	41	42	43
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	26	26	27	27	28	28	29	29	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40	40	41	42	43
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Section: Between Karrabin Rosewood Road and Schumanns Road  
Route: Thagoona Haigles Road

Thagoona Haigles Road - Between Karrabin Rosewood Road and Schumanns Road Southbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

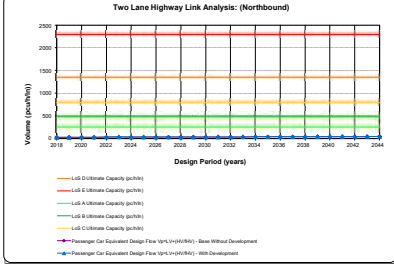
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	20	21	21	22	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	33	34
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L																							



Section Between Schumanns Road and Mount Marrow Quarry Road  
Route Link Locality: Thagoona Halsiea Road

**Thagoona Halsiea Road - Between Schumanns Road and Mount Marrow Quarry Road - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	20	21	21	22	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	33	34
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Total vehicles (veh/h)	24	24	25	25	26	26	27	27	28	29	29	30	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	159	162	165	169	172	176	179	183	186	190	194	198	202	206	210	214	218	223	227	232	236	241	246	251	256	261	266
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knob (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	24	24	25	25	26	26	27	27	28	29	29	30	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	26	26	27	27	28	28	29	29	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40	40	41	42	43
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	26	26	27	27	28	28	29	29	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40	40	41	42	43
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01



**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	20	21	21	22	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31	32	33	34
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Total vehicles (veh/h)	24	24	25	25	26	26	27	27	28	29	29	30	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	159	162	165	169	172	176	179	183	186	190	194	198	202	206	210	214	218	223	227	232	236	241	246	251	256	261	266
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knob (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	24	24	25	25	26	26	27	27	28	29	29	30	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	26	26	27	27	28	28	29	29	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40	40	41	42	43
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	26	26	27	27	28	28	29	29	30	31	31	32	33	33	34	35	35	36	37	37	38	39	40	40	41	42	43
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Section Between Schumanns Road and Mount Marrow Quarry Road  
Route Link Locality: Thagoona Halsiea Road

**Thagoona Halsiea Road - Between Schumanns Road and Mount Marrow Quarry Road - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280																							

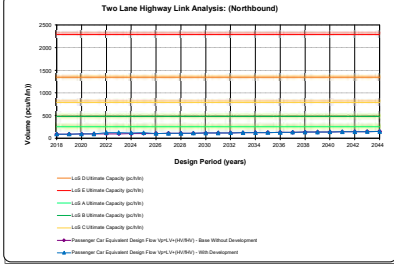


Section: Between Airforce Road and Railway Line  
Route Link Locality: Airforce Road

**Airforce Road - Between Airforce Road and Railway Line**

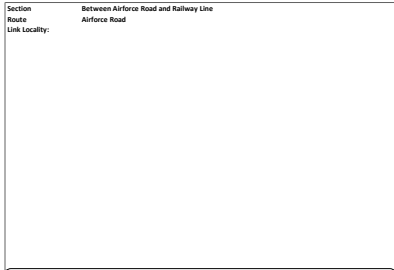
**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	77	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114	117	119	121	124	126	129
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Total vehicles (veh/h)	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114	117	119	121	124	126	129	131	134	137	139	142
Passenger Car Equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	567	578	590	601	613	626	638	651	664	677	691	705	719	733	748	763	778	793	809	826	842	859	876	894	911	930	948
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knob (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114	117	119	121	124	126	129	131	134	137	139	142
Passenger Car Equivalent Design Flow Vp=V*(HV/PHF) - Base Without Development	89	91	93	94	96	98	100	102	104	106	108	111	113	115	117	120	122	125	127	130	132	135	138	140	143	146	149
Development Traffic (veh/h)																											
Passenger Car Equivalent Design Flow Vp=V*(HV/PHF) - With Development	89	91	93	94	96	98	100	102	104	106	108	111	113	115	117	120	122	125	127	130	132	135	138	140	143	146	149
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06



**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044			
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280			
Light Vehicle Volume (veh/h)	77	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114	117	119	121	124	126	129			
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L			
LoS A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150			
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480			
LoS C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795			
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350			
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280			
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Number of Trucks (veh/h)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
Total vehicles (veh/h)	81	83	84	86	87	89	91	92	94	96	98	100	102	104	106	108	110	112	114	117	119	121	124	126	129	131	134	137	139	142
Passenger Car Equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Percentage Trucks (PT)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Average Annual Daily Traffic (AADT)	200	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	273	278	284	289	294	299	304	309	314	322	328	335		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Knob (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15			
Design Hour Volume (ADT * 30th Highest Factor)	30	31	31	32	32	33	34	34	35	36	37	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	54		
Passenger Car Equivalent Design Flow Vp=V*(HV/PHF) - Base Without Development	32	33	33	34	35	35	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	49	50	51	52	54	54			
Development Traffic (veh/h)																														
Passenger Car Equivalent Design Flow Vp=V*(HV/PHF) - With Development	32	33	33	34	35	35	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	49	50	51	52	54	54			
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02			

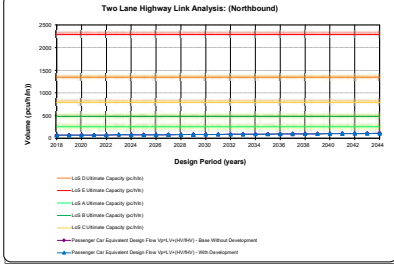


**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	201
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Section		Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic																											
Route	Link Locality	Bowells Road - Full extent																											
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Full extent	Bowells Road	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Link	Locality	51	52	53	54	55	56	57	58	59	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Year of Analysis		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/mi)		150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	
Light Vehicle Volume (veh/h)		480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
Terrain Type (L = Level, R = Rolling, M = Mountainous)		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Lod 8 Ultimate Capacity (pc/h/mi)		795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	
Lod 6 Ultimate Capacity (pc/h/mi)		1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	
Lod 4 Ultimate Capacity (pc/h/mi)		2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Number of lanes		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of trucks (veh/h)		9	9	9	10	10	10	10	10	11	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	
Total vehicles (veh/h)		60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger car equivalent (PE)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(PT*(E1-1))		0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93		
Driver population (Dp)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)		400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669	
Peak Hour Factor		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
K-factor (30th Highest / AADT)		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
Design Hour Volume (ADT * 30th Highest Factor)		60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development		65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Development Traffic (veh/h)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development		65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Lod Result		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	



Section		Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic																											
Route	Link Locality	Bowells Road - Full extent																											
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Full extent	Bowells Road	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Link	Locality	51	52	53	54	55	56	57	58	59	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Year of Analysis		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/mi)		150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	
Light Vehicle Volume (veh/h)		480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
Terrain Type (L = Level, R = Rolling, M = Mountainous)		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Lod 8 Ultimate Capacity (pc/h/mi)		795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	
Lod 6 Ultimate Capacity (pc/h/mi)		1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	
Lod 4 Ultimate Capacity (pc/h/mi)		2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Number of lanes		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of trucks (veh/h)		9	9	9	10	10	10	10	10	11	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	
Total vehicles (veh/h)		60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger car equivalent (PE)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(PT*(E1-1))		0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93		
Driver population (Dp)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)		400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669	
Peak Hour Factor		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
K-factor (30th Highest / AADT)		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
Design Hour Volume (ADT * 30th Highest Factor)		60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development		65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Development Traffic (veh/h)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development		65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Lod Result		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)		0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0													







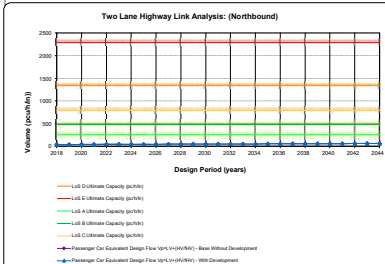




Section: Between Summer Street and 200 East of Summer Street  
Route: Paro Road  
Link Locality:

Paro Road - Between Summer Street and 200 East of Summer Street  
Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	32	32	33	33	34	35	35	36	37	38	38	39	40	41	42	42	43	44	45	46	47	48	49	50	51	52	53
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Los A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Los B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Los C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
Los D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Los E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Total vehicles (veh/h)	35	35	36	37	37	38	39	40	40	41	42	43	44	45	46	46	47	48	49	50	51	52	53	54	55	57	58
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heavy vehicle factor (HV=1+(PT*(E-1)))	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	230	235	239	244	249	254	259	264	269	275	280	286	292	298	303	310	316	322	328	335	342	349	356	363	370	377	385
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knob (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT x 30th Highest Factor)	35	35	36	37	37	38	39	40	41	42	43	44	45	46	46	47	48	49	50	51	52	53	54	55	57	58	58
Passenger Car Equivalent Design Flow Vp=V*(HV/HVH) - Base Without Development	36	37	37	38	39	40	41	41	42	43	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	59	60
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/HVH) - With Development	36	37	37	38	39	40	41	41	42	43	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	59	60
Los Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03



Paro Road - Between Summer Street and 200 East of Summer Street  
Southbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	32	32	33	33	34	35	35	36	37	38	38	39	40	41	42	42	43	44	45	46	47	48	49	50	51	52	53
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Los A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Los B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Los C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
Los D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Los E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Total vehicles (veh/h)	35	35	36	37	37	38	39	40	40	41	42	43	44	45	46	46	47	48	49	50	51	52	53	54	55	57	58
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heavy vehicle factor (HV=1+(PT*(E-1)))	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	232	237	241	246	251	256	261	267	272	277	283	289	294	300	306	312	319	325	331	338	345	352	359	366	373	381	388
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knob (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT x 30th Highest Factor)	35	36	37	37	38	39	40	41	42	43	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	58	59
Passenger Car Equivalent Design Flow Vp=V*(HV/HVH) - Base Without Development	35	36	37	37	38	39	40	41	41	42	43	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	59
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/HVH) - With Development	35	36	37	37	38	39	40	41	41	42	43	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	59
Los Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03



Paro Road - Between Summer Street and 200 East of Summer Street  
Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018
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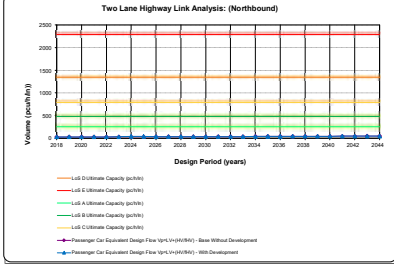


Section Between New England Highway and Harlow Quarry  
Route Muoro Street  
Link Locality

Muoro Street - Between New England Highway and Harlow Quarry

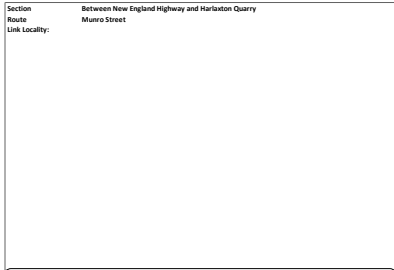
Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Light Vehicle Volume (veh/h)	18	19	19	19	20	20	21	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	31	
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480		
LoS C Ultimate Capacity (pc/h/ln)	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792		
LoS D Ultimate Capacity (pc/h/ln)	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344		
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Number of Trucks (veh/h)	6	6	6	6	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9	9	10	10	
Total vehicles (veh/h)	24	25	25	25	26	27	27	27	27	28	29	29	30	31	32	32	33	34	35	35	36	37	38	38	39	40	41	
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	203	207	211	215	220	224	229	233	238	243	247	252	257	263	268	273	279	284	290	296	302	308	314	320	326	333	340	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Knob (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	
Design Hour Volume (ADT x 30th Highest Factor)	24	25	25	25	26	27	27	27	28	29	29	30	30	31	32	32	33	34	35	35	36	37	38	38	39	40	41	
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - Base Without Development	27	28	28	29	30	30	31	31	32	33	33	34	34	35	35	36	37	38	38	39	40	41	41	42	43	44	45	46
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - With Development	27	28	28	29	30	30	31	31	32	33	33	34	34	35	35	36	37	38	38	39	40	41	41	42	43	44	45	46
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	



Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Light Vehicle Volume (veh/h)	18	19	19	19	20	20	21	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	31	
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
LoS C Ultimate Capacity (pc/h/ln)	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	
LoS D Ultimate Capacity (pc/h/ln)	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	6	6	6	6	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9	9	10	10	
Total vehicles (veh/h)	24	25	25	25	26	27	27	27	28	29	29	30	30	31	32	32	33	34	35	35	36	37	38	38	39	40	41	
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	203	207	211	215	220	224	229	233	238	243	247	252	257	263	268	273	279	284	290	296	302	308	314	320	326	333	340	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Knob (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	
Design Hour Volume (ADT x 30th Highest Factor)	24	25	25	25	26	27	27	27	28	29	29	30	30	31	32	32	33	34	35	35	36	37	38	38	39	40	41	
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - Base Without Development	27	28	28	29	30	30	31	31	32	33	33	34	34	35	35	36	37	38	38	39	40	41	41	42	43	44	45	46
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - With Development	27	28	28	29	30	30	31	31	32	33	33	34	34	35	35	36	37	38	38	39	40	41	41	42	43	44	45	46
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	



Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic

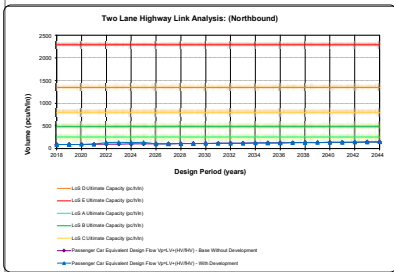
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
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Section: Between Gatton Laidley Road and Warrego Highway  
 Link Locality: Forest Hill Fernalde Road

**Forest Hill Fernalde Road - Between Gatton Laidley Road and Warrego Highway**  
**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	75	77	78	80	81	83	85	86	88	90	92	94	95	97	99	101	103	105	107	110	112	114	116	119	121	123	126
Terrain Type (L = Level, B = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	8	8	8	8	8	9	9	9	9	9	9	10	10	10	10	10	11	11	11	12	12	12	12	13	13	13	13
Total vehicles (veh/h)	83	85	86	88	90	92	93	95	97	99	101	103	105	107	110	112	114	116	119	121	123	126	128	131	134	136	139
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heavy vehicle factor (HVLF) (1+PT*(E1-1))	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	553	564	576	587	599	611	623	636	648	661	673	688	702	716	730	745	760	775	790	806	822	839	855	871	890	908	926
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	83	85	86	88	90	92	93	95	97	99	101	103	105	107	110	112	114	116	119	121	123	126	128	131	134	136	139
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVLF)) - Base Without Development	87	89	90	92	94	96	98	100	102	104	106	108	110	112	115	117	119	122	124	127	129	132	134	137	140	143	145
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVLF)) - With Development	87	89	90	92	94	96	98	100	102	104	106	108	110	112	115	117	119	122	124	127	129	132	134	137	140	143	145
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06



**Forest Hill Fernalde Road - Between Gatton Laidley Road and Warrego Highway**  
**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	75	77	78	80	81	83	85	86	88	90	92	94	95	97	99	101	103	105	107	110	112	114	116	119	121	123	126
Terrain Type (L = Level, B = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	8	8	8	8	8	9	9	9	9	9	9	10	10	10	10	10	11	11	11	12	12	12	12	13	13	13	13
Total vehicles (veh/h)	83	85	86	88	90	92	93	95	97	99	101	103	105	107	110	112	114	116	119	121	123	126	128	131	134	136	139
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Heavy vehicle factor (HVLF) (1+PT*(E1-1))	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	553	564	576	587	599	611	623	636	648	661	673	688	702	716	730	745	760	775	790	806	822	839	855	871	890	908	926
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	83	85	86	88	90	92	93	95	97	99	101	103	105	107	110	112	114	116	119	121	123	126	128	131	134	136	139
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVLF)) - Base Without Development	87	89	90	92	94	96	98	100	102	104	106	108	110	112	115	117	119	122	124	127	129	132	134	137	140	143	145
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVLF)) - With Development	87	89	90	92	94	96	98	100	102	104	106	108	110	112	115	117	119	122	124	127	129	132	134	137	140	143	145
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06

Section: Between Gatton Laidley Road and Warrego Highway  
 Link Locality: Forest Hill Fernalde Road

**Forest Hill Fernalde Road - Between Gatton Laidley Road and Warrego Highway**  
**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	20
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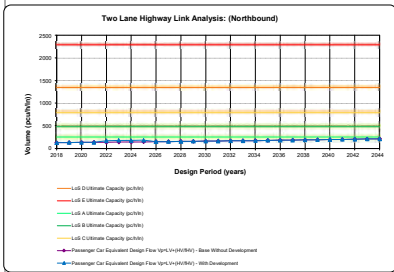


Section Route: Between Hall Road and Forest Hill Fernvale Road  
Link Locality: Gatton Laidley Road

Gatton Laidley Road - Between Hall Road and Forest Hill Fernvale Road

Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	112	115	117	119	122	124	127	129	132	134	137	140	143	145	148	151	154	157	161	164	167	171	174	177	181	184	188
Terrain Type (L = Level, M = Rolling, H = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
LoS A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
LoS C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	
LoS E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	10	10	10	10	10	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	16	16	16	
Total vehicles (veh/h)	122	125	127	130	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181	185	189	193	196	200	
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	
Heavy vehicle factor (HV1) (E1*(PT)^1.1)	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	1221	1245	1270	1296	1322	1348	1375	1402	1431	1459	1488	1518	1548	1579	1611	1643	1676	1710	1744	1779	1814	1851	1888	1925	1964	2003	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Design Hour Volume (ADT * 30th Highest Factor)	122	125	127	130	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181	185	189	193	196	200	
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVH)) - Base Without Development	127	129	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181	185	189	192	196	200	204	208	212
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVH)) - With Development	127	129	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181	185	189	192	196	200	204	208	212
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	



Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	112	115	117	119	122	124	127	129	132	134	137	140	143	145	148	151	154	157	161	164	167	171	174	177	181	184	188
Terrain Type (L = Level, M = Rolling, H = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
LoS A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
LoS C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	
LoS E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	10	10	10	10	10	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	16	16	16	
Total vehicles (veh/h)	122	125	127	130	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181	185	189	193	196	200	
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	
Heavy vehicle factor (HV1) (E1*(PT)^1.1)	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	1221	1245	1270	1296	1322	1348	1375	1402	1431	1459	1488	1518	1548	1579	1611	1643	1676	1710	1744	1779	1814	1851	1888	1925	1964	2003	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Design Hour Volume (ADT * 30th Highest Factor)	122	125	127	130	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181	185	189	193	196	200	
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVH)) - Base Without Development	127	129	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181	185	189	192	196	200	204	208	212
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVH)) - With Development	127	129	132	135	137	140	143	146	149	152	155	158	161	164	167	171	174	178	181	185	189	192	196	200	204	208	212
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	

Section Route: Between Hall Road and Forest Hill Fernvale Road  
Link Locality: Gatton Laidley Road

Gatton Laidley Road - Between Hall Road and Forest Hill Fernvale Road

Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

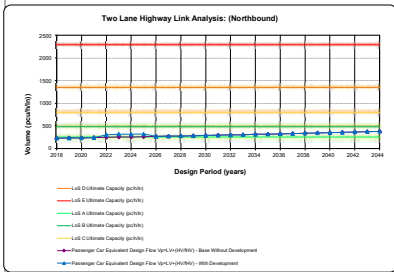
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
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**Section** Between Rosewood Marburg Road and Haigies Amberley Road  
**Route** Karabin Rosewood Road  
**Link Locality**

**Karabin Rosewood Road - Between Rosewood Marburg Road and Haigies Amberley Road** - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	190	194	198	202	206	210	214	218	222	227	232	237	241	246	251	256	261	267	272	277	283	288	294	300	306	312	319
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Ln A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Ln B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Ln C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
Ln D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Ln E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	24	25	25	26	26	27	27	28	28	29	29	30	31	31	32	33	34	35	35	36	37	37	38	39	40	40	40
Total vehicles (veh/h)	215	219	223	228	232	237	242	246	251	256	261	267	272	277	283	288	294	300	306	312	319	325	332	338	345	352	359
Passenger Car Equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Heavy vehicle factor (HVF) (H/P*(PT <sup>0.5</sup> ))	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2145	2188	2232	2276	2322	2368	2416	2464	2513	2564	2615	2667	2720	2775	2830	2887	2945	3004	3064	3125	3187	3251	3316	3383	3450	3519	3590
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Design Hour Volume (ADT * 30th Highest Factor)	215	219	223	228	232	237	242	246	251	256	261	267	272	277	283	288	294	300	306	312	319	325	332	338	345	352	359
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVF)) - Base Without Development	227	231	236	240	245	250	255	260	265	271	276	282	287	293	299	305	311	317	324	330	337	343	350	357	364	372	379
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVF)) - With Development	227	231	236	240	245	250	255	260	265	271	276	282	287	293	299	305	311	317	324	330	337	343	350	357	364	372	379
LnD Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.17



**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	190	194	198	202	206	210	214	218	222	227	232	237	241	246	251	256	261	267	272	277	283	288	294	300	306	312	319
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Ln A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Ln B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Ln C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
Ln D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Ln E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	24	25	25	26	26	27	27	28	28	29	29	30	31	31	32	33	34	35	35	36	37	37	38	39	40	40	40
Total vehicles (veh/h)	215	219	223	228	232	237	242	246	251	256	261	267	272	277	283	288	294	300	306	312	319	325	332	338	345	352	359
Passenger Car Equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Heavy vehicle factor (HVF) (H/P*(PT <sup>0.5</sup> ))	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2145	2188	2232	2276	2322	2368	2416	2464	2513	2564	2615	2667	2720	2775	2830	2887	2945	3004	3064	3125	3187	3251	3316	3383	3450	3519	3590
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Design Hour Volume (ADT * 30th Highest Factor)	215	219	223	228	232	237	242	246	251	256	261	267	272	277	283	288	294	300	306	312	319	325	332	338	345	352	359
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVF)) - Base Without Development	227	231	236	240	245	250	255	260	265	271	276	282	287	293	299	305	311	317	324	330	337	343	350	357	364	372	379
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVF)) - With Development	227	231	236	240	245	250	255	260	265	271	276	282	287	293	299	305	311	317	324	330	337	343	350	357	364	372	379
LnD Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.17

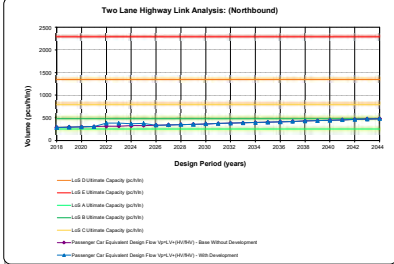
**Section** Between Rosewood Marburg Road and Haigies Amberley Road  
**Route** Karabin Rosewood Road  
**Link Locality**

**Karabin Rosewood Road - Between Rosewood Marburg Road and Haigies Amberley Road Direction - Two**



Section Route: **Between Warrego Highway and Old Laidley Forest Hill Road**  
 Link Location: **Laidley Plainland Road**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Light Vehicle Volume (veh/h)	223	227	232	236	241	246	251	256	261	266	271	277	282	288	294	300	306	312	318	324	331	337	344	351	358	365	373	
Terrain Type (L = Level, B = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Ln A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
Ln B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
Ln C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	
Ln D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	
Ln E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	59	60	61	63	64	65	66	68	69	71	72	73	
Total vehicles (veh/h)	267	272	277	283	288	294	300	306	312	319	325	331	338	345	352	359	366	373	381	388	396	404	412	420	429	437	446	
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16		
Heavy Vehicle Factor (HVF) (1/(1-PT)^2.5)	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2665	2719	2773	2828	2885	2943	3002	3062	3123	3185	3249	3314	3380	3448	3517	3587	3659	3732	3807	3883	3960	4040	4120	4203	4287	4373	4460	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Design Hour Volume (ADT * 30th Highest Factor)	267	273	277	283	288	294	300	306	312	319	325	331	338	345	352	359	366	373	381	388	396	404	412	420	429	437	446	
Passenger Car Equivalent Design Flow (Vp) (Vp/HV) - Base Without Development	288	294	300	306	312	318	325	331	338	345	352	359	366	373	381	388	396	404	412	420	429	437	446	455	464	473	483	
Development Traffic (veh/h)	0	0	0	0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	
Passenger Car Equivalent Design Flow (Vp) (Vp/HV) - With Development	288	294	300	306	365	383	381	370	377	378	385	382	359	366	373	381	388	396	404	412	420	429	437	446	455	464	473	483
LnD Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	
Volume to Capacity Ratio (V/C)	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	



Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Light Vehicle Volume (veh/h)	223	227	232	236	241	246	251	256	261	266	271	277	282	288	294	300	306	312	318	324	331	337	344	351	358	365	373	
Terrain Type (L = Level, B = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Ln A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
Ln B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
Ln C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	
Ln D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	
Ln E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total vehicles (veh/h)	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	59	60	61	63	64	65	66	68	69	71	72	73	
Total vehicles (veh/h)	267	272	277	283	288	294	300	306	312	319	325	331	338	345	352	359	366	373	381	388	396	404	412	420	429	437	446	
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Heavy Vehicle Factor (HVF) (1/(1-PT)^2.5)	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2665	2719	2773	2828	2885	2943	3002	3062	3123	3185	3249	3314	3380	3448	3517	3587	3659	3732	3807	3883	3960	4040	4120	4203	4287	4373	4460	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Design Hour Volume (ADT * 30th Highest Factor)	267	273	277	283	288	294	300	306	312	319	325	331	338	345	352	359	366	373	381	388	396	404	412	420	429	437	446	
Passenger Car Equivalent Design Flow (Vp) (Vp/HV) - Base Without Development	288	294	300	306	312	318	325	331	338	345	352	359	366	373	381	388	396	404	412	420	429	437	446	455	464	473	483	
Development Traffic (veh/h)	0	0	0	0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	
Passenger Car Equivalent Design Flow (Vp) (Vp/HV) - With Development	288	294	300	306	365	383	381	370	377	378	385	382	359	366	373	381	388	396	404	412	420	429	437	446	455	464	473	483
LnD Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	
Volume to Capacity Ratio (V/C)	0.13	0.13	0.13	0.13	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	

Section Route: **Between Warrego Highway and Old Laidley Forest Hill Road**  
 Link Location: **Laidley Plainland Road**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2
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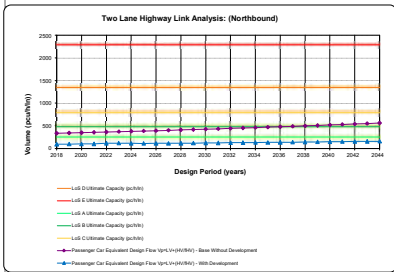


Section: Between Whites Road and Mulgoose Road  
 Link Location: Rosewood Ladley Road

**Rosewood Ladley Road - Between Whites Road and Mulgoose Road**

Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	86	88	90	91	93	95	97	99	101	103	105	107	109	111	114	116	118	121	123	126	128	131	133	136	139	141	144
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8	9	9	9	9	9	9	9	9	10	10	10
Total vehicles (veh/h)	92	94	96	98	100	102	104	106	108	110	113	115	117	120	122	124	127	129	132	135	137	140	143	146	149	152	155
Passenger Car equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Heavy vehicle factor (HVF=0.1*(PT*(E1-1)))	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	924	943	961	981	1000	1020	1041	1062	1083	1104	1126	1149	1172	1195	1219	1244	1269	1294	1320	1346	1373	1401	1429	1457	1486	1516	1546
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Design Hour Volume (ADT * 30th Highest Factor)	92	94	96	98	100	102	104	106	108	110	113	115	117	120	122	124	127	129	132	135	137	140	143	146	149	152	155
Passenger Car Equivalent Design Flow Vp=V/(HVF*(E1)) - Base Without Development	96	97	99	101	103	105	108	110	112	114	116	119	121	124	126	129	131	134	136	139	142	145	148	151	154	157	160
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V/(HVF*(E1)) - With Development	96	97	99	101	103	105	108	110	112	114	116	119	121	124	126	129	131	134	136	139	142	145	148	151	154	157	160
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07



**Rosewood Ladley Road - Between Whites Road and Mulgoose Road**

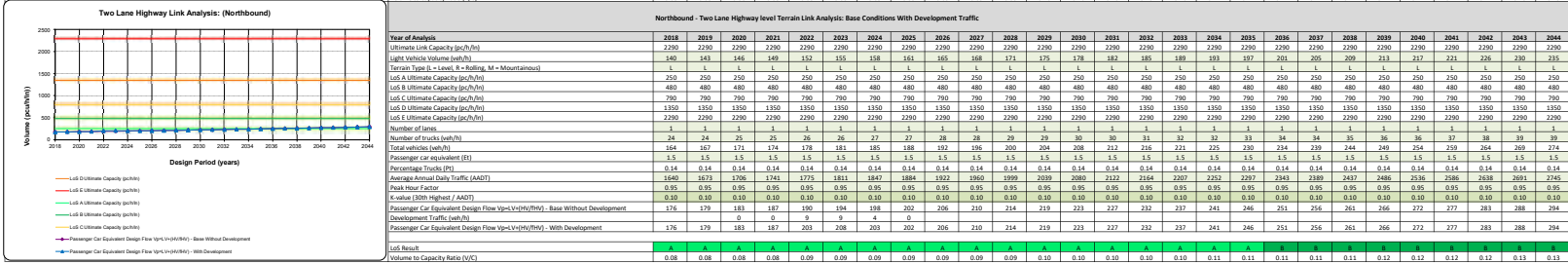
Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114	117	119	121	124	126	129	131
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	13	13	13	14	14	14	14	15	15	15	15	16	16	16	17	17	18	18	19	19	19	19	20	20	21	21	21
Total vehicles (veh/h)	91	93	95	97	99	101	103	105	107	109	111	114	116	118	120	123	125	128	130	133	136	138	141	144	147	150	153
Passenger Car equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Heavy vehicle factor (HVF=0.1*(PT*(E1-1)))	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	913	931	950	969	988	1008	1028	1049	1070	1091	1113	1135	1158	1181	1205	1229	1253	1278	1304	1330	1357	1384	1411	1440	1468	1498	1528
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Design Hour Volume (ADT * 30th Highest Factor)	91	93	95	97	99	101	103	105	107	109	111	114	116	118	120	123	125	128	130	133	136	138	141	144	147	150	153
Passenger Car Equivalent Design Flow Vp=V/(HVF*(E1)) - Base Without Development	98	100	102	104	106	108	110	112	114	117	119	121	124	126	129	131	134	137	139	142	145	148	151	154	157	160	163
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V/(HVF*(E1)) - With Development	98	100	102	104	106	108	110	112	114	117	119	121	124	126	129	131	134	137	139	142	145	148	151	154	157	160	163
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07





Section		Between Mulgrew Road and Crown Street																									
Route		Rosewood Ladley Road																									
Link Locality		Rosewood Ladley Road - Between Mulgrew Road and Crown Street																									
<b>Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic</b>																											
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	140	143	144	144	149	152	155	158	161	165	168	171	175	178	182	185	189	193	197	201	205	209	213	217	221	225	230
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Ln A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Ln B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Ln C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
Ln D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Ln E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	32	32	33	34	34	35	36	36	37	38	39	39
Total vehicles (veh/h)	164	167	171	174	178	183	185	188	192	196	200	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	274
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Heavy vehicle factor (HVF) (LTP/ET-1)	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	1640	1673	1706	1741	1775	1811	1847	1884	1922	1960	1999	2039	2080	2122	2164	2207	2252	2297	2343	2389	2437	2486	2536	2586	2638	2691	2745
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Design Hour Volume (ADT - 30th Highest Factor)	154	157	161	164	167	170	173	177	180	184	188	192	196	200	204	208	212	216	221	225	230	234	239	244	249	254	259
Passenger Car Equivalent Design Flow (Vp) (Vp/(H/VH)) - Base Without Development	176	179	183	187	190	194	198	202	206	210	214	219	223	227	232	237	241	246	251	256	261	266	272	277	283	288	294
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp) (Vp/(H/VH)) - With Development	176	179	183	187	190	194	198	202	206	210	214	219	223	227	232	237	241	246	251	256	261	266	272	277	283	288	294
LnD Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.13



Section		Between Mulgrew Road and Crown Street																									
Route		Rosewood Ladley Road																									
Link Locality		Rosewood Ladley Road - Between Mulgrew Road and Crown Street																									
<b>Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic</b>																											
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	135	138	141	144	147	149	152	155	159	162	165	168	172	175	179	182	186	190	193	197	201	205	209	213	218	222	227
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Ln A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Ln B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Ln C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
Ln D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Ln E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	19	19	19	20	20	21	21	21	22	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	31	31
Total vehicles (veh/h)	154	157	160	163	167	170	173	177	180	184	188	192	196	199	203	207	211	216	220	224	229	233	238	243	248	253	258
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Heavy vehicle factor (HVF) (LTP/ET-1)	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	1540	1571	1602	1634	1667	1701	1735	1769	1805	1841	1877	1915	1953	1992	2032	2073	2114	2157	2200	2244	2289	2334	2381	2429	2477	2527	2577
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Design Hour Volume (ADT - 30th Highest Factor)	143	146	149	152	155	158	161	164	167	170	173	177	180	184	188	192	196	200	204	208	212	216	220	224	229	233	238
Passenger Car Equivalent Design Flow (Vp) (Vp/(H/VH)) - Base Without Development	163	167	170	173	177	180	184	188	191	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258	263	268	273
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp) (Vp/(H/VH)) - With Development	163	167	170	173	177	180	184	188	191	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258	263	268	273
LnD Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12

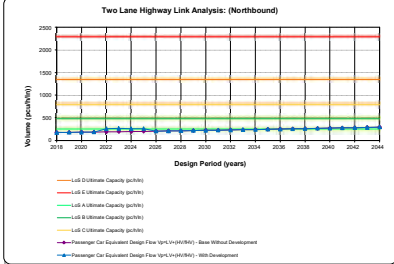


Section: Between Crown Street and Rosewood Marburg Road  
 Route: Rosewood Ladley Road

**Rosewood Ladley Road - Between Crown Street and Rosewood Marburg Road**

**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

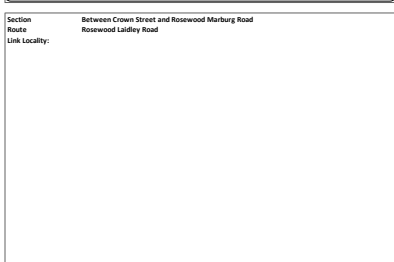
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	140	143	144	149	152	155	158	161	165	168	171	175	178	182	185	189	193	197	201	205	209	213	217	221	225	230	235
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Ln A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Ln B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Ln C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
Ln D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Ln E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	32	32	33	34	34	35	36	36	37	38	39	39
Total vehicles (veh/h)	164	167	171	174	178	183	185	188	192	196	200	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	274
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Heavy vehicle factor (HVF) (1/(1-PT)^2.5)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	1640	1673	1706	1741	1778	1811	1847	1884	1922	1960	1999	2039	2080	2122	2164	2207	2252	2297	2343	2389	2437	2486	2536	2586	2638	2691	2745
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Design Hour Volume (ADT * 30th Highest Factor)	164	167	171	174	178	183	185	188	192	196	200	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	274
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVH)) - Base Without Development	176	179	183	187	190	194	198	202	206	210	214	219	223	227	232	237	241	246	251	256	261	266	272	277	283	288	294
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVH)) - With Development	176	179	183	187	190	194	198	202	206	210	214	219	223	227	232	237	241	246	251	256	261	266	272	277	283	288	294
LnD Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.13	0.13



**Rosewood Ladley Road - Between Crown Street and Rosewood Marburg Road**

**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)	135	138	141	144	147	149	152	155	159	162	165	168	172	175	179	182	186	190	193	197	201	205	209	213	218	222	227
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Ln A Ultimate Capacity (pc/h/ln)	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Ln B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Ln C Ultimate Capacity (pc/h/ln)	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
Ln D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Ln E Ultimate Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	19	19	19	20	20	21	21	22	22	22	23	23	24	24	24	25	25	26	26	27	27	28	28	29	29	30	31
Total vehicles (veh/h)	154	157	160	163	167	170	173	177	180	184	188	192	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Heavy vehicle factor (HVF) (1/(1-PT)^2.5)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	1540	1571	1602	1634	1667	1701	1735	1769	1805	1841	1877	1915	1953	1992	2032	2073	2114	2157	2200	2244	2289	2334	2381	2429	2477	2527	2577
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-value (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Design Hour Volume (ADT * 30th Highest Factor)	154	157	160	163	167	170	173	177	180	184	188	192	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVH)) - Base Without Development	163	167	170	173	177	180	184	188	191	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258	263	268	273
Passenger Car Equivalent Design Flow (Vp) (Vp/(HVH)) - With Development	163	167	170	173	177	180	184	188	191	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258	263	268	273
LnD Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12



**Rosewood Ladley Road - Between Crown Street and Rosewood Marburg Road**

**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

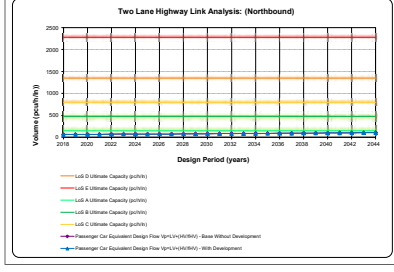
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Light Vehicle Volume (veh/h)																											



Section Route: Full Extent  
 Link Locality: Bowtells Road

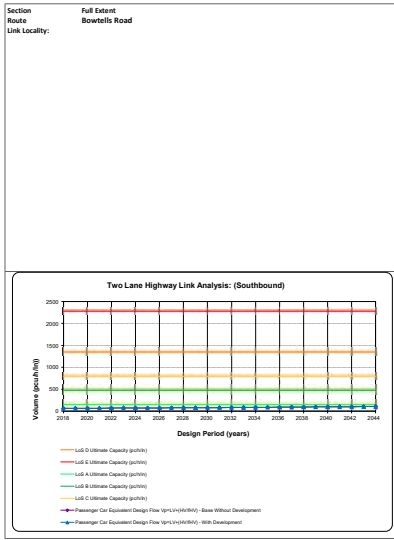
**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85	
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Load A Ultimate Capacity (pc/h/mi)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	
Load B Ultimate Capacity (pc/h/mi)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
Load C Ultimate Capacity (pc/h/mi)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	
Load D Ultimate Capacity (pc/h/mi)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	
Load E Ultimate Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of trucks (veh/h)	9	9	9	10	10	10	10	10	11	11	11	11	11	12	12	12	12	13	13	13	14	14	14	14	14	15	15	
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(PT*(E-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Eq)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
Design Hour Volume (ADT * 30th Highest Factor)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - With Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05



**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85	
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Load A Ultimate Capacity (pc/h/mi)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	
Load B Ultimate Capacity (pc/h/mi)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	
Load C Ultimate Capacity (pc/h/mi)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	
Load D Ultimate Capacity (pc/h/mi)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	
Load E Ultimate Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of trucks (veh/h)	11	11	11	12	12	12	12	12	13	13	13	13	13	14	14	14	14	15	15	15	16	16	16	16	16	17	17	
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(PT*(E-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Eq)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	
Design Hour Volume (ADT * 30th Highest Factor)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - With Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05



**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

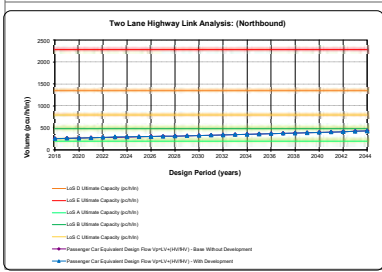
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/mi)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L																						



Section: Full Extent  
Route: Hall Road  
Link Locality:

**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341	
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200		
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480		
LoS C Ultimate Capacity (pc/h/ln)	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792		
LoS D Ultimate Capacity (pc/h/ln)	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344		
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280		
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60	
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402	
Passenger car equivalent (E)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
Heavy vehicle factor (HV=1+PT*(E-1))	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Driver population (pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
K-value (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12		
Design Hour Volume (DfV = 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402	
Passenger Car Equivalent Design Flow Vp=V*(HV/HVH) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432	
Passenger Car Equivalent Design Flow Vp=V*(HV/HVH) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432	
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Volume to Capacity Ratio (V/C)	0.11	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.19	0.19



**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341	
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200		
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480		
LoS C Ultimate Capacity (pc/h/ln)	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792		
LoS D Ultimate Capacity (pc/h/ln)	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344		
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280		
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60	
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402	
Passenger car equivalent (E)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
Heavy vehicle factor (HV=1+PT*(E-1))	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Driver population (pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
K-value (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12		
Design Hour Volume (DfV = 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402	
Passenger Car Equivalent Design Flow Vp=V*(HV/HVH) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432	
Passenger Car Equivalent Design Flow Vp=V*(HV/HVH) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432	
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Volume to Capacity Ratio (V/C)	0.11	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.19	0.19

Section: Full Extent  
Route: Hall Road  
Link Locality:

**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286									





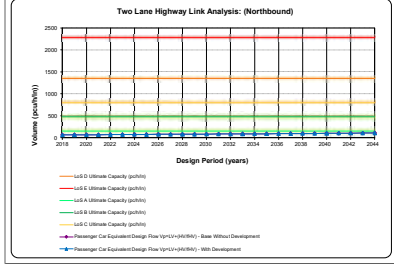


Section: Between Lake Clarendon Way and Lake Clarendon  
Route: Main Green Swamp Road  
Link Locality:

**Main Green Swamp Road - Between Lake Clarendon Way and Lake Clarendon**

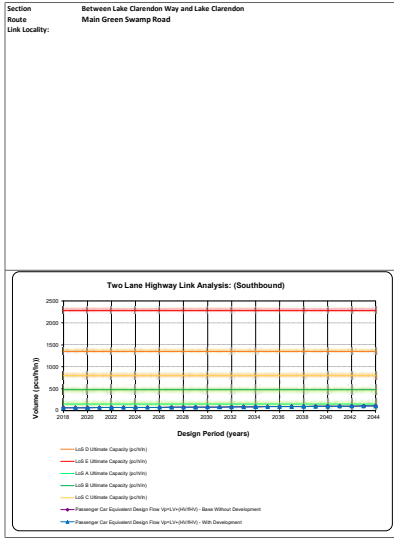
**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Load A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Load B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Load C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
Load D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Load E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	9	9	9	10	10	10	10	10	11	11	11	11	11	12	12	12	13	13	13	13	14	14	14	14	14	15	15
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Other population (Pop)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knoblock (30th Highest % AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Development Traffic (veh/h)	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - With Development	65	66	67	68	72	74	75	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	108
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05



**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	59	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Load A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Load B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
Load C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
Load D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Load E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	9	9	9	10	10	10	10	10	11	11	11	11	11	12	12	12	13	13	13	13	14	14	14	14	14	15	15
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Other population (Pop)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knoblock (30th Highest % AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT * 30th Highest Factor)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Development Traffic (veh/h)	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp=V*(HV/HV)) - With Development	65	66	67	68	72	74	75	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	108
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05



**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
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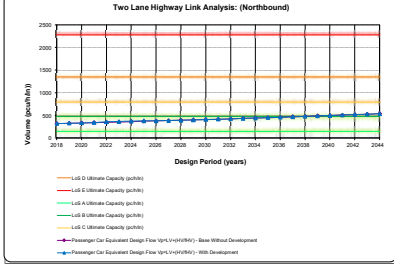


Section Between Gatton Helidon Road and Burgess Road  
Route Old Toowoomba Road  
Link Locality:

**Old Toowoomba Road - Between Gatton Helidon Road and Burgess Road**

**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

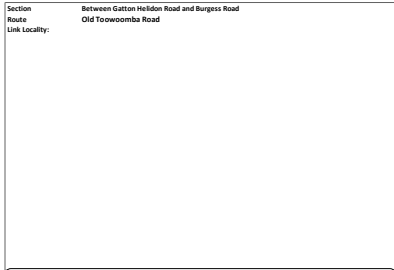
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	255	260	265	271	276	282	287	293	299	305	311	317	323	330	336	343	350	357	364	371	379	386	394	402	410	418	427
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	66	67	68	70	71	72	74	75
Total vehicles (veh/h)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502
Passenger Car Equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E <sub>h</sub> -1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knob (30th Highest / AADT)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Design Hour Volume (ADT * 30th Highest Factor)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502
Passenger Car Equivalent Design Flow (Vp=V*(HV/PE)) - Base Without Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
Development Traffic (veh/h)																											
Passenger Car Equivalent Design Flow (Vp=V*(HV/PE)) - With Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.23	0.24



**Old Toowoomba Road - Between Gatton Helidon Road and Burgess Road**

**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Light Vehicle Volume (veh/h)	255	260	265	271	276	282	287	293	299	305	311	317	323	330	336	343	350	357	364	371	379	386	394	402	410	418	427
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
LoS B Ultimate Capacity (pc/h/ln)	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
LoS C Ultimate Capacity (pc/h/ln)	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795	795
LoS D Ultimate Capacity (pc/h/ln)	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
LoS E Ultimate Capacity (pc/h/ln)	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	66	67	68	70	71	72	74	75
Total vehicles (veh/h)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502
Passenger Car Equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E <sub>h</sub> -1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Dp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Knob (30th Highest / AADT)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Design Hour Volume (ADT * 30th Highest Factor)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502
Passenger Car Equivalent Design Flow (Vp=V*(HV/PE)) - Base Without Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
Development Traffic (veh/h)																											
Passenger Car Equivalent Design Flow (Vp=V*(HV/PE)) - With Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.23	0.24



**Old Toowoomba Road - Between Gatton Helidon Road and Burgess Road**

**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025
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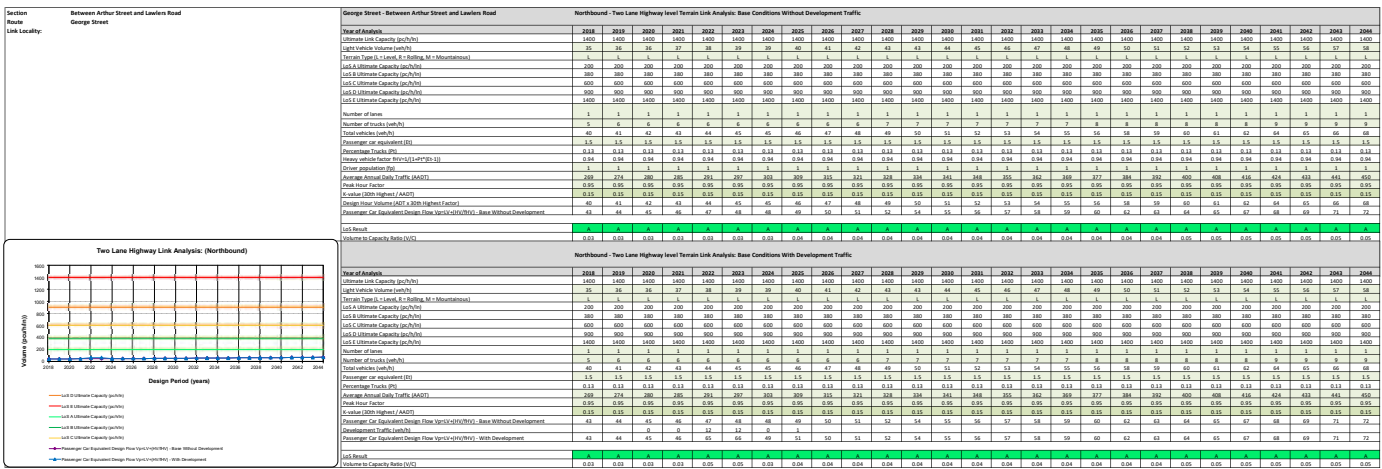
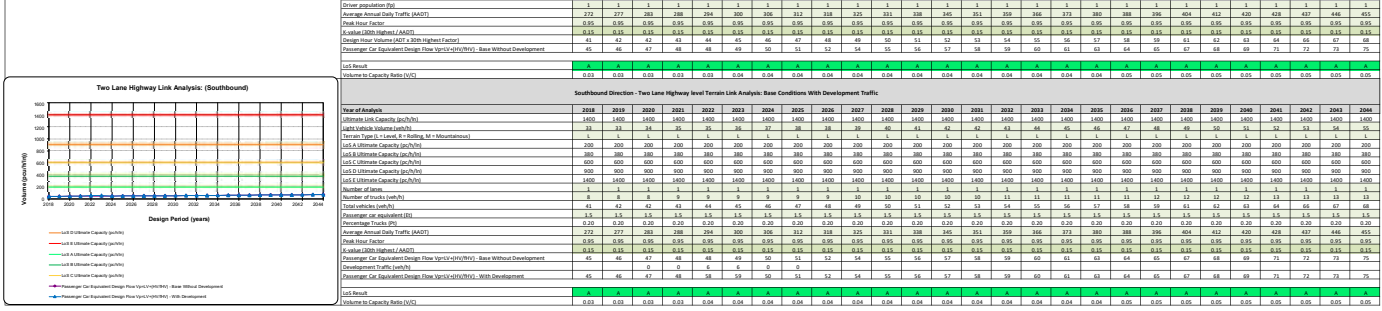












**Section: Between Arthur Street and Lawlers Road**  
**Route: George Street**  
**Link Locality:**

**Northbound - Two Lane Highway Level Terms Link Analysis - Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Urban Lane Capacity (pc/h)	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450
Light Vehicle Volume (veh/h)	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Heavy Vehicle Volume (veh/h)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Urban Lane Capacity (pc/h)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Light Vehicle Capacity (pc/h)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Light Vehicle Capacity (pc/h)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Light Vehicle Capacity (pc/h)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Light Vehicle Capacity (pc/h)	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Percentage of Trucks (PC)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Average Annual Daily Traffic (AADT)	209	214	220	226	231	237	243	249	255	261	267	273	279	285	291	297	303	309	315	321	327	333	339	345	351	357	363
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Average Annual Daily Traffic (AADT)	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Average Annual Daily Traffic (AADT)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	162	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Design Flow Volume (ADT x 3600) (veh/h)	45	46	47	48	49	50	51																				































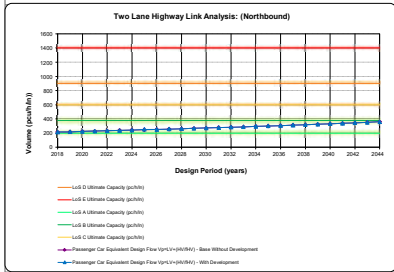




Section: Between Craig Street and Gwydir Highway  
Route: Bent Street  
Link Locality:

Bent Street - Between Craig Street and Gwydir Highway  
Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	170	173	177	180	184	188	191	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258	263	268	273	279	284
Terrain Type (L=Level, M=Rolling, H=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LnA Ultimate Capacity (pc/h)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
LnB Ultimate Capacity (pc/h)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
LnC Ultimate Capacity (pc/h)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
LnD Ultimate Capacity (pc/h)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
LnE Ultimate Capacity (pc/h)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of trucks (veh/h)	30	31	31	32	32	33	34	34	35	36	37	37	38	39	40	40	41	42	43	44	45	45	46	47	48	49	50
Total vehicles (veh/h)	200	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335
Passenger car equivalent (E)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+PT*(E-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Eq)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Passenger Car Equivalent Design Flow Vp=V*(HV)*(E)	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV)*(E) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
LnD Result	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume to Capacity Ratio (V/C)	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26



Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	170	173	177	180	184	188	191	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258	263	268	273	279	284
Terrain Type (L=Level, M=Rolling, H=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LnA Ultimate Capacity (pc/h)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
LnB Ultimate Capacity (pc/h)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
LnC Ultimate Capacity (pc/h)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
LnD Ultimate Capacity (pc/h)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
LnE Ultimate Capacity (pc/h)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of trucks (veh/h)	30	31	31	32	32	33	34	34	35	36	37	37	38	39	40	40	41	42	43	44	45	45	46	47	48	49	50
Total vehicles (veh/h)	200	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335
Passenger car equivalent (E)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+PT*(E-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Eq)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Passenger Car Equivalent Design Flow Vp=V*(HV)*(E)	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV)*(E) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
LnD Result	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume to Capacity Ratio (V/C)	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26

Section: Between Craig Street and Gwydir Highway  
Route: Bent Street  
Link Locality:

Bent Street - Between Craig Street and Gwydir Highway  
Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	170	173	177	180	184	188																					



Link Locality:

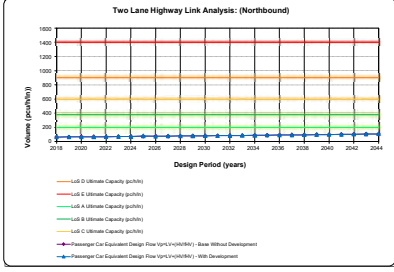
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	170	173	177	180	184	188	191	195	199	203	207	211	216	220	224	229	233	238	243	248	253	258	263	268	273	279	284
Terrain Type (L = Level, R = Rolling, M = Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	30	31	31	32	32	33	34	34	35	36	37	37	38	39	40	40	41	42	43	44	45	46	47	48	49	50	
Total vehicles (veh/h)	200	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(PT*(E-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-value (30th Highest / AADT)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	
Design Hour Volume (ADT * 30th Highest Factor)	200	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - With Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332	339	346	353	360
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V/(HV/HVH) - Base Without Development	215	219	224	228	233	237	242	247	252	257	262	267	273	278	284	289	295	301	307	313	319	326	332				



Section: Full Extent  
Route: Clark Road  
Link Locality:

**Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85	
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of trucks (veh/h)	9	9	9	10	10	10	10	11	11	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger car equivalent (PE)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV<sub>1</sub>)(L+HV<sub>1</sub>)/E<sub>1</sub>	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (pp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669	
Peak hour factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-value (30th Highest Z AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Design Hour Volume (ADT - 30th Highest Factor)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger Car Equivalent Design Flow Vp<sub>1</sub>(Vp<sub>1</sub>/HVH) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow Vp<sub>1</sub>(Vp<sub>1</sub>/HVH) - With Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08



**Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85	
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of trucks (veh/h)	9	9	9	10	10	10	10	11	11	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger car equivalent (PE)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV<sub>1</sub>)(L+HV<sub>1</sub>)/E<sub>1</sub>	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (pp)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669	
Peak hour factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-value (30th Highest Z AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Design Hour Volume (ADT - 30th Highest Factor)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100	
Passenger Car Equivalent Design Flow Vp<sub>1</sub>(Vp<sub>1</sub>/HVH) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow Vp<sub>1</sub>(Vp<sub>1</sub>/HVH) - With Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108	
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08

Section: Full Extent  
Route: Clark Road  
Link Locality:

**Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400																							

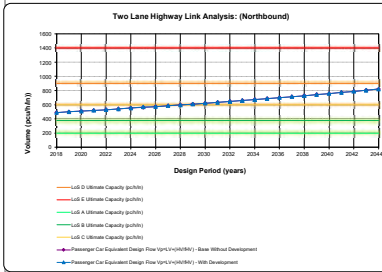


Section: Between Villiers Street and Bent Street  
Route: Craig Street  
Link Locality:

**Craig Street - Between Villiers Street and Bent Street**

**Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	388	395	403	411	420	428	437	445	454	463	472	482	492	501	511	522	532	543	554	565	576	587	599	611	623	636	649
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	68	70	71	73	74	76	77	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114
Total vehicles (veh/h)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger car equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	3800	3876	3954	4033	4113	4196	4279	4365	4452	4541	4632	4725	4819	4916	5014	5114	5217	5321	5427	5536	5647	5760	5875	5992	6112	6234	6359
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT / 30th Highest Factor)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - Base Without Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - With Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Load Result	C	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Volume to Capacity Ratio (V/C)	0.35	0.36	0.36	0.37	0.38	0.39	0.39	0.40	0.41	0.42	0.43	0.44	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.59



**Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	388	395	403	411	420	428	437	445	454	463	472	482	492	501	511	522	532	543	554	565	576	587	599	611	623	636	649
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	68	70	71	73	74	76	77	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114
Total vehicles (veh/h)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger car equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	3800	3876	3954	4033	4113	4196	4279	4365	4452	4541	4632	4725	4819	4916	5014	5114	5217	5321	5427	5536	5647	5760	5875	5992	6112	6234	6359
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT / 30th Highest Factor)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - Base Without Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - With Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Load Result	C	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Volume to Capacity Ratio (V/C)	0.35	0.36	0.36	0.37	0.38	0.39	0.39	0.40	0.41	0.42	0.43	0.44	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.59

Section: Between Villiers Street and Bent Street  
Route: Craig Street  
Link Locality:

**Craig Street - Between Villiers Street and Bent Street**

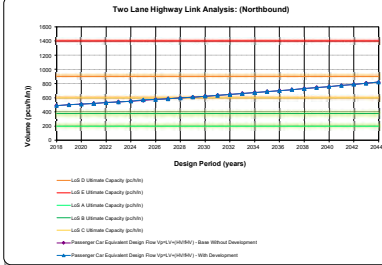


Section: Between Villers Street and Summerland Way  
Route: Dobble Street

Dobble Street - Between Villers Street and Summerland Way

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	388	395	403	411	420	428	437	445	454	463	472	482	492	501	511	522	532	541	554	565	576	587	599	611	623	636	649
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	68	70	71	73	74	76	77	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114
Total vehicles (veh/h)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Eq)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	3800	3876	3954	4033	4113	4196	4279	4365	4452	4541	4632	4725	4819	4916	5014	5114	5217	5321	5427	5536	5647	5760	5875	5992	6112	6234	6359
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT / 30th Highest Factor)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Load Result	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Volume to Capacity Ratio (V/C)	0.35	0.36	0.36	0.37	0.38	0.39	0.39	0.40	0.41	0.42	0.43	0.44	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.59



Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	388	395	403	411	420	428	437	445	454	463	472	482	492	501	511	522	532	541	554	565	576	587	599	611	623	636	649
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	68	70	71	73	74	76	77	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114
Total vehicles (veh/h)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Eq)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	3800	3876	3954	4033	4113	4196	4279	4365	4452	4541	4632	4725	4819	4916	5014	5114	5217	5321	5427	5536	5647	5760	5875	5992	6112	6234	6359
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT / 30th Highest Factor)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Load Result	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Volume to Capacity Ratio (V/C)	0.35	0.36	0.36	0.37	0.38	0.39	0.39	0.40	0.41	0.42	0.43	0.44	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.59



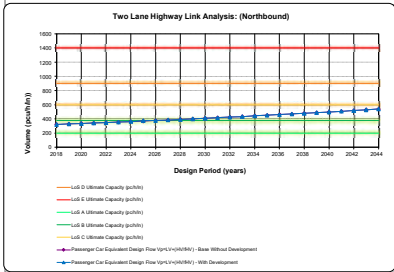
Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic



Section: Between Summerland Way and Clark Road  
Route: Trenray Road  
Link Locality:

Trenray Road - Between Summerland Way and Clark Road  
Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Light Vehicle Volume (veh/h)	255	260	265	271	276	282	287	293	299	305	311	317	323	330	336	343	350	357	364	371	379	386	394	402	410	418	427	
Terrain Type (L=Level, M=Rolling, H=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	66	67	68	70	71	72	74	75	
Total vehicles (veh/h)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502	
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(L*PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	
Design Hour Volume (ADT * 30th Highest Factor)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - Base Without Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540	
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - With Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540	
Load Result	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Volume to Capacity Ratio (V/C)	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.29	0.30	0.30	0.31	0.32	0.32	0.33	0.34	0.34	0.35	0.36	0.36	0.37	0.38	0.39



Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Light Vehicle Volume (veh/h)	255	260	265	271	276	282	287	293	299	305	311	317	323	330	336	343	350	357	364	371	379	386	394	402	410	418	427	
Terrain Type (L=Level, M=Rolling, H=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	66	67	68	70	71	72	74	75	
Total vehicles (veh/h)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502	
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(L*PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	
Design Hour Volume (ADT * 30th Highest Factor)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - Base Without Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540	
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - With Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540	
Load Result	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Volume to Capacity Ratio (V/C)	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.29	0.30	0.30	0.31	0.32	0.32	0.33	0.34	0.34	0.35	0.36	0.36	0.37	0.38	0.39

Section: Between Summerland Way and Clark Road  
Route: Trenray Road  
Link Locality:

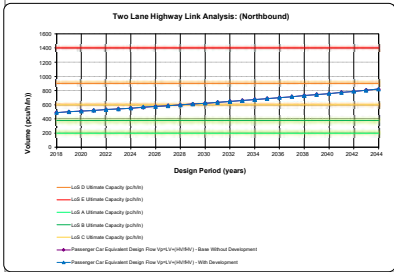
Trenray Road - Between Summerland Way and Clark Road  
Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base



Section: Between Craig Street and Dobie Street  
Route: Villers Street  
Link Locality:

**Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	388	395	403	411	420	428	437	445	454	463	472	482	492	501	511	522	532	541	554	565	576	587	599	611	623	636	649
Terrain Type (L=Level, M=Rolling, H=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	68	70	71	73	74	76	77	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114
Total vehicles (veh/h)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	3800	3876	3954	4033	4113	4196	4279	4365	4452	4541	4632	4725	4819	4916	5014	5114	5217	5321	5427	5536	5647	5760	5875	5992	6112	6234	6359
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADV = 30th Highest Factor)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Load Result	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Volume to Capacity Ratio (V/C)	0.35	0.36	0.36	0.37	0.38	0.39	0.39	0.40	0.41	0.42	0.43	0.44	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.59



**Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	388	395	403	411	420	428	437	445	454	463	472	482	492	501	511	522	532	541	554	565	576	587	599	611	623	636	649
Terrain Type (L=Level, M=Rolling, H=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	68	70	71	73	74	76	77	79	80	82	83	85	87	88	90	92	94	96	98	100	102	104	106	108	110	112	114
Total vehicles (veh/h)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger car equivalent (PE)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	3800	3876	3954	4033	4113	4196	4279	4365	4452	4541	4632	4725	4819	4916	5014	5114	5217	5321	5427	5536	5647	5760	5875	5992	6112	6234	6359
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADV = 30th Highest Factor)	456	465	474	484	494	503	514	524	534	545	556	567	578	590	602	614	626	639	651	664	678	691	705	719	733	748	763
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	490	500	510	520	531	541	552	563	574	586	598	610	622	634	647	660	673	686	700	714	728	743	758	773	788	804	820
Load Result	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Volume to Capacity Ratio (V/C)	0.35	0.36	0.36	0.37	0.38	0.39	0.39	0.40	0.41	0.42	0.43	0.44	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.59

Section: Between Craig Street and Dobie Street  
Route: Villers Street  
Link Locality:

**Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023</
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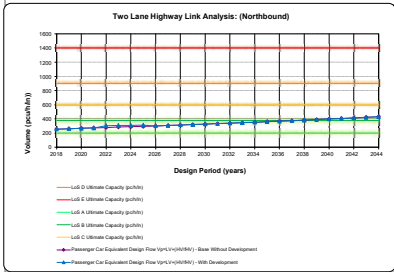


Section Between Bowen Street and Station Street  
Route Arthur Street  
Link Locality:

Arthur Street - Between Bowen Street and Station Street

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle Factor (HV=1+(L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



Arthur Street - Between Bowen Street and Station Street

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle Factor (HV=1+(L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

Section Between Bowen Street and Station Street  
Route Arthur Street  
Link Locality:

Arthur Street - Between Bowen Street and Station Street

Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

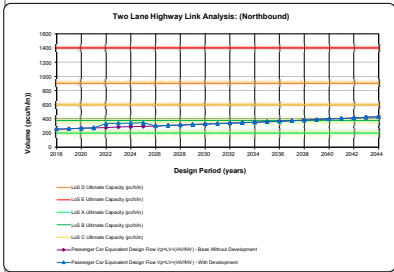
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2
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Section: Between Station Street and Mary McMillan Street  
Route: Arthur Street  
Link Locality:

Arthur Street - Between Station Street and Mary McMillan Street  
Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (A=Level, B=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADH / 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



Arthur Street - Between Station Street and Mary McMillan Street  
Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (A=Level, B=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADH / 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

Section: Between Station Street and Mary McMillan Street  
Route: Arthur Street  
Link Locality:

Arthur Street - Between Station Street and Mary McMillan Street  
Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

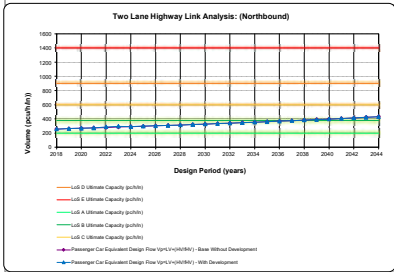
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
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Section Between Mary McKillop Street and Georges Street  
Route Arthur Street  
Link Locality:

Arthur Street - Between Mary McKillop Street and Georges Street Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, M=Rolling, Mt=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



Arthur Street - Between Mary McKillop Street and Georges Street Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, M=Rolling, Mt=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

Section Between Mary McKillop Street and Georges Street  
Route Arthur Street  
Link Locality:

Arthur Street - Between Mary McKillop Street and Georges Street Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

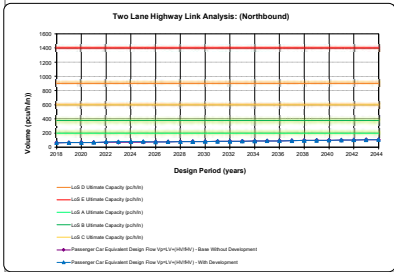
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	
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Section: Between Carrington Road and Williams Road  
Route: Boundary Road  
Link Locality: Boundary Road

Boundary Road - Between Carrington Road and Williams Road  
Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Link A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Link B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Link C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Link D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Link E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	9	9	9	10	10	10	10	11	11	11	11	11	11	11	12	12	12	13	13	13	14	14	14	14	14	15	15
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger car equivalent (E1)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT / 30th Highest Factor)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - With Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Link Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08



Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	59	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Link A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Link B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Link C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Link D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Link E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	9	9	9	10	10	10	10	11	11	11	11	11	11	12	12	12	13	13	13	14	14	14	14	14	14	15	15
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger car equivalent (E1)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADT / 30th Highest Factor)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - With Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Link Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08

Section: Between Carrington Road and Williams Road  
Route: Boundary Road  
Link Locality: Boundary Road

Boundary Road - Between Carrington Road and Williams Road  
Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	140																										



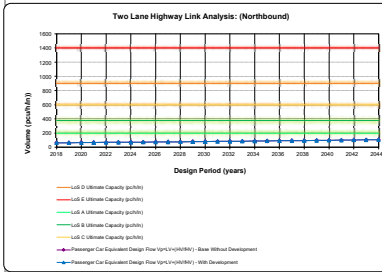




Section: Full extent  
Route: Crown Street  
Link Locality:

**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Terrain Type (L=Level, M=Rolling, H=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	9	9	9	10	10	10	10	10	11	11	11	11	11	11	12	12	12	13	13	13	14	14	14	14	14	15	15
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger car equivalent (PE)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HVF)=(1+PT*(E <sub>T</sub> -1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADH) = 30th Highest Factor	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger Car Equivalent Design Flow Vp=(V <sub>ADH</sub> /HVF) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=(V <sub>ADH</sub> /HVF) - With Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08



**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	51	52	53	54	55	56	57	58	60	61	62	63	65	66	67	69	70	71	73	74	76	77	79	80	82	84	85
Terrain Type (L=Level, M=Rolling, H=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	9	9	9	10	10	10	10	10	11	11	11	11	11	11	12	12	12	13	13	13	14	14	14	14	14	15	15
Total vehicles (veh/h)	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger car equivalent (PE)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HVF)=(1+PT*(E <sub>T</sub> -1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	400	408	416	424	433	442	450	459	469	478	488	497	507	517	528	538	549	560	571	583	594	606	618	631	643	656	669
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Design Hour Volume (ADH) = 30th Highest Factor	60	61	62	64	65	66	68	69	70	72	73	75	76	78	79	81	82	84	86	87	89	91	93	95	97	98	100
Passenger Car Equivalent Design Flow Vp=(V <sub>ADH</sub> /HVF) - Base Without Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=(V <sub>ADH</sub> /HVF) - With Development	65	66	67	68	70	71	73	74	76	77	79	80	82	83	85	87	89	90	92	94	96	98	100	102	104	106	108
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08

Section: Full extent  
Route: Crown Street  
Link Locality:

**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

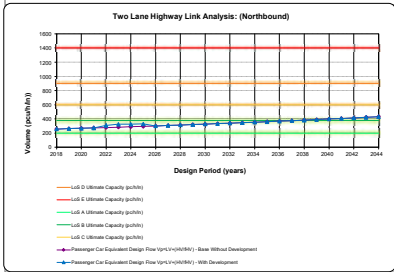
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400																									



Section: Between Station Street and Seventeen Mile Road  
Route: Laidley Street

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
LoS B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
LoS C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
LoS D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
LoS E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Eq)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
LoS B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
LoS C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
LoS D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
LoS E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Eq)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/PHV) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

Section: Between Station Street and Seventeen Mile Road  
Route: Laidley Street

Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

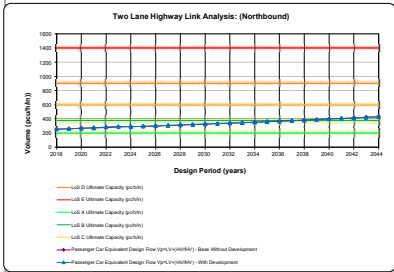
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400																									



Section: Between Seventeen Mile Road and George Street  
Route: Laidley Street

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (A=Level, B=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
V-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT / 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (A=Level, B=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
V-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT / 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

Section: Between Seventeen Mile Road and George Street  
Route: Laidley Street

Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	20
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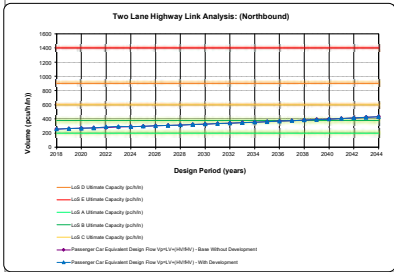




**Section** Between Tenthill Creek Road and Warrego Highway  
**Route** Skyway Road  
**Link Locality** Skyway Road

**Skyway Road - Between Tenthill Creek Road and Warrego Highway**  
**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle Factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



**Southbound Direction - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle Factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

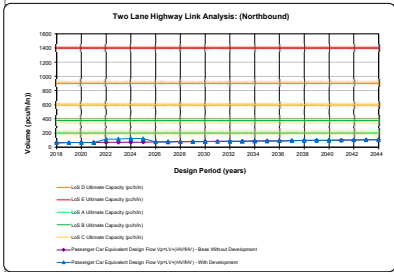




Section Between Arthur Street and Laidley Street  
Route Station Street  
Link Locality:

Station Street - Between Arthur Street and Laidley Street Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, M=Mountaineous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
LoS B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
LoS C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
LoS D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
LoS E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT / 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



Station Street - Between Arthur Street and Laidley Street Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, M=Mountaineous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
LoS B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
LoS C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
LoS D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
LoS E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT / 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

Section Between Arthur Street and Laidley Street  
Route Station Street  
Link Locality:

Station Street - Between Arthur Street and Laidley Street Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

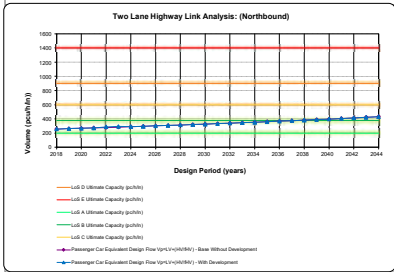
Year of Analysis	2018	2019
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Section: Between Warrego Highway and Salseyard Road  
Route: Tenhill Creek Road  
Link Locality: Tenhill Creek Road

Tenhill Creek Road - Between Warrego Highway and Salseyard Road  
Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, M=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ln A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Ln B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Ln C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Ln D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Ln E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
V-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Ln Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



Tenhill Creek Road - Between Warrego Highway and Salseyard Road  
Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, M=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ln A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Ln B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Ln C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Ln D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Ln E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
V-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/PHV) - With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Ln Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

Section: Between Warrego Highway and Salseyard Road  
Route: Tenhill Creek Road  
Link Locality: Tenhill Creek Road

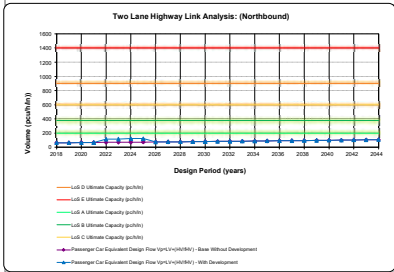
Tenhill Creek Road - Between Warrego Highway and Salseyard Road  
Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019
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Section: Between William Street and Bommer Street  
Route: Victor Street  
Link Locality:

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Light Vehicle Volume (veh/h)	255	260	265	271	276	282	287	293	299	305	311	317	323	330	336	343	350	357	364	371	379	386	394	402	410	418	427	
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Number of Trucks (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	66	67	68	70	71	72	74	75	
Total vehicles (veh/h)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502	
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(L*PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	
Design Hour Volume (ADT * 30th Highest Factor)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - Base Without Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540	
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - With Development	323	329	336	342	349	356	363	371	379	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
Load Result	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Volume to Capacity Ratio (V/C)	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.28	0.28	0.29	0.29	0.30	0.30	0.31	0.32	0.32	0.33	0.34	0.34	0.35	0.36	0.36	0.37	0.38	0.39	



Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Light Vehicle Volume (veh/h)	255	260	265	271	276	282	287	293	299	305	311	317	323	330	336	343	350	357	364	371	379	386	394	402	410	418	427	
Terrain Type (L=Level, R=Rolling, M=Mountainous)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	66	67	68	70	71	72	74	75	
Total vehicles (veh/h)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502	
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Heavy vehicle factor (HV=1+(L*PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
K-factor (30th Highest / AADT)	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	
Design Hour Volume (ADT * 30th Highest Factor)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - Base Without Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540	
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HVH) - With Development	323	329	336	342	349	356	376	371	379	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
Load Result	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Volume to Capacity Ratio (V/C)	0.23	0.23	0.24	0.24	0.25	0.26	0.27	0.27	0.27	0.27	0.28	0.28	0.29	0.29	0.30	0.30	0.31	0.32	0.32	0.33	0.34	0.34	0.35	0.36	0.36	0.37	0.38	0.39

Section: Between William Street and Bommer Street  
Route: Victor Street  
Link Locality:

Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

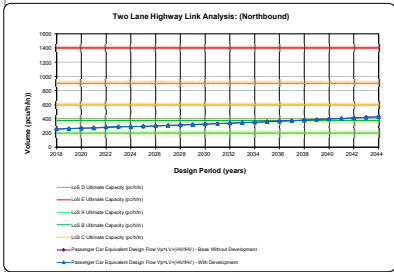
Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	20
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**Section** Between Warrego Highway and Tenthill Creek Road  
**Route** Western Drive  
**Link Locality** Western Drive

**Western Drive - Between Warrego Highway and Tenthill Creek Road**  
**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
LoS B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
LoS C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
LoS D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
LoS E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle Factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow Vp=V*(HV/HV)_Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/HV)_With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



**Northbound - Two Lane Highway level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, R=Rolling, M=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
LoS A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
LoS B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
LoS C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
LoS D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
LoS E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle Factor (HV=1+L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow Vp=V*(HV/HV)_Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=V*(HV/HV)_With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
LoS Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

**Section** Between Warrego Highway and Tenthill Creek Road  
**Route** Western Drive  
**Link Locality** Western Drive

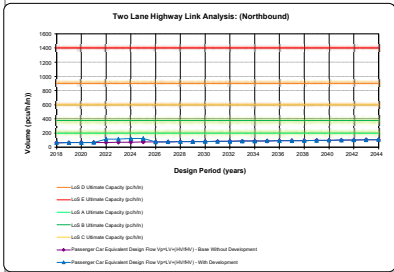
**Western Drive - Between Warrego Highway and Tenthill Creek Road**  
**Southbound Direction - Two Lane Highway level Terrain Link Analysis:**

Section Between Bowen Street and Laidley Street  
Route William Street  
Link Locality:

William Street - Between Bowen Street and Laidley Street

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, M=Rolling, H=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Link A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Link B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Link C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Link D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Link E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Link Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31



William Street - Between Bowen Street and Laidley Street

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	204	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341
Terrain Type (L=Level, M=Rolling, H=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Link A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Link B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Link C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Link D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Link E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	36	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60
Total vehicles (veh/h)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle factor (HV=1+(PT*(E1-1)))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	240	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	258	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432
Link Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.31

Section Between Bowen Street and Laidley Street  
Route William Street  
Link Locality:

William Street - Between Bowen Street and Laidley Street

Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2
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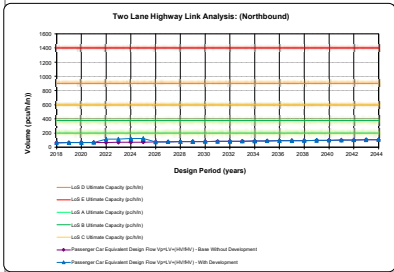




Section: Between Warrego Highway and Mary Mackillop Street  
Route: Turner Street  
Link Locality: Turner Street

Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	255	260	265	271	276	282	287	293	299	305	311	317	323	330	336	343	350	357	364	371	379	386	394	402	410	418	427
Heavy Vehicle Volume (veh/h)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	66	67	68	70	71	72	74	75
Total Vehicles (veh/h)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy Vehicle Factor (HV-1) [1+PT*(E1-1)]	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Design Hour Volume (ADT * 30th Highest Factor)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502
Passenger Car Equivalent Design Flow Vp=[Vp*(HV)/HV] - Base Without Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=[Vp*(HV)/HV] - With Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.28	0.28	0.29	0.29	0.30	0.30	0.31	0.32	0.32	0.33	0.34	0.34	0.35	0.36	0.36	0.37	0.38	0.39



Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	255	260	265	271	276	282	287	293	299	305	311	317	323	330	336	343	350	357	364	371	379	386	394	402	410	418	427
Heavy Vehicle Volume (veh/h)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Load A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Load B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Load C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Load D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Load E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	61	62	63	64	66	67	68	70	71	72	74	75
Total Vehicles (veh/h)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy Vehicle Factor (HV-1) [1+PT*(E1-1)]	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2000	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Design Hour Volume (ADT * 30th Highest Factor)	300	306	312	318	325	331	338	345	351	359	366	373	380	388	396	404	412	420	428	437	446	455	464	473	483	492	502
Passenger Car Equivalent Design Flow Vp=[Vp*(HV)/HV] - Base Without Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow Vp=[Vp*(HV)/HV] - With Development	323	329	336	342	349	356	363	370	378	385	393	401	409	417	426	434	443	452	461	470	479	489	499	509	519	529	540
Load Result	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Volume to Capacity Ratio (V/C)	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.28	0.28	0.29	0.29	0.30	0.30	0.31	0.32	0.32	0.33	0.34	0.34	0.35	0.36	0.36	0.37	0.38	0.39

Section: Between Warrego Highway and Mary Mackillop Street  
Route: Turner Street  
Link Locality: Turner Street

Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2
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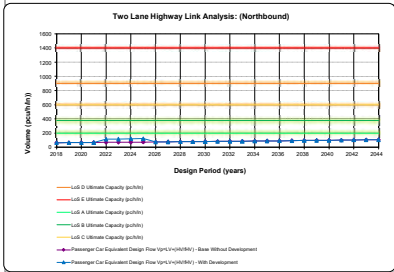


Section Between North Street and Railway Line  
Route Larcombe Street  
Link Locality:

**Larcombe Street - Between North Street and Railway Line**

**Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341	348
Terrain Type (L=Level, M=Rolling, H=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Ln A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Ln B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Ln C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Ln D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Ln E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Number of Trucks (veh/h)	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60	61
Total vehicles (veh/h)	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402	410
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle Factor (HV=1+(L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347	3414
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402	410
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432	440
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	263	268	274	279	285	291	297	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432	440
Ln Result	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Volume to Capacity Ratio (V/C)	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.30	0.31	0.31



**Northbound - Two Lane Highway Level Terrain Link Analysis: Base Conditions With Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Ultimate Link Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Light Vehicle Volume (veh/h)	208	212	216	221	225	230	234	239	244	249	254	259	264	269	275	280	286	291	297	303	309	315	322	328	335	341	348
Terrain Type (L=Level, M=Rolling, H=Mountainous)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Ln A Ultimate Capacity (pc/h/ln)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Ln B Ultimate Capacity (pc/h/ln)	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
Ln C Ultimate Capacity (pc/h/ln)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Ln D Ultimate Capacity (pc/h/ln)	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Ln E Ultimate Capacity (pc/h/ln)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Trucks (veh/h)	37	37	38	39	40	41	41	42	43	44	45	46	47	48	48	49	50	51	52	53	55	56	57	58	59	60	61
Total vehicles (veh/h)	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402	410
Passenger Car Equivalent (E1)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Percentage Trucks (PT)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Heavy vehicle Factor (HV=1+(L*PT*(E1-1))	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Driver population (Pg)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Average Annual Daily Traffic (AADT)	2040	2081	2122	2165	2208	2252	2297	2343	2390	2438	2487	2536	2587	2639	2692	2746	2800	2856	2914	2972	3031	3092	3154	3217	3281	3347	3414
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
K-factor (30th Highest / AADT)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Design Hour Volume (ADT * 30th Highest Factor)	245	250	255	260	265	270	276	281	287	293	298	304	310	317	323	329	336	343	350	357	364	371	378	386	394	402	410
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_Base Without Development	263	268	274	279	285	291	296	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432	440
Development Traffic (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Car Equivalent Design Flow (Vp)=V*(HV/HV)_With Development	263	268	274	279	285	291	297	302	308	315	321	327	334	340	347	354	361	368	376	383	391	399	407	415	423	432	440
Ln Result	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Volume to Capacity Ratio (V/C)	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.30	0.30	0.31	0.31

Section Between North Street and Railway Line  
Route Larcombe Street  
Link Locality:

**Larcombe Street - Between North Street and Railway Line**

**Southbound Direction - Two Lane Highway Level Terrain Link Analysis: Base Conditions Without Development Traffic**

Year of Analysis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
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APPENDIX

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Traffic Impact Assessment

**Appendix Q** Gaul Street  
Technical Memo



ARTC

The Australian Government is investing  
in infrastructure through the National  
Infrastructure Corridor (NIC) to  
improve growth and connectivity.



# Memorandum

To	<b>Stephen Brierley</b>	From	<b>FFJV</b>
Copy	<b>Darren Bell</b>	Reference	<b>3300</b>
Date	<b>17 September 2019</b>	Pages (including this page)	<b>35</b>
Subject	<b>Helidon to Calvert – Gaul Street Level Crossing Traffic Impact Assessment</b>		

## 1 Introduction

### 1.1 Overview

This Technical Memorandum documents the assessment undertaken to investigate the potential traffic impacts to the road network in Gatton as a result of the proposed Helidon to Calvert (H2C) section (the Project) of the Melbourne-Brisbane Inland Rail (MBIR).

The assessment considers options to retain or close the existing level crossing located between the Gaul Street/Hickey Street and William Street/Crescent Street intersections, as indicated in **Figure 1**, which crosses the existing West Moreton System and in the future will cross both the West Moreton System and the MBIR System. The assessed scenarios are detailed in Section 1.3.



Figure 1 Location of Gaul Street Level Crossing



# Memorandum

## 1.2 Assessment area

The assessment area includes the road network that may be impacted by the closure of the Gaul Street level crossing, i.e. the intersections and road links on the most direct alternative routes for impacted traffic. The intersections assessed are listed below and their locations shown on **Figure 2**. Intersections outside of this network are not anticipated to be significantly impacted.

- Eastern Drive/Golf Links Drive (1)
- Eastern Drive/Crescent Street (2)
- Eastern Drive/Old College Road (3)
- William Street/Crescent Street (4)
- Gaul Street/Hickey Street (5)
- Crescent Street/Railway Street (6)
- Crescent Street/East Street (7)
- Hickey Street/Old College Road (8)
- Beavan Street/Old College Road (9)
- Gaul Street Level Crossing.



Figure 2 Assessment area



# Memorandum

## 1.3 Traffic analysis approach

The modelling approach consisted of the following:

- Due to the complexity and operational effects of adjacent intersections, a network modelling approach using SIDRA software was adopted;
- Traffic surveys were conducted at the intersections noted in Section 1.2 as volume inputs for the SIDRA network model with traffic survey specifications consisting of:
  - Classified intersection counts accounting for light and heavy vehicles;
  - Traffic survey period accounting for: 06:00 to 09:00 AM peak period and 15:00 to 18:00 PM peak period;
  - Classified 24 hour 7 day Austroads 12 bin tube count at the existing Gaul Street level crossing.
- The SIDRA model was verified according to existing turn lane lengths, lane widths, posted speed, pedestrian protection and lane storage capacity;
- Operation of the Gaul Street active level crossing is described as follows:
  - Active level crossings utilise warning devices to warn road users of the approach of a train. The warning devices operate when the approaching train is at a minimum warning time from entering the road rail interface. The level crossing warning time is defined as the minimum time of operation of the warning equipment for the fastest train from the initiation of the warning sequence until the front of the train reaches the road-rail intersection.
  - For Inland Rail, the minimum warning device protection is defined in the basis of design as being an active level crossing controlled by flashing lights and half boom barriers. The minimum signage, line marking and assembly for this crossings' type is defined in AS1742.7 and is a RX-5 flashing light assembly and half boom barriers. (Note: the standard RX-5 is synonymous with the term Type F Highway signal).
  - Operation of this type of crossing requires the warning devices to be initiated and maintained automatically by the detection of a train, using crossing control devices that operate on the approach side of the level crossing. This ensures the correct minimum warning time is obtained.
- The active level crossing operational sequence adopted is as follows:
  - If no train is approaching the level crossing then the Type F highway signals are extinguished, the half-boom barriers are a fully raised position and no audible warning can be heard.
  - As a train approaches the level crossing then, at the minimum warning time point ( $t=0$ ), the crossing control devices trigger the Type F highway signals to commence and they continue to flash alternately. At the same time warning bells are also triggered to commence and continue to sound. The minimum warning time is 25 seconds for Type F light and boom barrier installations.
  - After 11 seconds ( $t=11$ ) time interval the half-boom barriers commence to lower and after an additional 11 to 13 seconds ( $t=22-25$ ) they reach the fully lowered position and one of the warning bells is silenced.
  - After the minimum approach time has expired ( $t=25$ ) the front of the approaching train will reach the level crossing.

# Memorandum

- When the train has cleared the crossing the booms commence to rise to the upright position and the remaining warning bell will be silenced. Unless a second train is approaching the level crossing, in the holding section, as the rear of the first train passes clear of the level crossing and there is insufficient time for the half-boom barriers to rise and remain in the fully raised position for the set time interval before commencing to lower for the second train, then the boom barriers remain lowered until the rear of the second train has also passed clear of the level crossing
- After the last train has cleared the level crossing, the booms commence to rise to the upright position and the remaining warning bell will be silenced. The half-boom barriers reach the fully raised position within 10 seconds and the Type F highway signals become extinguished.
- The level crossing wait time for current operations are based on 270 seconds wait time in the AM Peak and 100 seconds wait time in the PM Peak.
- The level crossing wait time calculations with the Project operational are based on the following:
  - Warning time of 25 seconds;
  - Boom gate time of 10 seconds;
  - The best case (fastest) train clearance time was calculated based on:
    - an assumed maximum train speed of 115 km/h = 56.4 seconds;
  - The worst case (slowest) train clearance time was calculated based on:
    - A minimum train speed based on a train accelerating from the closest turnout;
    - Distance of the level crossing from the closest turnout of 970 m (Down);
    - Freight train acceleration of 0.1 m/s<sup>2</sup>;
    - Initial train speed at turnout of 0 km/h;
    - Maximum turnout speed of 50 km/h;
    - Train length of 1,800 m;
    - The train will be travelling at 50 km/h when it reaches Gaul Street;
    - The train will continue to travel at 50 km/h until the tail of the train clears the turnout, at which point it will accelerate at 0.1 m/s<sup>2</sup>;
    - Therefore, the train will be travelling at 70.8 km/h by the time it clears Gaul Street.
    - The calculated worst case clearance time is 117.6 seconds.
  - Best case (lowest) wait time is:
    - 25 s (warning time) + 10 s (Boom raise time) + 56 s (Time taken to clear crossing) = 91 seconds
  - Worst case (highest) wait time per train is:
    - 25 s (warning time) + 10 s (Boom raise time) + 118 s (Time taken to clear crossing) = 153 seconds
  - The worst case (highest) design time used for the analysis is 306 seconds, representing two trains arriving back to back in opposing directions.



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- The Gaul Street rail crossing was coded into SIDRA as follows:
  - The railway crossing was represented by a straight road with two phases. A Dummy Movement is specified to represent the train movement in Phase B when vehicle movements are stopped assuming two trains crossing within the peak hour. The Minimum Green Time for the Dummy Movement is specified as input so that the road closure time for the train is Minimum Green Time plus the Yellow and All-Red Times for Phase B. The remaining cycle time is allocated to Phase A which allows vehicles to cross the level crossing.
  - This crossing was used in a Network with adjacent intersections with Approach Distances specified to represent limited queue storage distances. This allows modelling of lane blockage by downstream queues.
- The following scenarios were evaluated:
  - Scenario 1: Base Model - Gaul Street Level Crossing to Remain Open:
    - Current Year 2018 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the existing level crossing and associated external intersections based on existing geometry and control for the AM and PM peak hours within the current year with current train operations.
    - Future Year 2023 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the level crossing and associated external intersections based on existing geometry and control for the AM and PM peak hours for the future year when the Project is operational.
    - Future Year 2033 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the level crossing and associated external intersections based on existing geometry and control for the AM and PM peak hours for the future design year when the Project is operational.
  - Scenario 2: Closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection
    - Future Year 2023 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the external intersections based on the closure of the level crossing and impacts of associated diverted traffic for the AM and PM peak hours of the future year when the Project is operational.
    - Future Design Year 2033 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the external intersections based on the closure of the level crossing and impacts of associated diverted traffic for the AM and PM peak hours of the future design year when the Project is operational.
  - Scenario 3: Gaul Street Level Crossing to Remain Open with Traffic Signal Control Upgrades to William Street/Crescent Street intersection:
    - Future Year 2023 AM and PM peak hour isolated intersection analysis: The signalised upgraded William Street/Crescent Street intersection in isolation.
    - Future Year 2023 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the level crossing and associated external intersections based on proposed upgraded geometry and control of William Street/Crescent Street intersection and Gaul Street/Hickey Street intersection. This was done for both AM and PM peak hours for the future year when Project is operational.

# Memorandum

- Pedestrian and cyclist movements at Gaul Street are anticipated to be maintained in all scenarios. Pedestrian and cyclist counts undertaken on Thursday 13<sup>th</sup> September 2018 indicate strong pedestrian activity, particularly in the PM count period:
  - between 6am and 9am - 33 pedestrians and 5 cyclists
  - between 3pm and 6pm – 173 pedestrians and 9 cyclists.

## 1.4 Analysis performance criteria

### 1.4.1 Delay based intersection analysis criteria

An increase in vehicles as the result of traffic growth in the area as well as an increase in train frequencies through the level crossing as a result of the Project and Queensland Rail traffic will likely increase traffic delays. Increases in delays have an economic and social impact on the community through increased travel times, driver impatience and the associated economic cost of these delays to private and commercial/heavy vehicle trips. The following input types are required as a basis to evaluate existing intersection performance:

- Existing intersection geometry and lane configuration data;
- Traffic signal phasing and sequence data;
- Vehicle movement data;
- Peak hour traffic volume data.

The delay based analyses criteria adopted for the purposes of this Technical Memorandum are provided in **Table 1**. The table indicates the LoS per intersection control type associated with a respective delay per vehicle measured in seconds.

**Table 1 LoS Definitions Based on Vehicle Delay in Seconds (Source: SIDRA Intersection 8 User Guide)**

Control delay per Vehicle in Seconds (d)			
Level of Service	Signals	Roundabout	Sign Control
A	$d \leq 10$	$d \leq 10$	$d \leq 10$
B	$10 < d \leq 20$	$10 < d \leq 20$	$10 < d \leq 15$
C	$20 < d \leq 35$	$20 < d \leq 35$	$15 < d \leq 25$
D	$35 < d \leq 55$	$35 < d \leq 50$	$25 < d \leq 35$
E	$55 < d \leq 80$	$50 < d \leq 70$	$35 < d \leq 50$
F	$d < 80$	$d < 70$	$d < 50$



# Memorandum

## 2 Scenario 1 - Base Model - Open level crossing

This section provides an overview of the approach and inputs used to develop the Base Model layout. The Base Model was used to evaluate the current year and future year scenarios where the existing Gaul Street level crossing remains open. The scenarios consist of:

- Current Year 2018 AM and PM peak hour analysis: Existing geometry and control with open level crossing;
- Future Year 2023 AM and PM peak hour analysis: Existing geometry and control with open level crossing;
- Future Year 2033 AM and PM peak hour analysis: Existing geometry and control with open level crossing.

### 2.1 Scenario 1 - Base Model - Layout

The Base Model was developed for both the weekday AM and PM peak hours. The base network was determined based on existing geometry and control as well as traffic demand inputs from traffic survey data. For conservancy individual intersection peak hour volumes were used as traffic demands within the network model. The base network model layout is illustrated in **Figure 3**.

# Memorandum

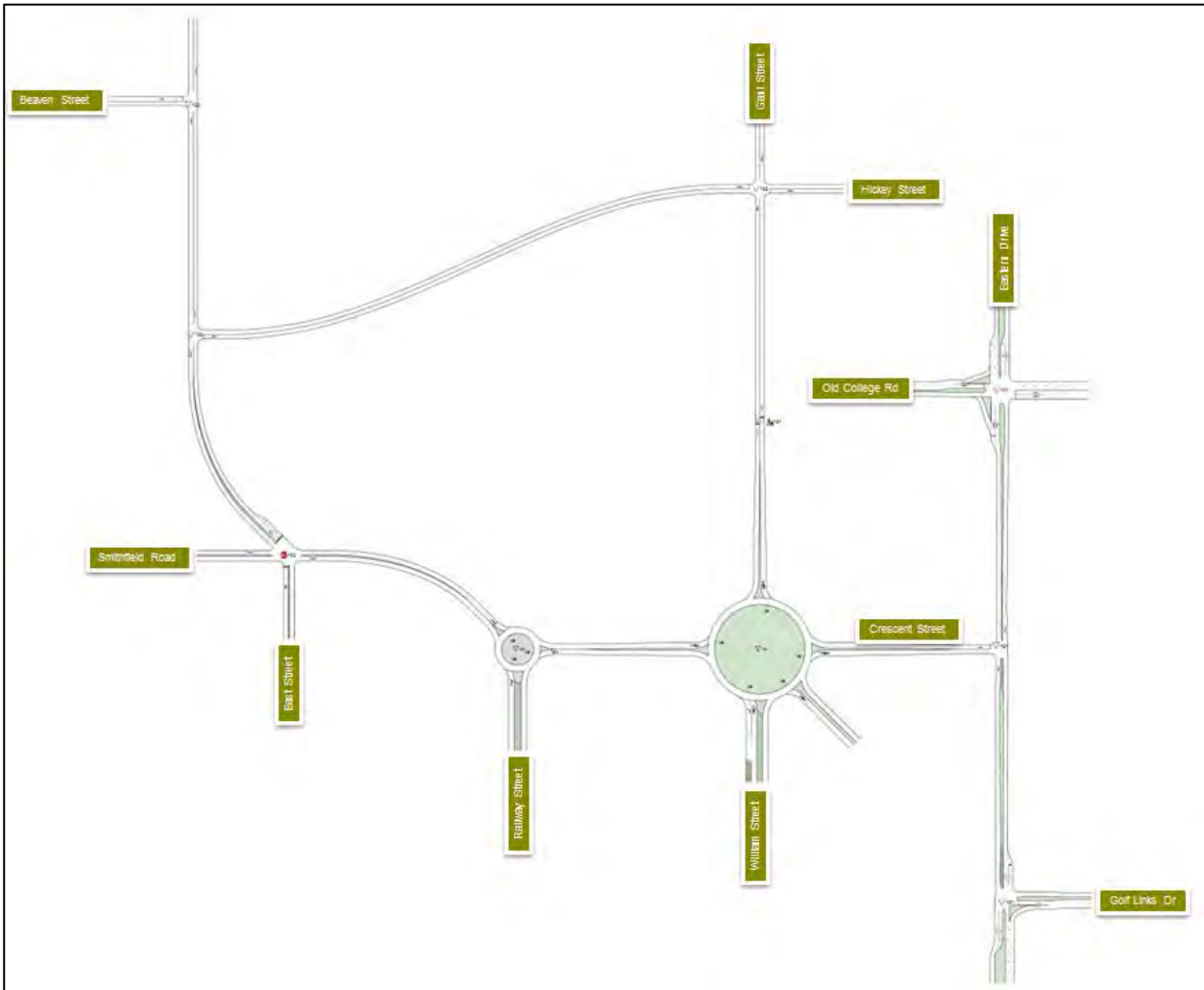


Figure 3 Base Model layout

## 2.2 Traffic growth

A linear traffic growth rate was determined based on expected future year committed developments within close proximity of Gatton. Inputs provided by Lockyer Valley Regional Council indicated that there is a 20 year committed residential development to be implemented within the Woodlands area. The development extent is considered to be 4,000 residential units which are to be developed over a 20 year period to future year 2038. The traffic growth analysis results are provided in **Figure 4**.



# Memorandum

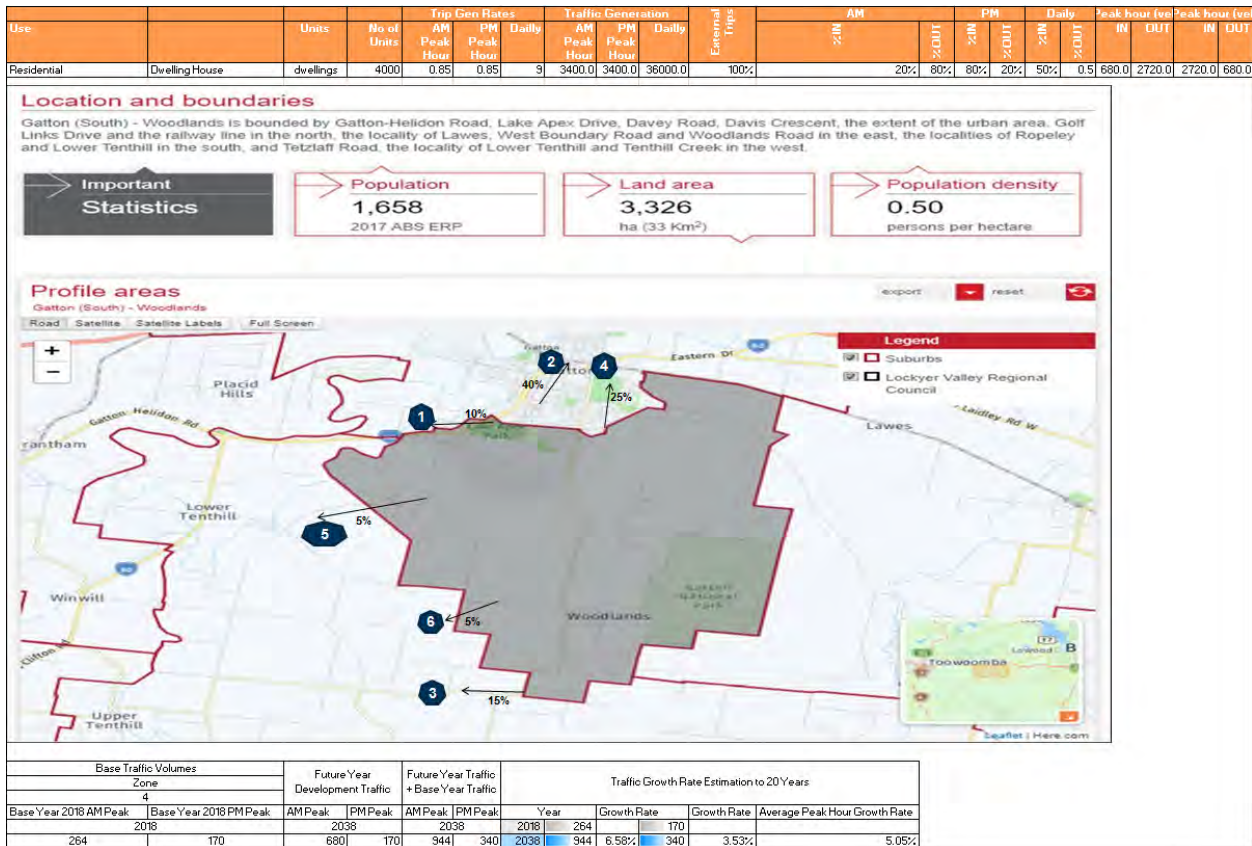


Figure 4 Traffic growth analysis

Peak hour development traffic expected to be generated by the proposed development was determined based on the RTA Guide to Traffic Generating Developments 2002. Given the extent of the envisaged residential development, the traffic expected to be generated amounts to 3,400 veh/h for both AM and PM peak hours. This accounts for the development generated traffic at year 2038 when the total 4,000 units would be developed. Based on the combinations of peak hour directional distribution, assumed external zonal distributions, base peak hour traffic at zone 4 and development generated traffic to zone 4 an average yearly traffic growth rate of 5% was estimated. The 5% traffic growth rate was used across all intersections within the assessment area in order to conservatively increase current year peak hour volumes to account for the envisaged traffic growth impact of the 4,000 unit residential development.

## 2.3 Scenario 1 - Base Model - Level crossing traffic volumes

Existing and future year traffic volumes at the level crossing within the Base Model are summarised below and shown in Figure 5.

# Memorandum



**Figure 5 Base Model level crossing traffic volumes**

Seven day 24 hour traffic surveys were conducted at the exiting Gaul Street level crossing. The survey results indicate that approximately 152 vehicles cross the level crossing during the AM peak in the northbound direction while 201 vehicles cross the level crossing during the AM peak in the southbound direction.

The survey results also indicate that approximately 273 vehicles cross the level crossing during the PM peak in the northbound direction while 313 vehicles cross the level crossing during the PM peak in the southbound direction.

The application of a 5% traffic growth rate would increase current year traffic volumes to approximately 316 vehicles to cross the level crossing during the design year 2033 AM peak in the northbound direction and 418 vehicles to cross the level crossing during the design year 2033 AM peak in the southbound direction.

Similarly, the PM peak hour traffic would increase to approximately 568 vehicles crossing the level crossing during the in the northbound direction for design year 2033 and 651 vehicles crossing the level crossing in the southbound direction for design year 2033.



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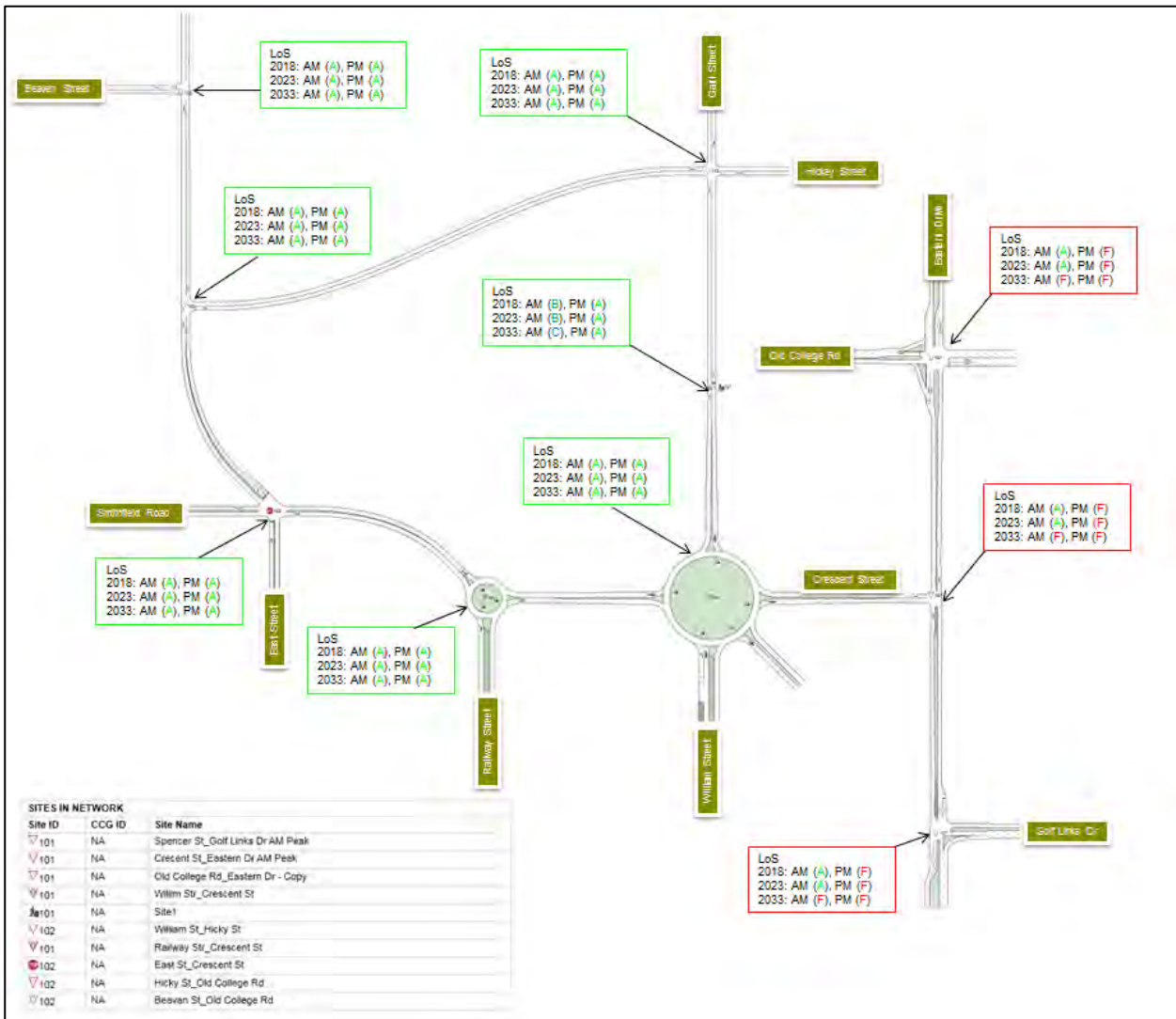
## 2.4 Scenario 1 – Base Model - Analysis results

The intersection analysis for the Base Model was done for the following scenarios as described in Section 1.3:

- Scenario 1: Base Model - Gaul Street Level Crossing to Remain Open
  - Current Year 2018 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the existing level crossing and associated external intersections based on existing geometry and control for the AM and PM peak hours within the current year.
  - Future Year 2023 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the existing level crossing and associated external intersections based on existing geometry and control for the AM and PM peak hours for the future year when the Project is operational.
  - Future Year 2033 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the existing level crossing and associated external intersections based on existing geometry and control for the AM and PM peak hours for the future design year when the Project is operational.

A summary of the Base Model Level of Service (LoS) analysis results for the intersections are provided in **Figure 6**.

# Memorandum



**Figure 6 Scenario 1 - Base Model network level intersection LoS analysis summary**

The overall intersection analysis results indicate that all intersections operate within acceptable levels of service and vehicle delay, except for the intersections of:


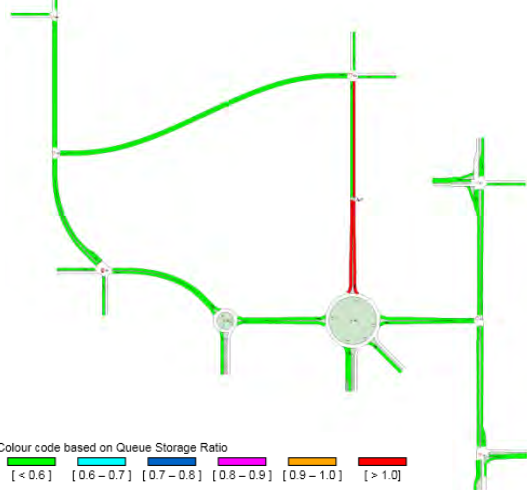
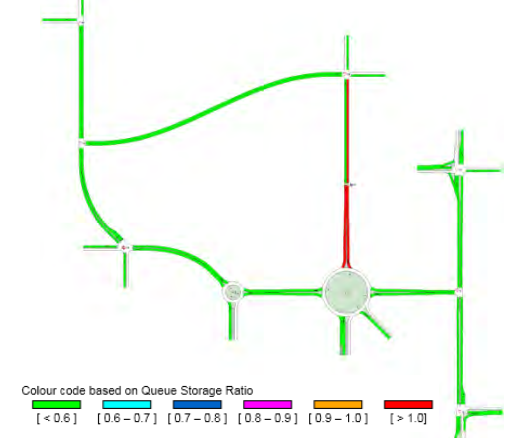
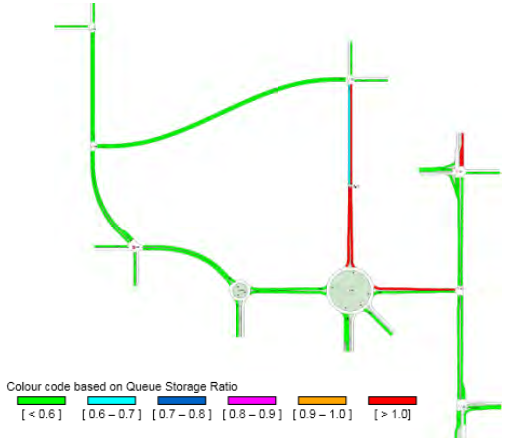
- Eastern Drive/Golf Links Drive;
- Eastern Drive/Old College Road;
- Eastern Drive/Crescent Street.

These intersections indicate that high levels of vehicle delay occur during current and future year peak hour conditions. Both geometric and intersection control upgrades would be required to improve operational performance. Vehicle queueing analysis results should be evaluated in parallel to vehicle delay (LoS). Queueing analyses results depict the queue storage ratio (percentile of vehicles queueing in relation to the lane storage capacity in meters). Queueing analysis outputs contribute to safety impacts, where extensive queueing beyond allowable storage capacity contributes to a higher probability for the occurrence of an accident. **Table 2** illustrates the Base Model network wide queue storage analysis results.

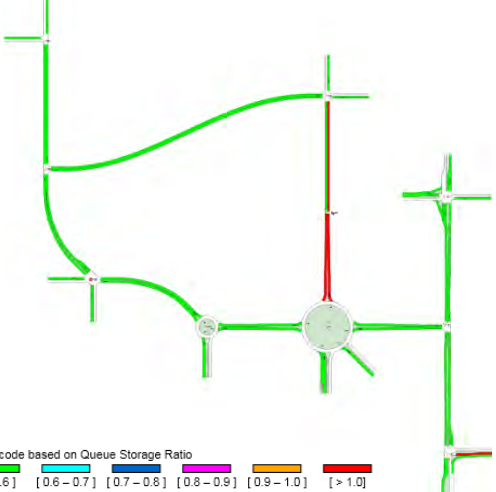
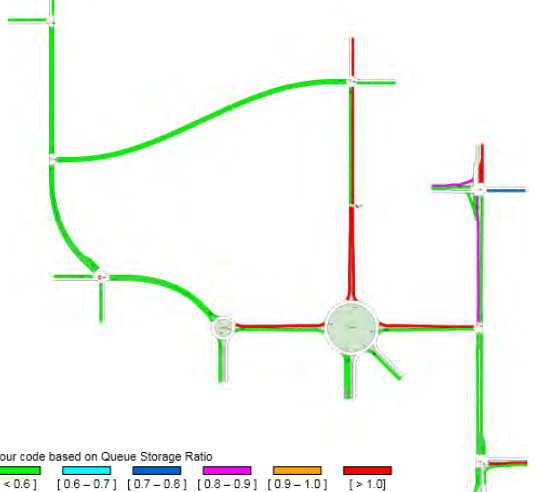


# Memorandum

Table 2 Scenario 1: Base Model queue storage ratio analysis results

Year of Analysis	AM Peak (Queue Storage Ratio)	PM Peak (Queue Storage Ratio)
Current Year 2018	 <p>Colour code based on Queue Storage Ratio</p> <p>[ &lt; 0.6 ] [ 0.6 - 0.7 ] [ 0.7 - 0.8 ] [ 0.8 - 0.9 ] [ 0.9 - 1.0 ] [ &gt; 1.0 ]</p>	 <p>Colour code based on Queue Storage Ratio</p> <p>[ &lt; 0.6 ] [ 0.6 - 0.7 ] [ 0.7 - 0.8 ] [ 0.8 - 0.9 ] [ 0.9 - 1.0 ] [ &gt; 1.0 ]</p>
Future Year 2023	 <p>Colour code based on Queue Storage Ratio</p> <p>[ &lt; 0.6 ] [ 0.6 - 0.7 ] [ 0.7 - 0.8 ] [ 0.8 - 0.9 ] [ 0.9 - 1.0 ] [ &gt; 1.0 ]</p>	 <p>Colour code based on Queue Storage Ratio</p> <p>[ &lt; 0.6 ] [ 0.6 - 0.7 ] [ 0.7 - 0.8 ] [ 0.8 - 0.9 ] [ 0.9 - 1.0 ] [ &gt; 1.0 ]</p>

# Memorandum

Year of Analysis	AM Peak (Queue Storage Ratio)	PM Peak (Queue Storage Ratio)
Design Year 2033	 <p>Colour code based on Queue Storage Ratio</p> <p>[&lt;0.6] [0.6-0.7] [0.7-0.8] [0.8-0.9] [0.9-1.0] [&gt;1.0]</p>	 <p>Colour code based on Queue Storage Ratio</p> <p>[&lt;0.6] [0.6-0.7] [0.7-0.8] [0.8-0.9] [0.9-1.0] [&gt;1.0]</p>



# Memorandum

The analysis results provided in **Table 2** indicate that existing queue storage capacity between the Gaul Street level crossing and the William Street/Crescent Street intersection and the Gaul Street/Hickey Street intersection would be exceeded throughout all years of analyses. The potential vehicle queue spill back from the William Street/Crescent Street intersection across the existing Gaul Street level crossing is considered a significant safety risk.

The analysis results also indicate that the intersections of Eastern Drive/Golf Links Drive, Eastern Drive/Old College Road and Eastern Drive/Crescent Street would experience queue spill back impacts where allowable queue storage capacity would be exceeded at design year 2033. Geometric upgrades would be required in order to mitigate for queue storage ratio impacts.

## 3 Scenario 2 - Closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection

The analysis of Scenario 2 was conducted in order to determine the impacts that closing the Gaul Street level crossing would have on the surrounding road network as a result of envisaged diverted traffic. Consistent with the option proposed as a part of the feasibility design, this scenario involved the closure of the western end of Hickey street, resulting in Hickey Street becoming a cul-de-sac and removing the connection to Old College Road. This treatment allowed for the level of Old College Road to be lowered to achieve suitable height clearance underneath the rail crossing. Further information about the design and rail crossing is provided as a part of the feasibility design.

### 3.1 Traffic redistribution as result of closures

Traffic volumes crossing the existing Gaul Street level crossing were manually redistributed to and from external zones to simulate closure of Gaul Street level crossing and removal of the Hickey Street / Old College Road connection. Traffic volumes were proportionally distributed from place of origin to destination along the shortest and fastest alternative route. It is assumed that:

- The northbound level crossing movement will traverse along Crescent Street westbound to Old College Road when diverted.
- The southbound level crossing movement will either:
  - Continue along Old College Road to Crescent Street; or.
  - traverse north along Park Lane or Gaul Street in order to turn left into Old College Road and continue east along Crescent Street when diverted. .

Traffic movements were not diverted through Eastern Drive due to existing capacity constraints on this part of the network being likely to influence road users to use an alternative route.

The envisaged primary diverted travel movements are indicated in **Figure 7**.

# Memorandum



**Figure 7** Diverted travel movements due to level crossing closure

**Figure 8** shows the highest expected traffic volumes for the 2023 and 2033 analysis years resulting from the redistribution of traffic movements.

The diverted southbound level crossing movement would contribute 240 veh/h during the AM peak and 398 veh/h during the PM peak for the year 2023 and 391 veh/h during the AM peak and 649 veh/h during the PM peak for the year design 2033.

The diverted north bound level crossing movement would contribute to 209 veh/h during the AM peak and 412 veh/h during the PM peak for the year 2023 and 341 veh/h during the AM peak and 672 veh/h during the PM peak for the year design 2033.

The diversion results in an additional travel distance of up to 1,2 km. Assuming an average network travel speed of 40 km/h, the diversion results in an additional travel time of up to 108 seconds.

The closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection, results in Hickey Street / Old College Road becoming a stand-alone intersection within this network, having no connection to the other intersections. For this reason, the Hickey Street / Gaul Street intersection was not considered in the analysis for this scenario. All traffic utilising this intersection to cross the railway line have been distributed through other intersections in the network to account for this removal.



# Memorandum



Note: The highest vehicle volume is a combination of the diverted level crossing traffic volume as well as the background traffic volume for the respective movement of travel.

Figure 8 Highest volume by movement

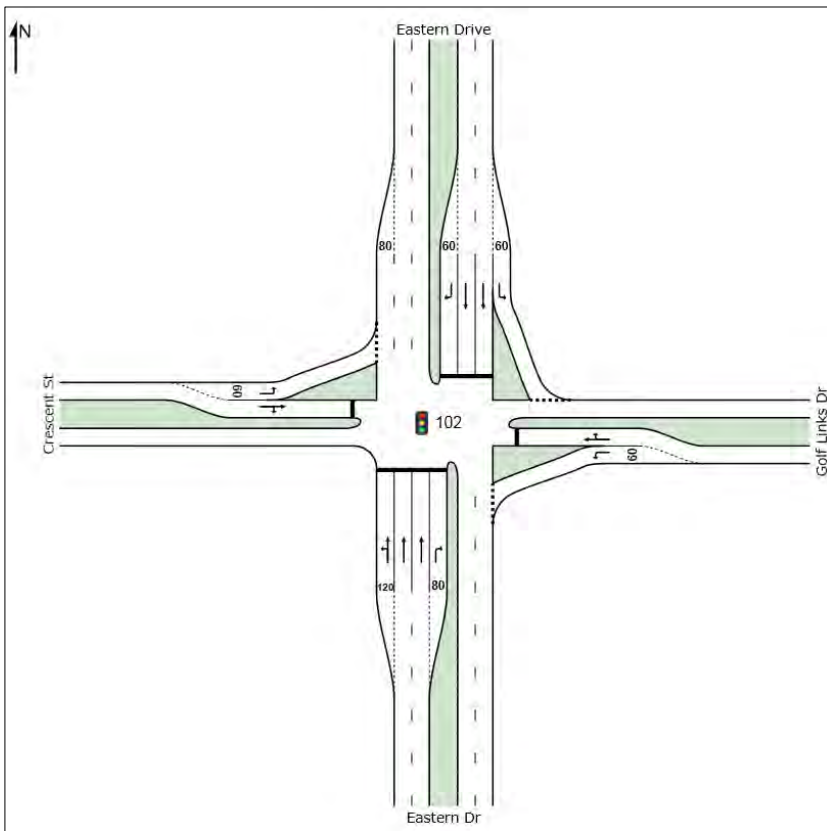
## 3.2 Scenario 2 - Analysis Results

The intersection analysis for the model was done for the following scenario as described in Section 1.3:

- Scenario 2: Closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection
  - Future Year 2023 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the external intersections based on the closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection and impacts of associated diverted traffic for the AM and PM peak hours of the future year when the Project is operational.
  - Future Design Year 2033 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the external intersections based on the closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection and impacts of associated diverted traffic for the AM and PM peak hours of the future design year when the Project is operational.

In addition to the closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection, Scenario 2 includes the proposed upgrade of the Eastern Drive/Golf Links Drive intersection and Eastern Drive/Crescent Street intersection, as stipulated by TMR to be included in the Project scope. This upgrade is being provided in order to ensure adequate operational efficiency is achieved for the design year 2033 and associated future year traffic volumes. The proposed upgraded intersection layout and control of this intersection is illustrated in Figure 9.

# Memorandum



**Figure 9 Proposed upgraded Eastern Drive/Crescent Street/Golf Links Drive intersection**

As an isolated site, the intersection would operate within acceptable levels of service and delay for both AM and PM peak hours during future year 2023 and 2033 scenarios. The analysis results for the isolated site is indicated in **Table 3** to **Table 6**.



# Memorandum

**Table 3 Scenario 2: Upgraded Eastern Drive/Crescent Street/Golf Links Drive analysis results 2023 AM Peak**

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn. v/c	Average Delay sec	Level of Service	Percentile Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m			
South											
1	L2	20	2.0	0.129	28.5	LOS C	2.3	15.9	0.76	0.63	42.0
2	T1	402	2.0	0.290	24.2	LOS C	5.5	38.5	0.80	0.66	42.8
3	R2	91	2.0	0.105	11.0	LOS B	1.1	7.8	0.51	0.69	49.6
Approach		513	2.0	0.290	22.0	LOS C	5.5	38.5	0.75	0.66	43.9
East											
4	L2	199	2.0	0.171	7.6	LOS A	1.8	12.7	0.29	0.63	52.7
5	T1	78	2.0	0.557	36.6	LOS D	6.2	43.4	0.97	0.79	36.5
6	R2	78	2.0	0.557	42.2	LOS D	6.2	43.4	0.97	0.79	36.1
Approach		355	2.0	0.557	21.6	LOS C	6.2	43.4	0.59	0.70	44.0
North											
7	L2	102	2.0	0.074	6.1	LOS A	0.3	2.2	0.16	0.59	53.7
8	T1	568	2.0	0.476	26.1	LOS C	9.7	67.8	0.86	0.73	42.0
9	R2	218	2.0	0.332	27.4	LOS C	6.7	46.6	0.78	0.78	40.8
Approach		888	2.0	0.476	24.1	LOS C	9.7	67.8	0.76	0.72	42.8
West											
10	L2	87	2.0	0.075	6.7	LOS A	0.5	3.3	0.24	0.61	53.4
11	T1	4	2.0	0.035	33.7	LOS C	0.3	2.1	0.88	0.63	37.6
12	R2	4	2.0	0.035	39.3	LOS D	0.3	2.1	0.88	0.63	37.2
Approach		96	2.0	0.075	9.3	LOS A	0.5	3.3	0.29	0.61	51.4
All Vehicles		1852	2.0	0.557	22.3	LOS C	9.7	67.8	0.70	0.70	43.7

The 2023 AM peak analysis results in **Table 3** indicate the intersection would operate within LoS C and an average delay of 22.3 seconds.

# Memorandum

**Table 4 Scenario 2: Upgraded Eastern Drive/Crescent Street/Golf Links Drive analysis results 2023 PM Peak**

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn. v/c	Average Delay sec	Level of Service	Percentile Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m			
South											
1	L2	28	2.0	0.238	15.4	LOS B	5.4	37.6	0.54	0.49	50.0
2	T1	1412	2.0	0.536	11.9	LOS B	15.2	106.2	0.65	0.58	50.1
3	R2	179	2.0	0.368	11.9	LOS B	2.4	16.7	0.61	0.74	49.0
Approach		1619	2.0	0.536	12.0	LOS B	15.2	106.2	0.64	0.60	50.0
East											
4	L2	179	2.0	0.216	8.6	LOS A	2.2	15.3	0.37	0.66	51.9
5	T1	25	2.0	0.232	37.3	LOS D	2.0	13.8	0.93	0.72	36.3
6	R2	25	2.0	0.232	42.9	LOS D	2.0	13.8	0.93	0.72	35.8
Approach		229	2.0	0.232	15.6	LOS B	2.2	15.3	0.49	0.67	47.3
North											
7	L2	237	2.0	0.194	7.1	LOS A	1.6	11.5	0.28	0.63	53.1
8	T1	1033	2.0	0.469	11.7	LOS B	12.6	88.1	0.64	0.56	50.3
9	R2	132	2.0	0.547	44.7	LOS D	5.4	37.5	0.98	0.79	34.2
Approach		1401	2.0	0.547	14.0	LOS B	12.6	88.1	0.61	0.60	48.6
West											
10	L2	255	2.0	0.350	11.2	LOS B	5.0	34.7	0.55	0.73	50.1
11	T1	8	2.0	0.080	36.3	LOS D	0.6	4.5	0.91	0.67	36.7
12	R2	8	2.0	0.080	41.8	LOS D	0.6	4.5	0.91	0.67	36.2
Approach		272	2.0	0.350	12.9	LOS B	5.0	34.7	0.58	0.73	48.9
All Vehicles		3521	2.0	0.547	13.1	LOS B	15.2	106.2	0.61	0.61	49.1

The 2023 PM peak analysis results in **Table 4** indicate the intersection would operate within LoS B and an average delay of 13.1 seconds.



# Memorandum

**Table 5 Scenario 2: Upgraded Eastern Drive/Crescent Street/Golf Links Drive analysis results 2033 AM Peak**

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows		Deg. Satn. v/c	Average Delay sec	Level of Service	Percentile Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
		Total veh/h	HV %				Vehicles veh	Distance m				
South												
1	L2	33	2.0	0.213	29.3	LOS C	3.8	27.2	0.78	0.66	41.6	
2	T1	655	2.0	0.479	25.8	LOS C	9.6	68.5	0.85	0.72	42.0	
3	R2	146	2.0	0.193	14.1	LOS B	2.1	15.2	0.66	0.73	47.6	
Approach		834	2.0	0.479	23.9	LOS C	9.6	68.5	0.81	0.72	42.9	
East												
4	L2	317	2.0	0.304	10.9	LOS B	5.1	36.6	0.45	0.68	50.2	
5	T1	127	2.0	0.914	53.7	LOS D	13.2	94.0	1.00	1.11	31.2	
6	R2	127	2.0	0.914	59.3	LOS E	13.2	94.0	1.00	1.11	30.9	
Approach		572	2.0	0.914	31.2	LOS C	13.2	94.0	0.70	0.87	39.4	
North												
7	L2	166	2.0	0.124	6.3	LOS A	0.6	4.5	0.19	0.60	53.5	
8	T1	925	2.0	0.875	39.8	LOS D	22.1	157.3	0.98	1.03	36.2	
9	R2	355	2.0	0.549	29.6	LOS C	11.9	84.9	0.86	0.82	39.8	
Approach		1446	2.0	0.875	33.5	LOS C	22.1	157.3	0.86	0.93	38.5	
West												
10	L2	142	2.0	0.140	8.2	LOS A	1.2	8.9	0.36	0.65	52.3	
11	T1	6	2.0	0.048	34.9	LOS C	0.4	2.8	0.89	0.64	37.4	
12	R2	4	2.0	0.048	40.5	LOS D	0.4	2.8	0.89	0.64	36.9	
Approach		153	2.0	0.140	10.2	LOS B	1.2	8.9	0.40	0.65	50.8	
All Vehicles		3004	2.0	0.914	29.2	LOS C	22.1	157.3	0.79	0.85	40.3	

The 2033 AM peak analysis results in **Table 5** indicate the intersection would operate within LoS C and an average delay of 29.2 seconds.

# Memorandum

**Table 6 Scenario 2: Upgraded Eastern Drive/Crescent Street/Golf Links Drive analysis results 2033 PM Peak**

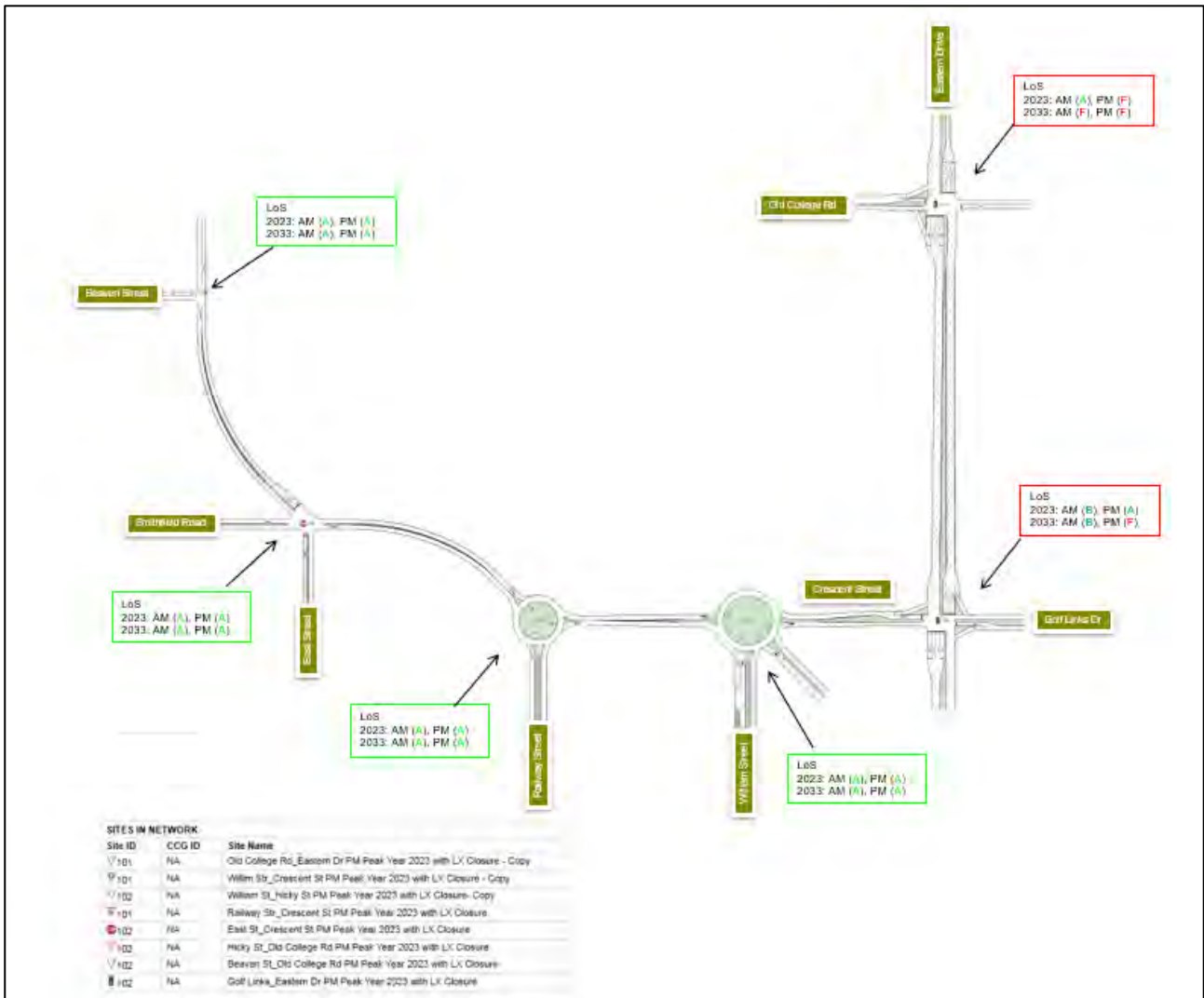
Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn. v/c	Average Delay sec	Level of Service	Percentile Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m			
South											
1	L2	46	2.0	0.428	18.0	LOS B	10.9	76.3	0.61	0.58	48.3
2	T1	2300	2.0	0.964	43.6	LOS D	54.8	383.5	0.86	1.07	34.9
3	R2	291	2.0	0.822	40.9	LOS D	10.5	73.3	1.00	1.04	35.3
Approach		2637	2.0	0.964	42.9	LOS D	54.8	383.5	0.87	1.06	35.1
East											
4	L2	291	2.0	0.438	22.0	LOS C	8.4	59.0	0.78	0.86	43.7
5	T1	41	2.0	0.381	38.3	LOS D	3.3	22.9	0.96	0.76	35.9
6	R2	41	2.0	0.381	43.9	LOS D	3.3	22.9	0.96	0.76	35.5
Approach		373	2.0	0.438	26.2	LOS C	8.4	59.0	0.82	0.83	41.7
North											
7	L2	385	2.0	0.364	11.1	LOS B	5.4	37.9	0.56	0.73	50.3
8	T1	1683	2.0	0.928	37.5	LOS D	42.3	295.8	0.83	1.01	37.1
9	R2	215	2.0	0.893	56.7	LOS E	10.6	74.2	1.00	1.03	30.8
Approach		2283	2.0	0.928	34.8	LOS C	42.3	295.8	0.80	0.96	38.1
West											
10	L2	416	2.0	0.935	61.6	LOS E	19.4	135.6	1.00	1.22	29.8
11	T1	14	2.0	0.104	36.4	LOS D	0.8	5.9	0.91	0.67	36.9
12	R2	8	2.0	0.104	42.0	LOS D	0.8	5.9	0.91	0.67	36.4
Approach		438	2.0	0.935	60.4	LOS E	19.4	135.6	1.00	1.19	30.0
All Vehicles		5731	2.0	0.964	39.9	LOS D	54.8	383.5	0.85	1.02	36.1

The 2033 PM peak analysis results in **Table 6** indicate the intersection would operate within LoS D and an average delay of 39.9 seconds.

Although the proposed upgraded Eastern Drive/Crescent Street/Golf Links Drive intersection would operate within acceptable levels of service and delay in an isolated state, the network impacts of up and downstream queuing and lane blockage is not accounted for. A summary of the Scenario 2 network model Level of Service analysis results for the intersections (with the upgraded Eastern Drive/Crescent Street/Golf Links Drive intersection) are provided in **Figure 10**.



# Memorandum



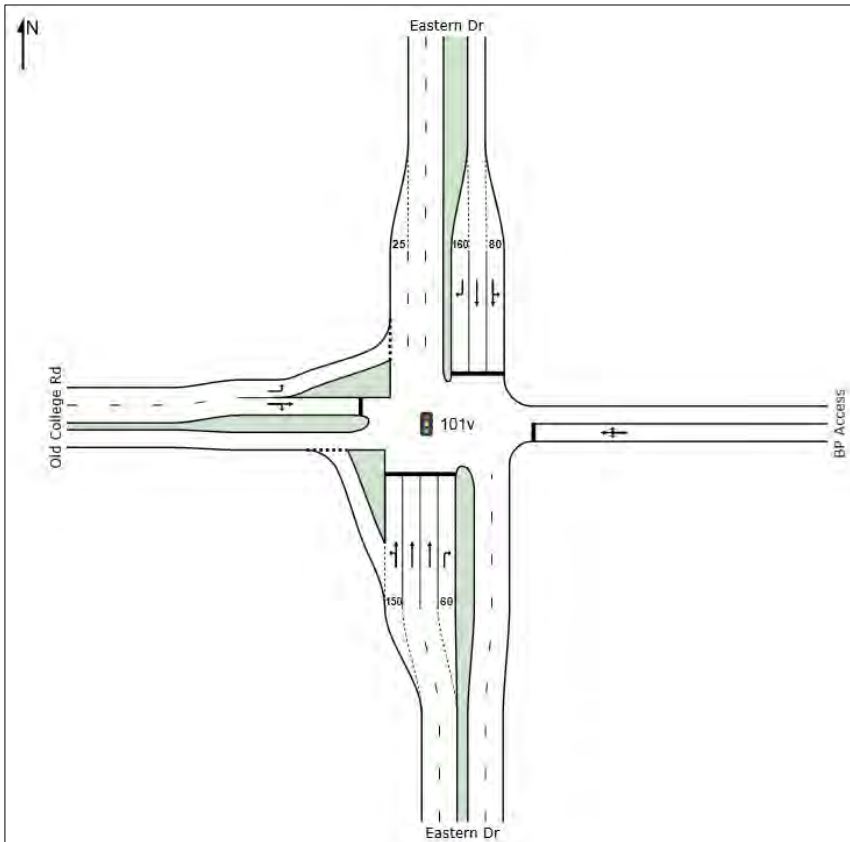
**Figure 10 Scenario 2 – Closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection network level intersection LoS analysis summary with upgraded Eastern Drive/Crescent Street/Golf Links Drive**

It is evident from **Figure 10** that the LoS and queuing related impacts at the Eastern Drive/Old College Road intersection (as indicated in Section 2.4) would impact on the operational performance of the upgraded Eastern Drive/Crescent Street/Golf Links Drive intersection. The upgraded intersection would operate at LoS F during design year 2033 PM peak conditions, as would the Eastern Drive/Old College Road intersection. All other intersections which are to be affected by the proposed redistributed level crossing closure traffic would operate within acceptable levels of service and vehicle delay.

To improve network operations, geometry and control upgrades are required at the Eastern Drive/Old College Road intersection. The exact year and implementation timing of the required upgrades at the Eastern Drive/Old College Road intersection is unknown, however these upgrades would be required by the design year 2033.

The upgrades required for the Eastern Drive/Old College Road intersection are illustrated in **Figure 11**.

# Memorandum



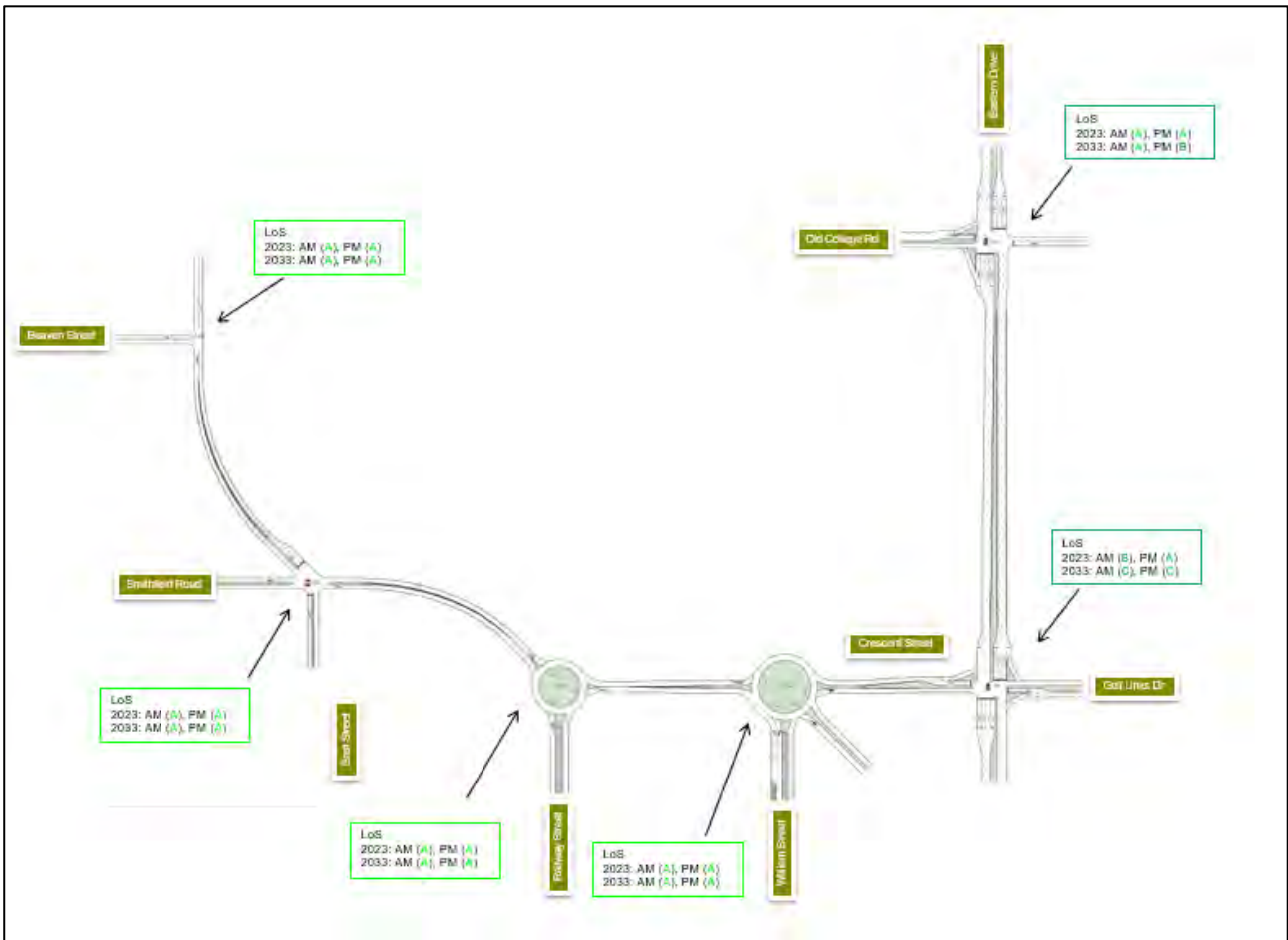
**Figure 11 Upgrades proposed for Eastern Drive / Old College Road Intersection**

The proposed intersection layout and control in **Figure 11** for the Eastern Drive/Old College Road intersection would ensure adequate network level operational performance.

A summary of the Scenario 2 network model Level of Service analysis results, including the upgraded Eastern Drive/Crescent Street/Golf Links Drive intersection and proposed upgraded Eastern Drive/Old College Road intersection, are provided in **Figure 12**.



# Memorandum



**Figure 12 Scenario 2 – Closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection LoS analysis summary with upgraded Eastern Drive/Crescent Street/Golf Links Drive intersection and upgraded Eastern Drive/Old College Road intersection**

As shown in **Figure 12**, all intersections within the modelled network are expected to operate within acceptable levels of service and vehicle delay. The proposed upgrades implemented at the Eastern Drive/Old College Road intersection would also improve LoS results at the Eastern Drive/Crescent Street/Golf Links Drive intersection on a network level.

As mentioned in Section 2.4, queuing analysis outputs contribute to safety impacts where extensive queuing beyond allowable storage capacity contributes to a higher probability for the occurrence of an accident. **Table 7** illustrates the model network wide queue storage analysis results for Scenario 2.

# Memorandum

Table 7 Scenario 2: Queue storage ratio analysis results (includes Eastern Drive/Crescent Street/Golf Links Drive intersection and Eastern Drive/Old College Road intersection upgrades)

Year of Analysis	AM Peak (Queue Storage Ratio)	PM Peak (Queue Storage Ratio)
Future Year 2023	<p>Colour code based on Queue Storage Ratio</p> <p>[ &lt; 0.6 ] [ 0.6 - 0.7 ] [ 0.7 - 0.8 ] [ 0.8 - 0.9 ] [ 0.9 - 1.0 ] [ &gt; 1.0 ]</p> 	<p>Colour code based on Queue Storage Ratio</p> <p>[ &lt; 0.6 ] [ 0.6 - 0.7 ] [ 0.7 - 0.8 ] [ 0.8 - 0.9 ] [ 0.9 - 1.0 ] [ &gt; 1.0 ]</p> 



# Memorandum

Year of Analysis	AM Peak (Queue Storage Ratio)	PM Peak (Queue Storage Ratio)
Design Year 2033	<p>Colour code based on Queue Storage Ratio</p> <p>[&lt; 0.6] [0.6-0.7] [0.7-0.8] [0.8-0.9] [0.9-1.0] [&gt; 1.0]</p> 	<p>Colour code based on Queue Storage Ratio</p> <p>[&lt; 0.6] [0.6-0.7] [0.7-0.8] [0.8-0.9] [0.9-1.0] [&gt; 1.0]</p> 

# Memorandum

The queue storage capacity analysis results indicate that:

- It is estimated that queue build up would occur between the Eastern Drive/Old College Road intersection and the Eastern Drive/Crescent Street/Golf Links Drive intersection during the future design year 2033 PM peak. Given low levels of vehicle delay, queues would clear with each signal cycle.
- Vehicle queues forming at the eastbound left turn of Golf Links Drive / Crescent Street intersection would consist of 114m and exceed the allowable storage of 60m during the future year design year 2033 PM peak.. The increase in vehicle queueing would be contributed to by the diverted traffic as a result of the closure of Gaul Street level crossing. Although queues slightly form, the impact on operational levels of service and vehicle delay would be minimal. Given low levels of vehicle delay, queues would dissipate quickly.

In summary, the queueing analysis results indicate that the closure of the Gaul Street level crossing and removal of the Hickey Street / Old College Road connection would have a minimal impact on the surrounding road network.

It is noted that the traffic from the closure of the Gaul Street level crossing and Hickey Street / Old College Road connection is anticipated to divert via Old College Road and pass under the existing and proposed rail overbridges. With the removal of the Hickey Street / Old College Road connection, the underpass will be upgraded to fully comply with vertical clearance limits, removing all height restriction issues.

## 4 Scenario 3 - Level crossing open with associated local upgrades

The analysis of Scenario 3 was conducted in order to determine the operational performance on vehicle queue and delay at the opening year 2023, should the level crossing remain open with the option of upgrading both William Street/Crescent Street intersection and Gaul Street/Hickey Street intersection to mitigate the significant risks associated with vehicle queuing over the level crossing from the adjacent intersections, as described in Section 2.4.

The upgrade option at the level crossing under Scenario 3 consists of:

- Converting the Hickey Street movements to Gaul Street to left-in-left-out only. This eliminates the potential for short stacking on the northern side of the crossing.
- Converting the existing intersection control at the William Street/Crescent Street to a signalised intersection with geometrical alterations. The traffic lights would need to be coordinated with the rail crossing.

The proposed upgrades are illustrated in **Figure 13**.



# Memorandum

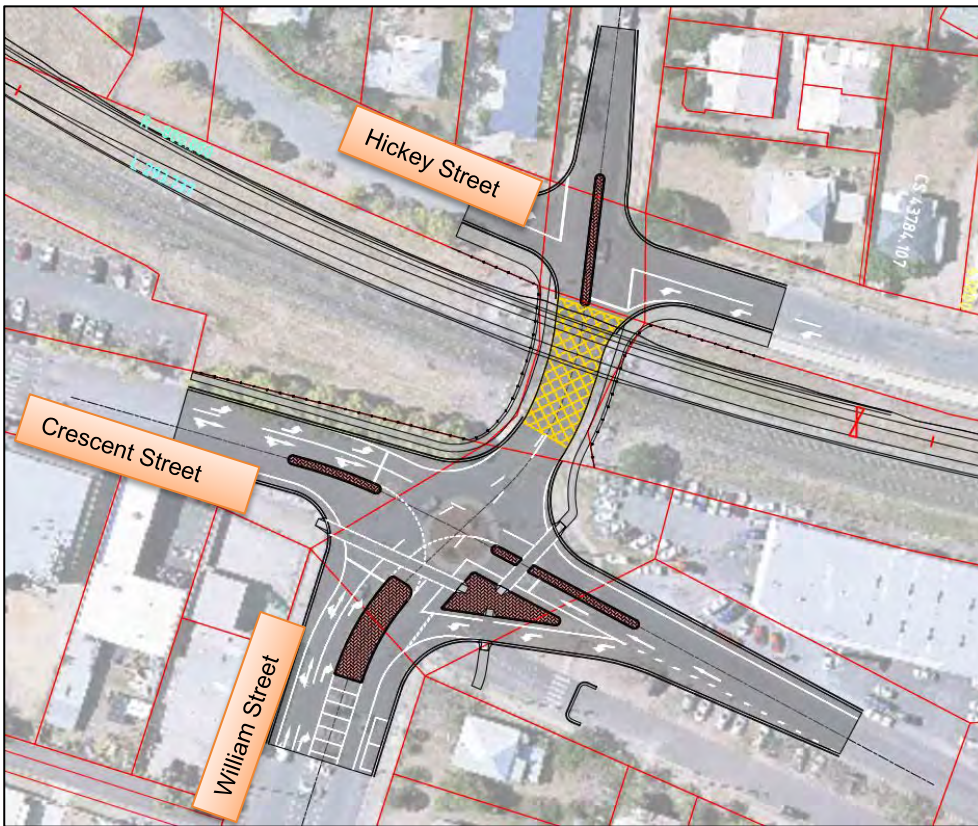


Figure 13 Scenario 3 - Level crossing open with associated local intersection upgrades to mitigate queuing

## 4.1 Scenario 3 - Analysis results

The intersection analysis for the model was done for the following scenario as described in Section 1.3:

- Scenario 3: Gaul Street Level Crossing to Remain Open with Traffic Signal Control Upgrades to William Street/Crescent Street intersection and left in/left out at Hickey Street/Gaul Street:
  - Future Year 2023 AM and PM peak hour isolated intersection analysis: The signalised upgraded William Street/Crescent Street intersection in isolation.
  - Future Year 2023 AM and PM peak hour analysis: This scenario evaluated the operational conditions of the existing level crossing and associated external intersections based on proposed signalisation of William Street/Crescent Street intersection and the upgrade of the Gaul Street/Hickey Street intersection. This was done for both AM and PM peak hours for the future year when the Project is to be operational. The analysis of this scenario includes the proposed upgrades of the Eastern Drive/Crescent Street/Golf Links Drive intersection and Eastern Drive/Old College Road intersection as evaluated in Scenario 2.

**Table 8** and **Table 9** demonstrate the results for the analysis of the signalised upgraded William Street/Crescent Street intersection in isolation during the future year 2023 AM and PM peak hours, respectively.

# Memorandum

**Table 8 Scenario 3: Signalised isolated William Street/Crescent Street analysis results 2023 AM Peak**

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn. v/c	Average Delay sec	Level of Service	Percentile Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m			
South											
1	L2	63	2	0.747	34.3	LOS C	5.5	38.8	1	0.9	39.2
2	T1	123	2	0.747	28.7	LOS C	5.5	38.8	1	0.9	30.5
3	R2	68	2	0.283	30.5	LOS C	1.8	12.6	0.94	0.75	39
Approach		255	2	0.747	30.6	LOS C	5.5	38.8	0.98	0.86	35.8
East											
4	L2	112	2	0.57	17.7	LOS B	4.7	33.1	0.92	0.78	47.9
5	T1	155	2	0.57	12.1	LOS B	4.7	33.1	0.92	0.78	48.5
Approach		266	2	0.57	14.4	LOS B	4.7	33.1	0.92	0.78	48.3
North											
6	L2	21	2	0.842	32.9	LOS C	8.4	59.6	1	1.01	29.2
7	T1	180	2	0.842	30.6	LOS C	8.4	59.6	1	1.01	30.1
8	R2	67	2	0.842	32.9	LOS C	8.4	59.6	1	1.01	29.2
Approach		268	2	0.842	31.4	LOS C	8.4	59.6	1	1.01	29.8
West											
9	L2	55	2	0.044	9.2	LOS A	0.5	3.7	0.37	0.65	45.5
10	T1	107	2	0.839	32.4	LOS C	5.6	40	1	0.99	38.3
11	R2	72	2	0.839	37.9	LOS D	5.6	40	1	0.99	37.6
Approach		234	2	0.839	28.6	LOS C	5.6	40	0.85	0.91	38.9
All Vehicles		1023	2	0.842	26.1	LOS C	8.4	59.6	0.94	0.89	38.5

The 2023 AM peak analysis results in **Table 8** indicate the intersection would operate within LoS C, characterised by an average delay of 26.1 seconds, and maximum 95<sup>th</sup> percentile queue lengths of 59.6m.



# Memorandum

**Table 9 Scenario 3: Signalised isolated William Street/Crescent Street analysis results 2023 PM Peak**

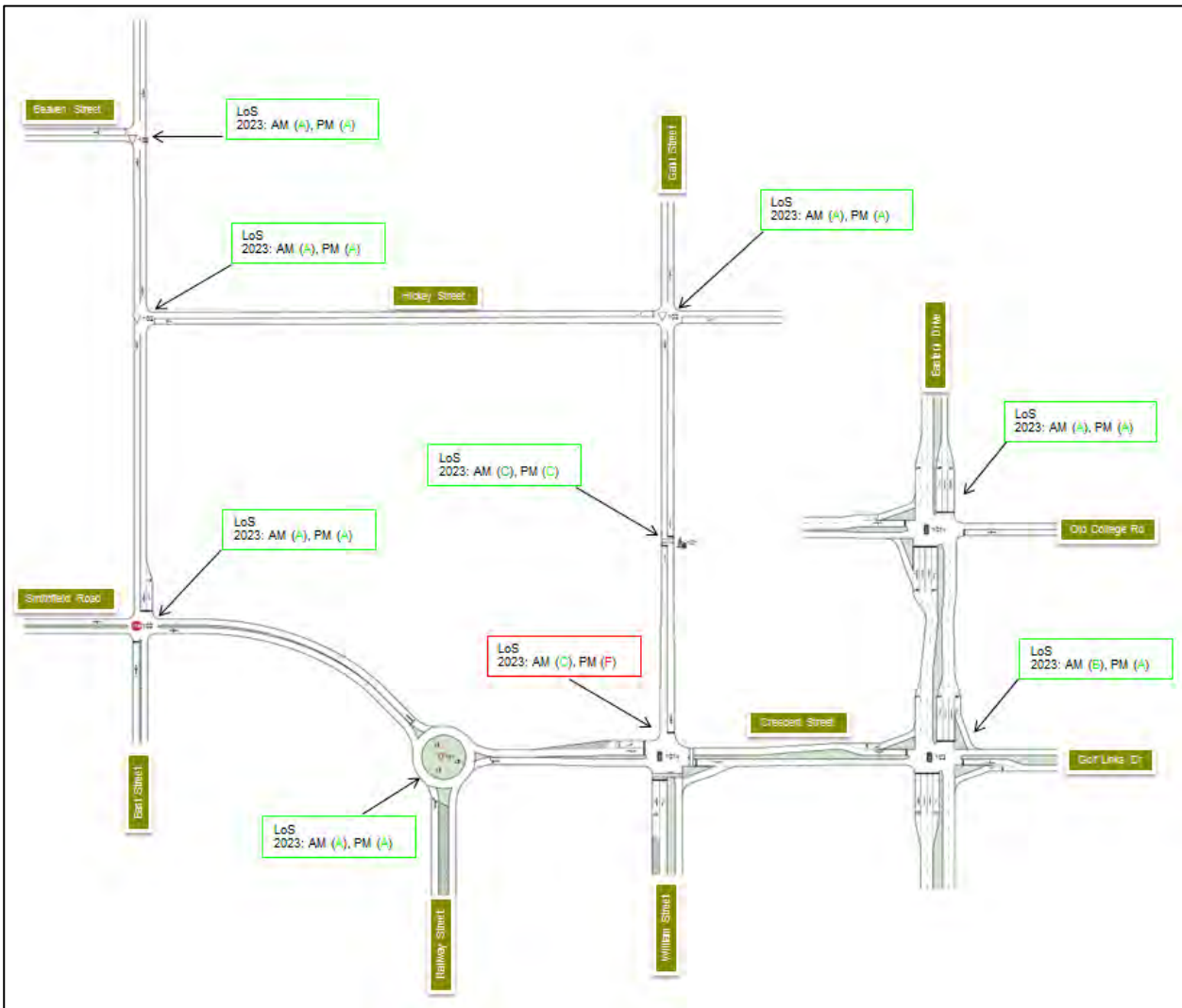
Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn. v/c	Average Delay sec	Level of Service	Percentile Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m			
South											
1	L2	136	2	0.945	77.1	LOS E	22.6	161	1	1.15	26.8
2	T1	191	2	0.945	71.6	LOS E	22.6	161	1	1.15	17.9
3	R2	111	2	0.268	46	LOS D	5.2	36.9	0.87	0.77	33.5
Approach		437	2	0.945	66.8	LOS E	22.6	161	0.97	1.05	24.9
East											
4	L2	132	2	0.872	53.5	LOS D	23.7	169	1	1.03	32.8
5	T1	294	2	0.872	47.8	LOS D	23.7	169	1	1.03	33.1
Approach		425	2	0.872	49.6	LOS D	23.7	169	1	1.03	33
North											
6	L2	67	2	0.939	71.3	LOS E	29.4	209.2	1	1.1	18.3
7	T1	200	2	0.939	69	LOS E	29.4	209.2	1	1.1	18.6
8	R2	152	2	0.939	71.3	LOS E	29.4	209.2	1	1.1	18.3
Approach		419	2	0.939	70.2	LOS E	29.4	209.2	1	1.1	18.4
West											
9	L2	106	2	0.083	12.2	LOS B	2	14.1	0.36	0.66	42.4
10	T1	144	2	0.958	79.8	LOS E	15.2	108.2	1	1.13	25.7
11	R2	68	2	0.958	85.3	LOS F	15.2	108.2	1	1.13	25.3
Approach		319	2	0.958	58.4	LOS E	15.2	108.2	0.79	0.98	27.8
All Vehicles		1600	2	0.958	61.5	LOS E	29.4	209.2	0.95	1.04	26.1

The 2023 PM peak analysis results in **Table 9** indicate the intersection would operate within LoS E, characterised by an average delay of 61.5 seconds, and maximum 95<sup>th</sup> percentile queue length of 209.2m. Significant queue lengths are expected on all intersection legs, ranging from 108.2 to 209.2m.

Further, the results in Table 9 do not yet consider the introduction of up to 306 second delays relating to the closure of the level crossing to accommodate passing trains. The introduction of the level crossing would further increase queue lengths on all legs of the intersection, as well as the overall average delay at the intersection.

A summary of the network model Level of Service analysis results for the intersections are provided in **Figure 14**.

# Memorandum



**Figure 14 Scenario 3 - Intersection LoS analysis summary**

Similar to the assessment of the intersection in isolation, **Figure 14** shows that the signalisation of the William Street/Crescent Street intersection would result in acceptable delays during the 2023 AM peak. However, the operational performance at this intersection would be unacceptable during the PM peak, characterised by LoS F. All other intersections would operate within acceptable LoS and vehicle delay for both AM and PM peak hours

Due to the unacceptable operations during the 2023 Future Year, analyses were considered not to be required for the 2033 Design Year as the impacts will be further exacerbated.

Therefore, it is evident that the signalisation of the William Street/Crescent Street would worsen operational performance for the PM peak of the opening year 2023 and would result in unacceptable operations.



# Memorandum

## 5 Summary

The technical memorandum evaluated the results of the traffic modelling undertaken to investigate the traffic related impacts which may result through the implementation of the Project through the at grade level crossing located at Gaul Street in Gatton. The technical memorandum presented the analysis findings where three scenarios were evaluated and associated impacts. These scenarios consisted of:

- Scenario 1: Gaul Street Level Crossing to Remain Open;
- Scenario 2: Closure of Gaul Street level crossing and removal of Hickey Street / Old College Road connection;
- Scenario 3: Gaul Street Level Crossing to Remain Open with Traffic Signal Control Upgrades to William Street/Crescent Street intersection.

### 5.1 Scenario 1 - Analysis results summary

#### 5.1.1 Overall intersection operational analyses

The overall intersection analysis results indicate that all intersections operate within acceptable levels of service and vehicle delay, except for the intersections of:

- Eastern Drive/Golf Links Drive;
- Eastern Drive/Old College Road;
- Eastern Drive/Crescent Street.

These intersections indicate that high levels of vehicle delay occur during base and future year peak hour conditions. Both geometric and intersection control upgrades would be required to improve operational performance.

#### 5.1.2 Queue storage ratio analyses

The analysis results indicate that existing queue storage capacity between the Gaul Street level crossing and the William Street/Crescent Street intersection and the Gaul Street/Hickey Street intersection would be exceeded throughout all years of analyses, including the 2018 scenario where increased train volumes are not included in the analysis. The potential vehicle queue spill back from the William Street/Crescent Street intersection across the existing Gaul Street level crossing is considered a significant safety risk. Closure of the level crossing is proposed to mitigate for such significant safety impacts.

The analysis results also indicate that the intersections of Eastern Drive/Golf Links Drive, Eastern Drive/Old College Road and Eastern Drive/Crescent Street would experience queue spill back impacts where allowable queue storage capacity would be exceeded at design year 2033. Geometric upgrades would be required to mitigate for queue storage ratio impacts and to effectively accommodate for queues forming.

### 5.2 Scenario 2 - Analysis results summary

#### 5.2.1 Overall intersection operational analyses

In combination to the of Scenario 2, upgrades are proposed for the Eastern Drive/Golf Links Drive intersection and Eastern Drive/Crescent Street intersection. With the upgrades in place and as an isolated site, the intersection would operate within acceptable levels of service and delay for both AM and PM peak

# Memorandum

hours during future year 2023 and 2033 scenarios. Although the proposed upgraded Eastern Drive/Crescent Street/ Golf Links Drive intersection would operate within acceptable levels of service and delay in an isolated state, the network impacts of up and downstream queueing and lane blockage is not accounted for.

It is evident from the analyses that the LoS and queueing related impacts at the Eastern Drive/Old College Road intersection (as indicated in Section 2.4) would impact on the operational performance of the upgraded Eastern Drive/Crescent Street/Golf Links Drive intersection. The upgraded intersection would operate at LoS F during design year 2033 conditions. Geometry and control upgrades are required at the Eastern Drive/Old College Road intersection to eliminate up and down stream impact as a network. The exact year and implementation timing of the required upgrades at the Eastern Drive/Old College Road intersection is unknown, however these upgrades would be required by the design year 2033.

All other intersections which are to be affected by the proposed redistributed level crossing closure traffic would operate within acceptable levels of service and vehicle delay. It should be noted that the intersections of Eastern Drive/Old College Road and Eastern Drive/Crescent Street/Golf Links Drive are not impacted by diverted traffic resulting from the closure of the Gaul Street level crossing, and all operational performance impacts at these intersections are as a direct result of traffic growth.

## 5.2.2 Queue storage ratio analyses

The queue storage capacity analysis result indicates the following:

- It is estimated that queue build up would occur between Eastern Drive/Old College Road intersection and Eastern Drive/Crescent Street/Golf Links Drive intersection during the future design year 2033 PM peak. Given low levels of vehicle delay, queues would clear with each signal cycle.
- Vehicle queues forming at the eastbound left turn of Gold Links Drive/Crescent Street intersection would consist of 114m and exceed the allowable storage of 60m during the future year 2033 PM peak. The increase in vehicle queueing would be contributed to by the diverted traffic as a result of the closure of the Gaul Street level crossing. Although queues slightly form, the impact on operational levels of service and vehicle delay would be minimal. Given low levels of vehicle delay, queues would dissipate quickly.

In summary, the queueing analysis results indicate that the closure of the Gaul Street level crossing and the removal of the Hickey Street / Old College Road connection would have a minimal impact on the surrounding road network.

## 5.3 Scenario 3 Analysis Results Summary

### 5.3.1 Overall intersection operational analyses

Although the signalisation of the William Street/Crescent Street intersection would result in acceptable Levels of Service and vehicle delay during the 2023 AM peak hour, it is evident from the analyses that this upgrade would result in increased queueing and delays during the PM peak in the opening year 2023, resulting in unacceptable operations. These would be further exacerbated in the 2033 Design Year as a result of background traffic growth.

Therefore, it is evident that the signalisation of the William Street/Crescent Street intersection would worsen operational performance for the PM peak of the opening year 2023 and would result in unacceptable operations.



# Memorandum

## 6 Conclusions and Recommendations

The following conclusions and recommendations from a Traffic Engineering perspective are made based on the network model analyses results:

- Future year traffic volumes between the William Street/Crescent Street intersection and the Gaul Street/Hickey Street intersection result in potential vehicle queue spill back across the existing Gaul Street level crossing. This is considered a significant safety risk.
- Signalisation of the William Street/Crescent Street intersection and conversion of Hickey Street/Gaul Street to a left-in/left-out arrangement significantly impacts on local network operations, with queues in excess of 108 m (and up to 209 m) expected on all legs of the signalised intersection.
- Closure of the existing Gaul Street level crossing is recommended based on existing queue storage capacity constraints. The potential vehicle queue spill back from the William Street/Crescent Street intersection across the existing Gaul Street level crossing is considered a significant safety risk.
- The closure of the level crossing would mitigate the significant safety issues relating to the queuing of traffic on the level crossing.
- The traffic from the removal of the Hickey Street / Old College Road intersection is anticipated to divert via Old College Road and pass under the existing and proposed rail overbridges
- The traffic from the closure of the Gaul Street level crossing is anticipated to divert via Old College Road and pass under the existing and proposed rail overbridges.
- The traffic capacity of the road links and intersections on the anticipated diversion route have been assessed as adequate to receive the additional traffic without significant negative impacts.
- Due to the height restrictions under the existing rail bridge over Old College Road, it is recommended that heavy commercial vehicles exceeding vertical clearance limits be directed to use Eastern Drive and avoid the northern residential area.
- The intersections of Eastern Drive/Crescent Street/Golf Links Drive and Eastern Drive/Old College Road require geometrical and intersection control upgrades as a result of Base Case traffic conditions, i.e. required with or without the changes in operation at the Gaul Street level crossing. The exact year and implementation timing of the Eastern Drive/Old College Road intersection upgrades is unknown, however these upgrades would be required by the design year 2033. The required intersection layout and lane configurations for the upgrades are indicated in **Figure 9** and **Figure 11**, respectively.
- It is noted that the intersections of Eastern Drive/Old College Road and Eastern Drive/Crescent Street/Golf Links Drive are not impacted by diverted traffic resulting from the closure of the Gaul Street level crossing, and all operational performance impacts at these intersections are as a direct result of background traffic growth.

# Memorandum

Document prepared by:


Future Freight Joint Venture

Level 14, 32 Turbot Street  
 Brisbane QLD 4000  
 Locked Bag 331  
 Brisbane QLD 4001  
 Australia

T +61 7 3173 8000  
 F +61 7 3173 8001

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Document control						
<b>Memorandum title</b>		<b>Helidon to Calvert – Gaul Street Level Crossing Traffic Impact Assessment</b>				
<b>Document ID</b>		2-0001-330-DCW-01-TN-0001_V2.docx	<b>Project number</b>		Inland Rail NS2K	
<b>ProjectWise Link</b>		<a href="pw:\designshare.au.aurecon.info:PWZ_DS_AUDC1_P_01\Documents\FFJV Inland Rail Phase 2\4 Design\D Civil Road and Drainage\Non Deliverables\Traffic\4. Tech Work Area\Ops Traffic\Intersection Analysis\">pw:\designshare.au.aurecon.info:PWZ_DS_AUDC1_P_01\Documents\FFJV Inland Rail Phase 2\4 Design\D Civil Road and Drainage\Non Deliverables\Traffic\4. Tech Work Area\Ops Traffic\Intersection Analysis\</a>				
<b>Client</b>		Australian Rail Track Corporation				
<b>Client contact</b>		<b>Client reference</b>				
Rev	Date	Revision details/status	Author	Reviewer	Verifier (if required)	Approver
0	7 December 2018	A	H Joubert	J Charlesworth	R Paulus	
1	17 September 2019	B	H Joubert / K Connolly	J Charlesworth / R Paulus	R Paulus	
<b>Current revision</b>		<b>B</b>				



APPENDIX

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Traffic Impact Assessment

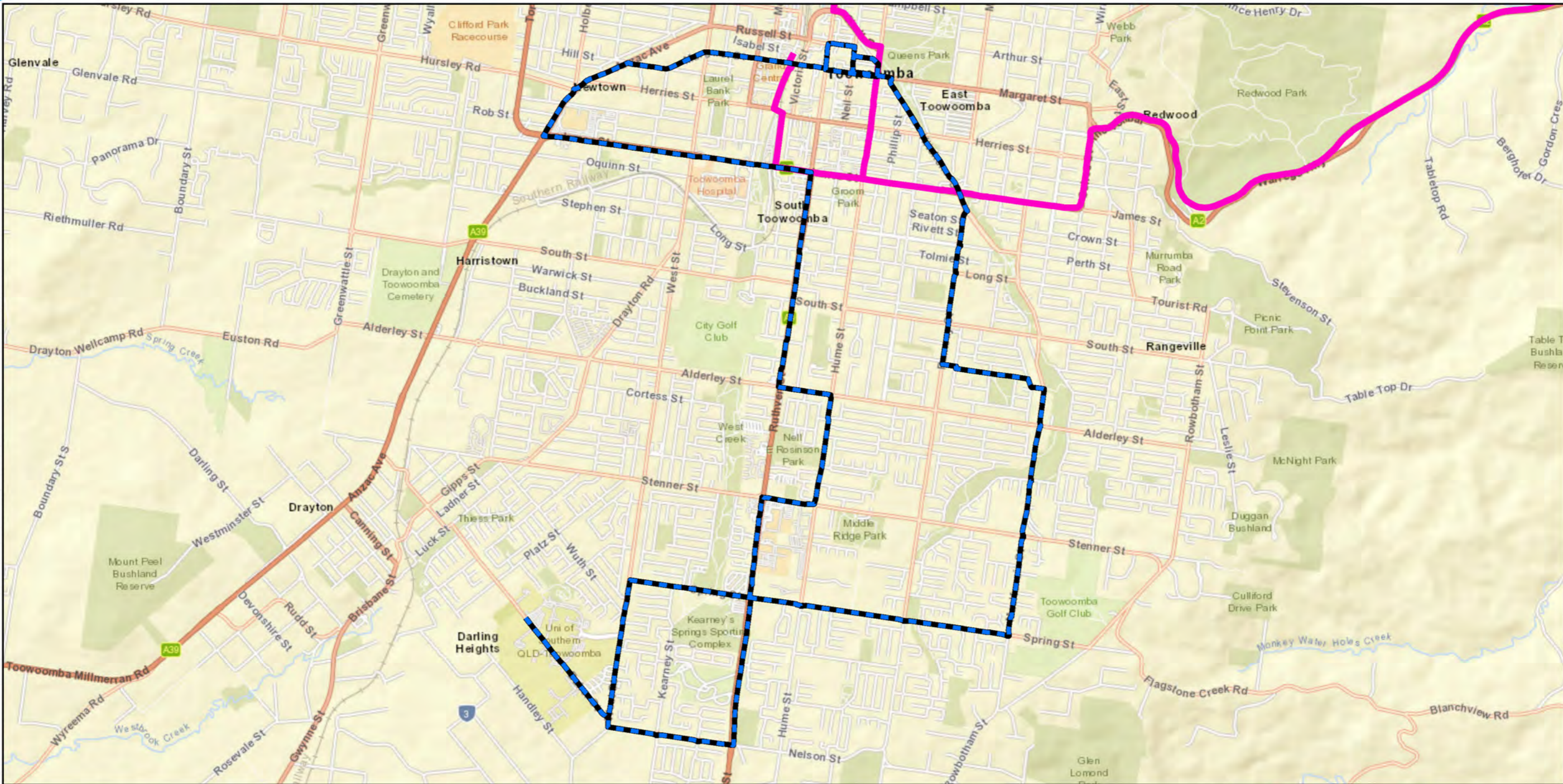
**Appendix R** Public Transport and  
Principal Cycle Network  
Plan Maps

ARTC

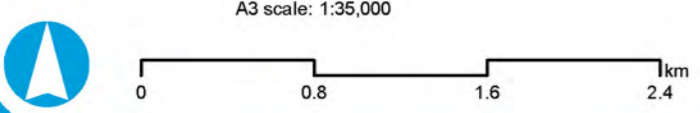
The Australian Government is investing  
in public transport through the National  
Railway Corporation (NRC) in  
partnership with the states and territories.



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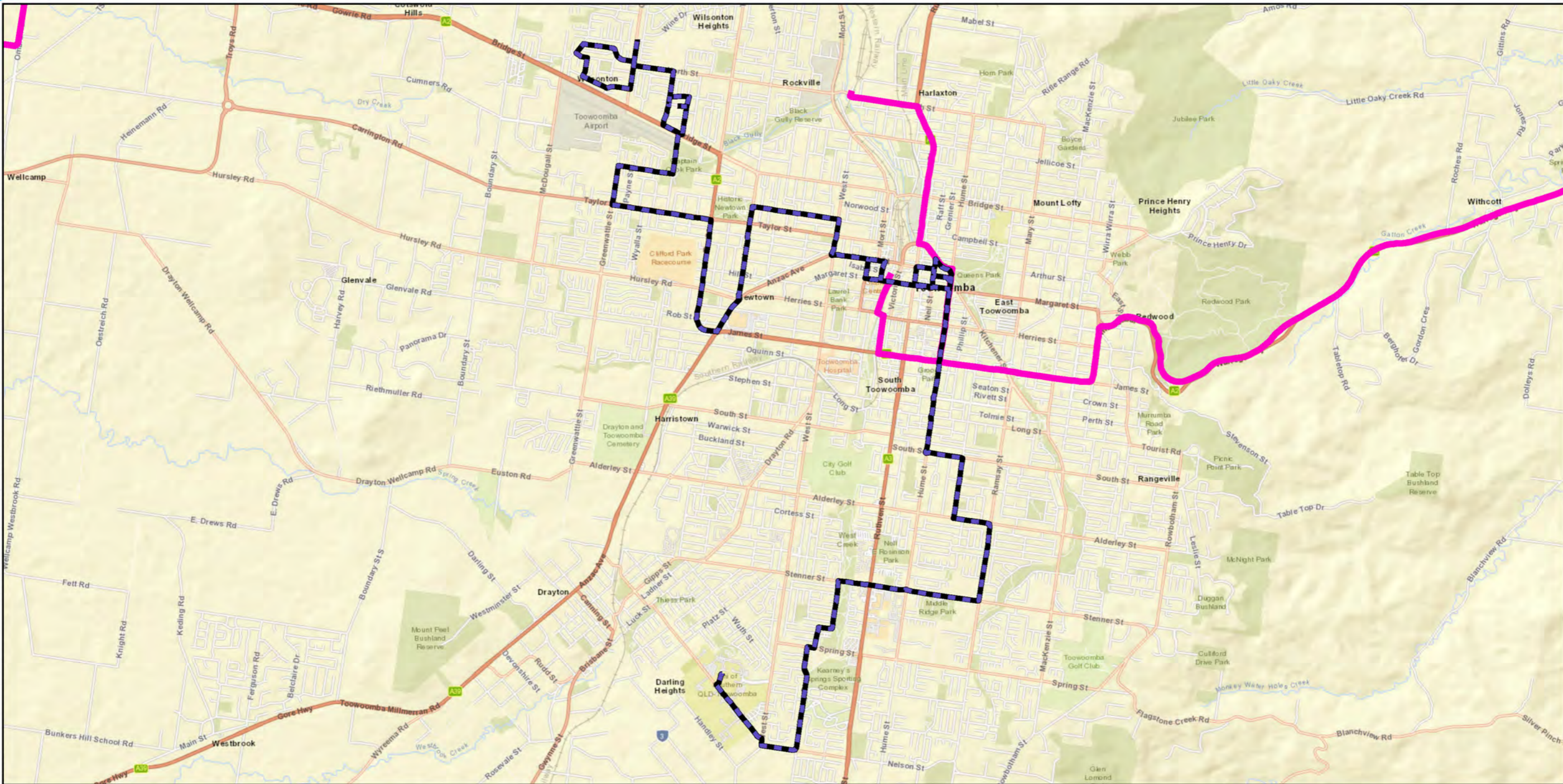


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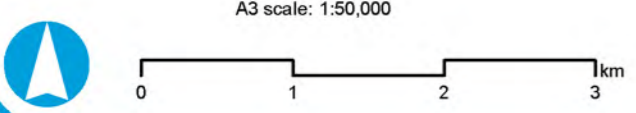




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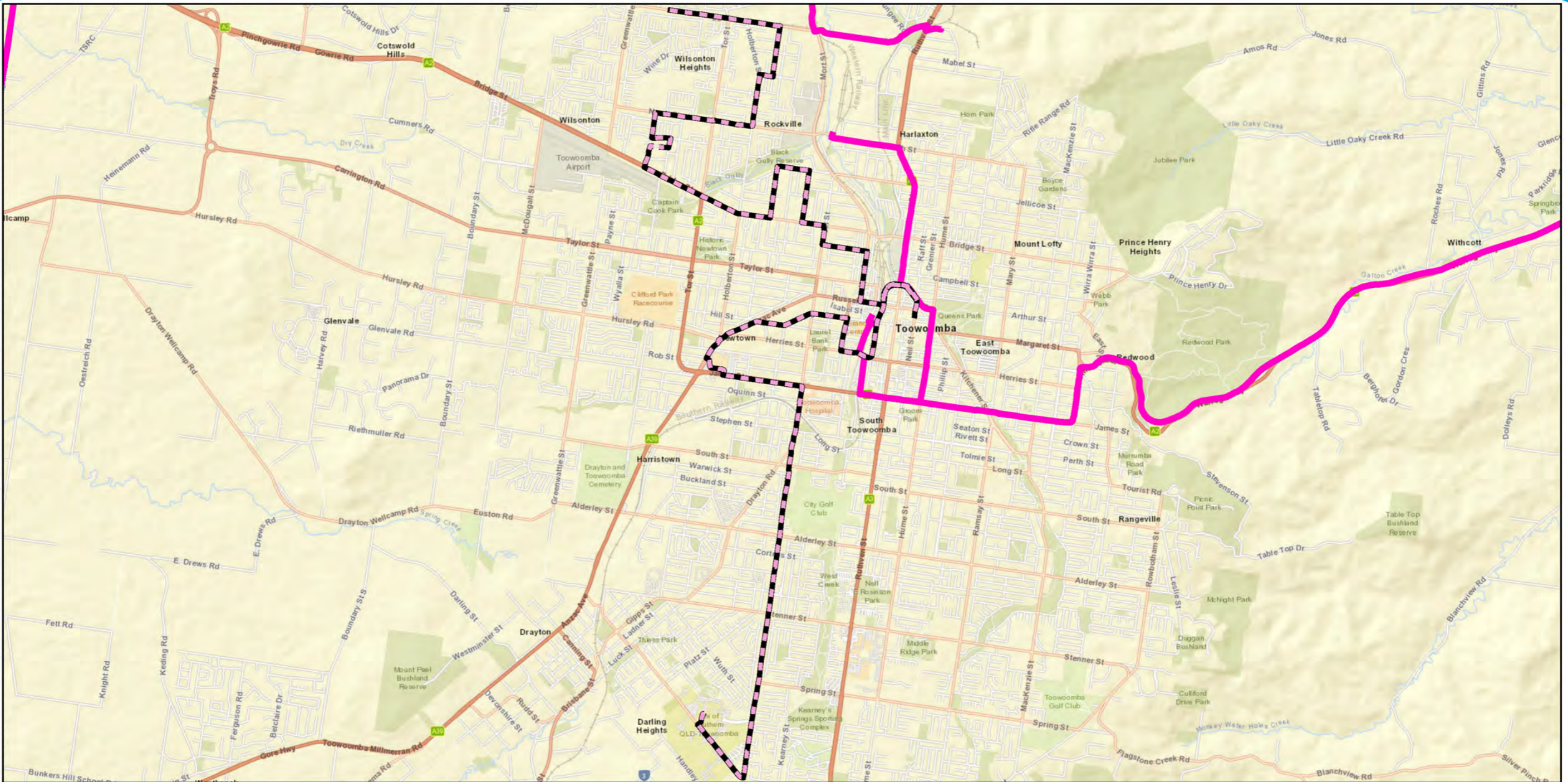


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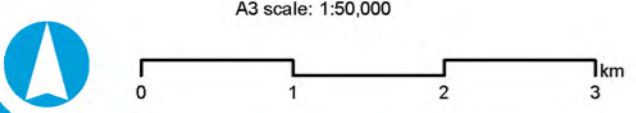




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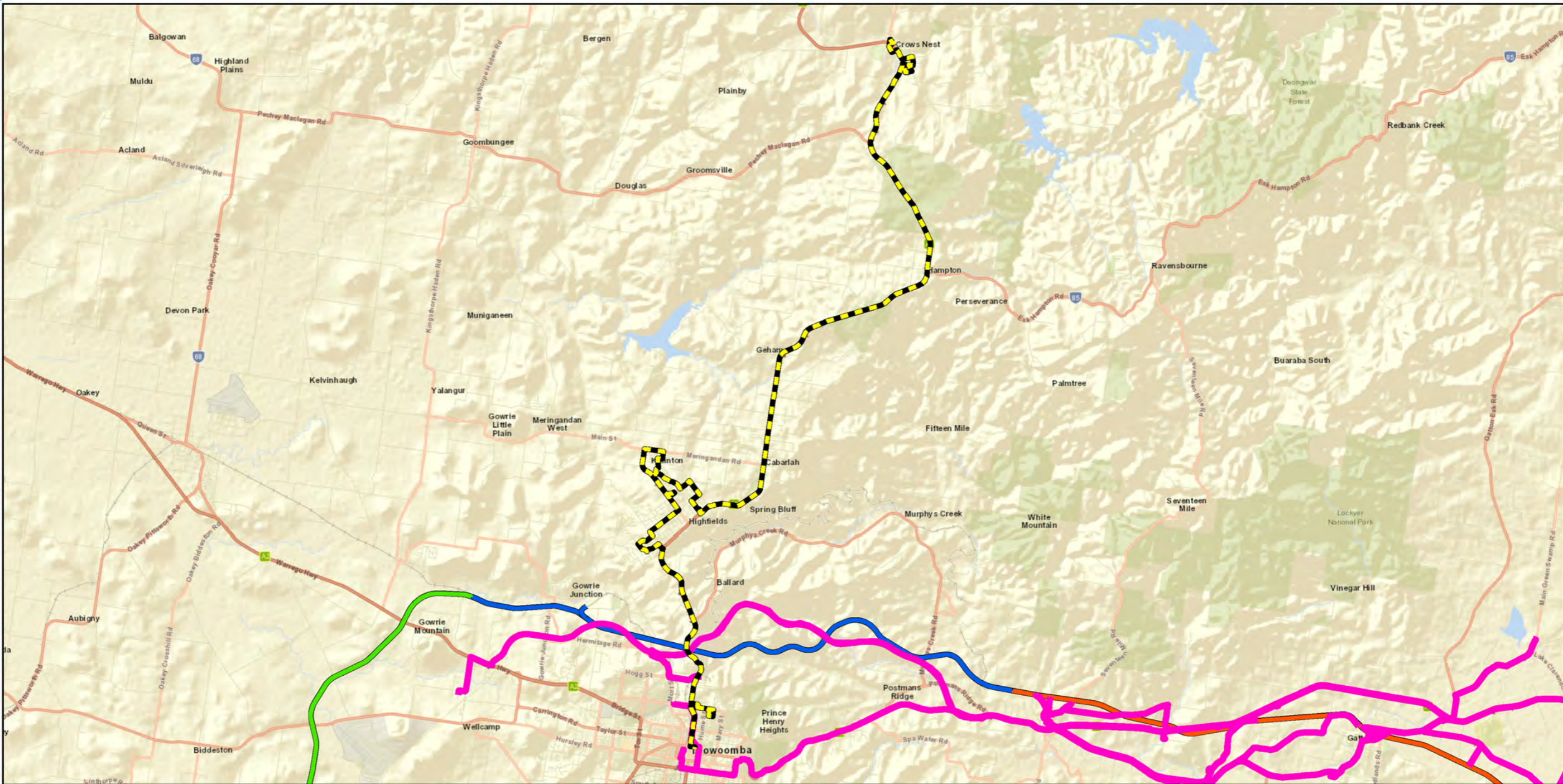


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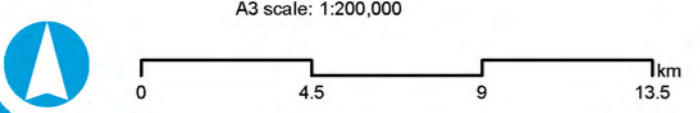




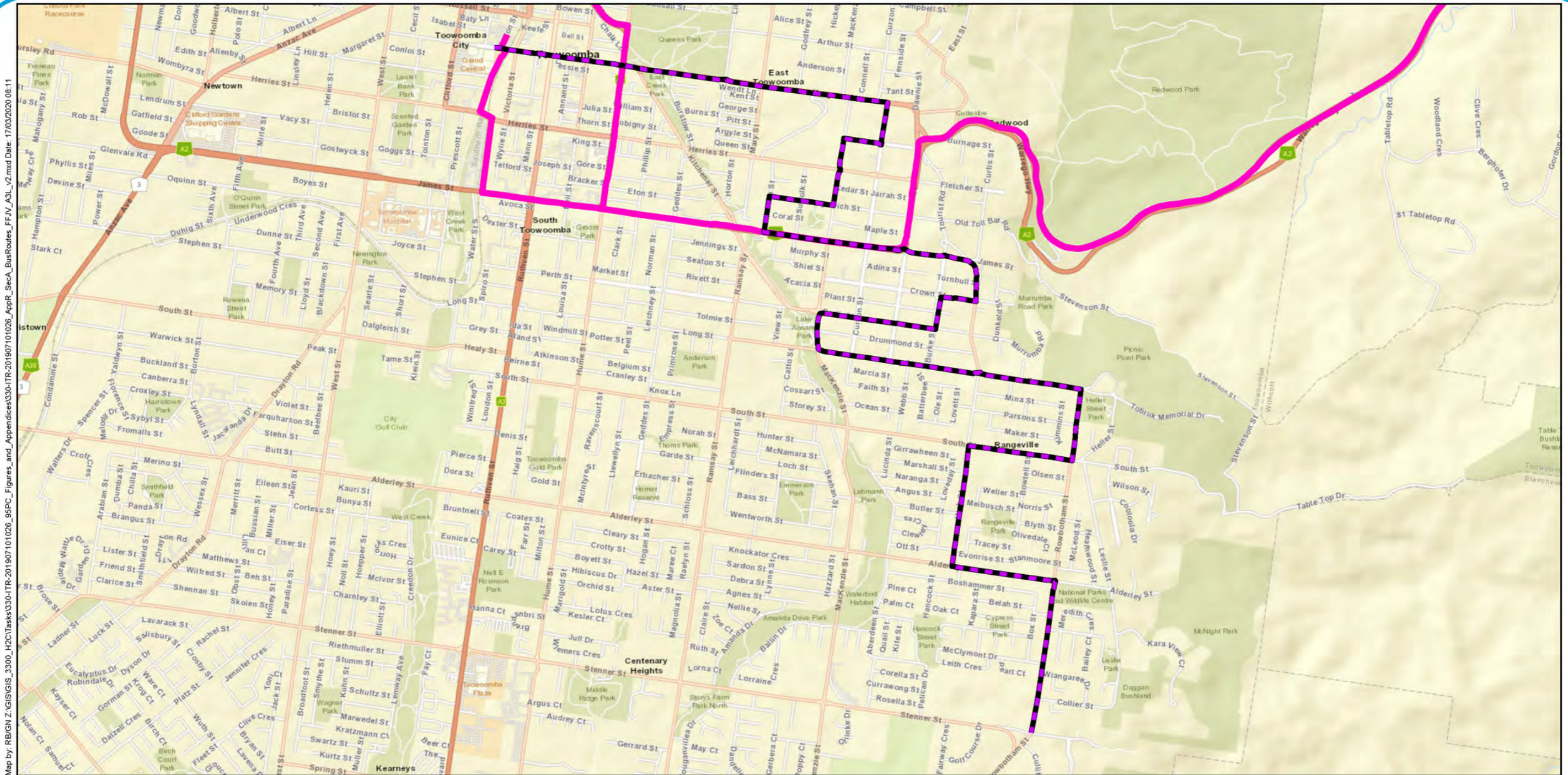
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- Kan-go/KGT Toowoomba City



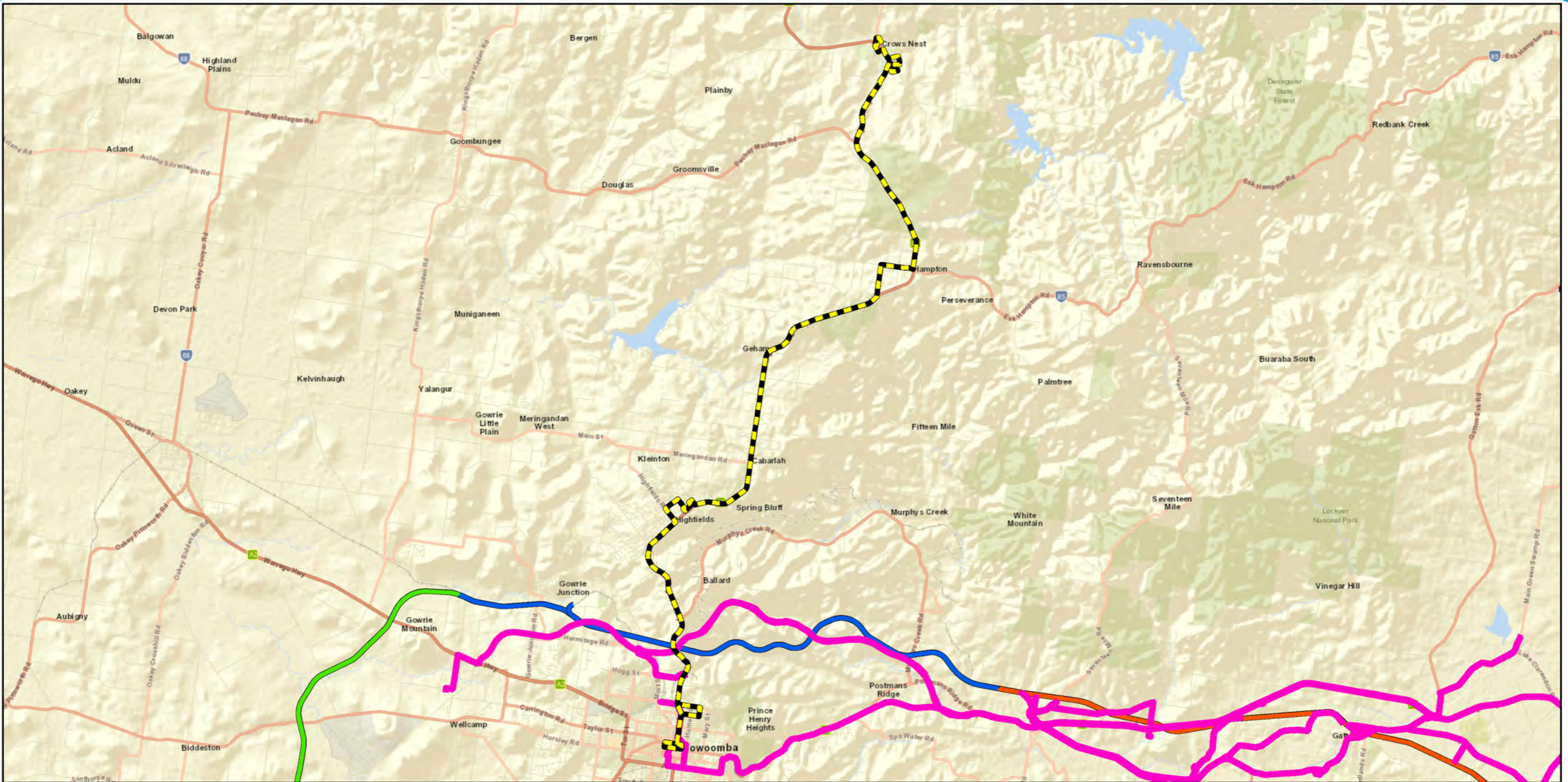
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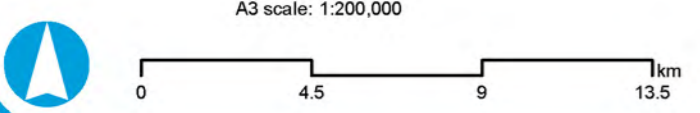
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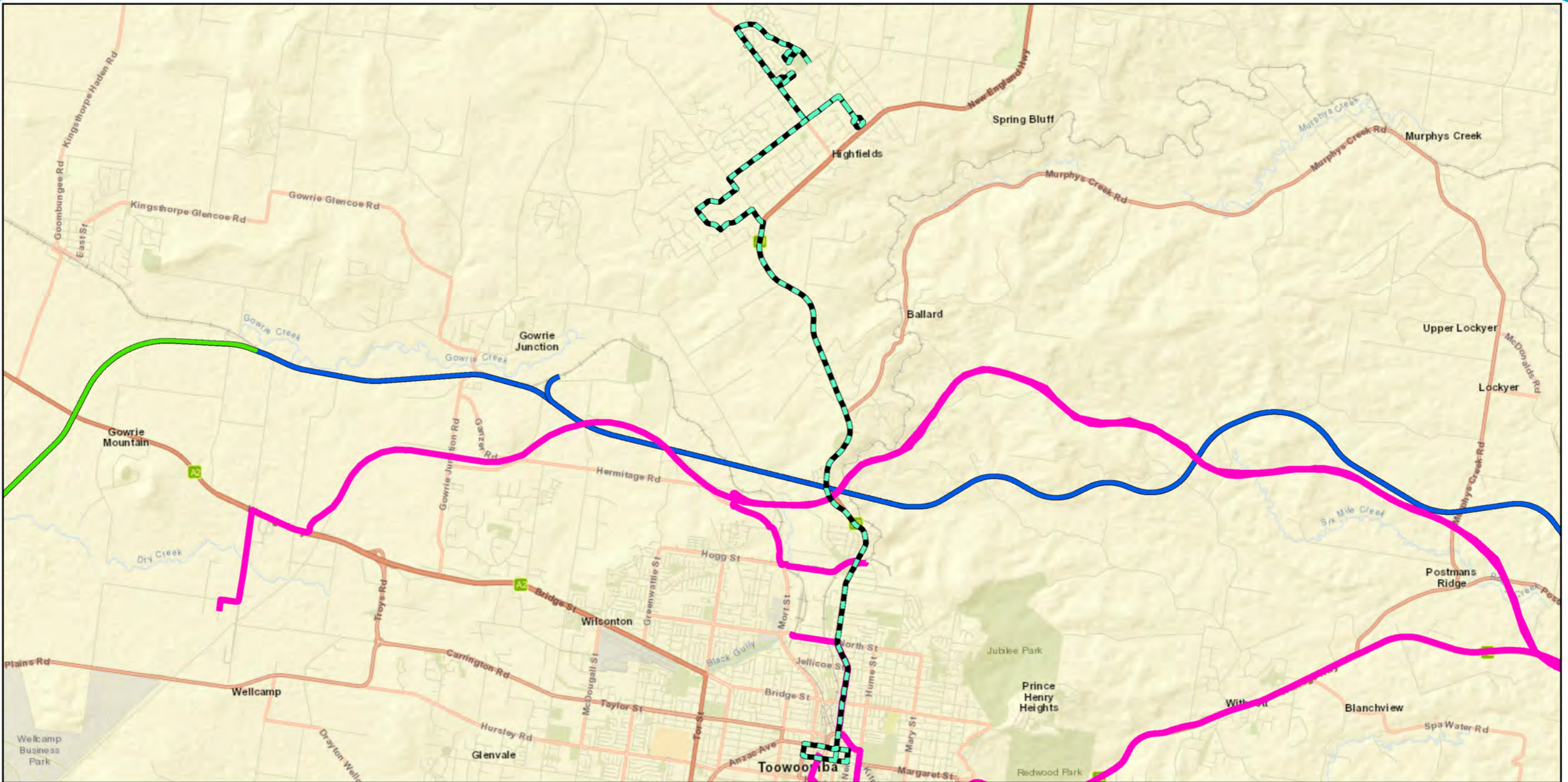


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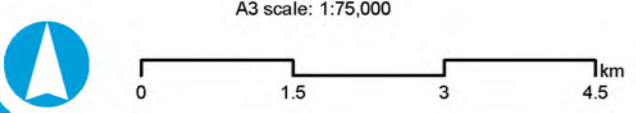




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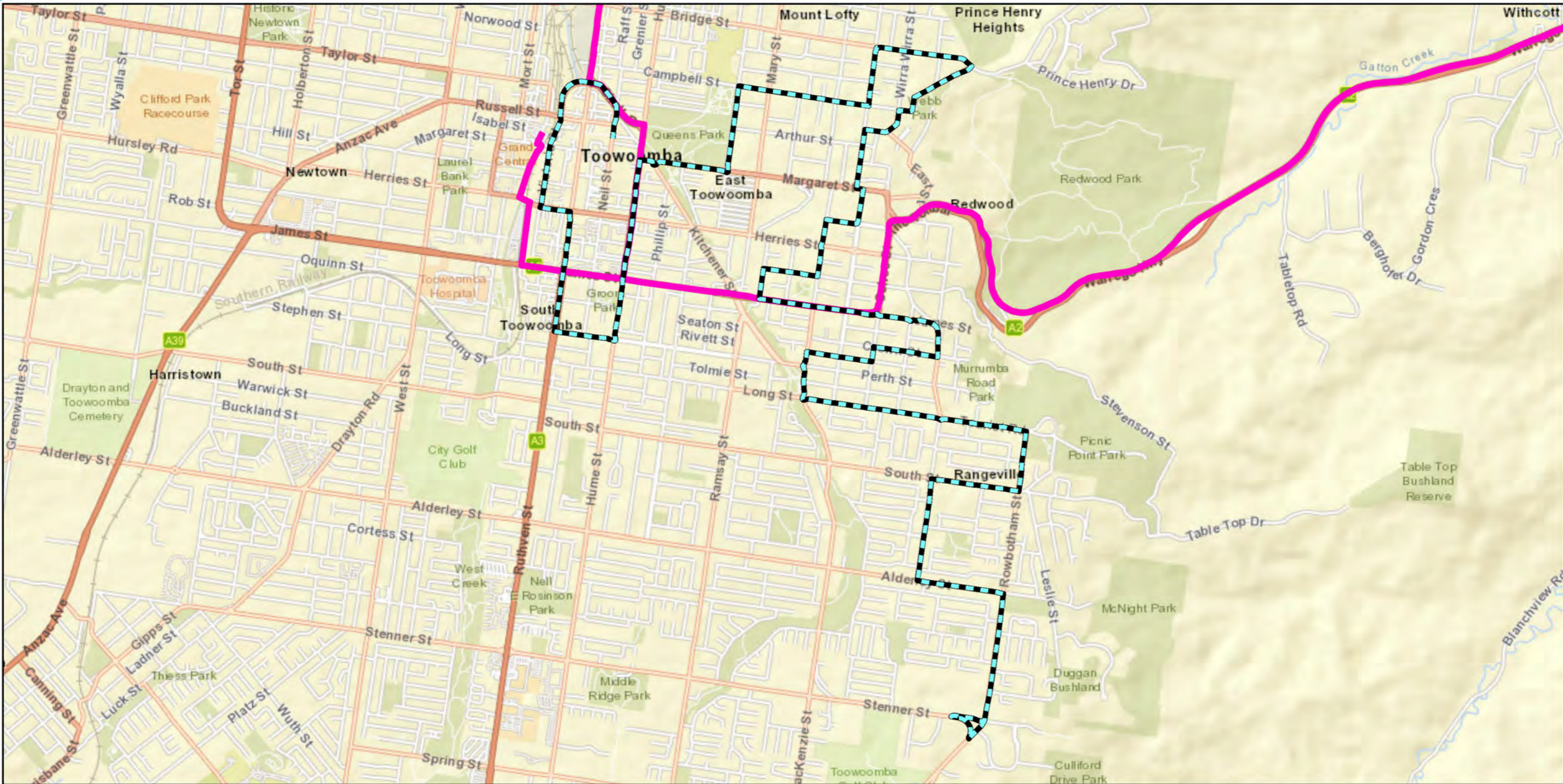


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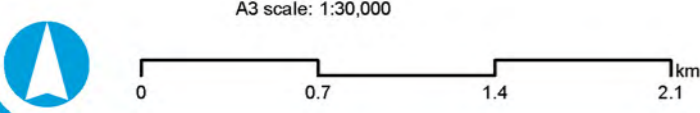




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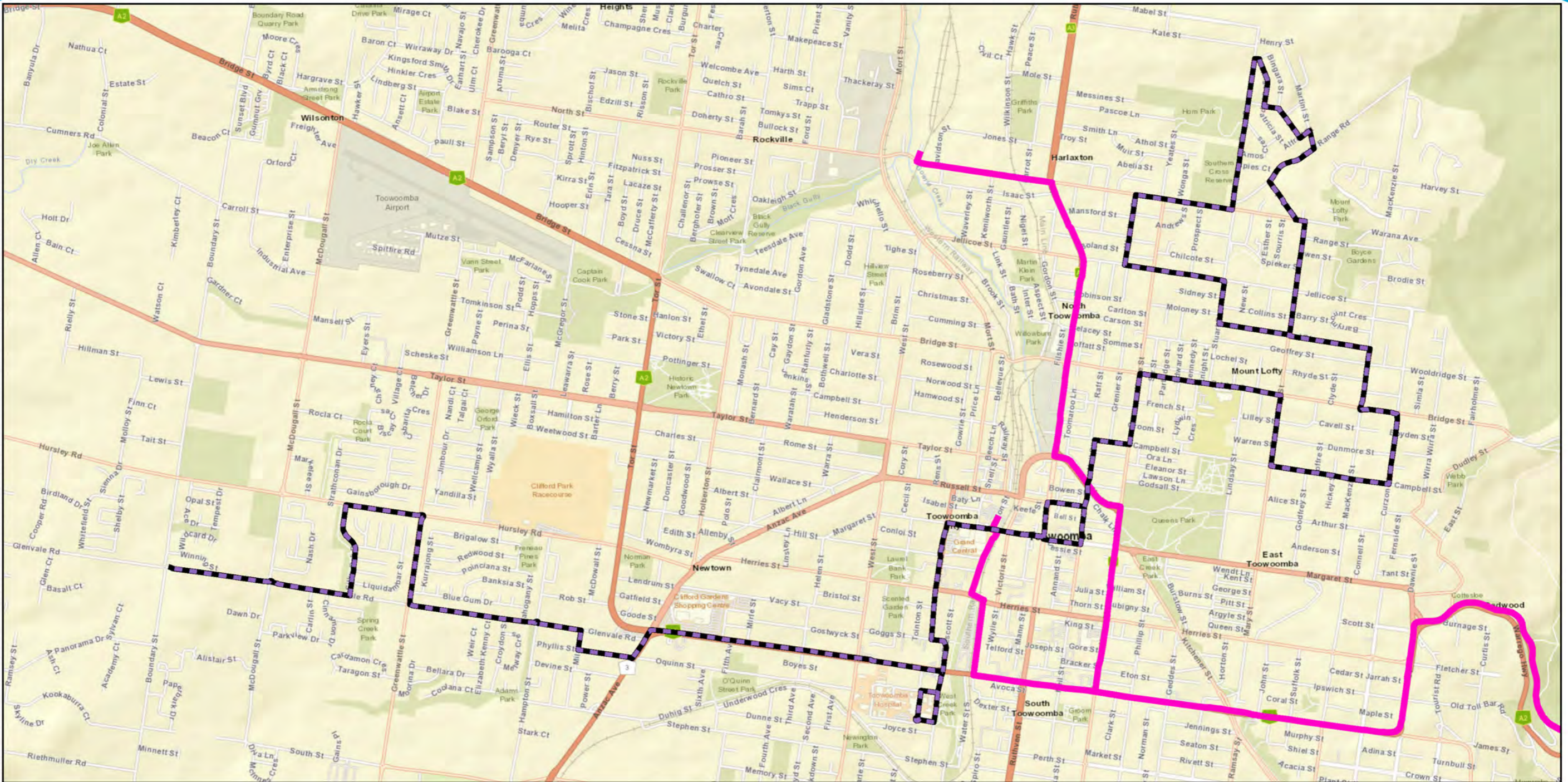


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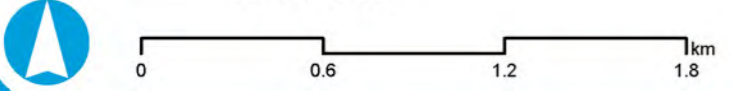
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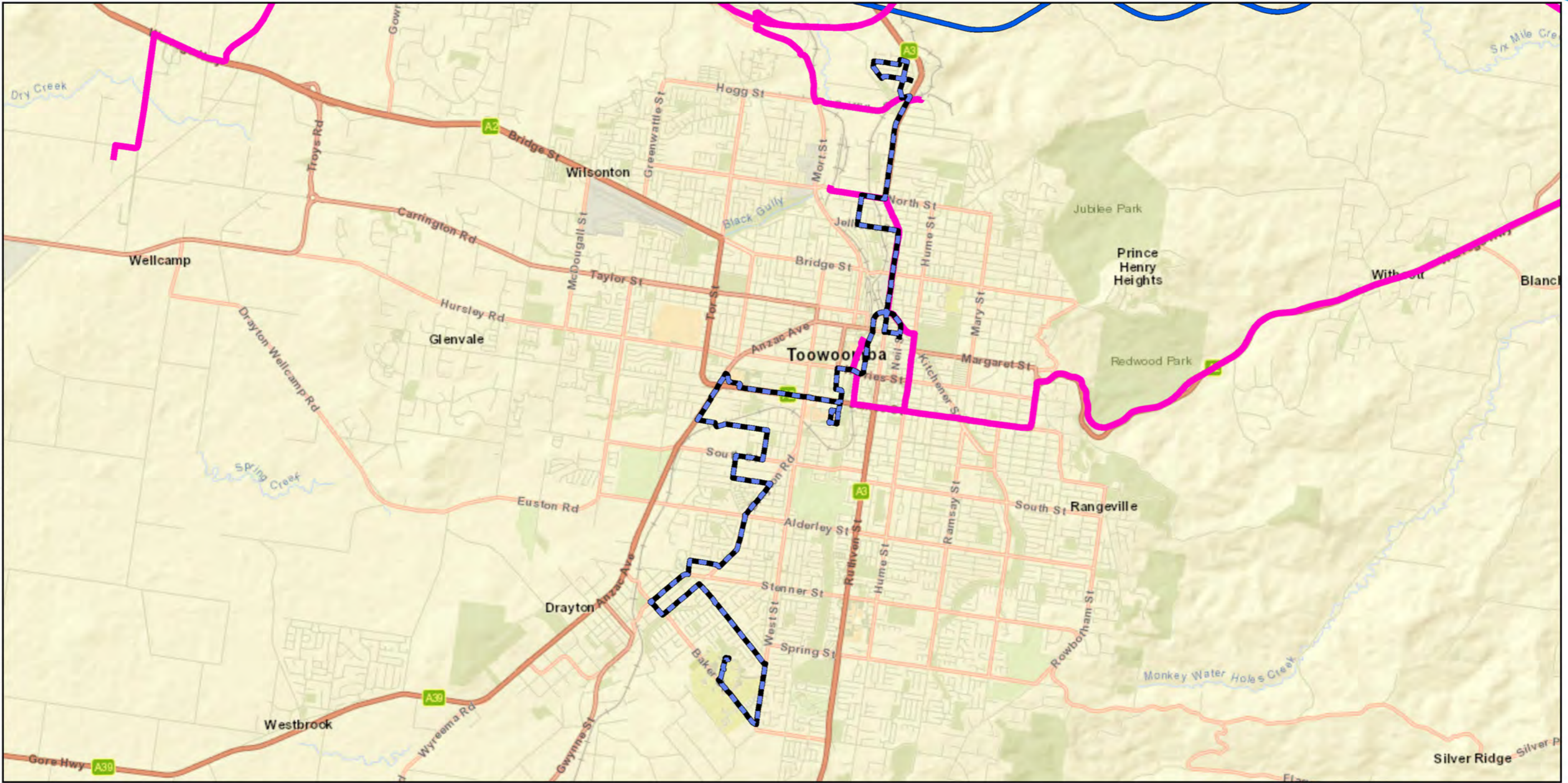


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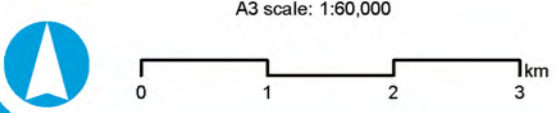




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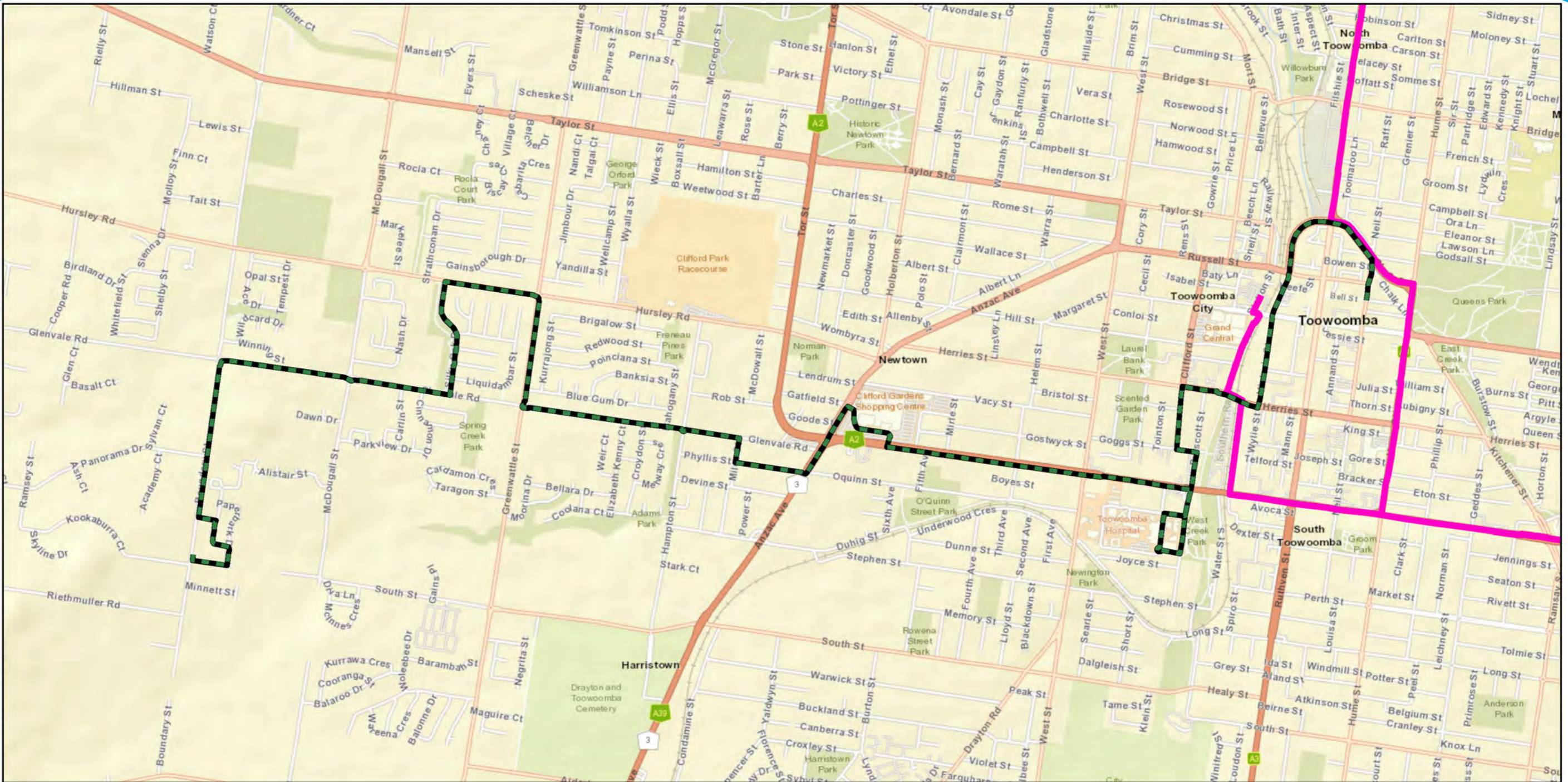


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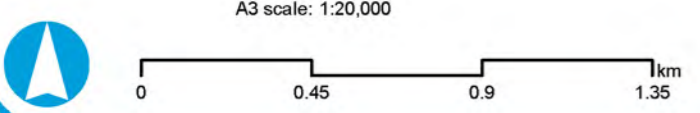




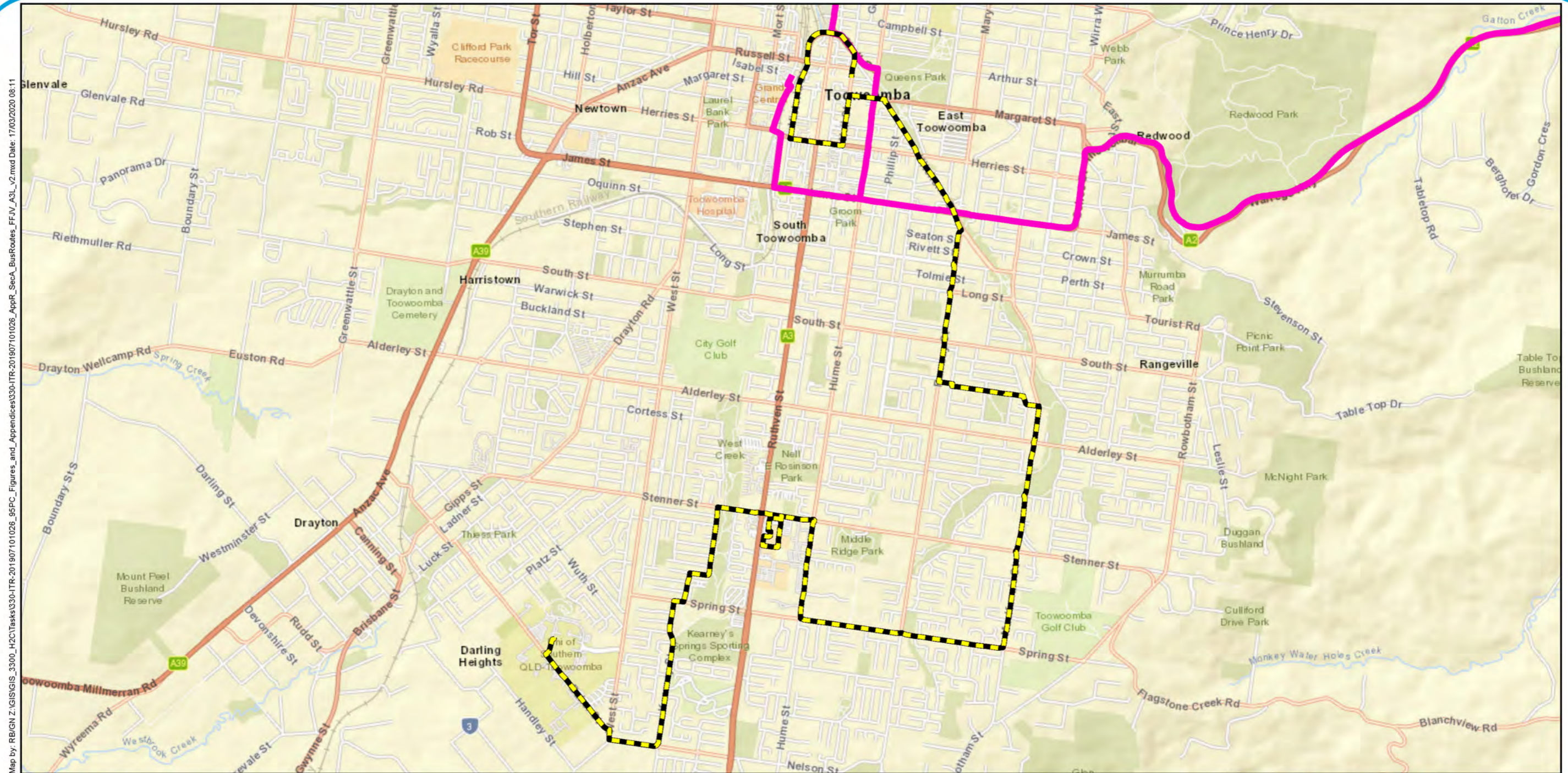
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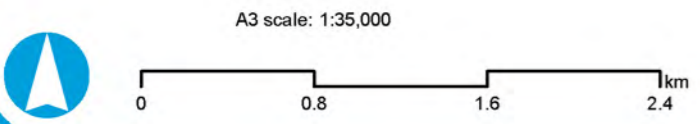




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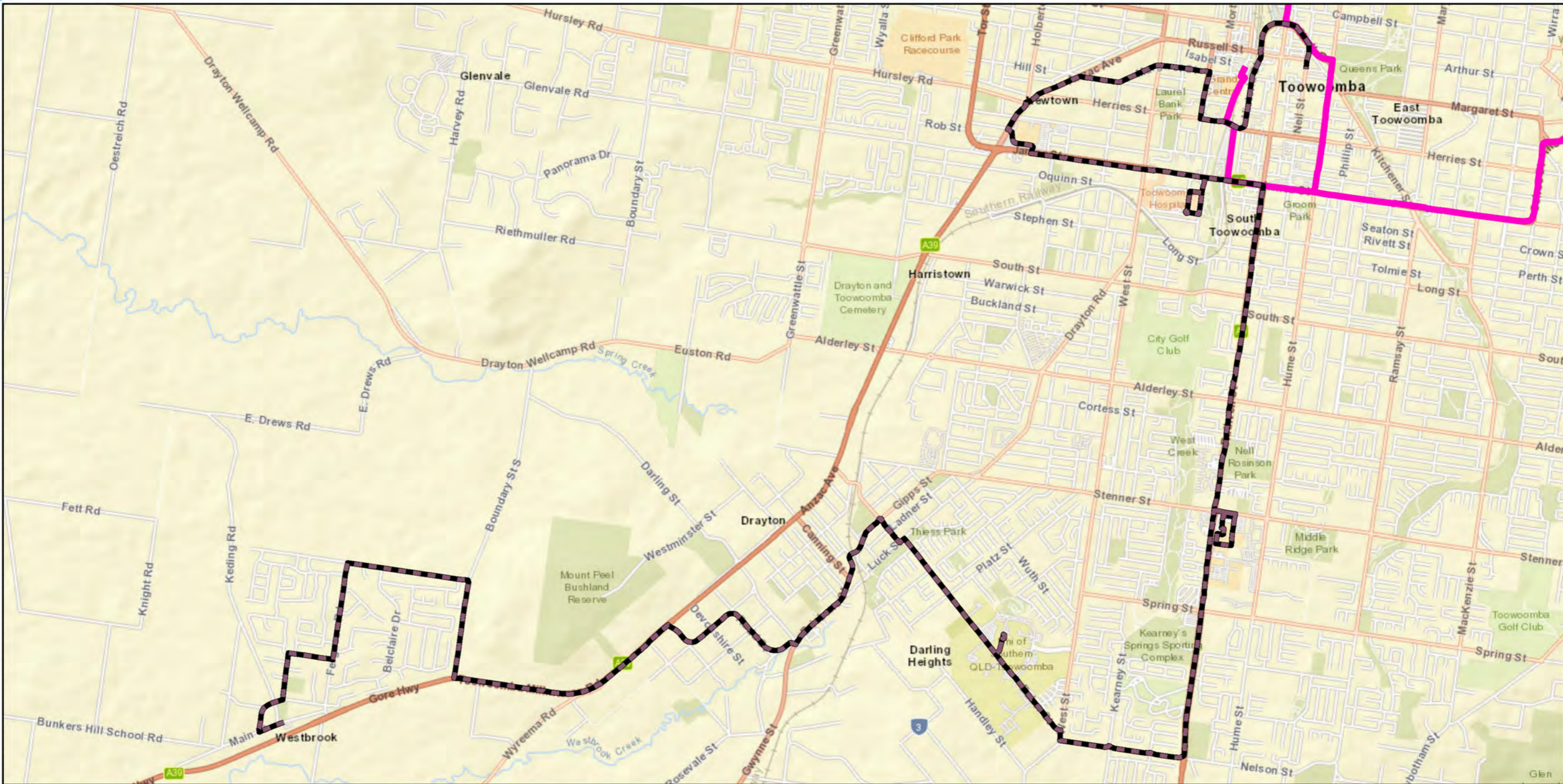
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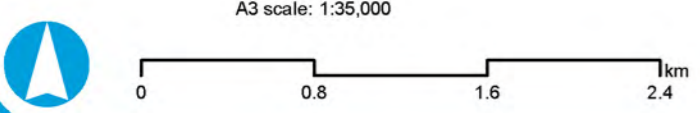




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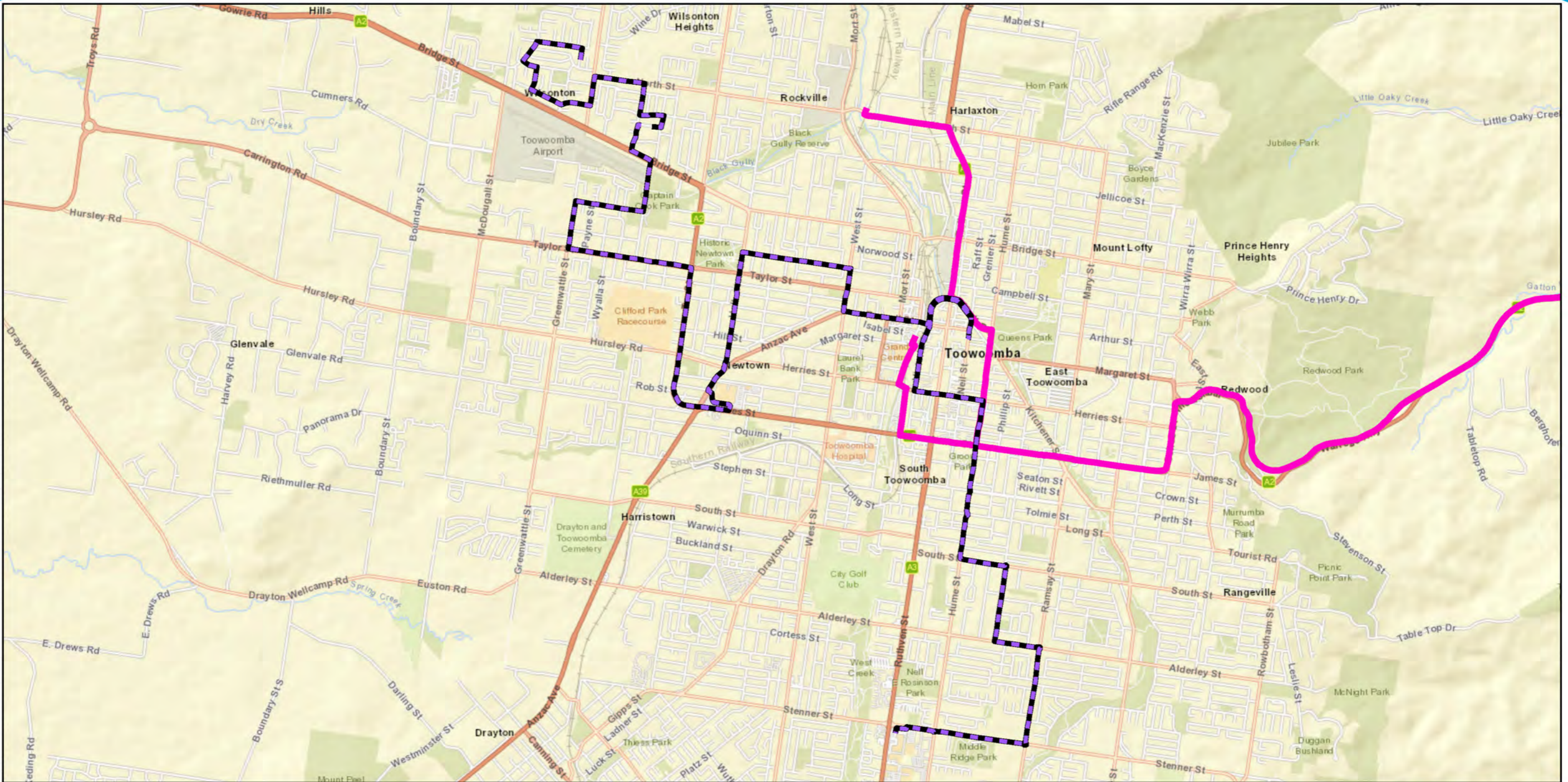


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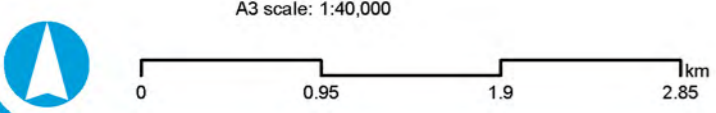




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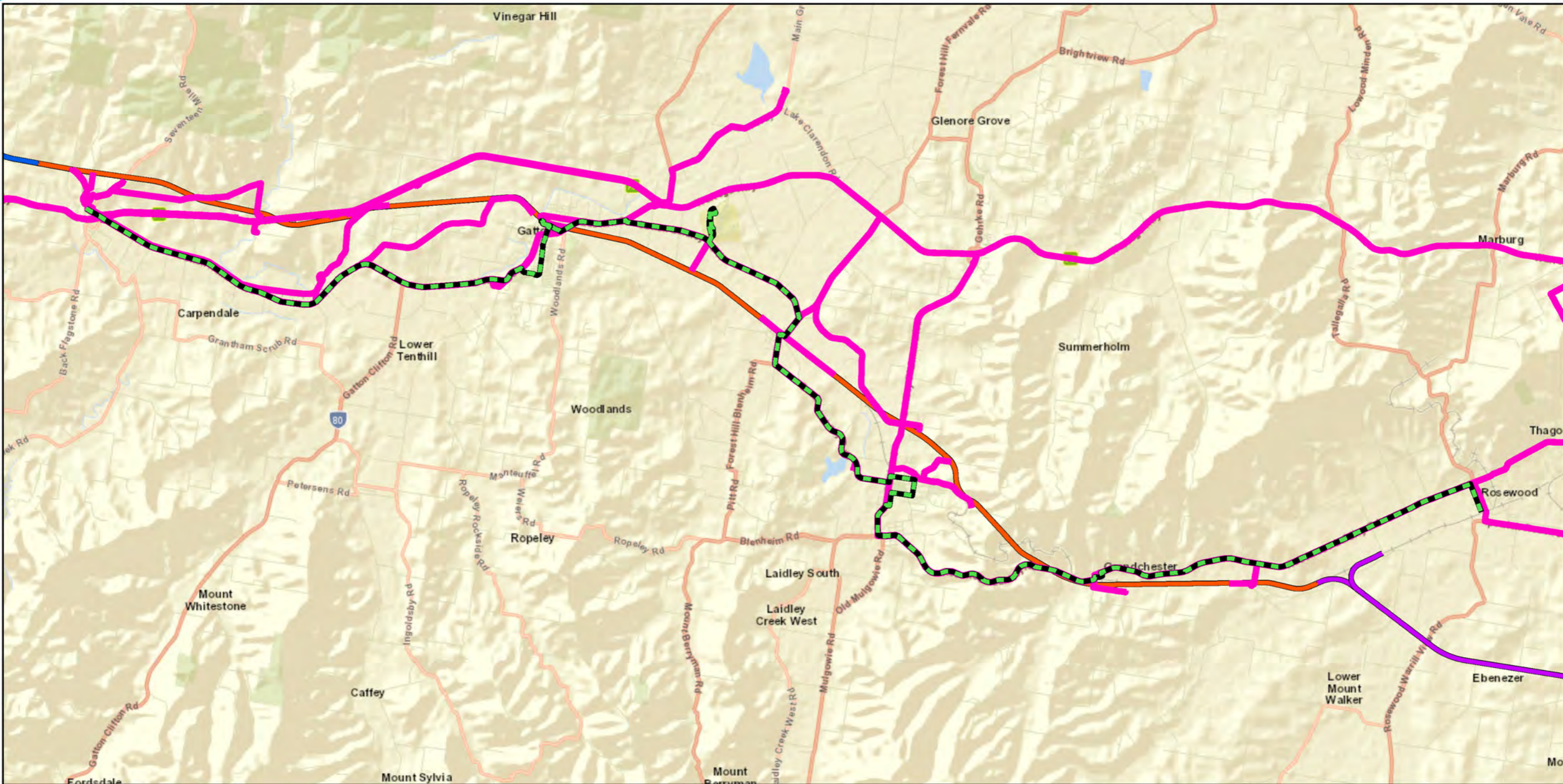


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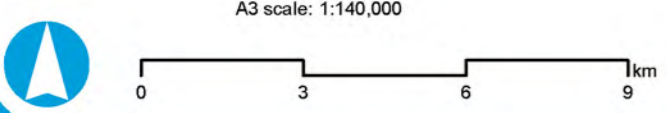




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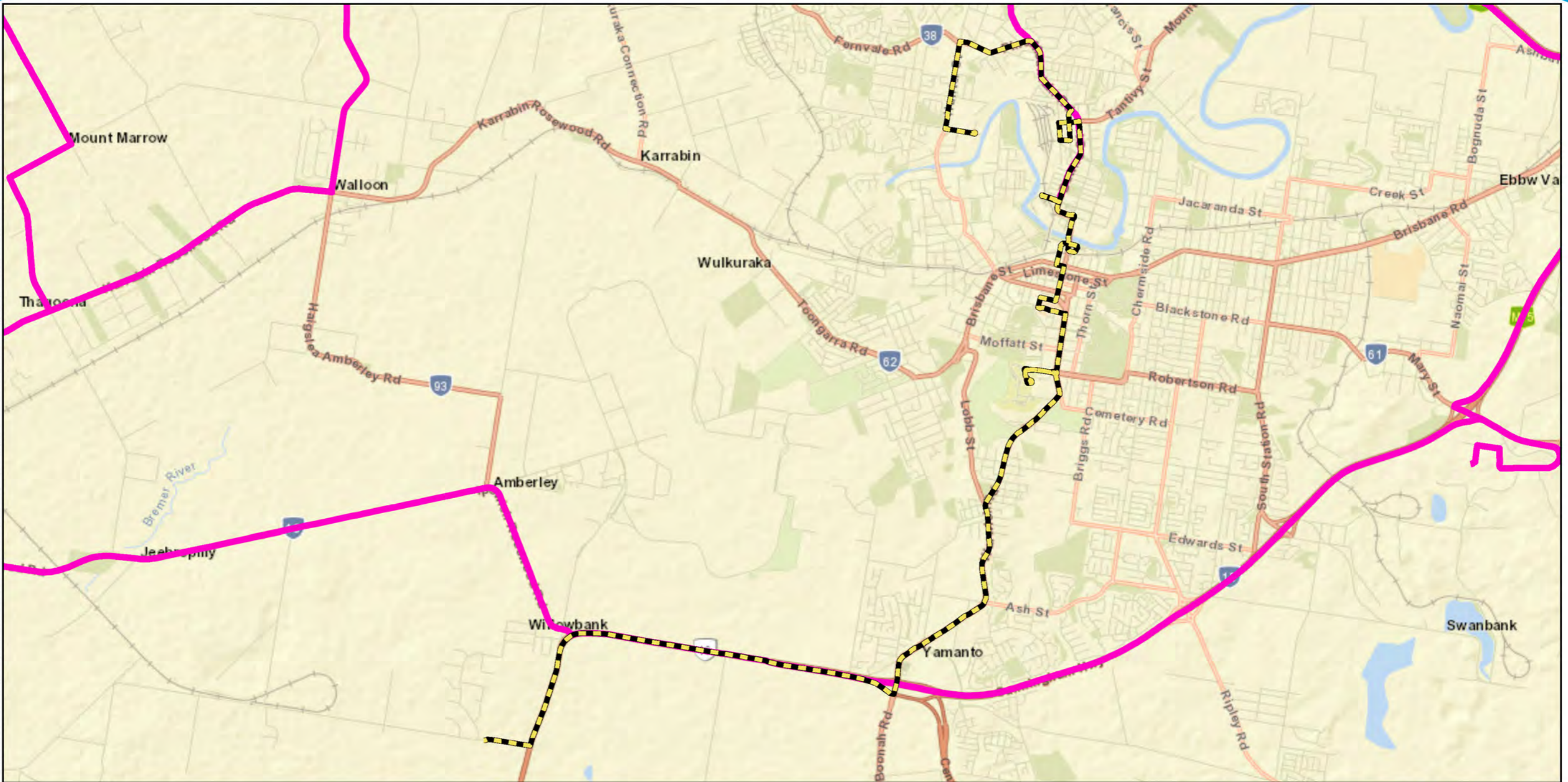


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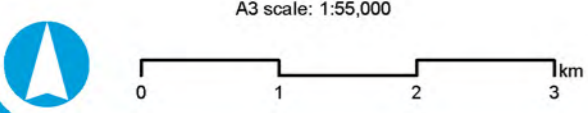




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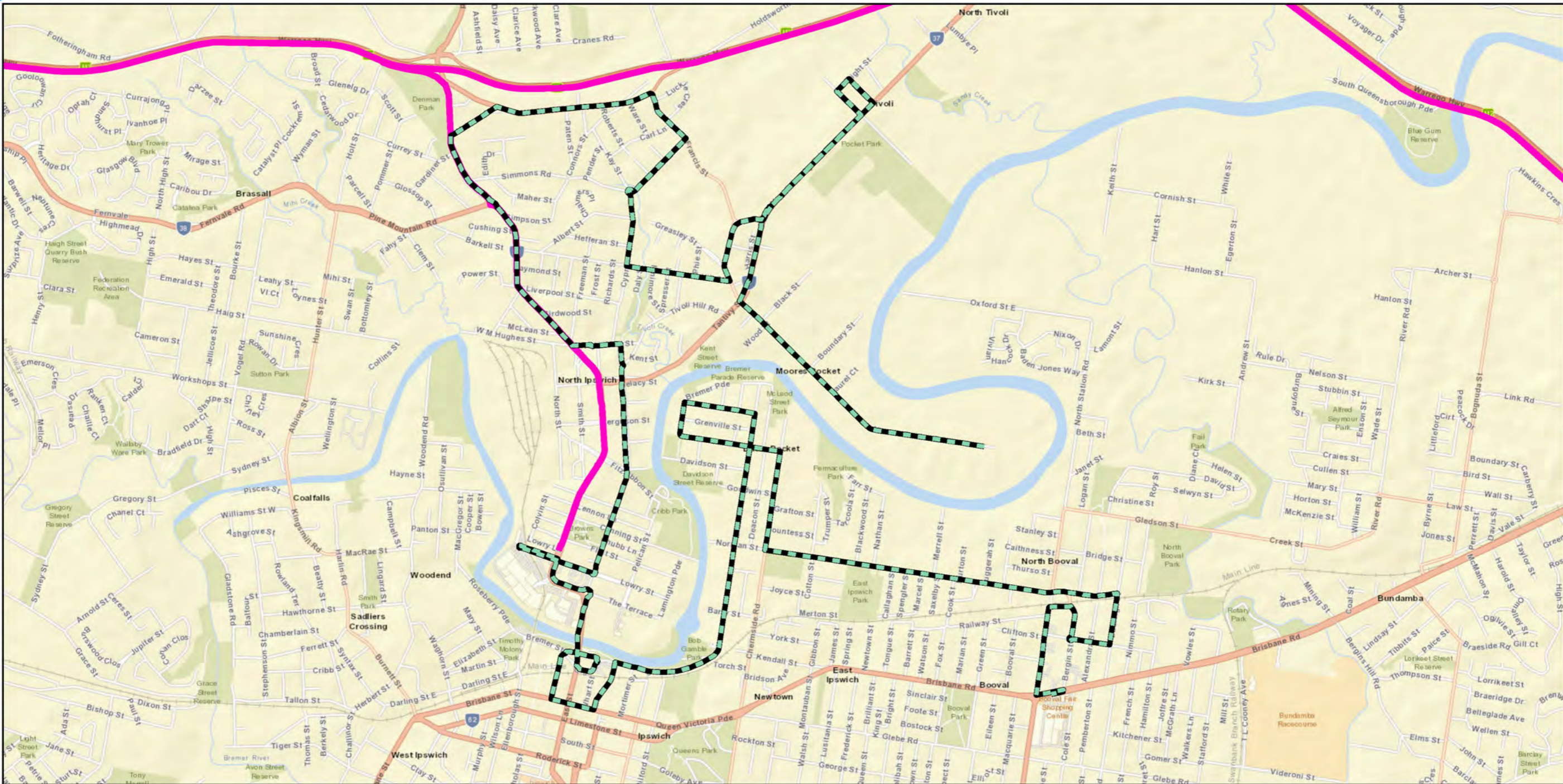


- Legend**
- Construction Traffic Routes
  - Bus Routes**
  - Route 515 - Conflicting with Cunningham Highway





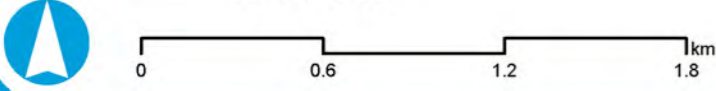
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- Legend**
- Construction Traffic Routes
  - Bus Routes**
  - Route 514 Ipswich City

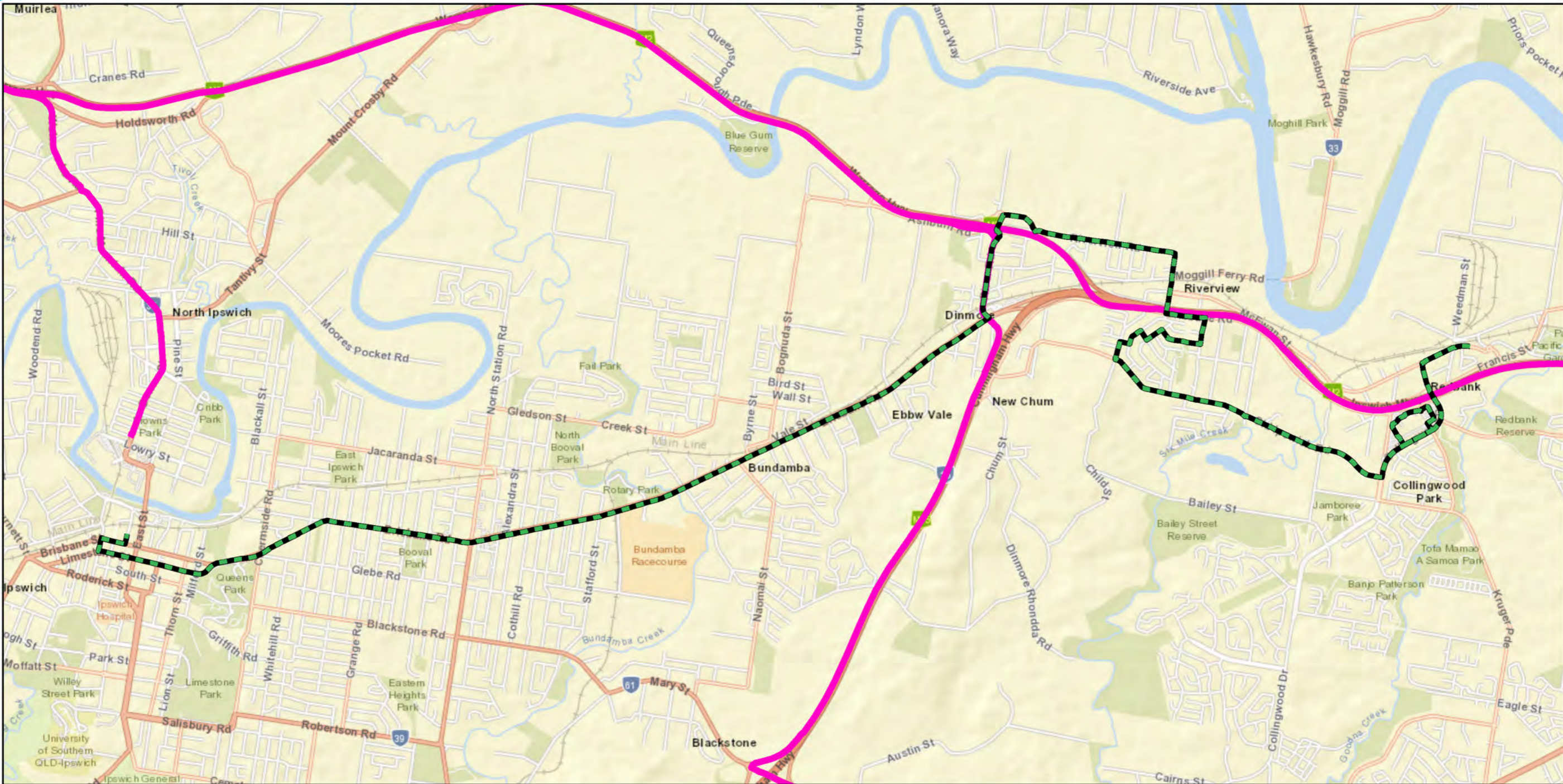


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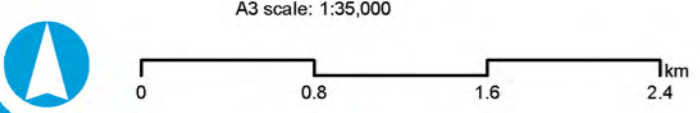




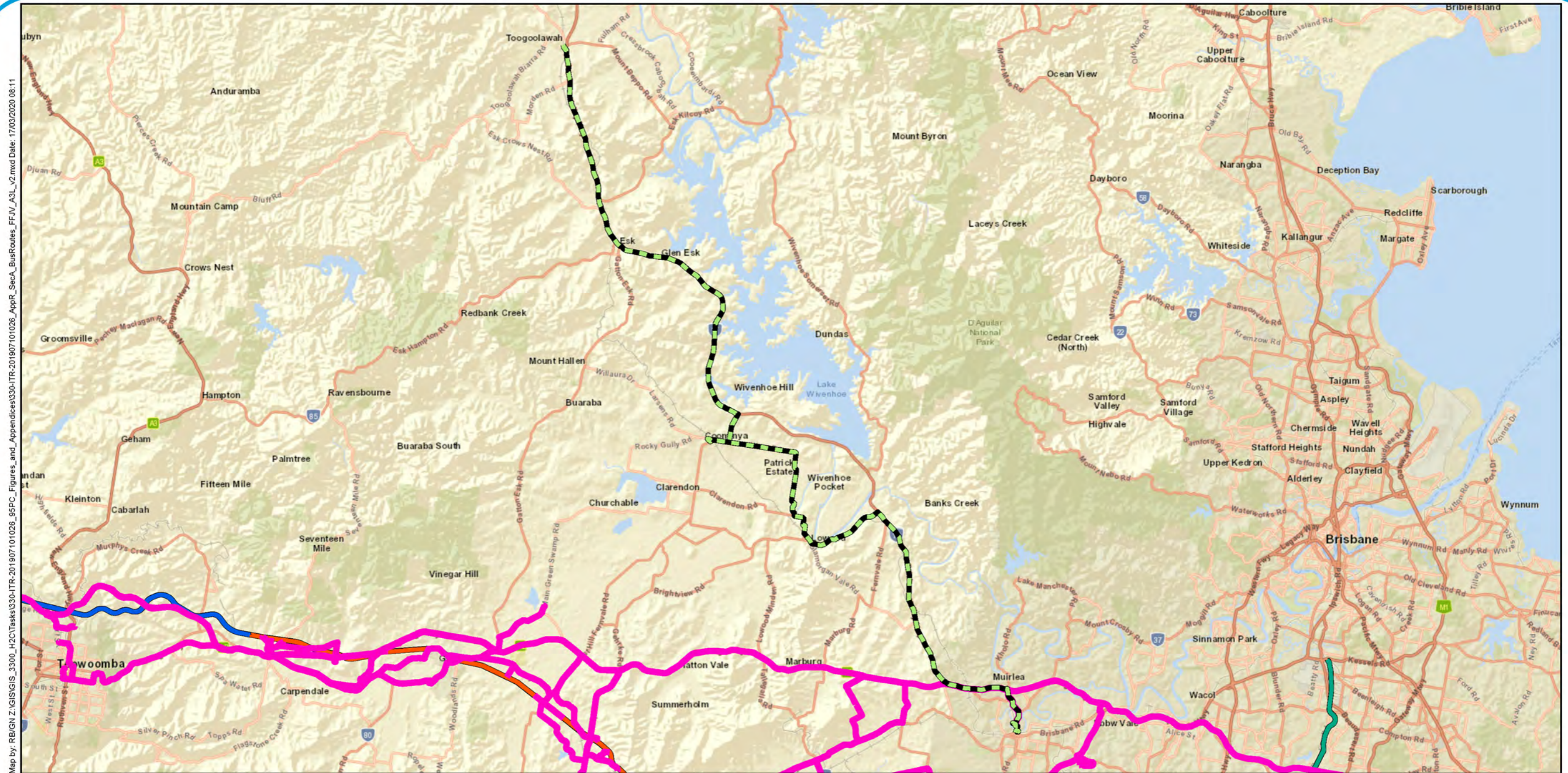
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- Legend**
- Construction Traffic Routes
  - Bus Routes**
  - - - Route 500 Ipswich City



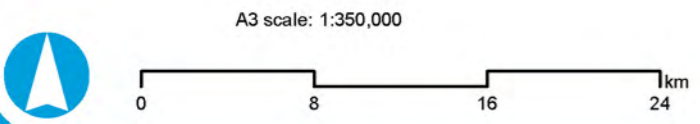




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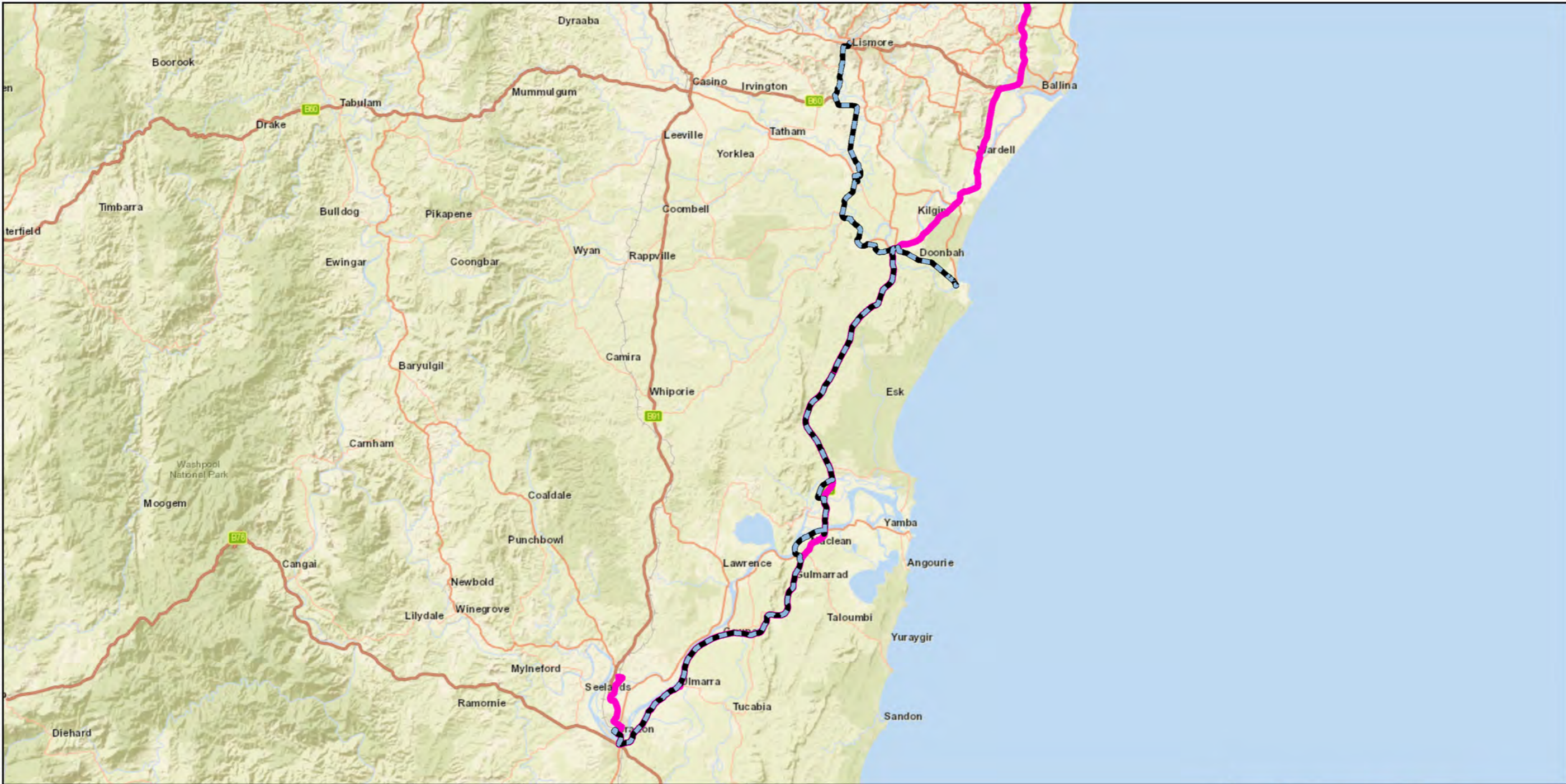
**Legend**

- G2H project alignment
- H2C project alignment
- K2ARB project alignment
- Construction Traffic Routes
- Bus Routes**
- Route 529

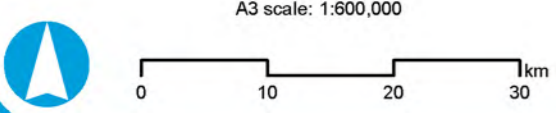




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- Legend**
- Construction Traffic Routes
  - Bus Routes**
  - Route 695 Grafton to Lismore







Map by: RB\GN Z\GIS\GIS\_3300\_H2C1Tasks\3300-ITR-201907101026\_95FC\_Figures\_and\_Appendices\3300-ITR-201907101026\_AppR\_SecA\_BusRoutes\_FFIV\_A3L\_v2.mxd Date: 17/03/2020 08:11

**Legend**

- Construction Traffic Routes
- Bus Routes**
- Route 375A Grafton



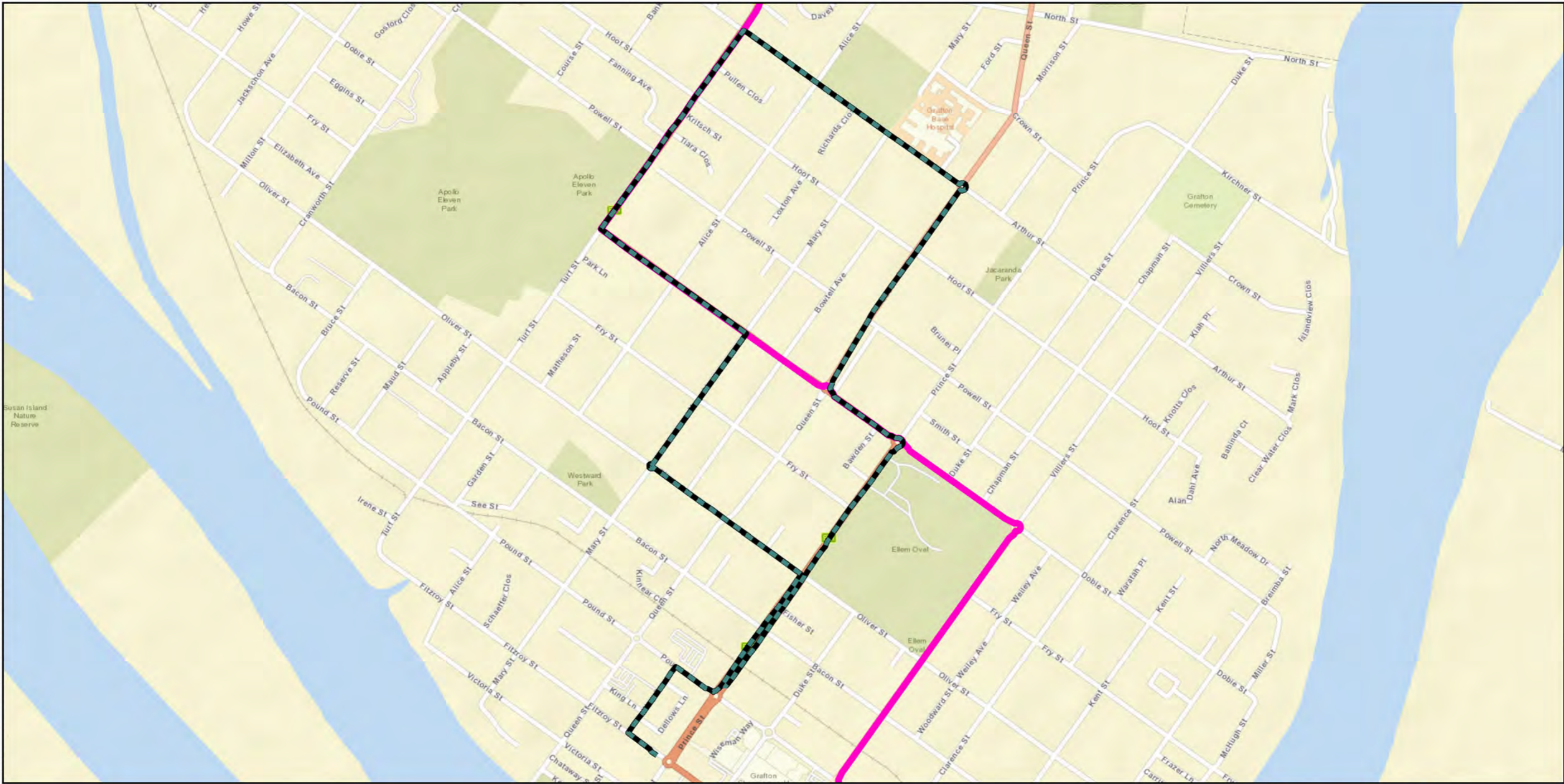
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Issue date: 16/03/2020 Version: 2  
Coordinate System: GDA 1994 MGA Zone 56



Map by: RB\IGN Z\GIS\GIS\_3300\_H2C\Tasks\330-ITR-201907101026\_95FC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppR\_SecA\_BusRoutes\_FF\_V\_A3L\_v2.mxd Date: 17/03/2020 08:11



- Legend**
- Construction Traffic Routes
  - Bus Routes**
  - Route 376



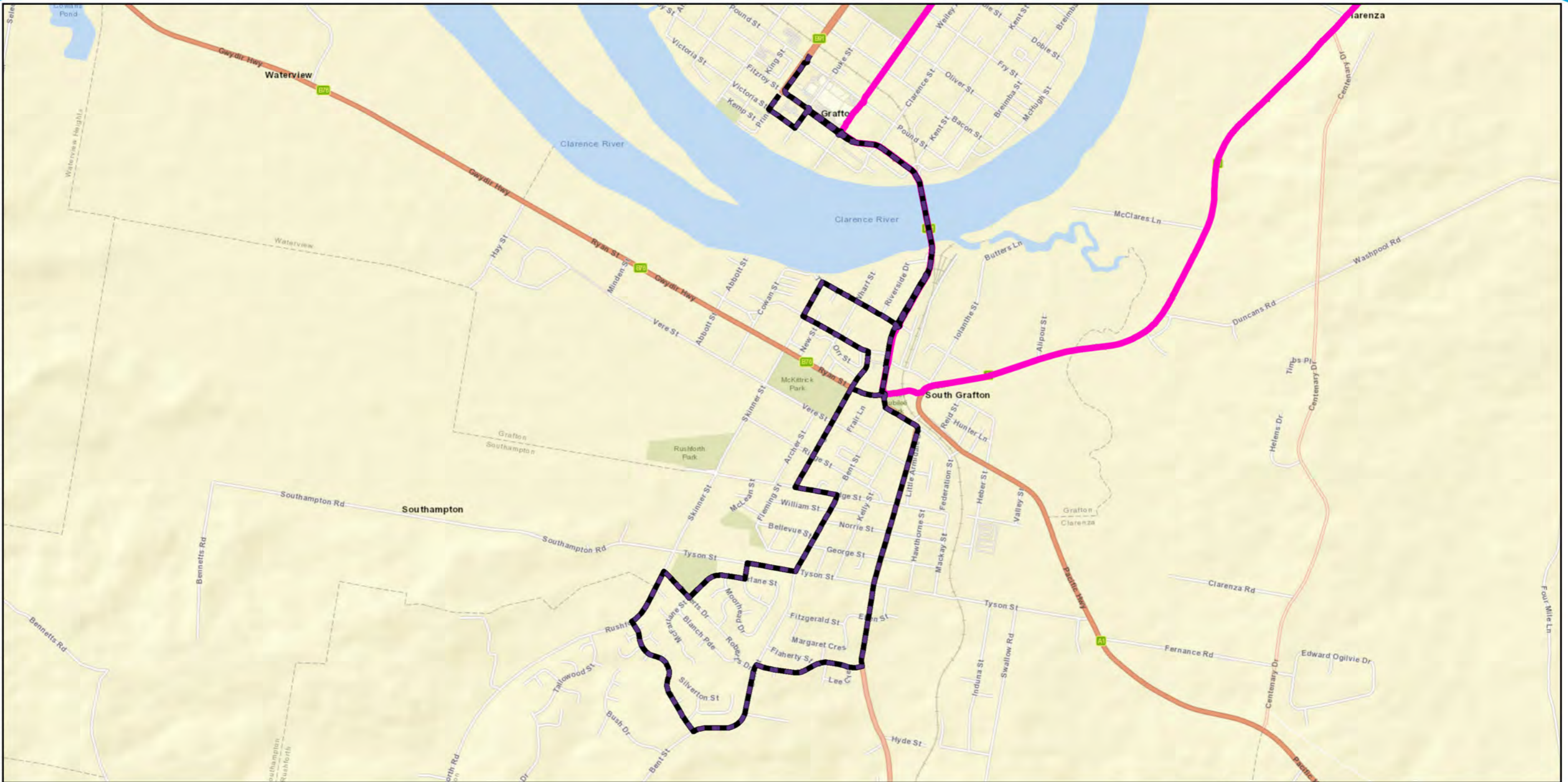
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Issue date: 16/03/2020 Version: 2  
Coordinate System: GDA 1994 MGA Zone 56



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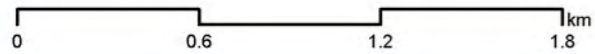


**Legend**

- Construction Traffic Routes
- Bus Routes**
- Route 374



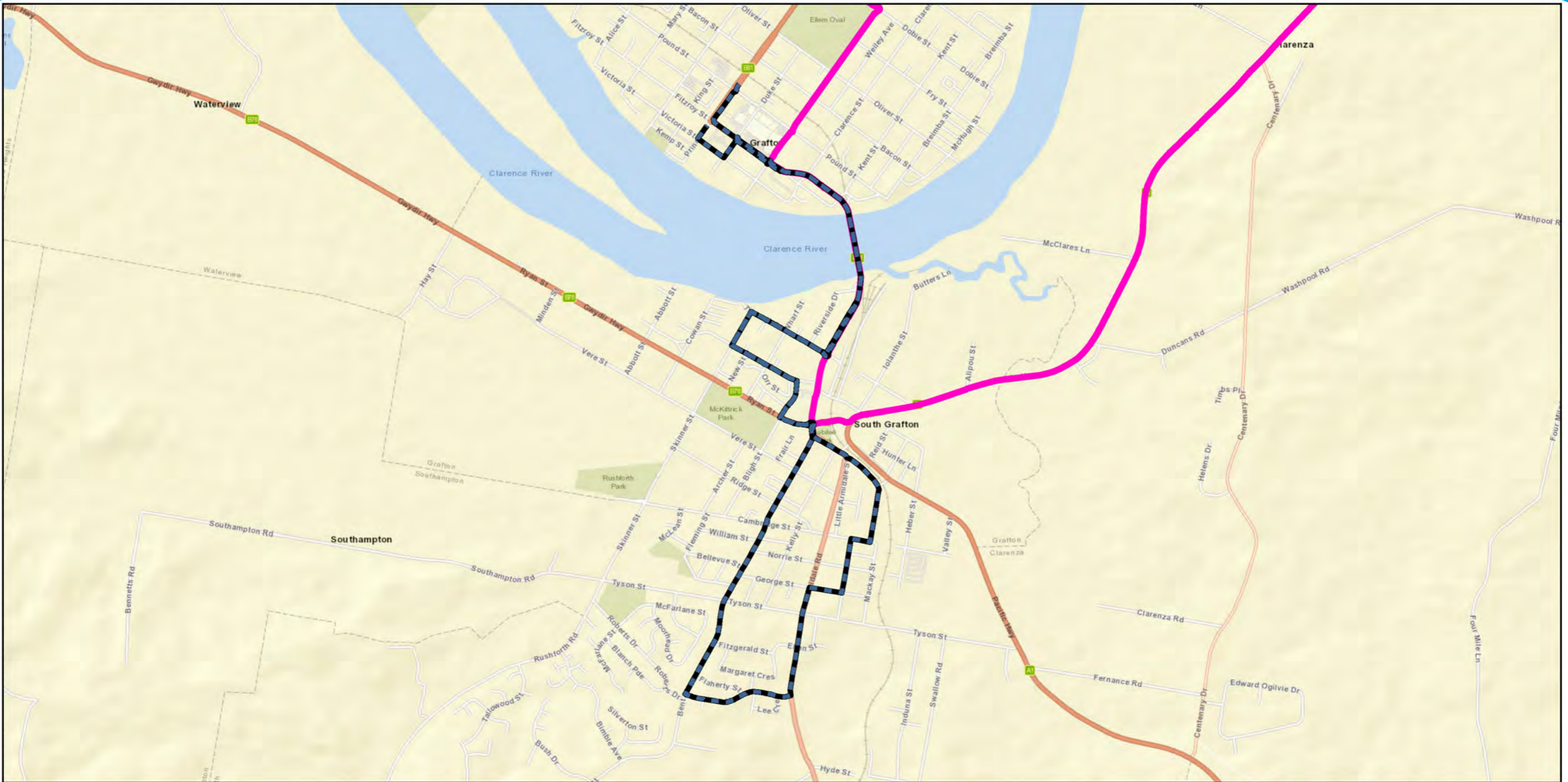
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Issue date: 16/03/2020 Version: 2  
 Coordinate System: GDA 1994 MGA Zone 56



Map by: RBIGN Z:\GIS\GIS\_3300\_H2CITasks\330-ITR-201907101026\_95FC\_Figures\_and\_Appendices\330-ITR-201907101026\_AppR\_SecA\_BusRoutes\_FFIV\_A3L\_v2.mxd Date: 17/03/2020 08:11



**Legend**

- █ Construction Traffic Routes
- Bus Routes**
- Route 373

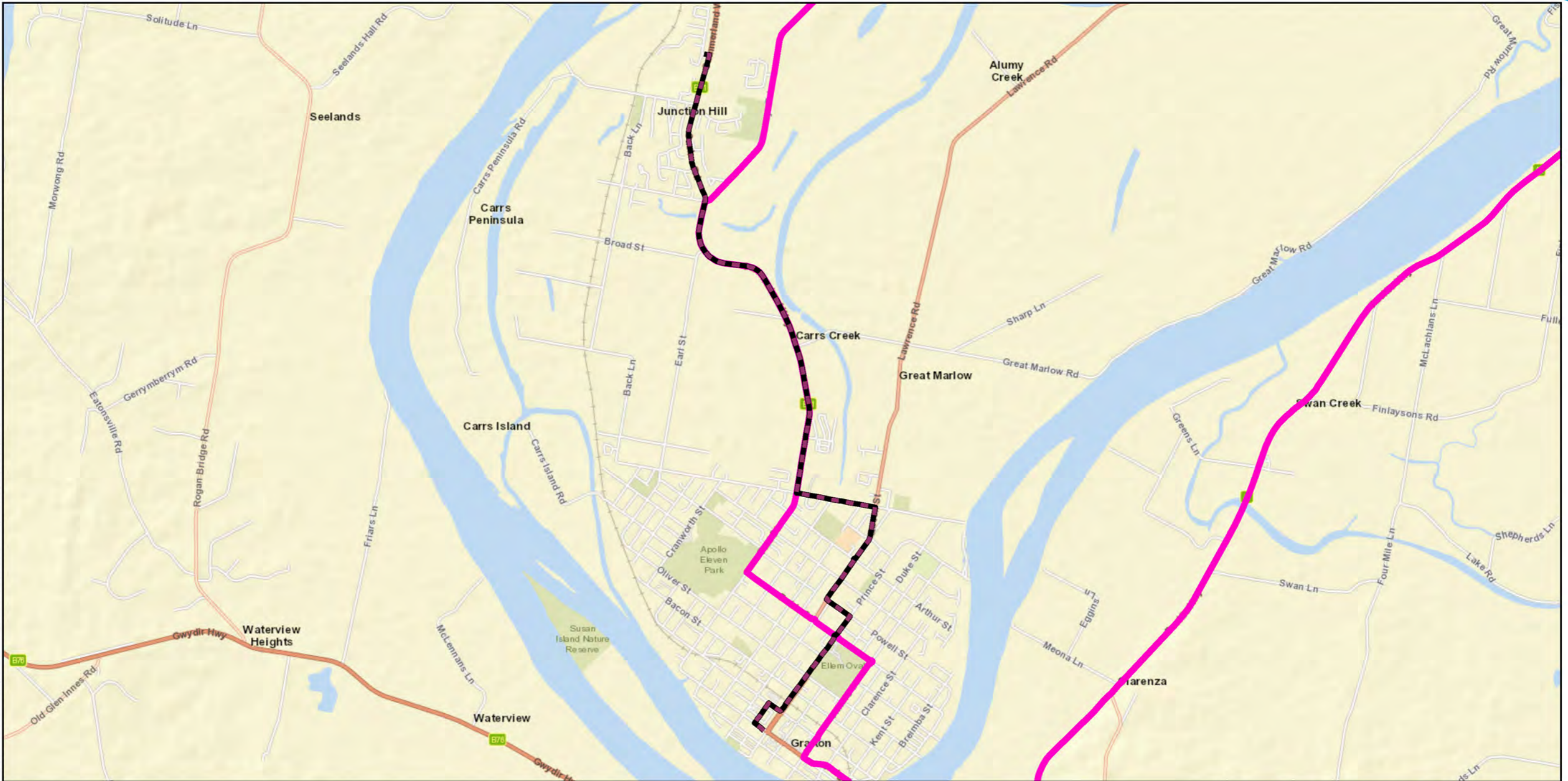


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Issue date: 16/03/2020 Version: 2  
Coordinate System: GDA 1994 MGA Zone 56





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**Legend**

- Construction Traffic Routes
- Bus Routes**
- Route 377 - Conflicting with Summerland Way



A3 scale: 1:40,000



Issue date: 16/03/2020 Version: 2  
Coordinate System: GDA 1994 MGA Zone 56

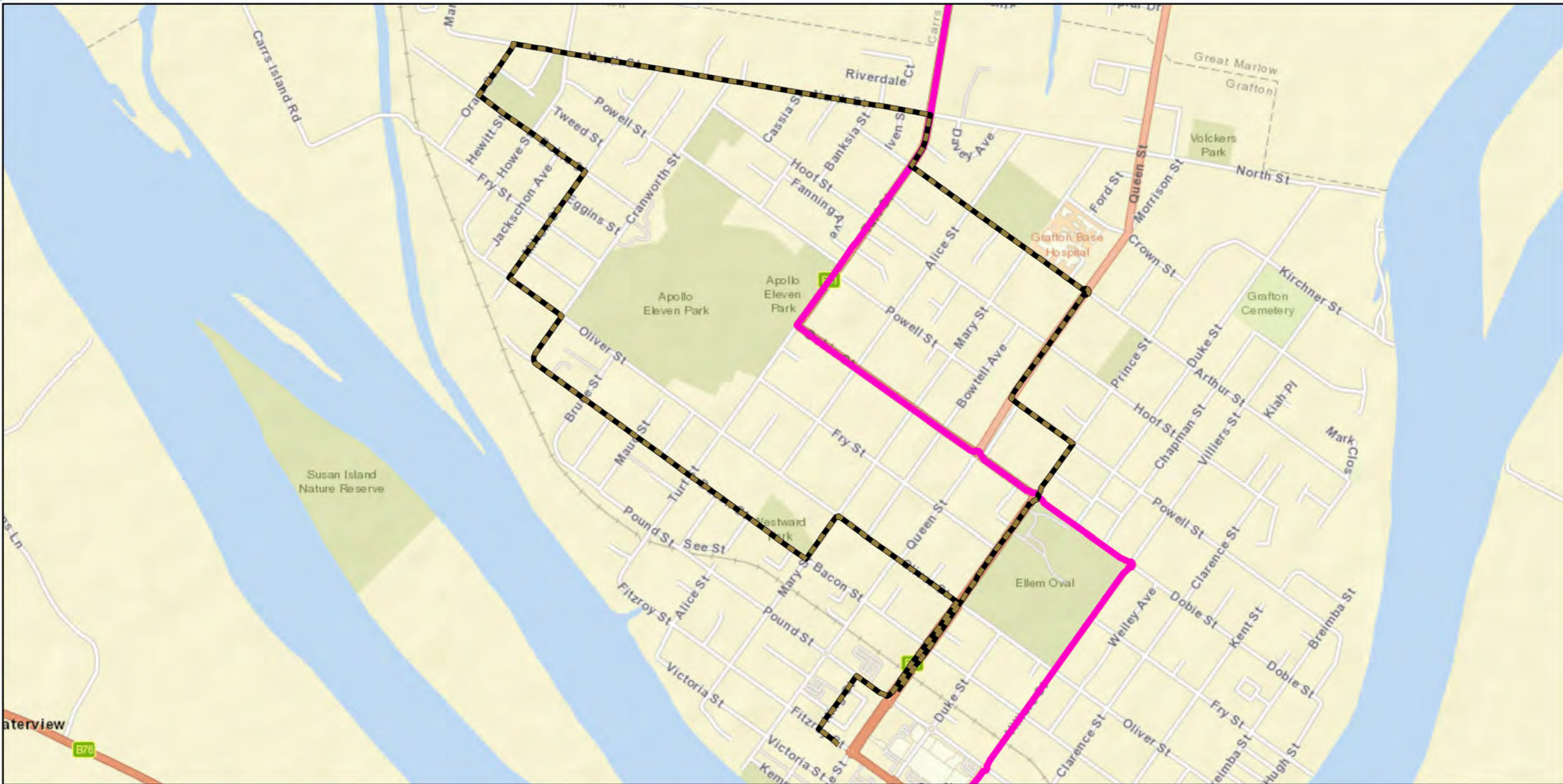
**Helidon to Calvert**

**Appendix R25:**

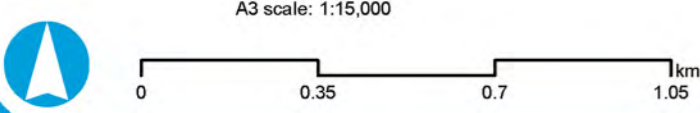
**Route 377 - Conflicting with Summerland Way**



Map by: RB\GN Z\GIS\GIS\_3300\_H2CITasks\3300-ITR-201907101026\_95FC\_Figures\_and\_Appendices\3300-ITR-201907101026\_AppR\_SecA\_BusRoutes\_FFIV\_A3L\_v2.mxd Date: 17/03/2020 08:11

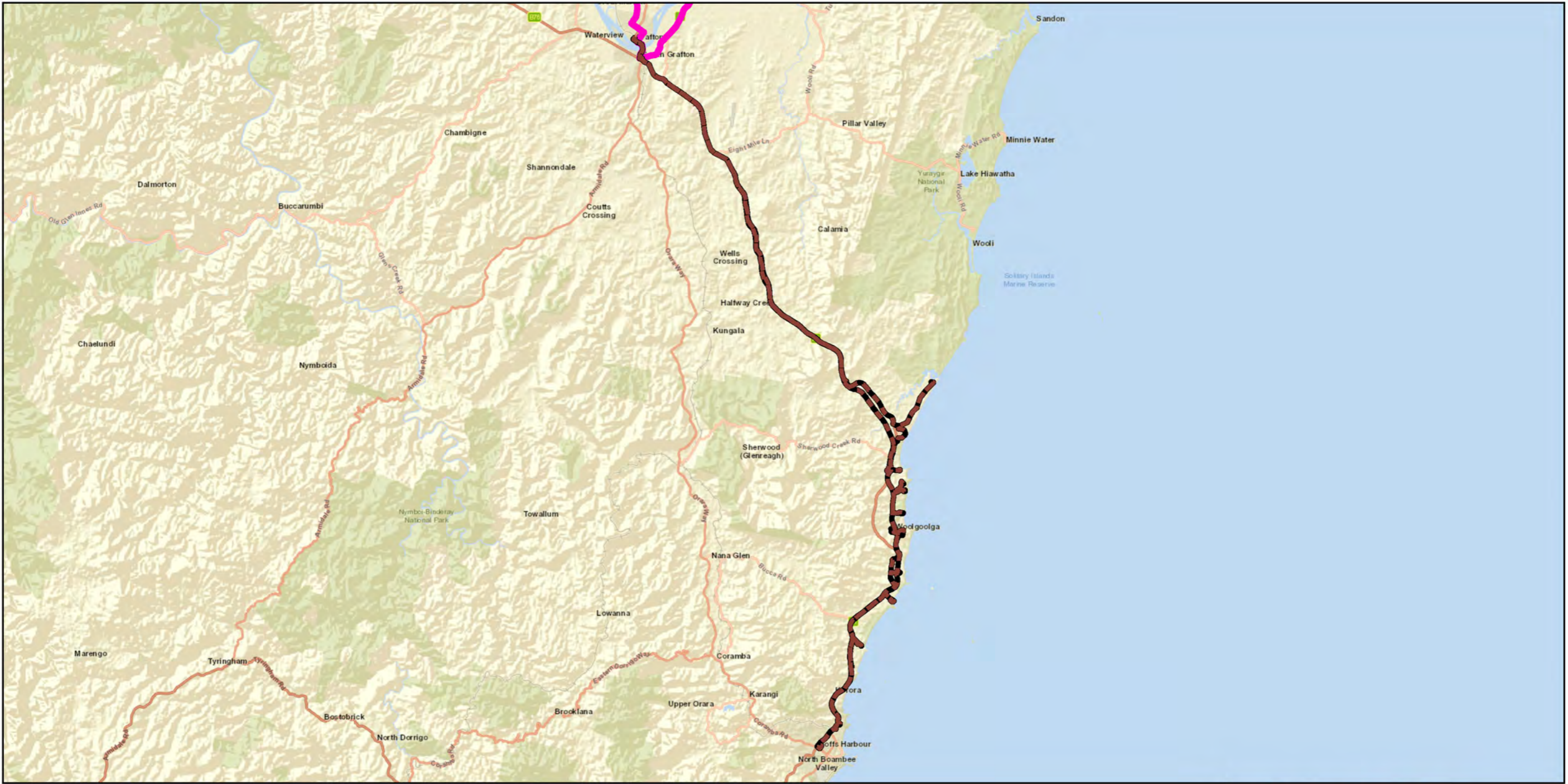


- Legend**
- Construction Traffic Routes
  - Bus Routes**
  - Route 375C - Conflicting with Turf Street

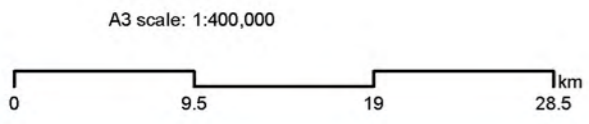




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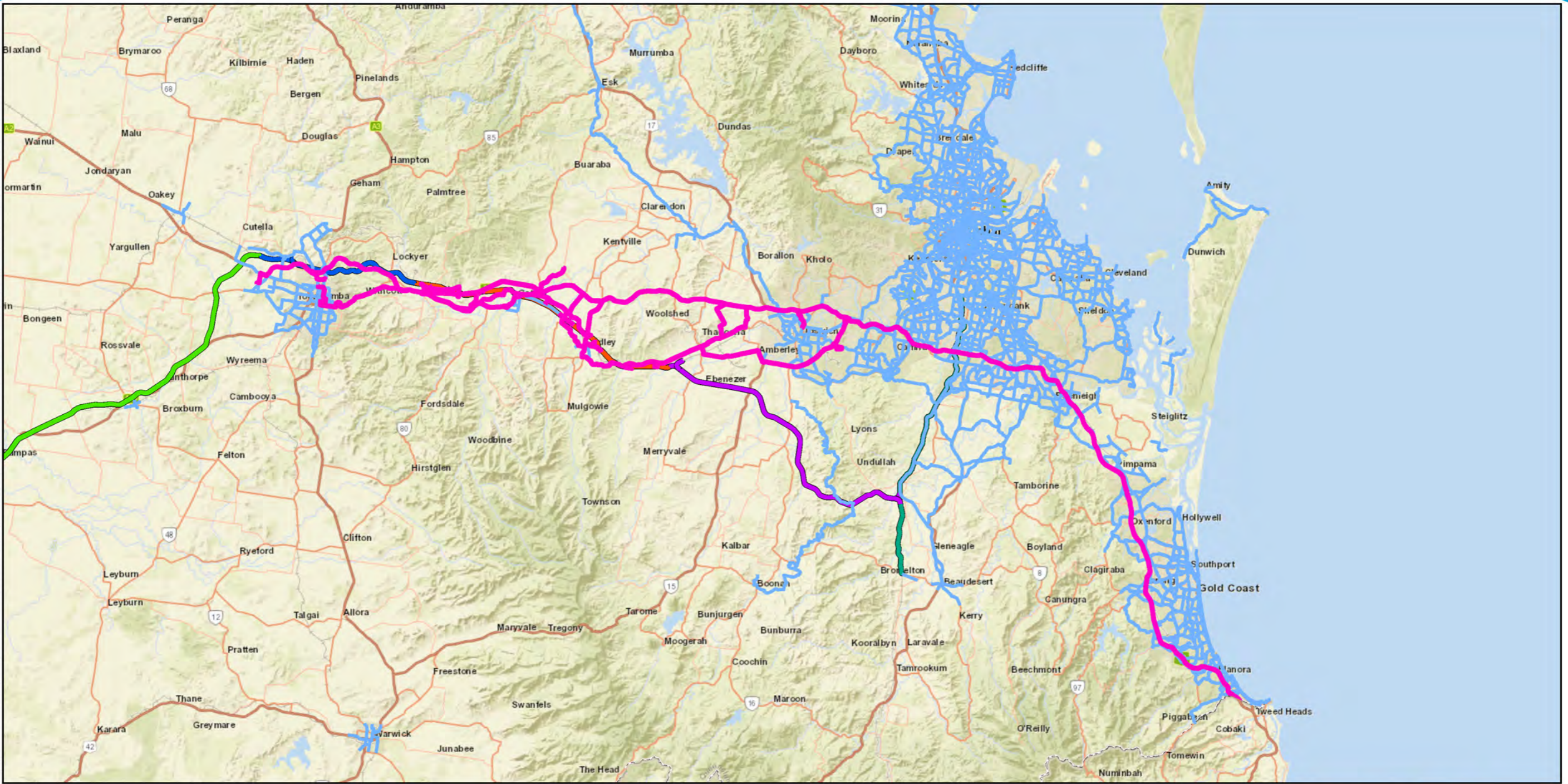


- Legend**
- Construction Traffic Routes
  - Bus Routes**
  - Route 372

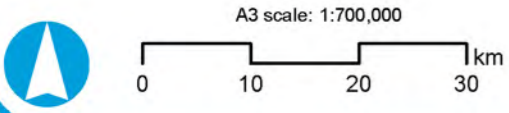




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- Legend**
- B2G project alignment
  - G2H project alignment
  - H2C project alignment
  - C2K project alignment
  - K2ARB project alignment
  - Construction Traffic Routes
  - Principal Cycle Network
  - QLD/NSW border





APPENDIX

U

Traffic Impact Assessment

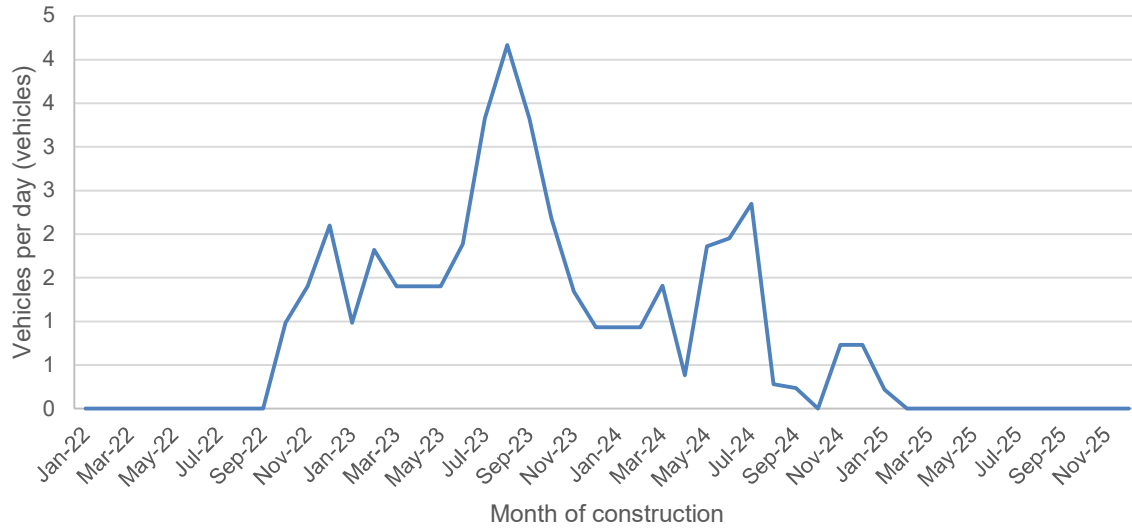
**Appendix S** Peak Construction Traffic  
by Road Segment

ARTC

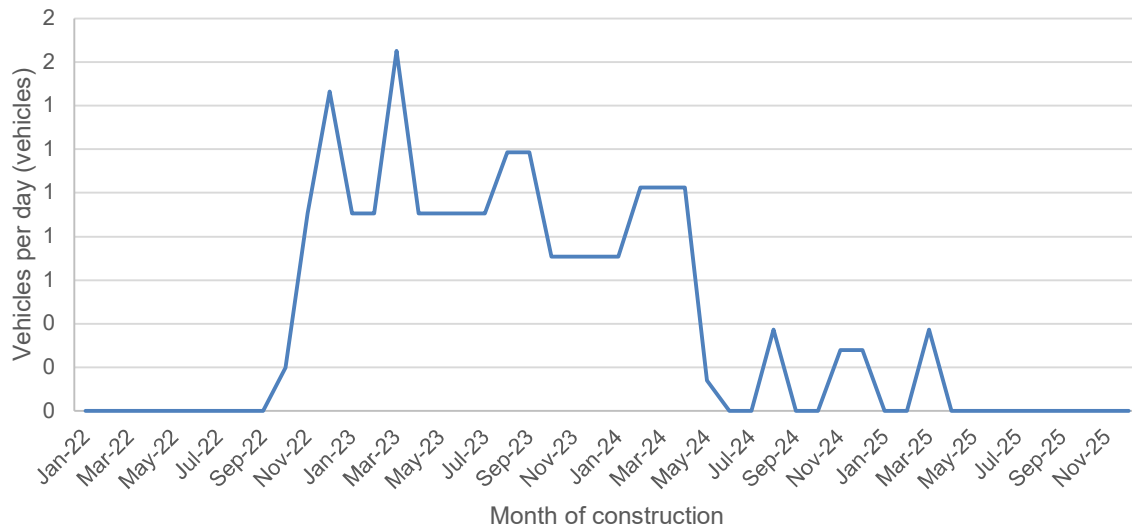
The Australian Government is investing  
in infrastructure through the Australian  
Rail Track Corporation (ARTC) to  
improve growth in our economy.



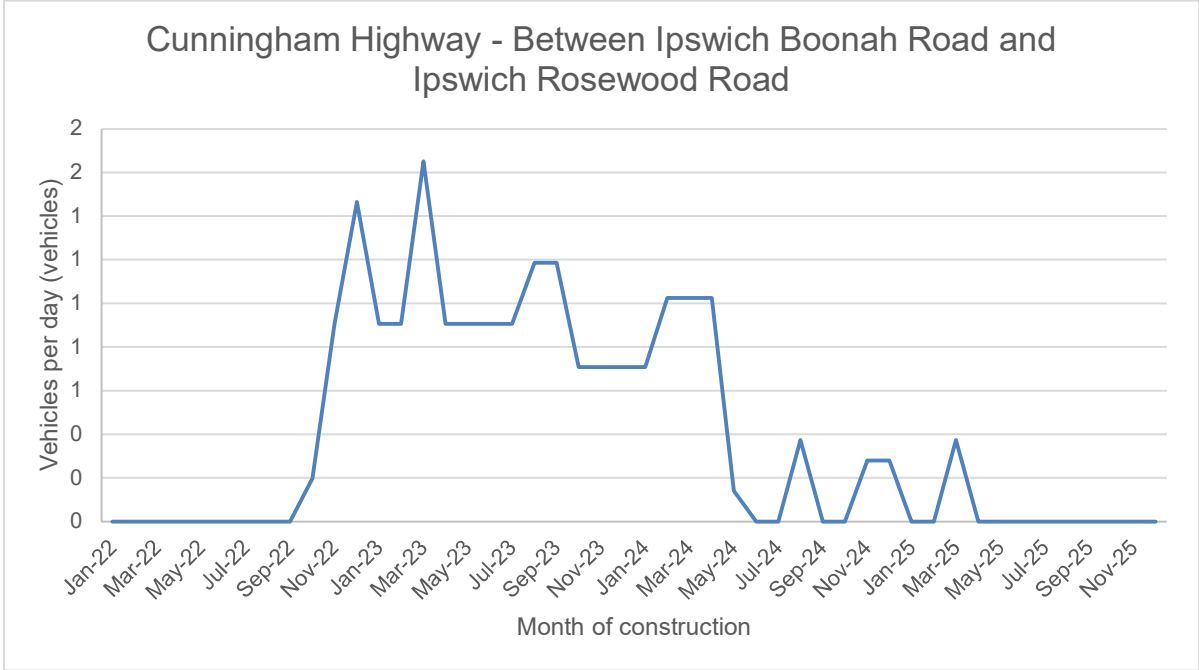
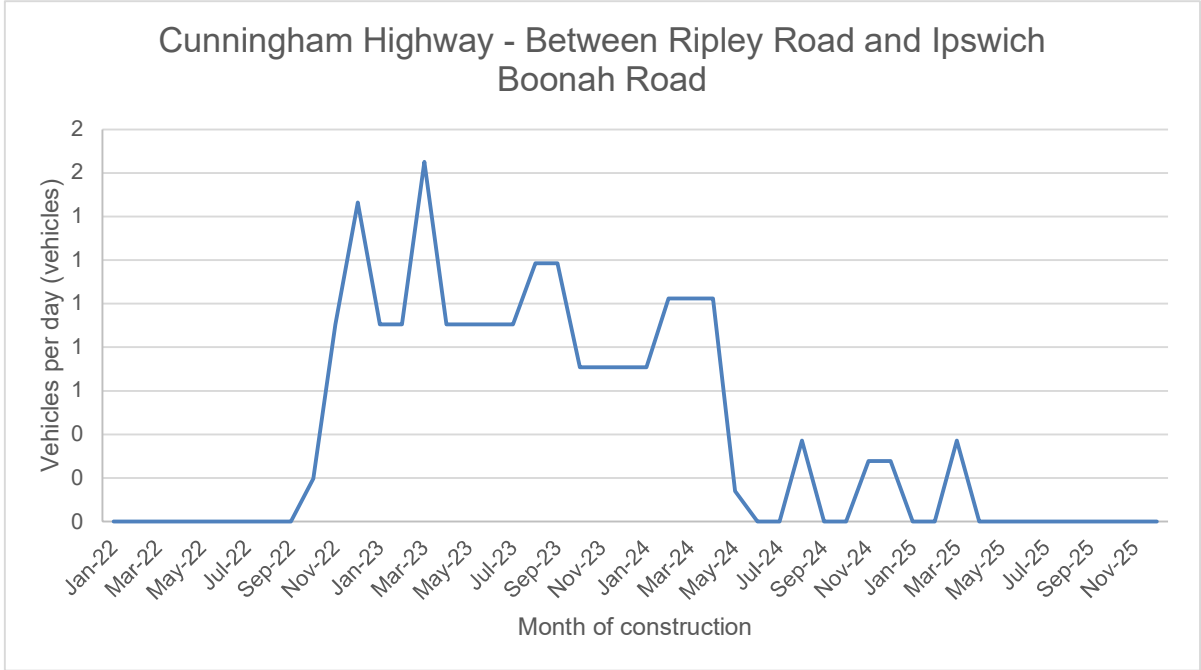
Cunningham Highway - Between River Road and Redbank Plains Road



Cunningham Highway - Between Redbanks Plains Road and Ripley Road

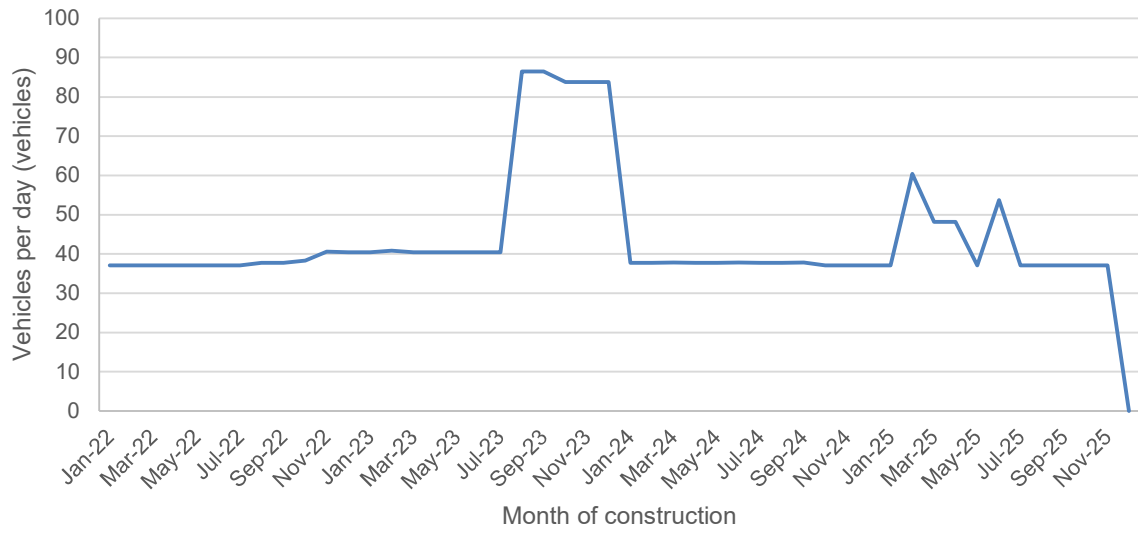




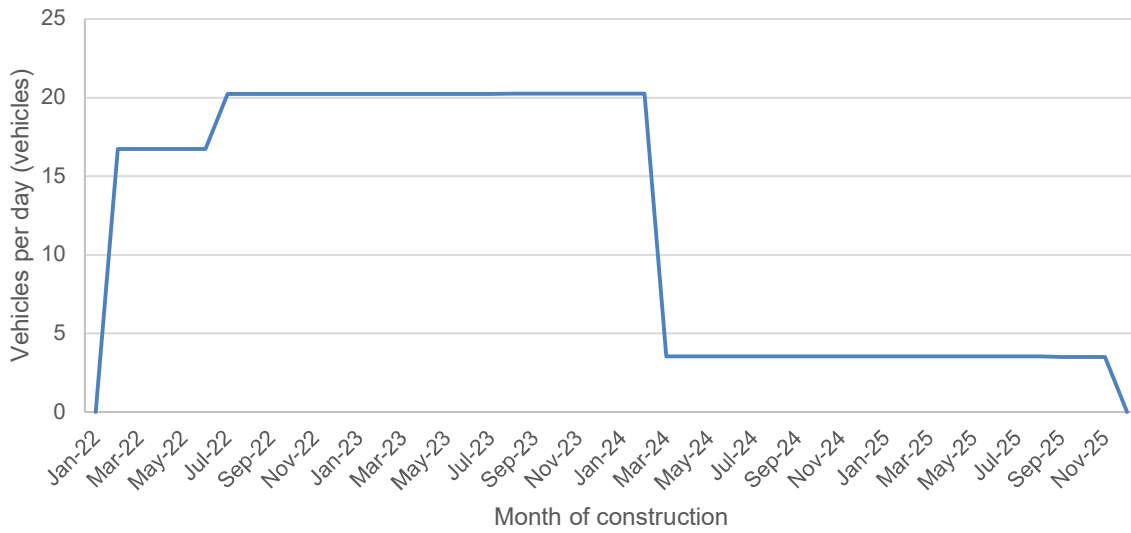




Forest Hill Fernvale Road - Between Gatton Laidley Road and Warrego Highway

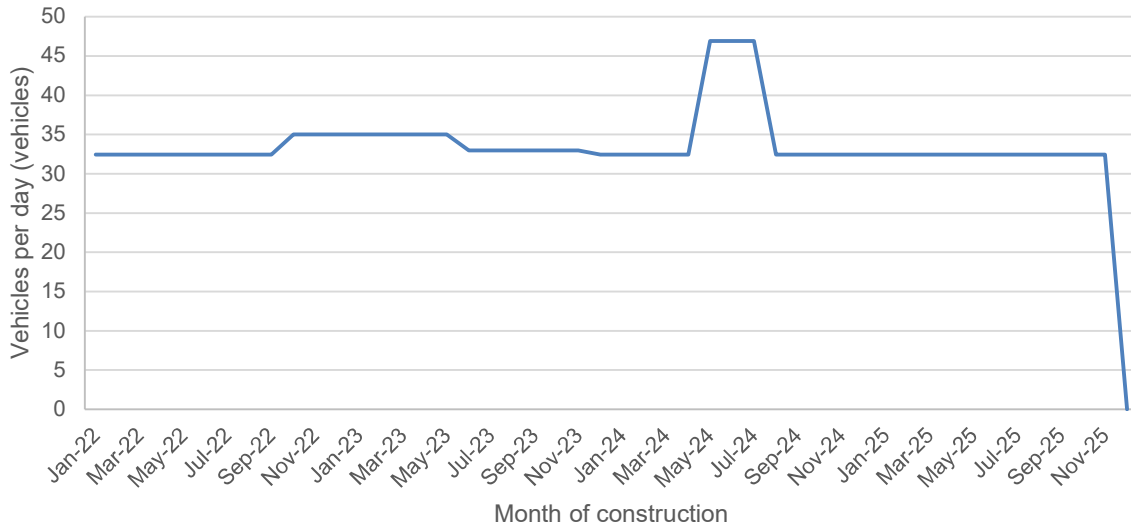


Gatton Esk Road - Between Warrego Highway and Lake Clarendon Way

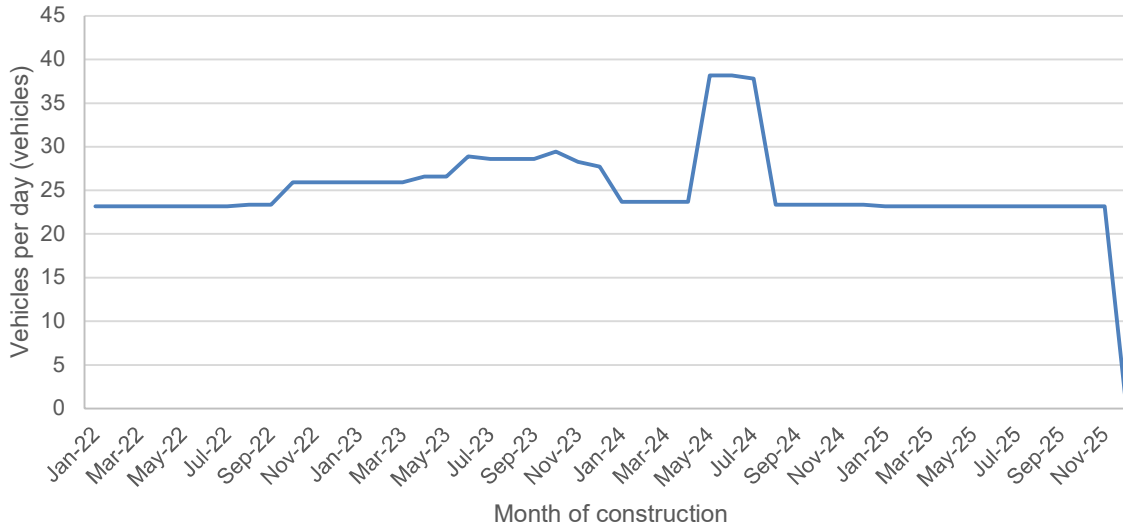




Gatton Helidon Road - Between William Street and Gatton Clifton Road

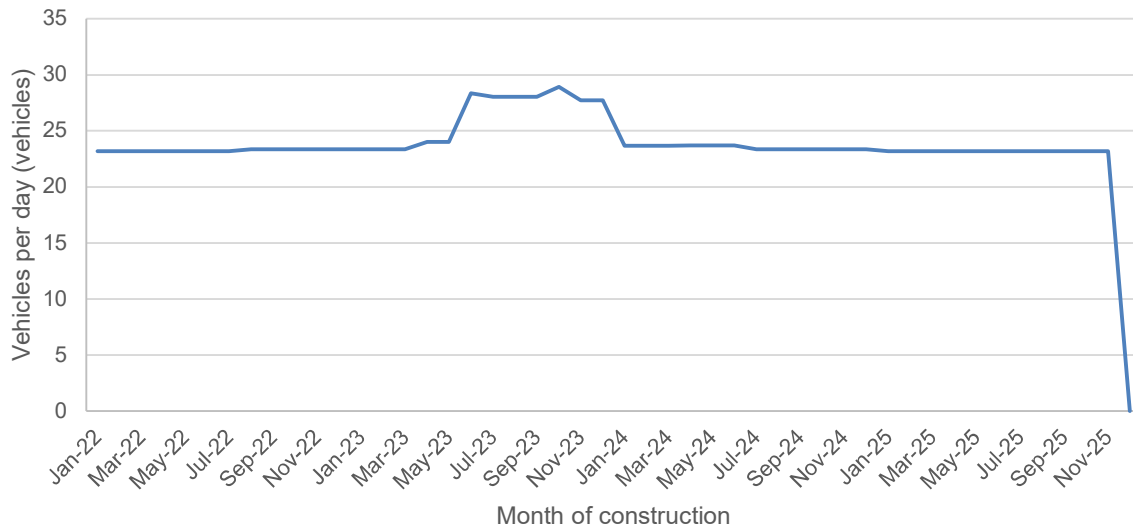


Gatton Helidon Road - Between Gatton Clifton Road and Railway Street

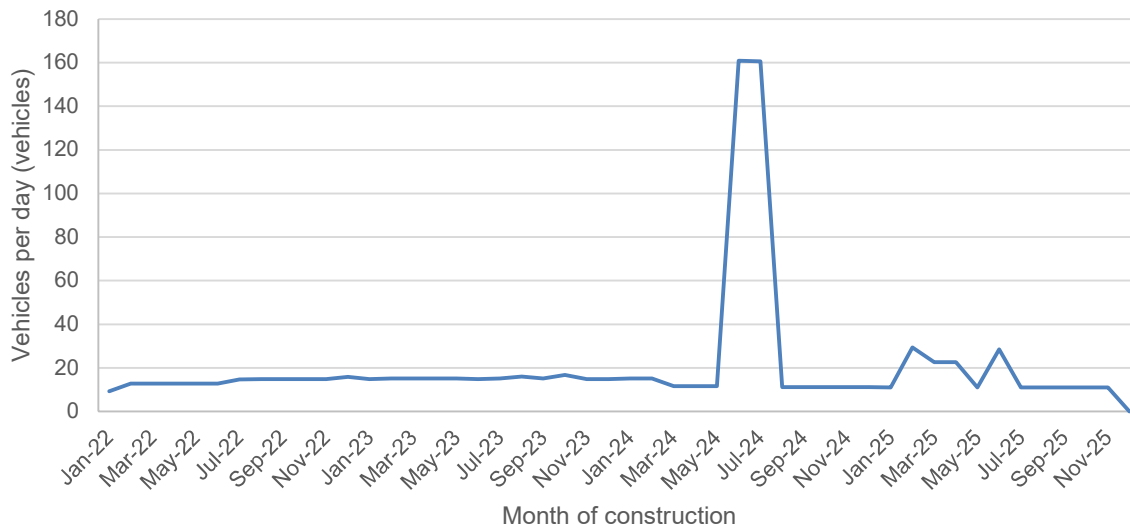




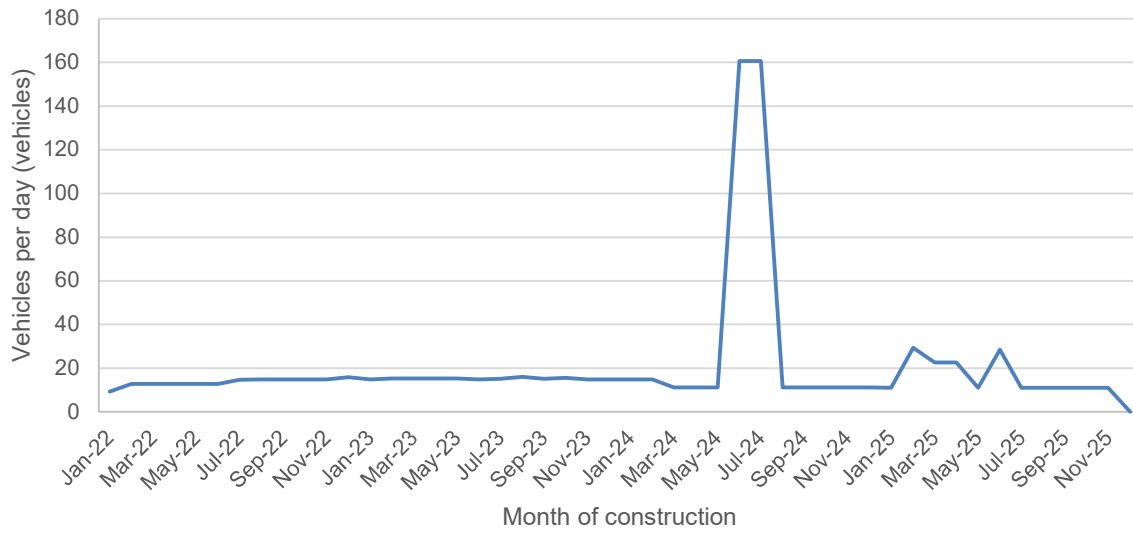
### Gatton Helidon Road - Between Railway Street and Hickey Street



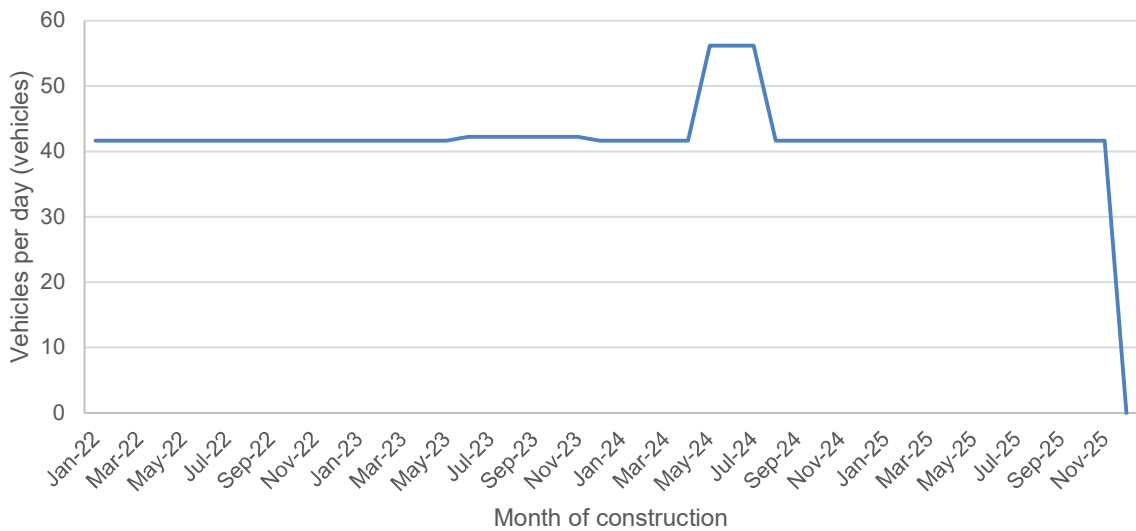
### Gatton Helidon Road - Between Hickey Street and Gatton Laidley Road W



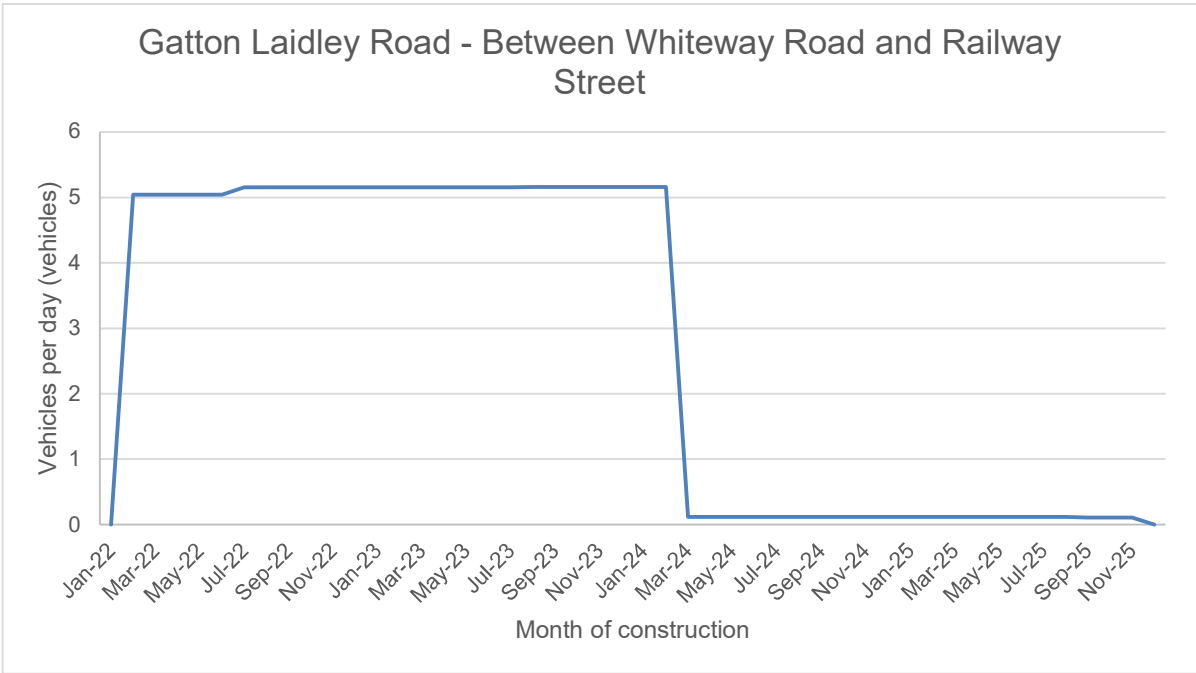
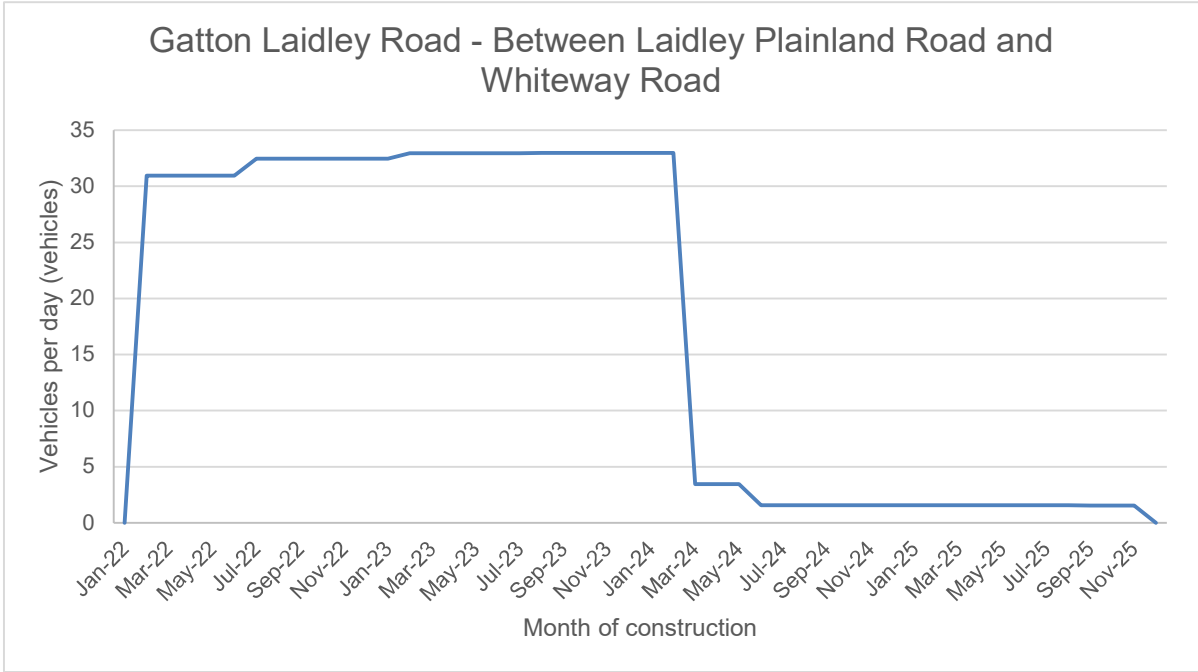
### Gatton Helidon Road - Between Gatton Laidley Road W and Warrego Highway

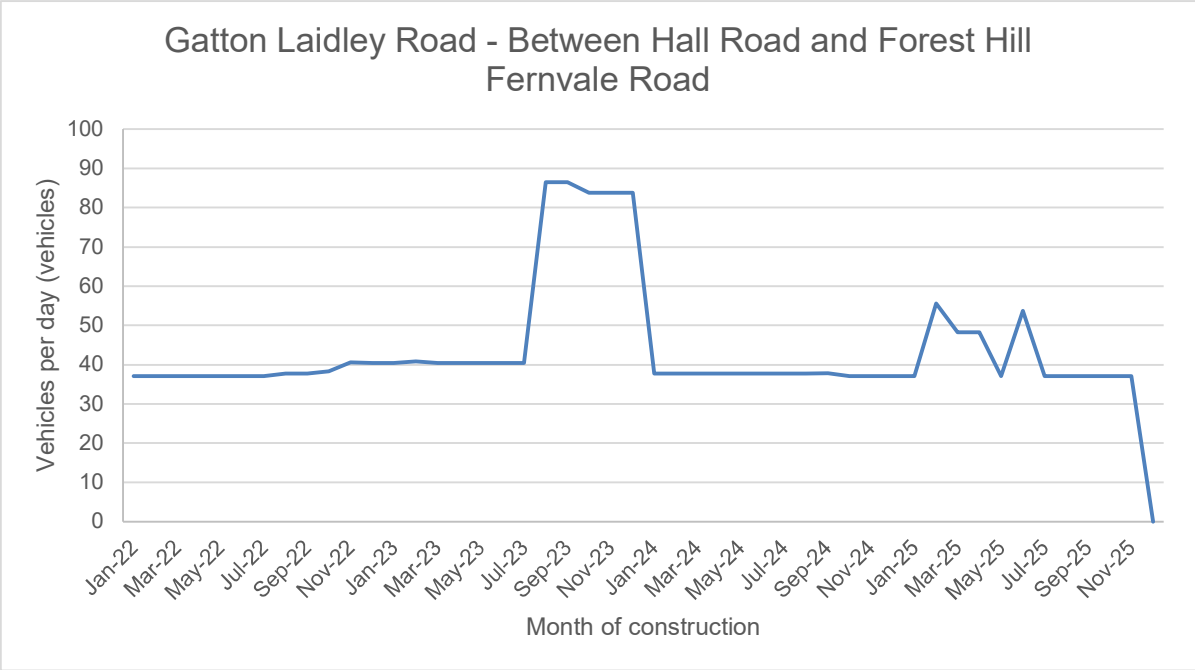
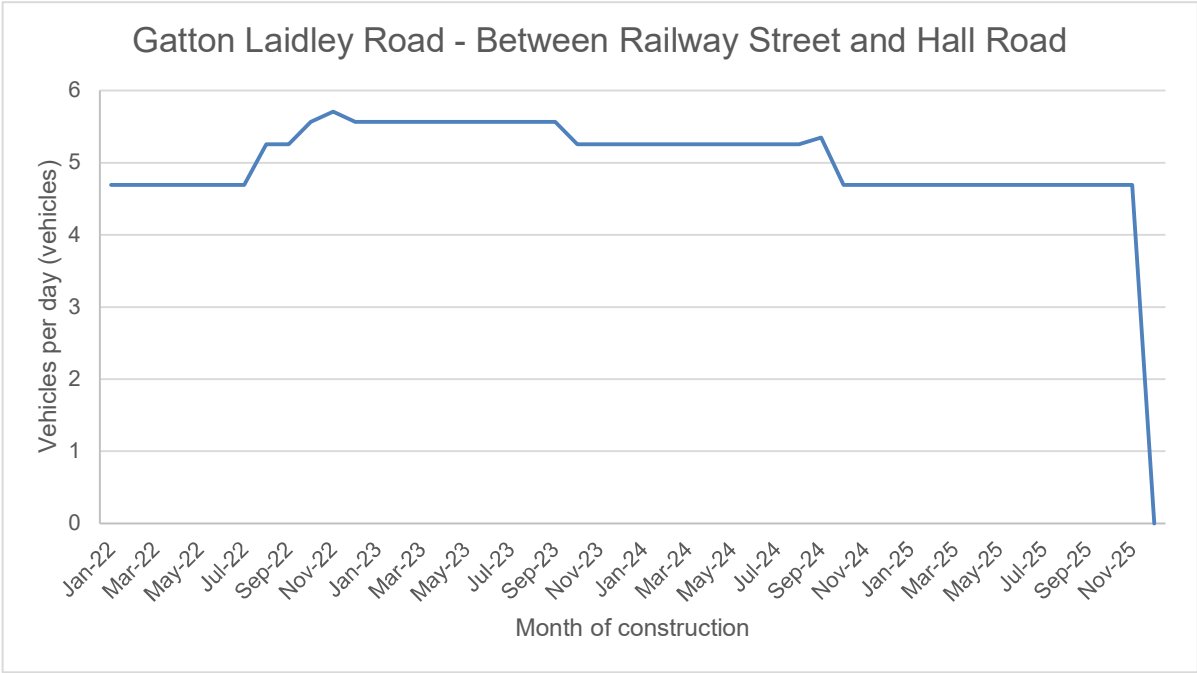


### Gatton Helidon Road - Between Warrego Highway and William Street



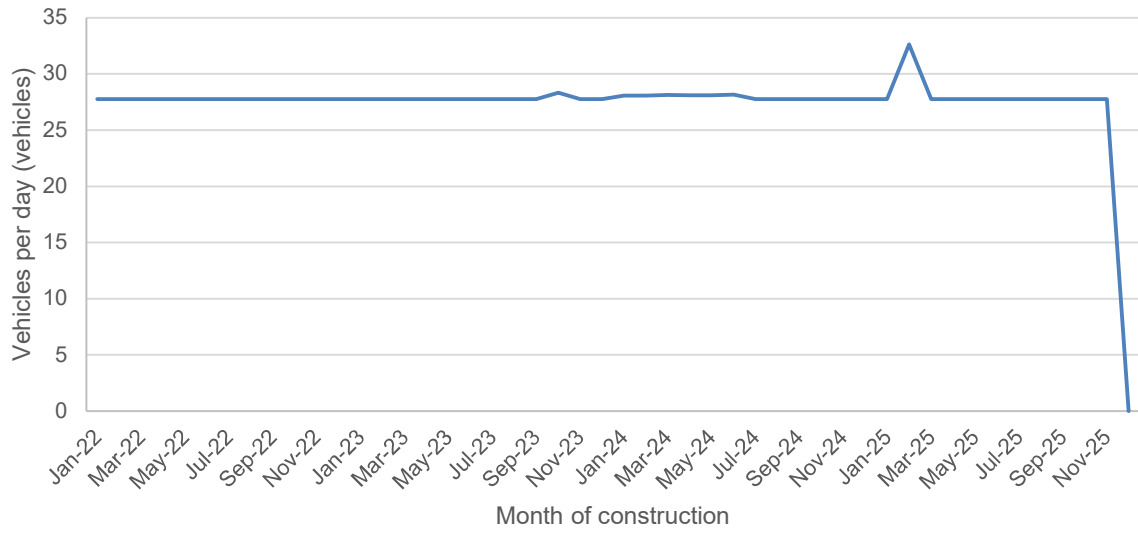




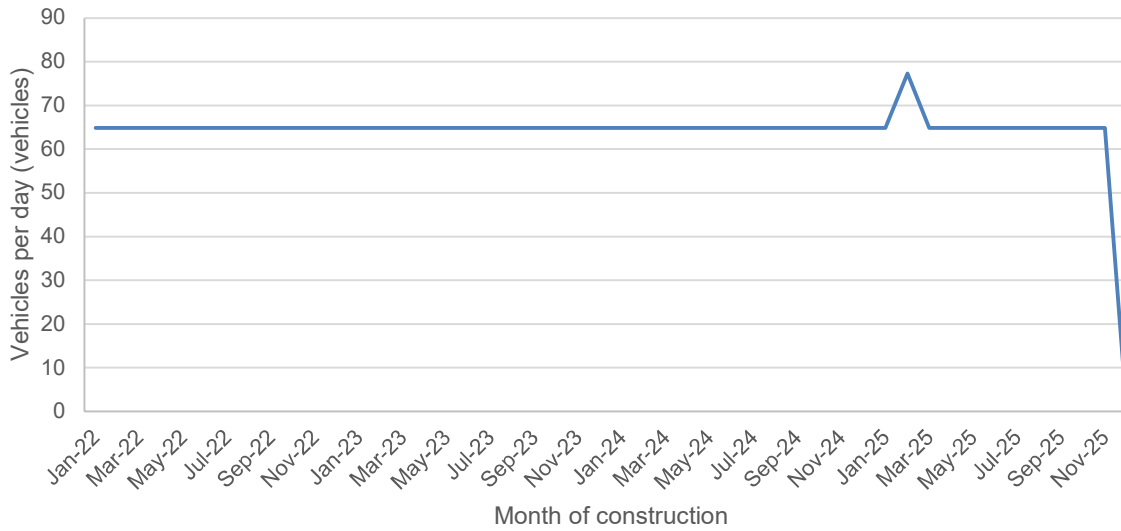




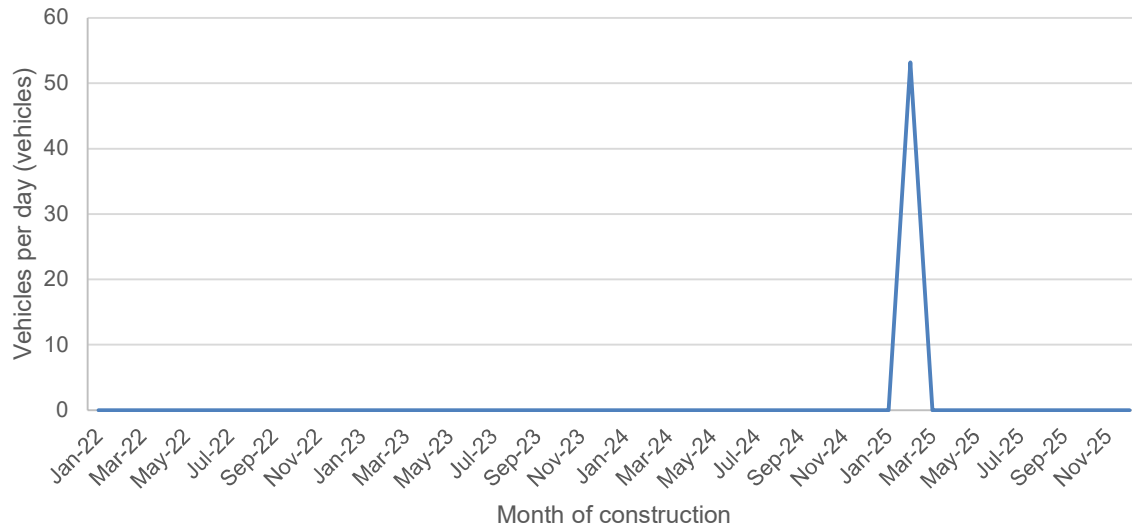
### Gatton Laidley Road West - Between Forest Hill Fernvale Road and Gatton Helidon Road



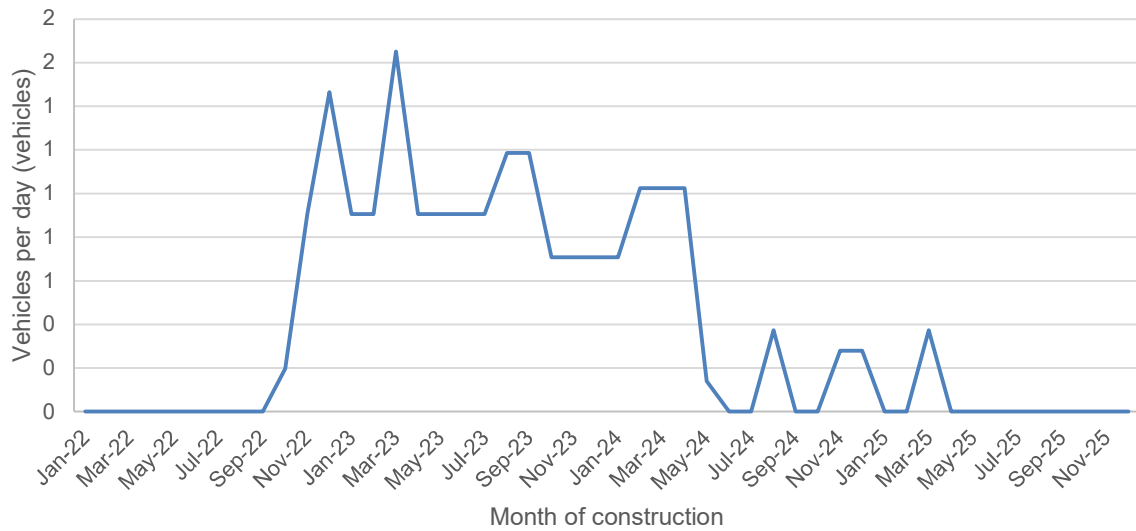
### Haigslea Amberley Road - Between Karrabin Rosewood Rd and Warrego Highway



### Ipswich Motorway - Between Cunningham Highway and Logan Motorway

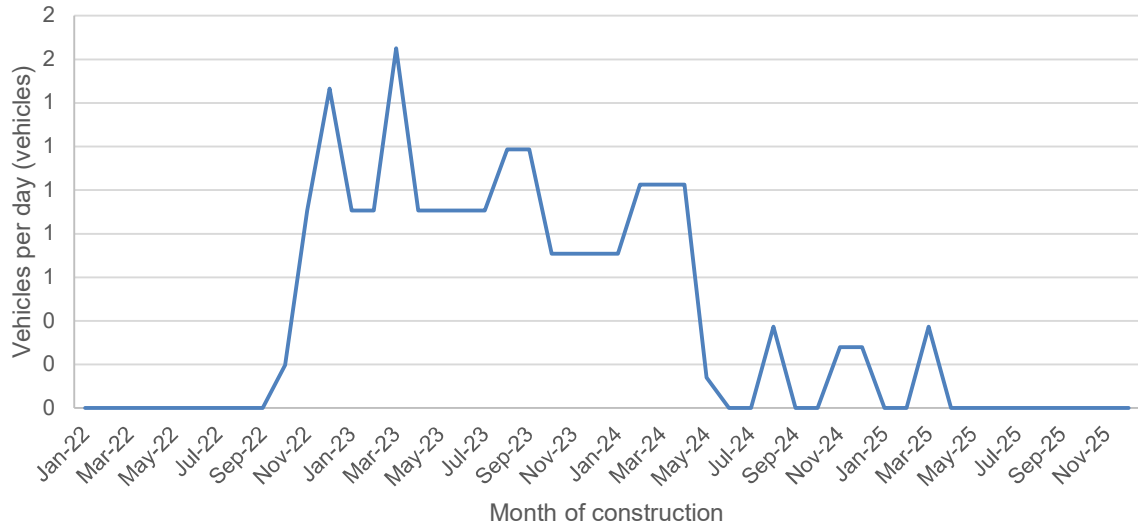


### Ipswich Rosewood Road - Between Cunningham Highway and Haiglse Amberley Road

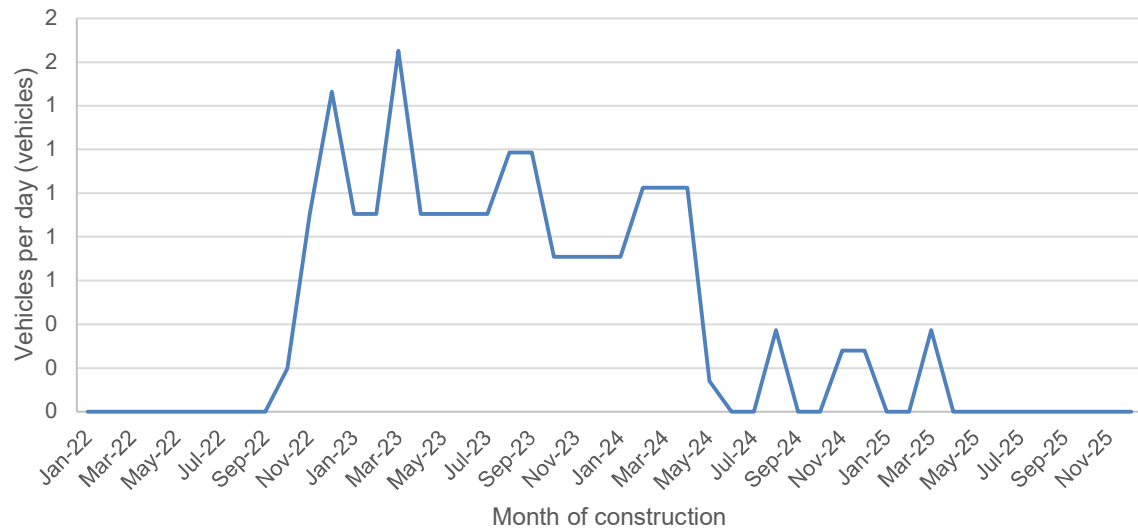




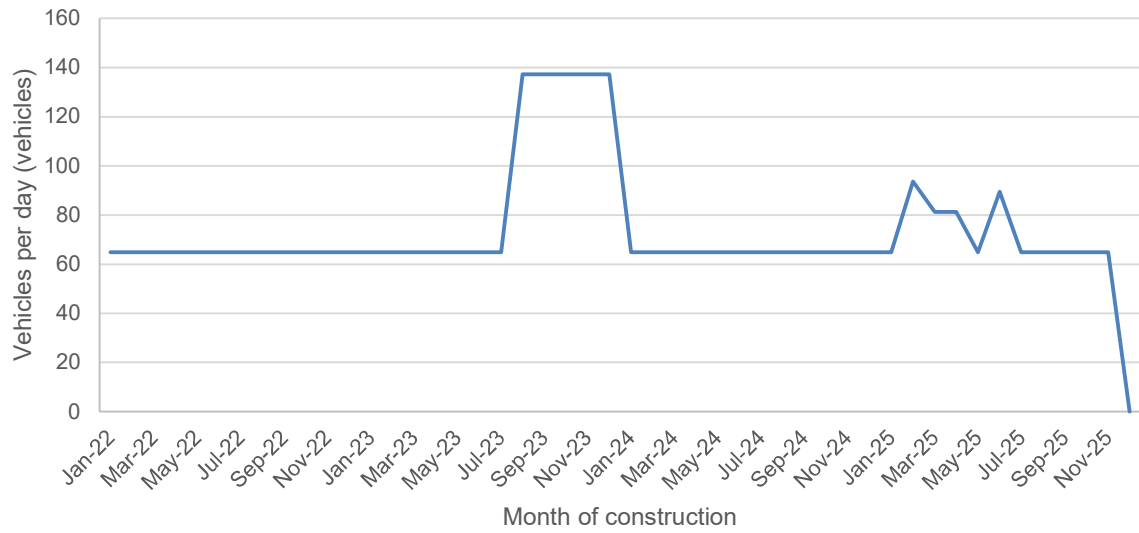
Ipswich Rosewood Road - Between Haigslea Amberley Road and Rosewood Warrill View Road



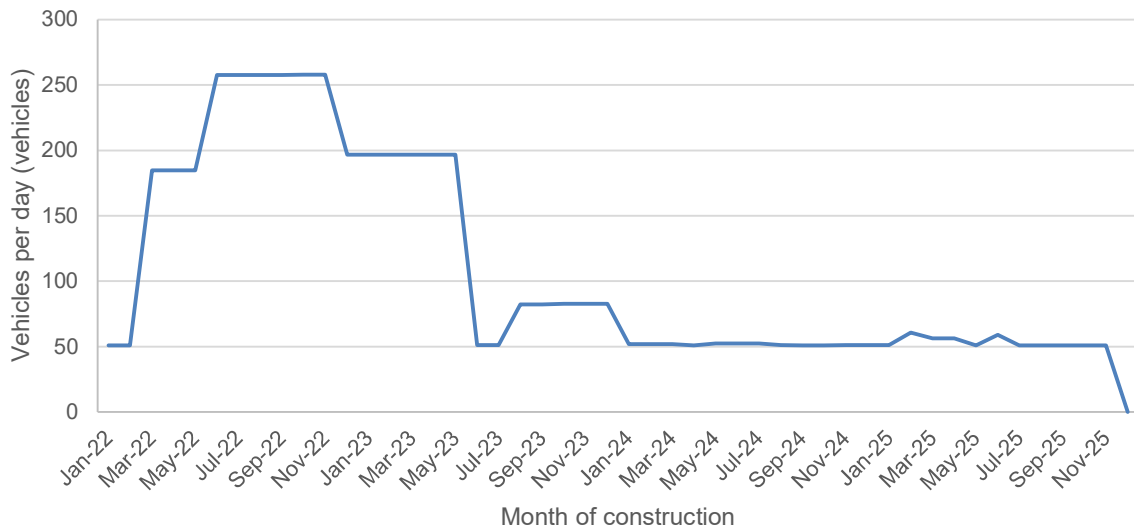
Ipswich Rosewood Road - Between Rosewood Warril View Road and Karrabin Rosewood Road



### Karrabin Rosewood Road - Between Rosewood Marburg Road and Haigslea Amberley Road

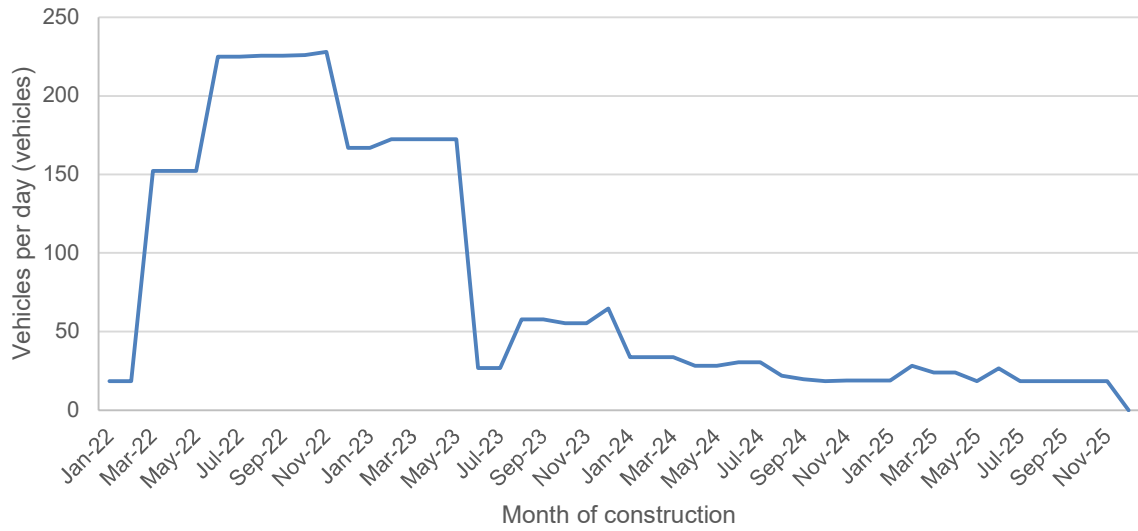


### Laidley Plainland Road - Between Warrego Highway and Old Laidley Forest Hill Road

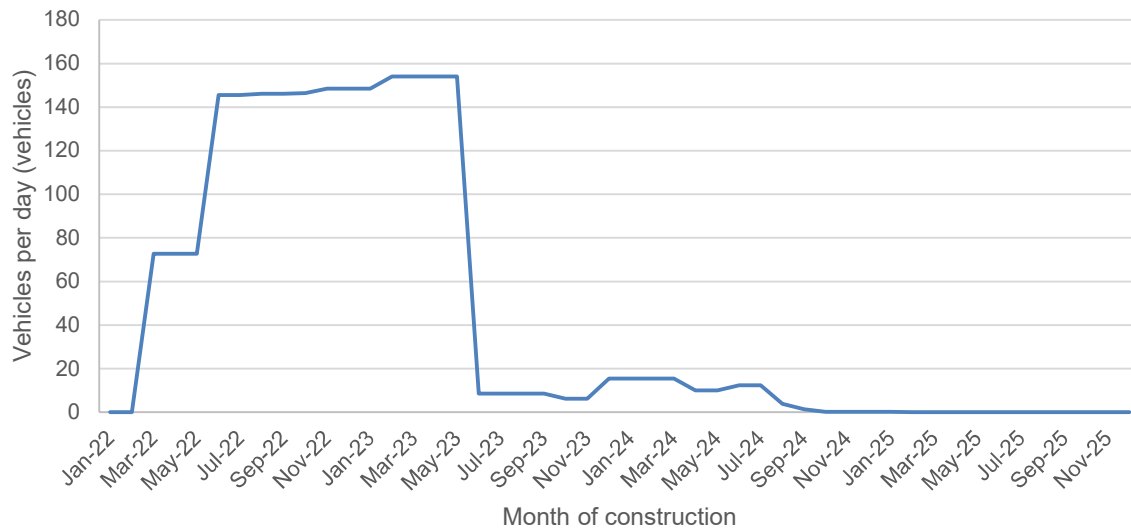




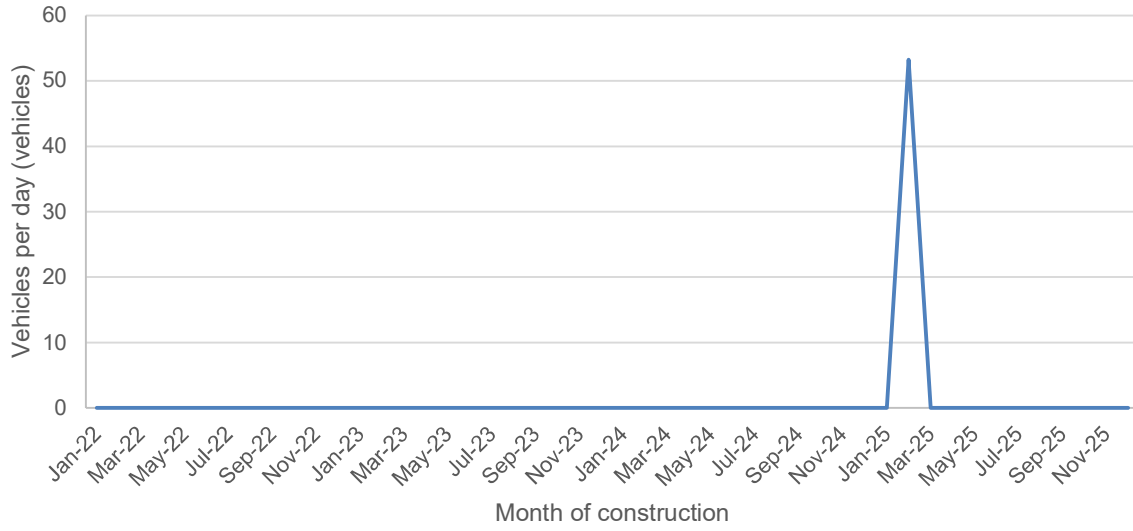
### Laidley Plainland Road - Between Old Laidley Forest Hill Road and Railway Street



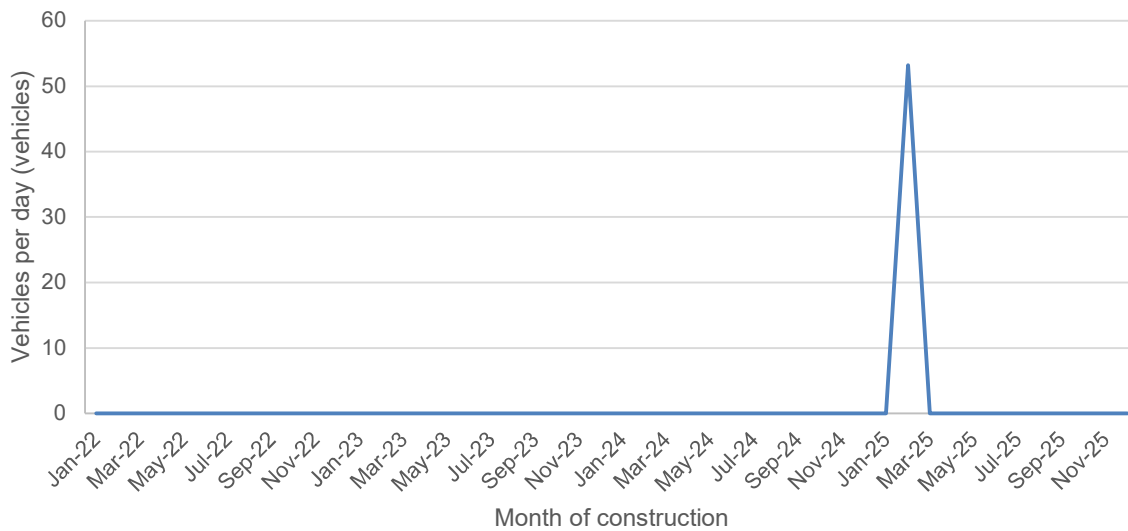
### Laidley Plainland Road - Between Railway Street and Whites Road



### Logan Motorway - Between Ipswich Motorway and Pacific Motorway

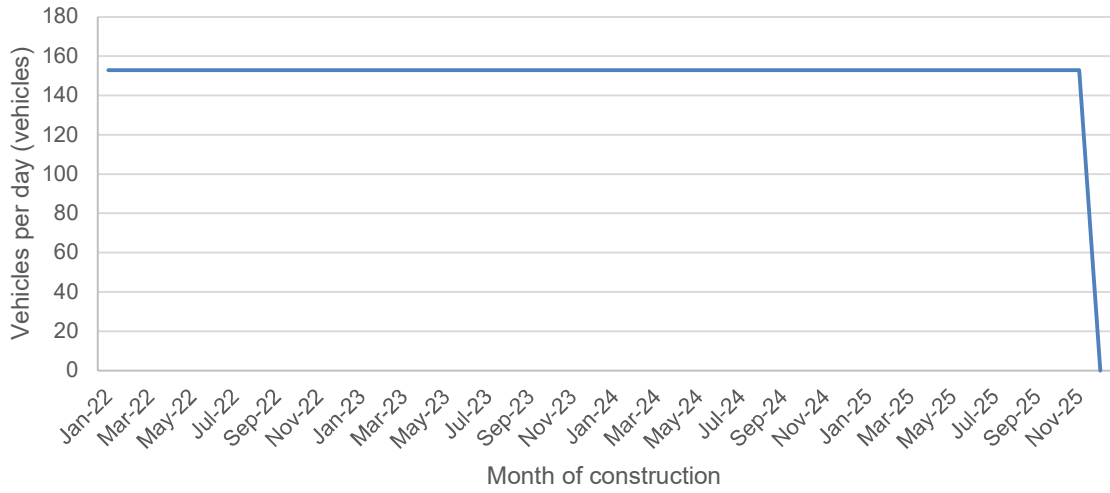


### Pacific Motorway - Between Logan Highway and NSW/QLD Border

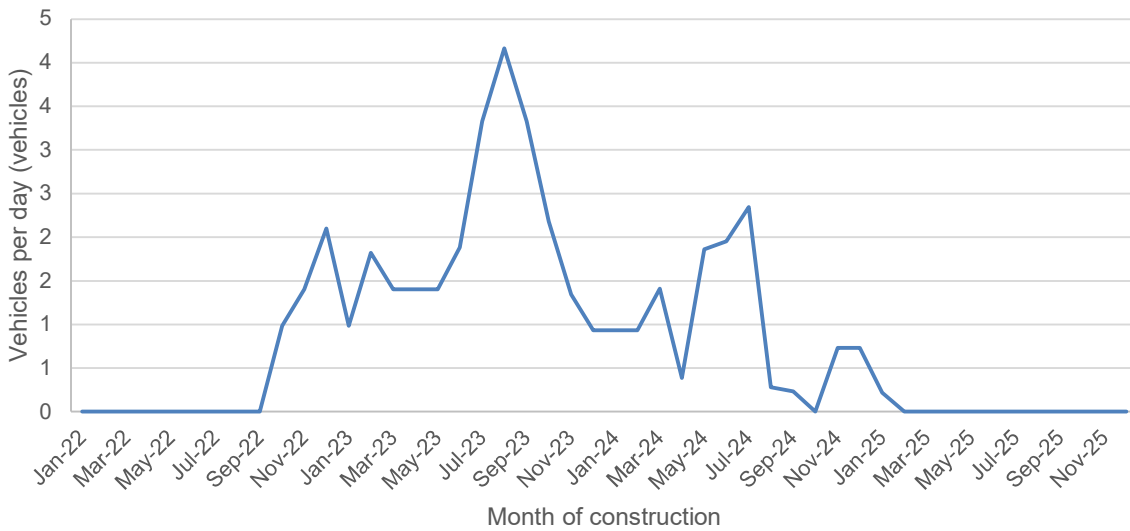




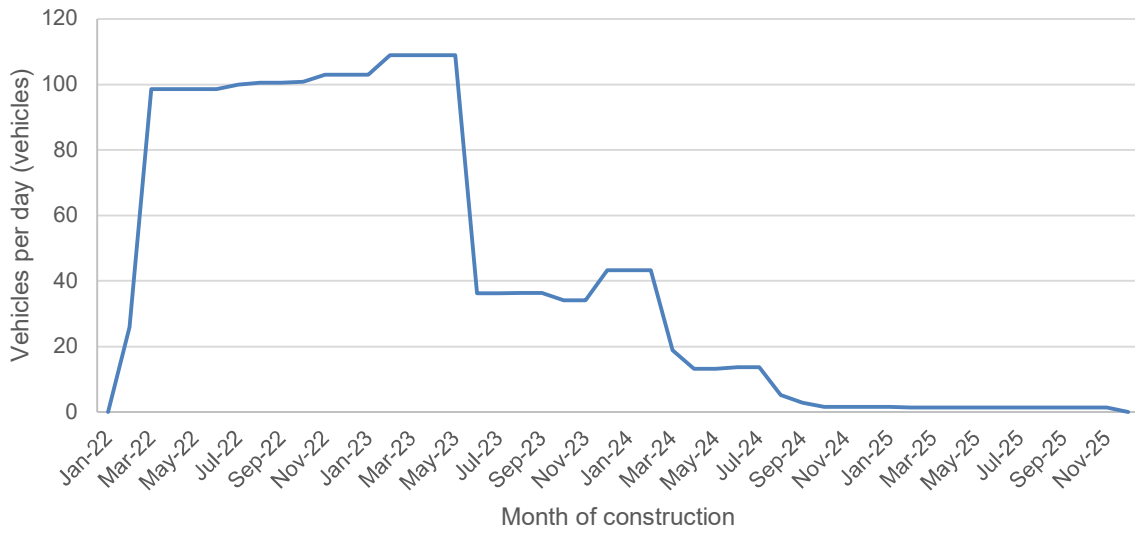
### Pine Mountain Road - Between Warrego Highway and Lowry Street



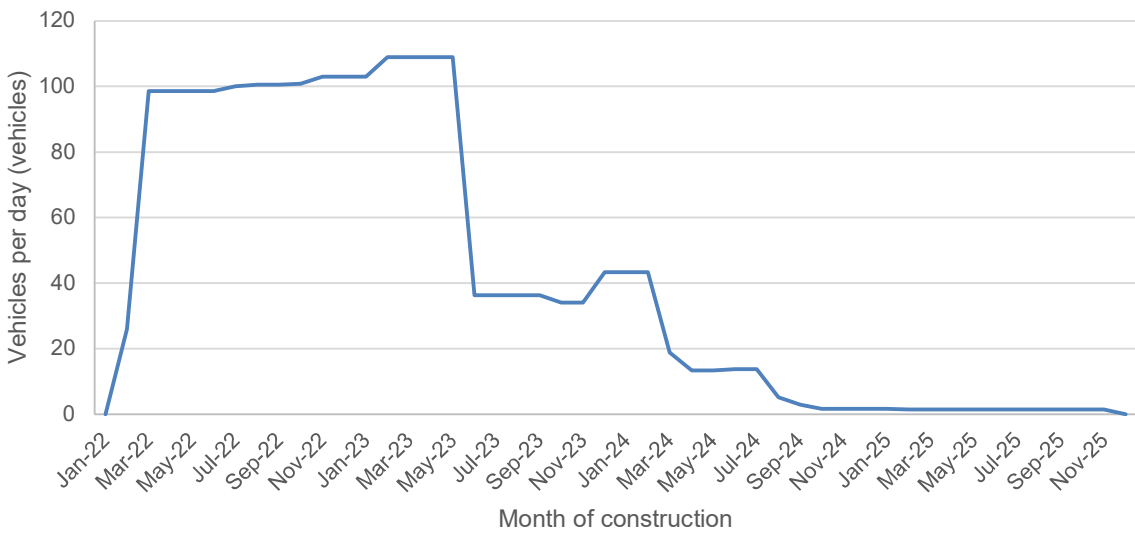
### River Road - Between Warrego Highway and Cunningham Highway



### Rosewood Laidley Road - Between Whites Road and Mulgowie Road

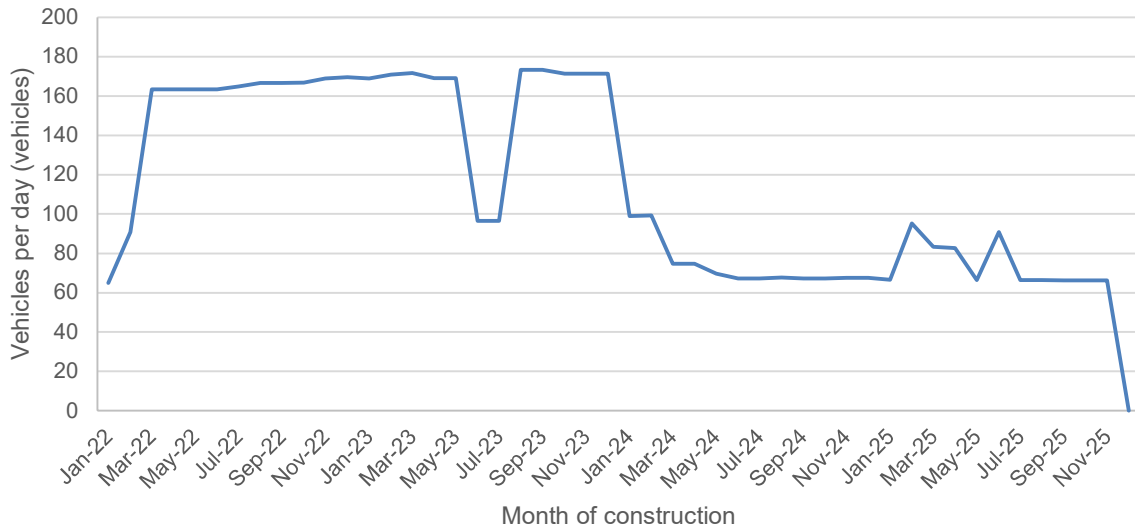


### Rosewood Laidley Road - Between Mulgowie Road and Crown Street

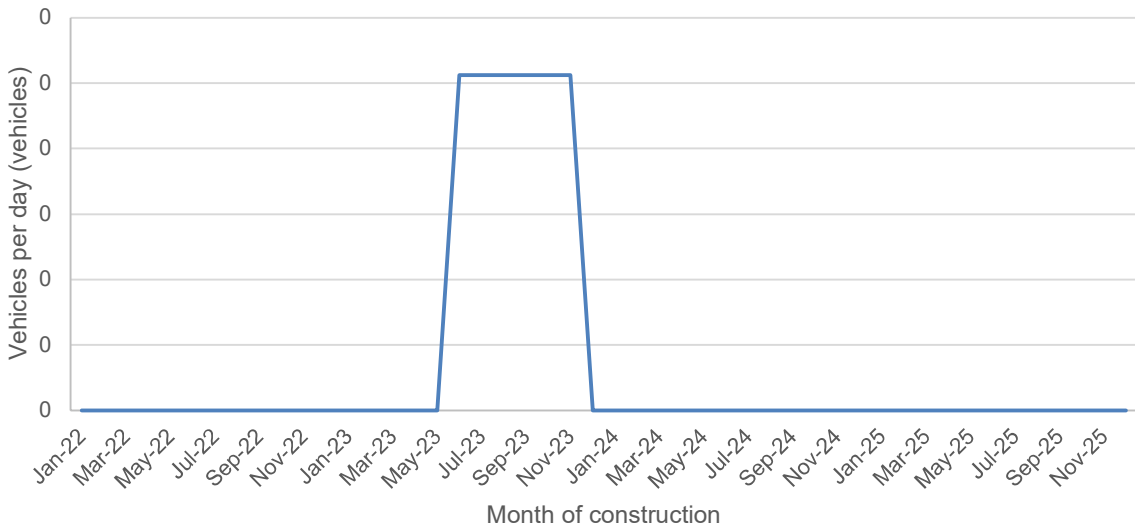




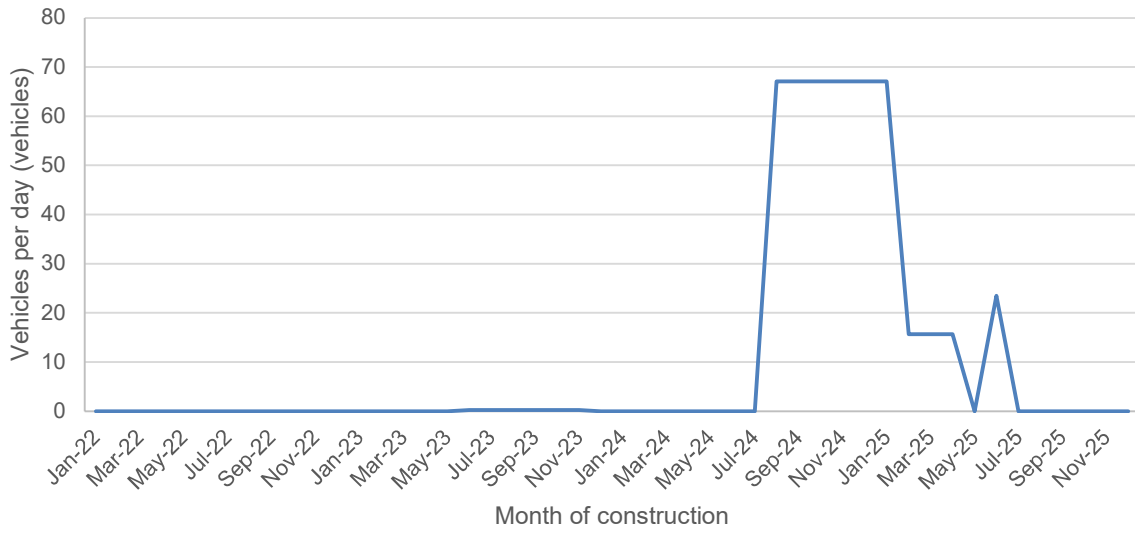
### Rosewood Laidley Road - Between Crown Street and Rosewood Marburg Road



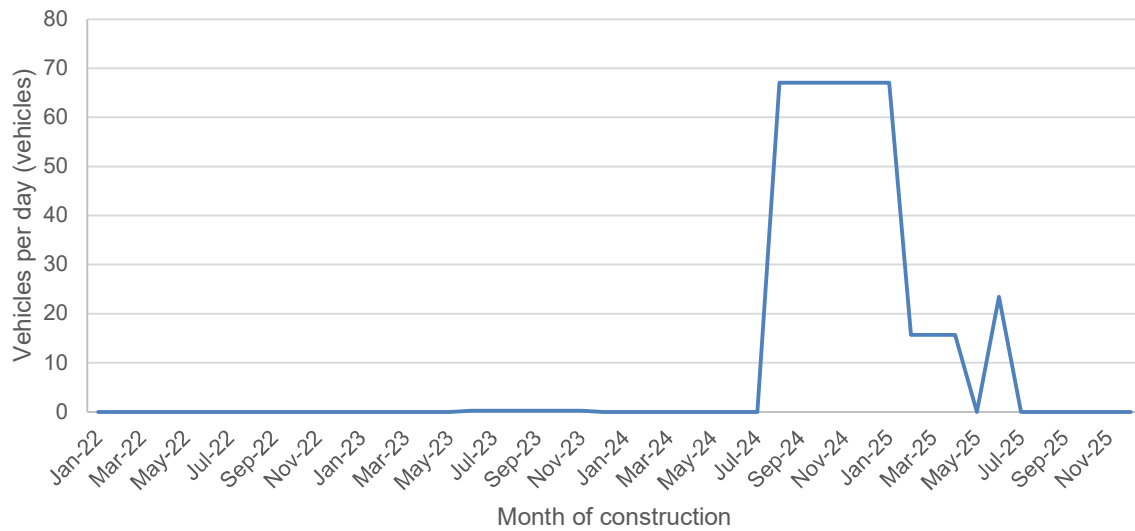
### Toowoomba Second Range Crossing - Between Warrego Highway and New England Highway



Toowoomba Second Range Crossing - Between New England Highway and Warrego Highway

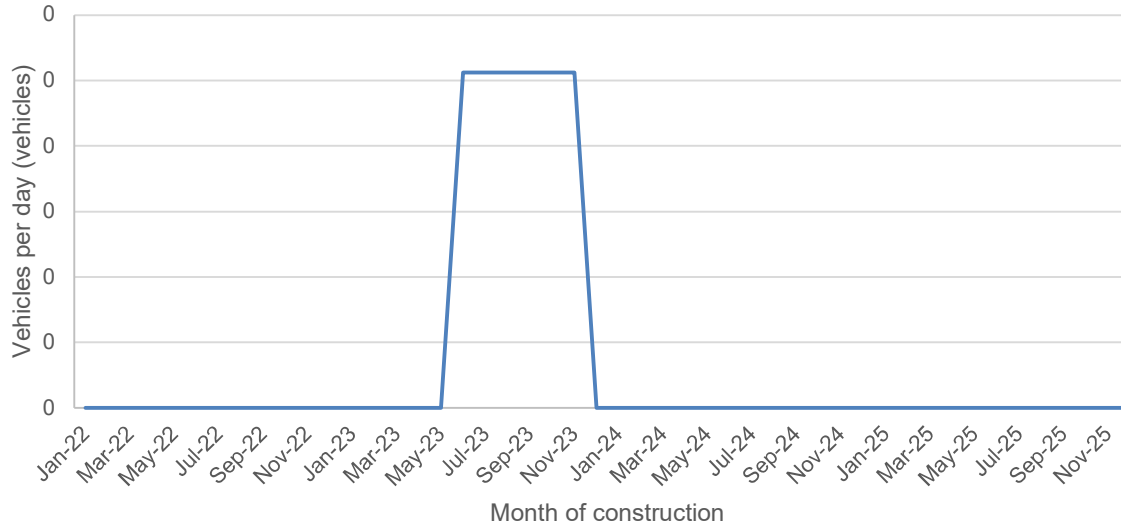


Toowoomba Second Range Crossing - Between New England Highway and Warrego Highway

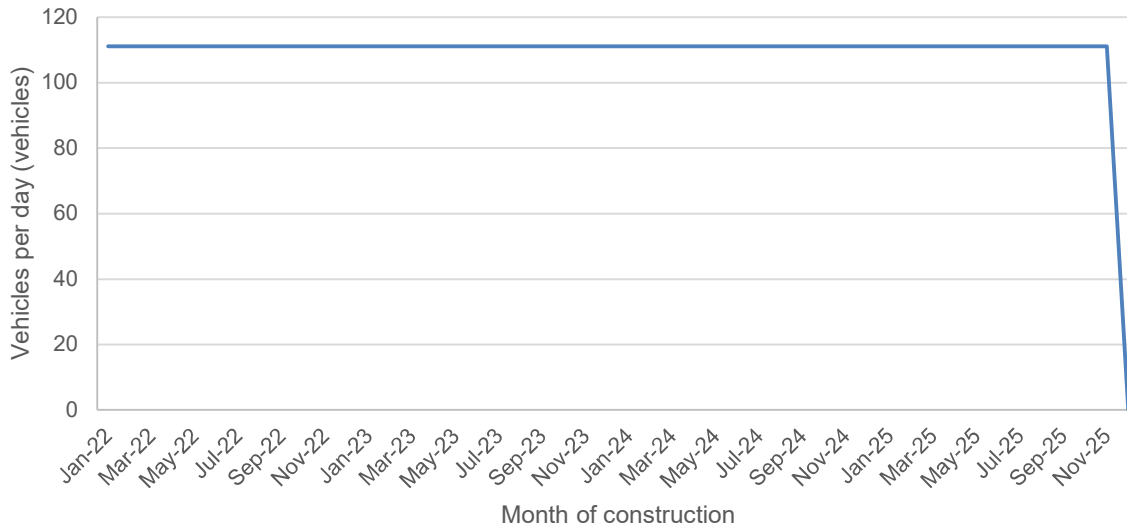




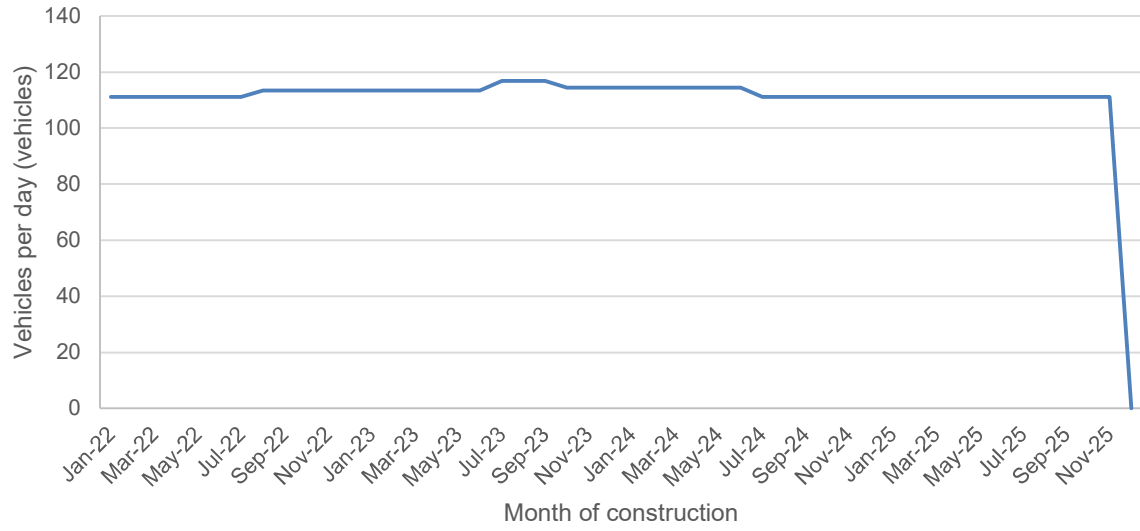
### Warrego Highway - Between Toowoomba Second Range Crossing and O'Mara's Road



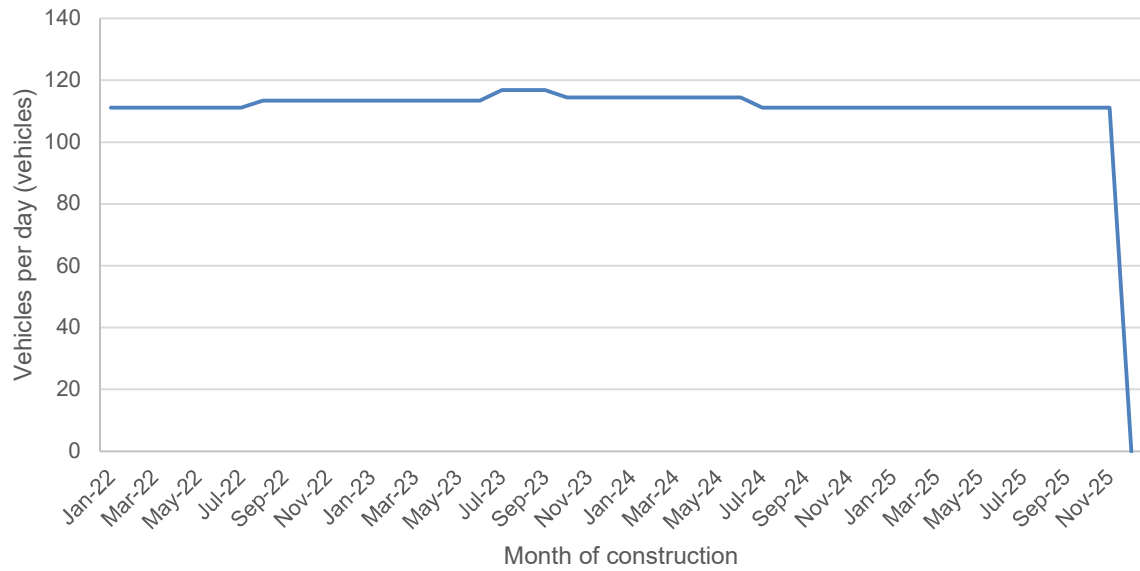
### Warrego Highway - Between Gore Highway and New England Highway



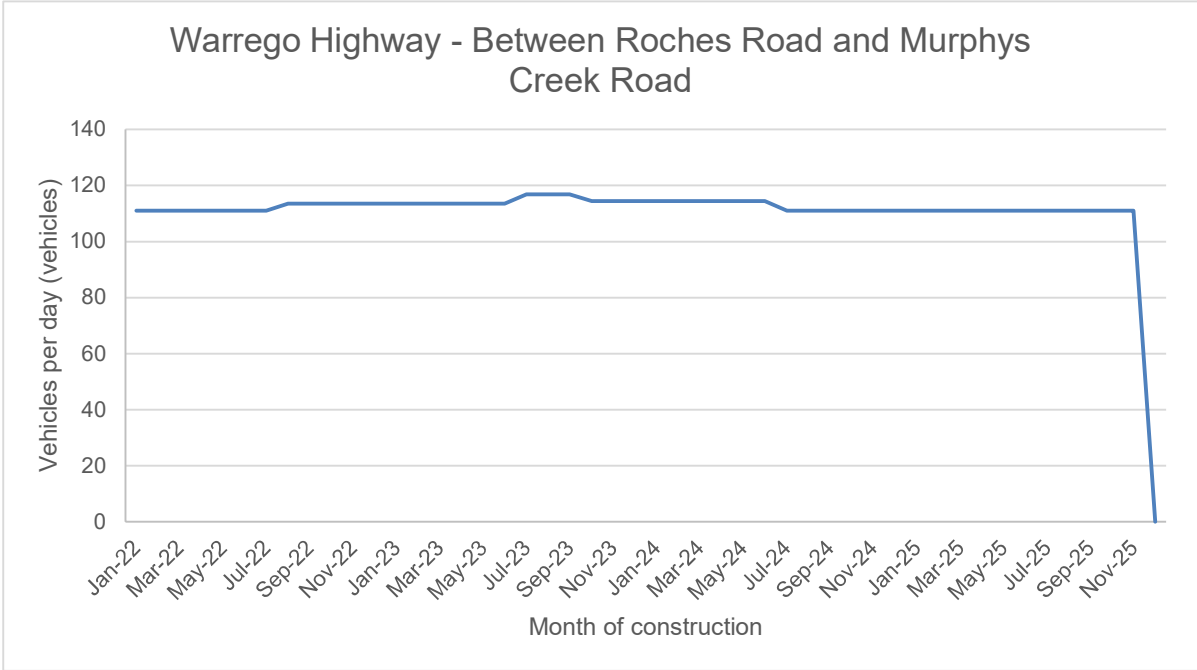
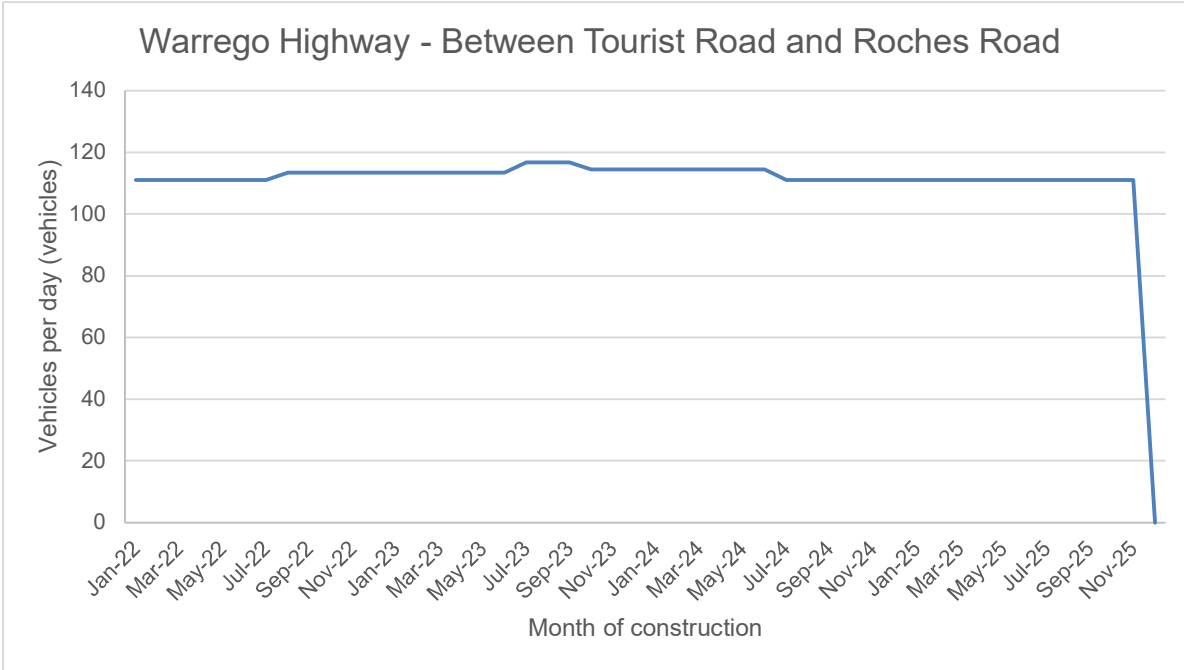
### Warrego Highway - Between New England Highway and James Street



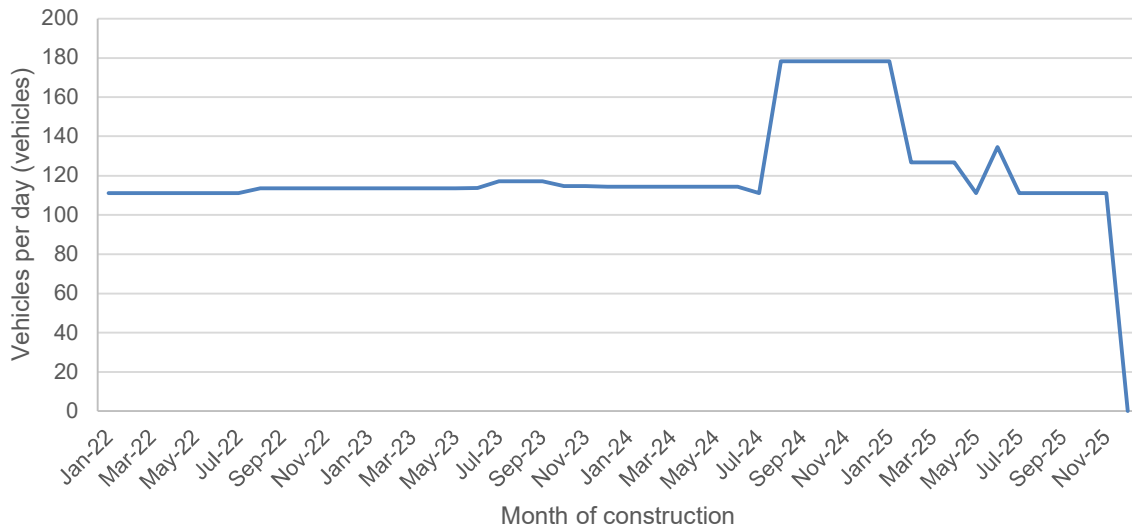
### Warrego Highway - Between James Street and Tourist Road



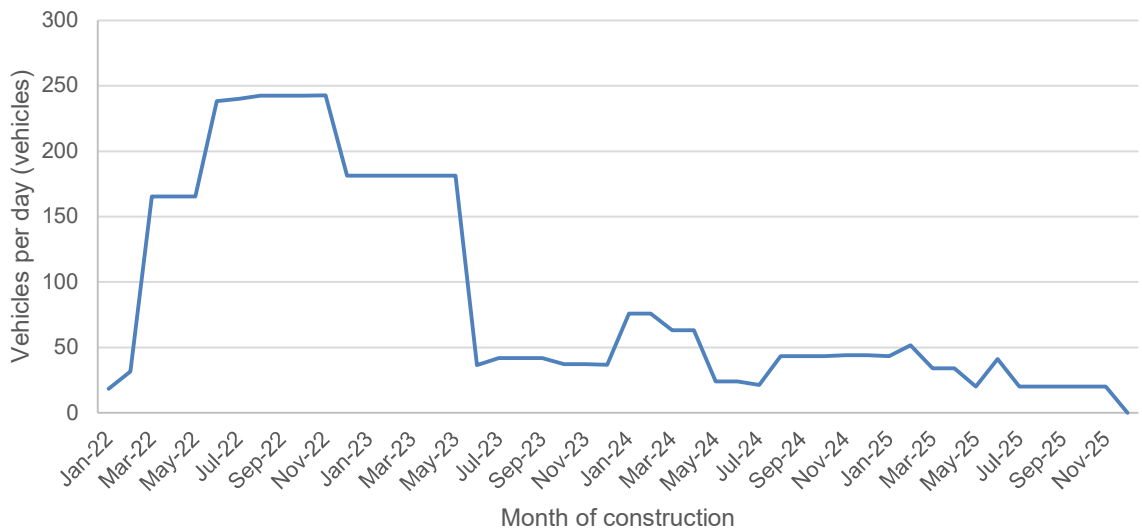




Warrego Highway - Between Murphys Creek Road and Gatton Helidon Road

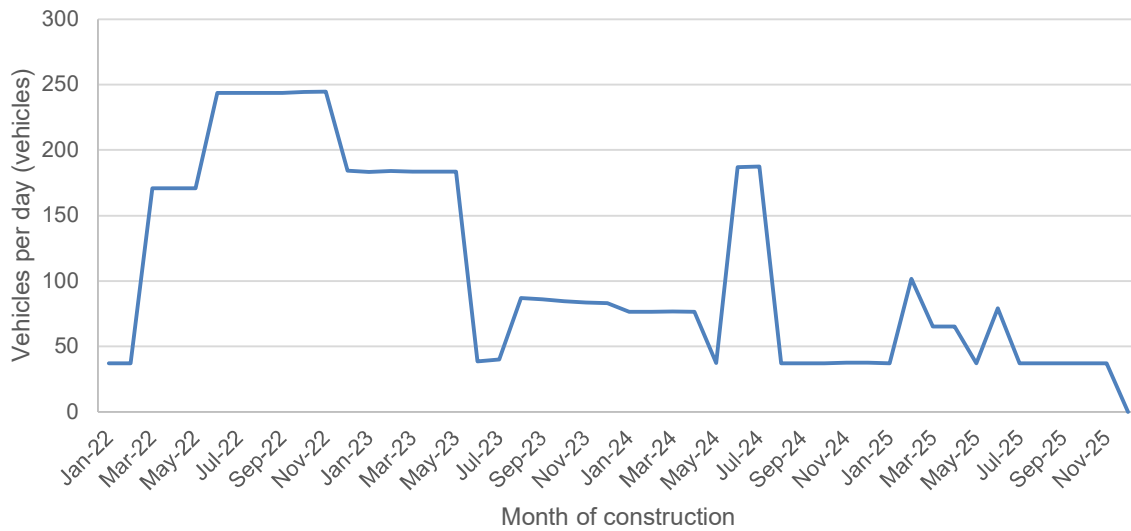


Warrego Highway - Between Gatton Helidon Road and Gatton Esk Road

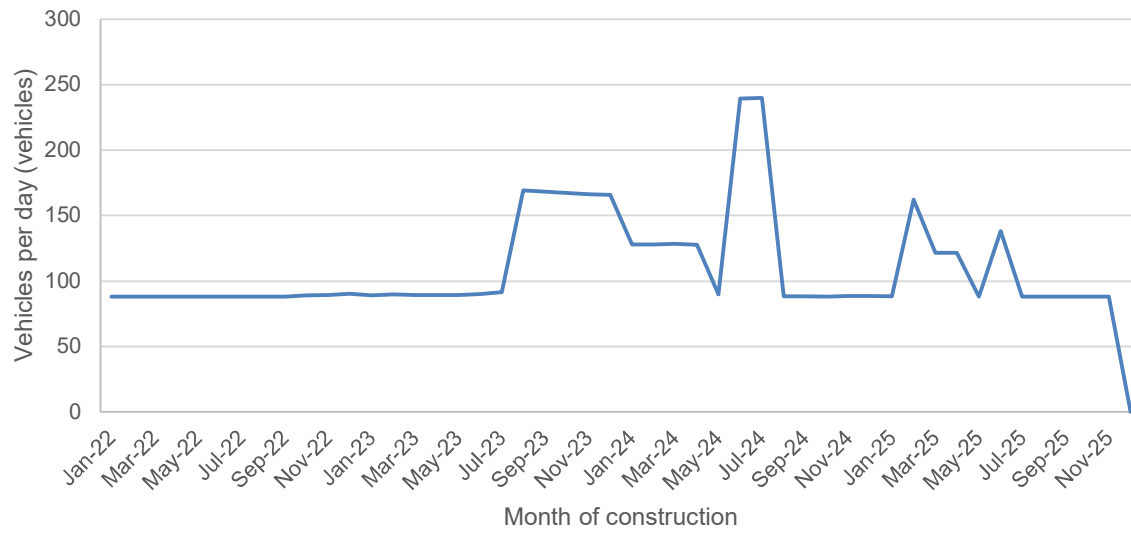




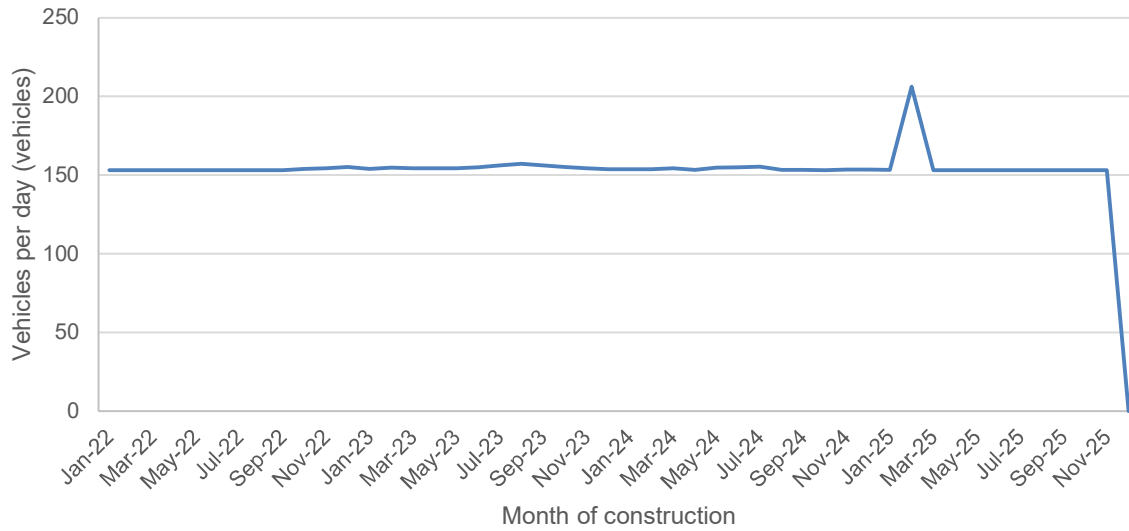
Warrego Highway - Between Gatton Esk Road and Laidley Plainland Road



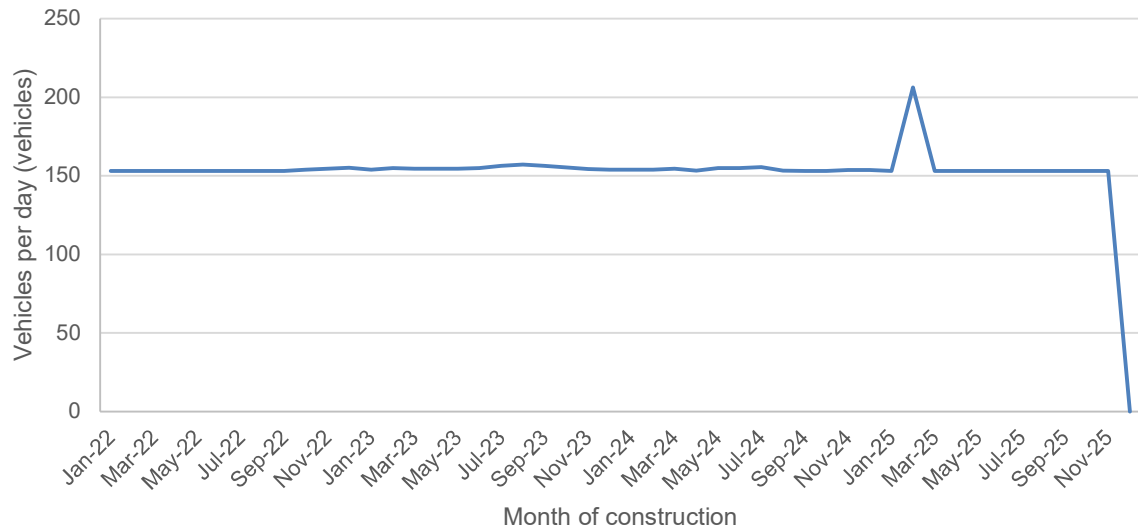
Warrego Highway - Between Laidley Plainland Road and Hagslea Amberley Road



### Warrego Highway - Between Haigslea Amberley Road and Brisbane Valley Highway

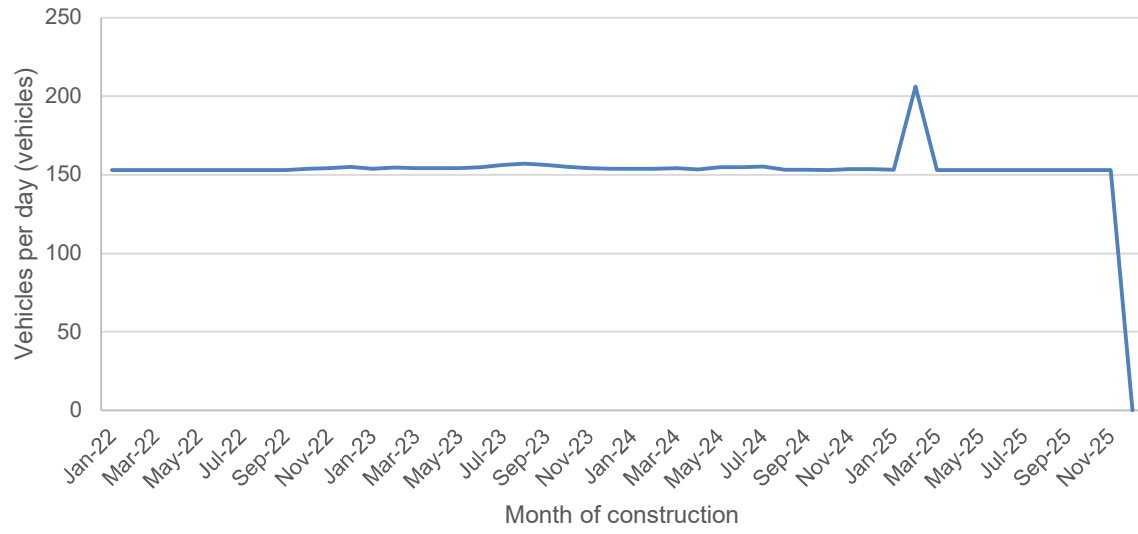


### Warrego Highway - Between Brisbane Valley Highway and Mount Crosby Road

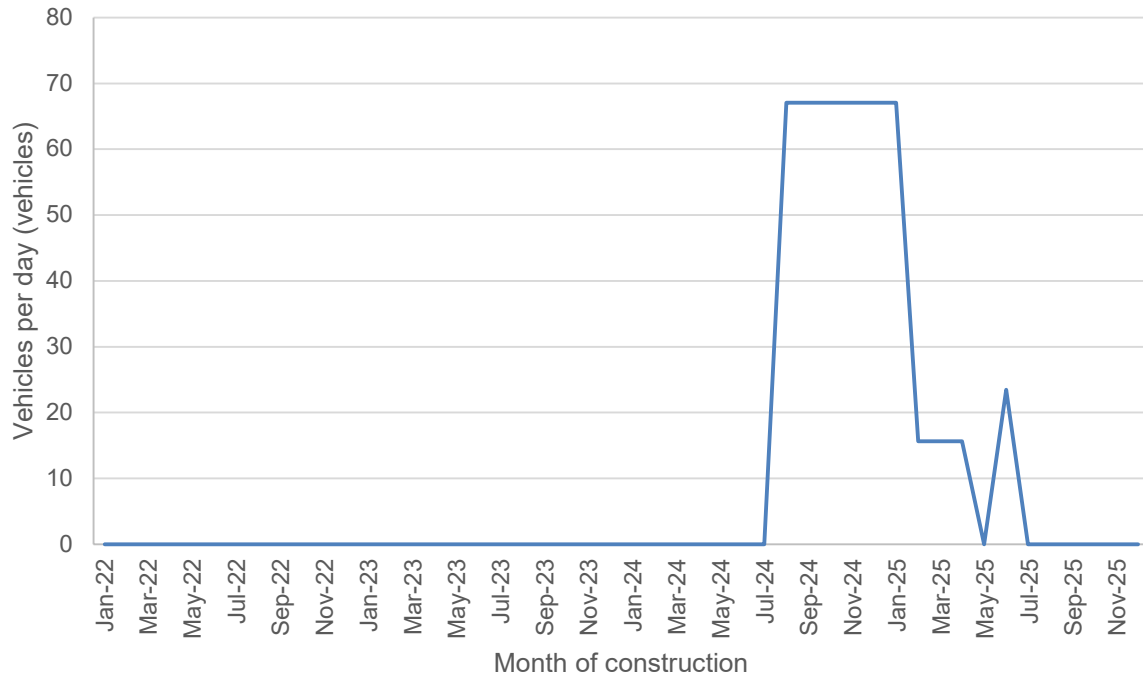




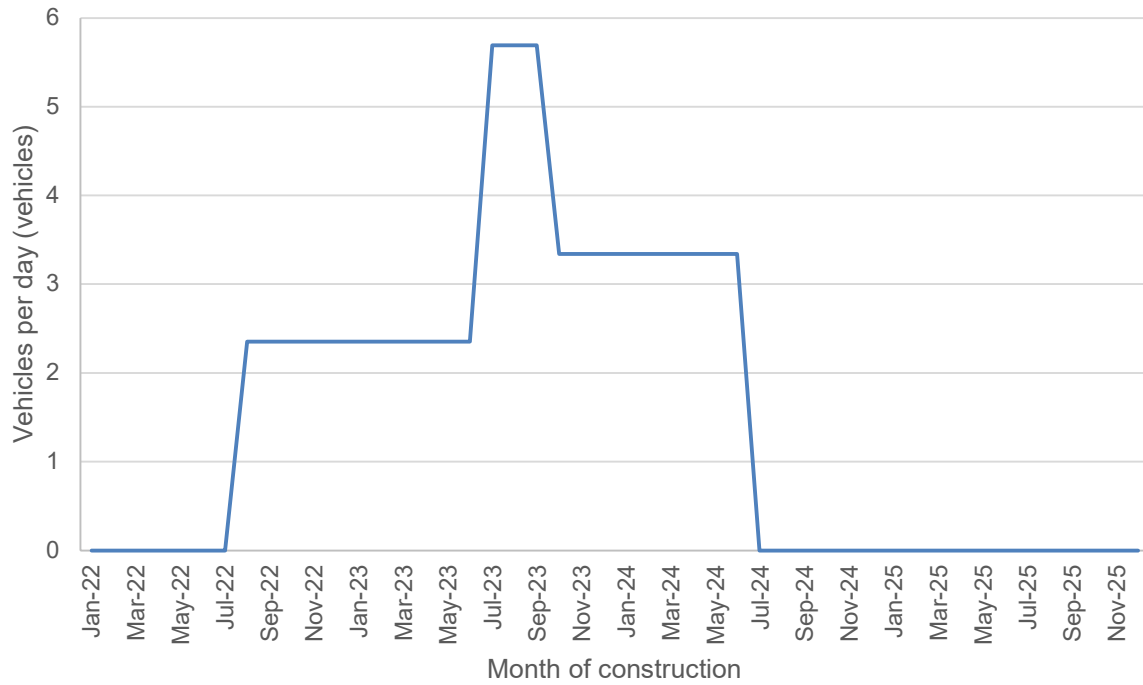
### Warrego Highway - Between Mount Crosby Road and Cunningham Highway



### New England Highway - Between Griffiths Street and Munro Street

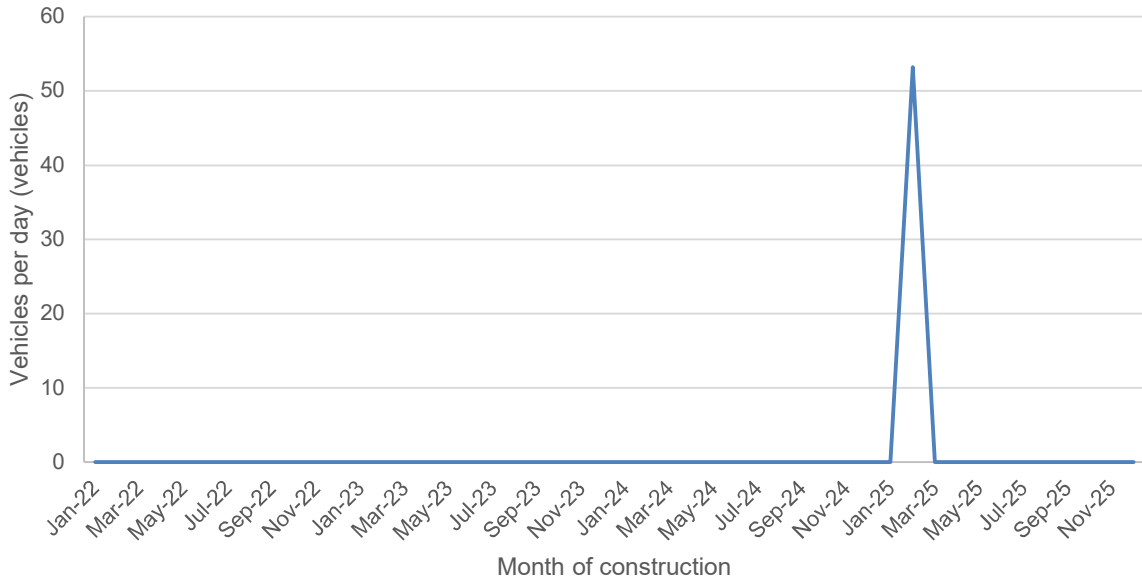


### New England Highway - Between North Street and James Street

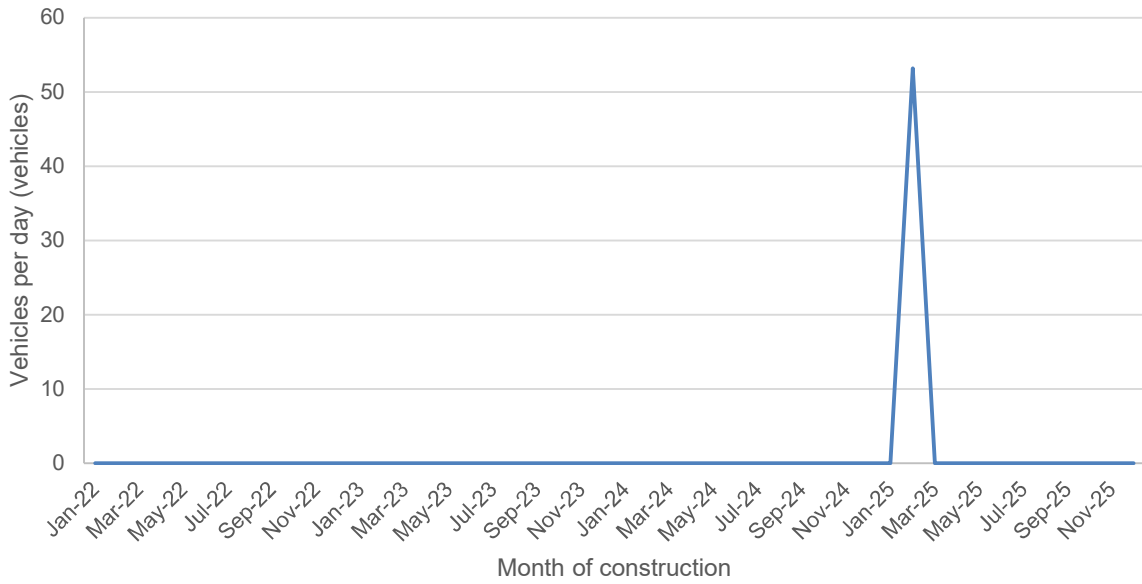




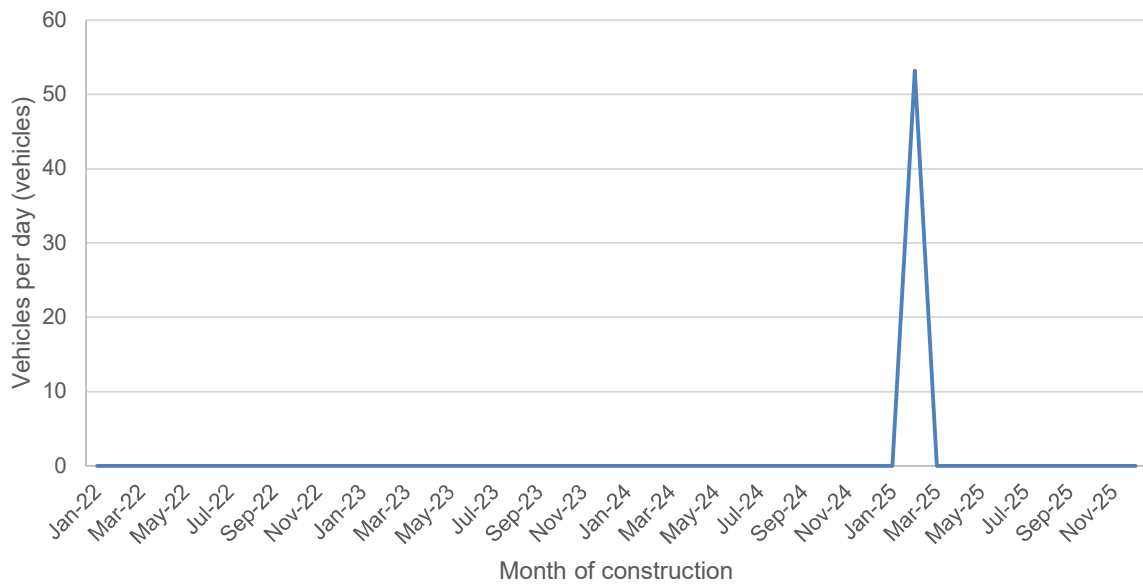
Bent Street - Between Craig Street and Gwydir Highway



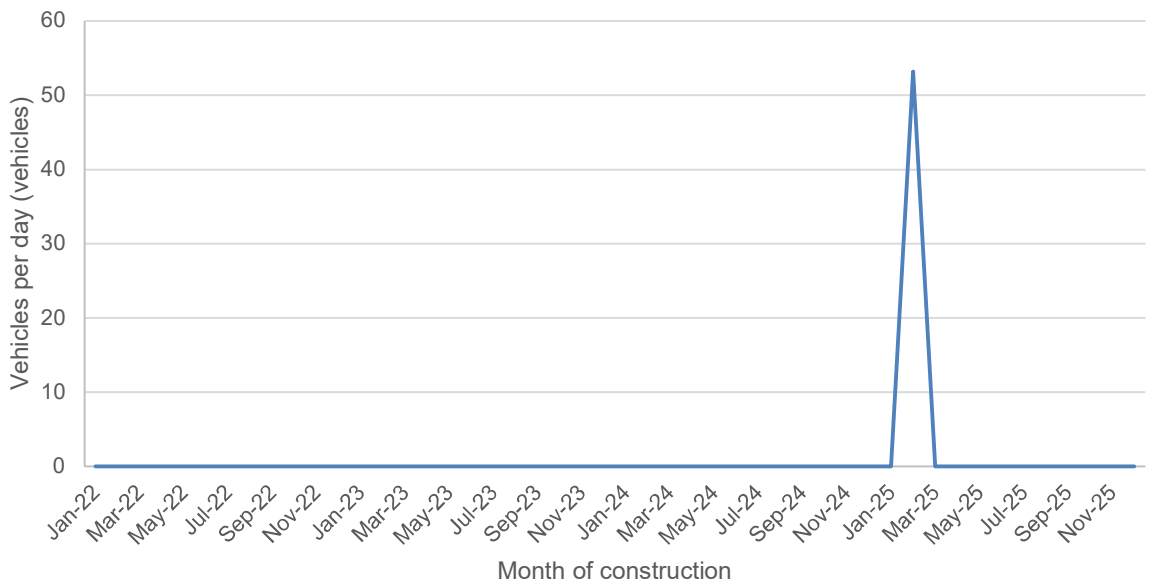
Charles Street - Between Bent Street and Pacific Highway



### Clark Road - Full Extent

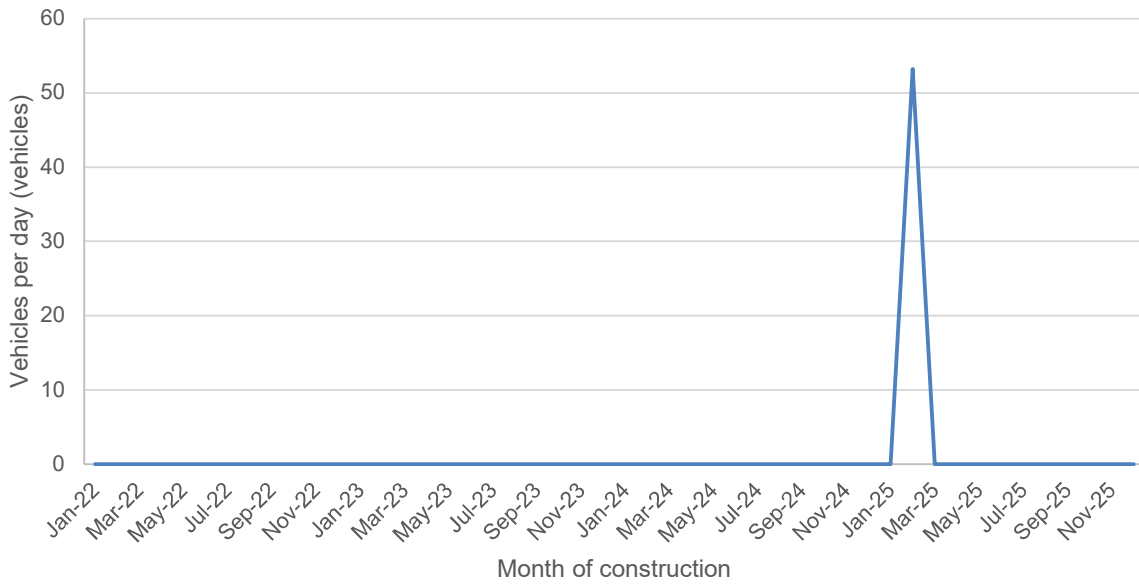


### Craig Street - Between Villiers Street and Bent Street

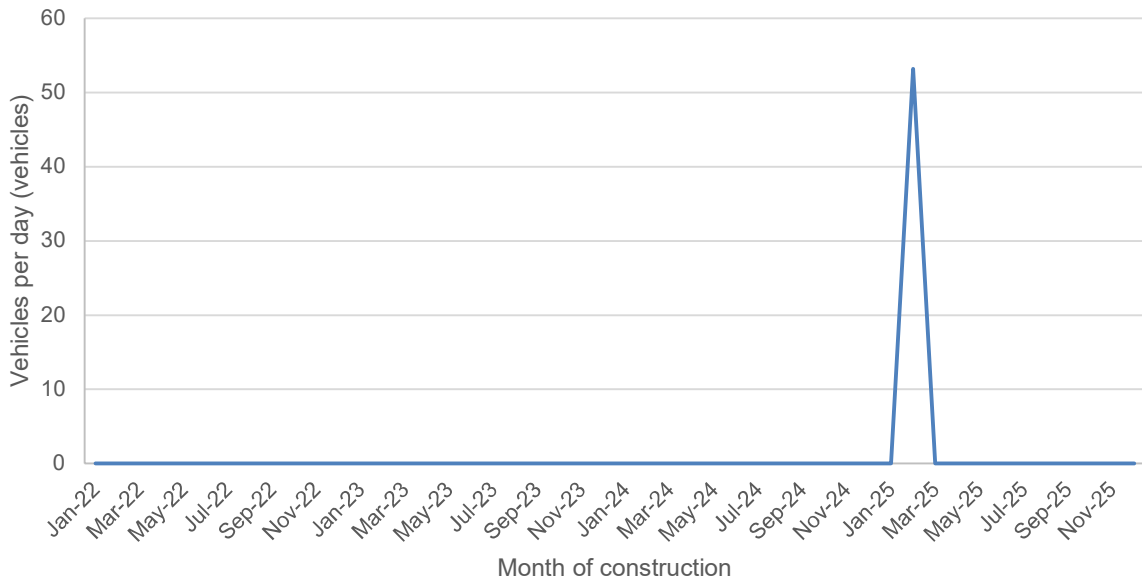




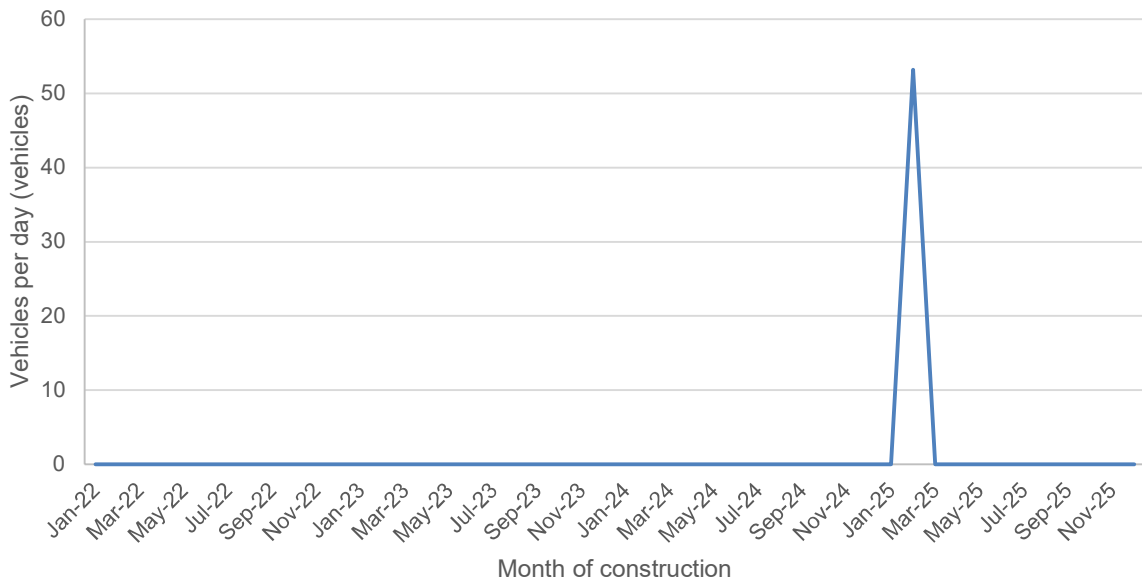
Dobie Street - Between Villers Street and Summerland Way



Trenayr Road - Between Summerland Way and Clark Road

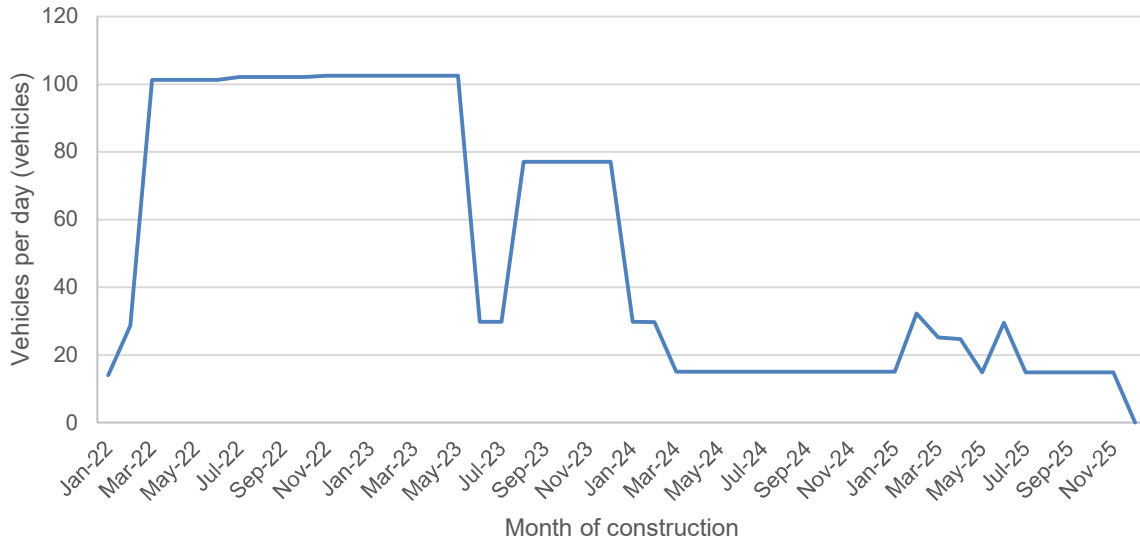


### Villers Street - Between Craig Street and Dobie Street

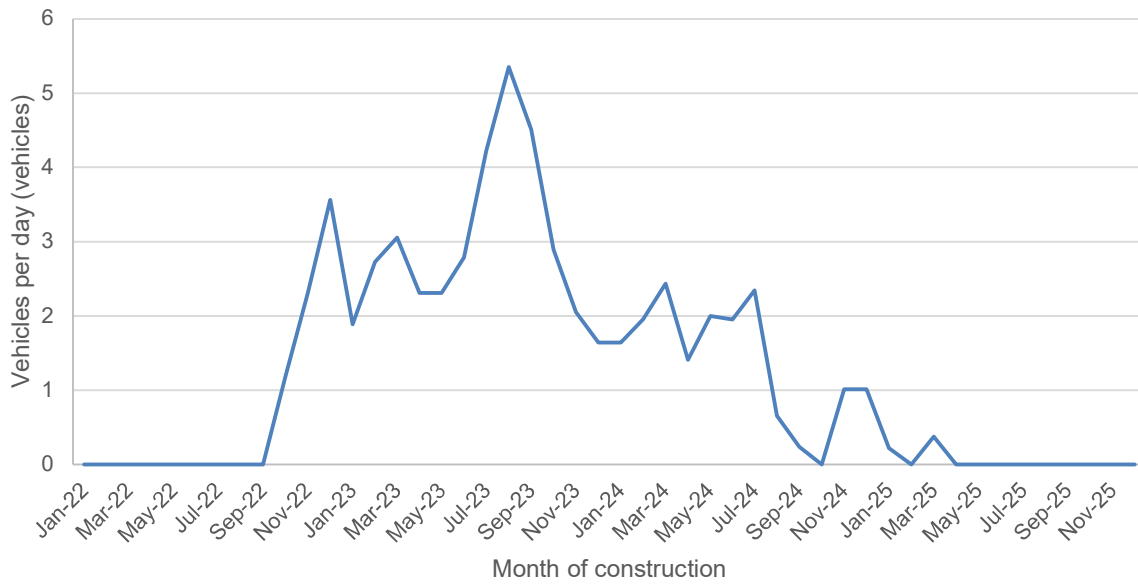




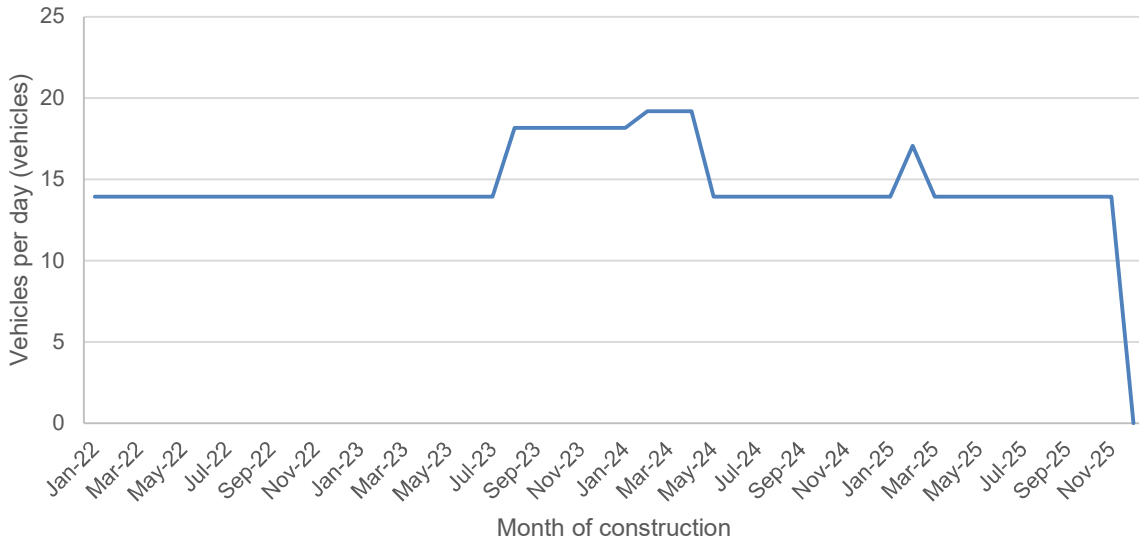
### Calvert Station Road - Between Rosewood Laidley Road and Gipps Street



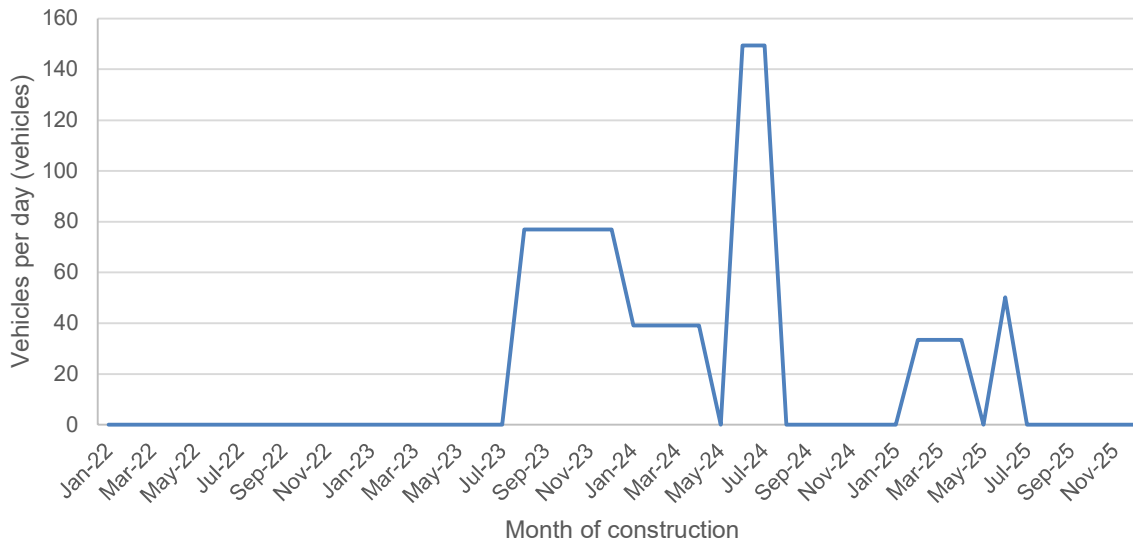
### Fairbank Place - Full Extent



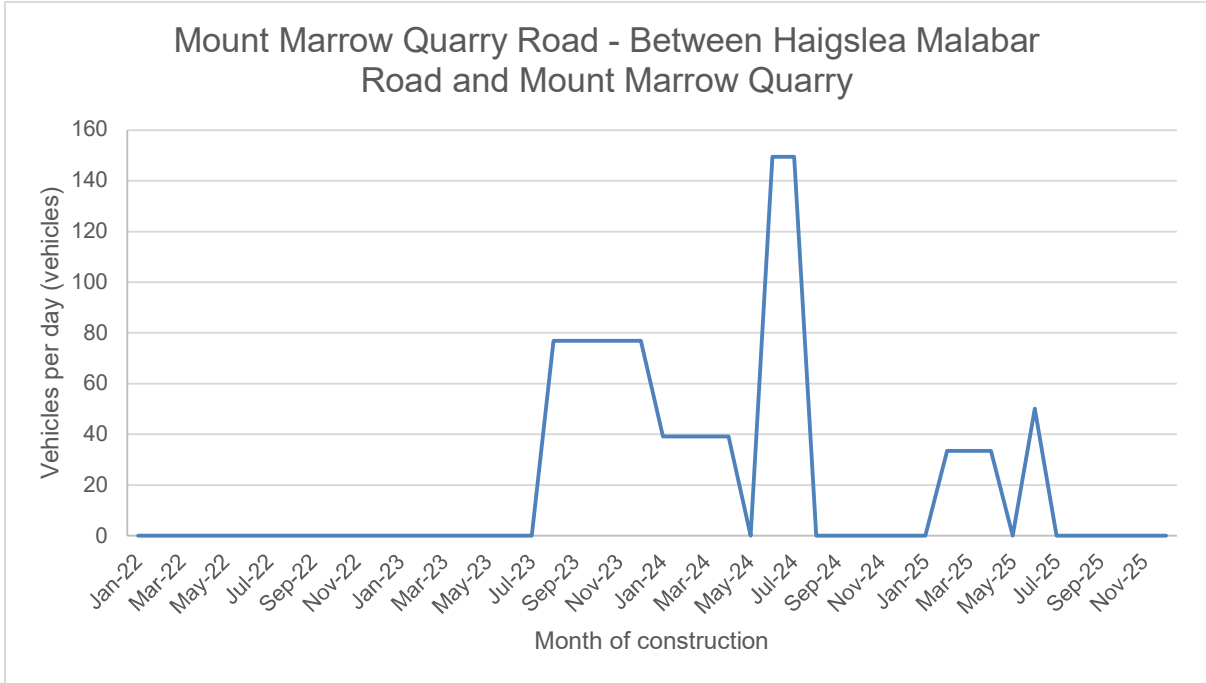
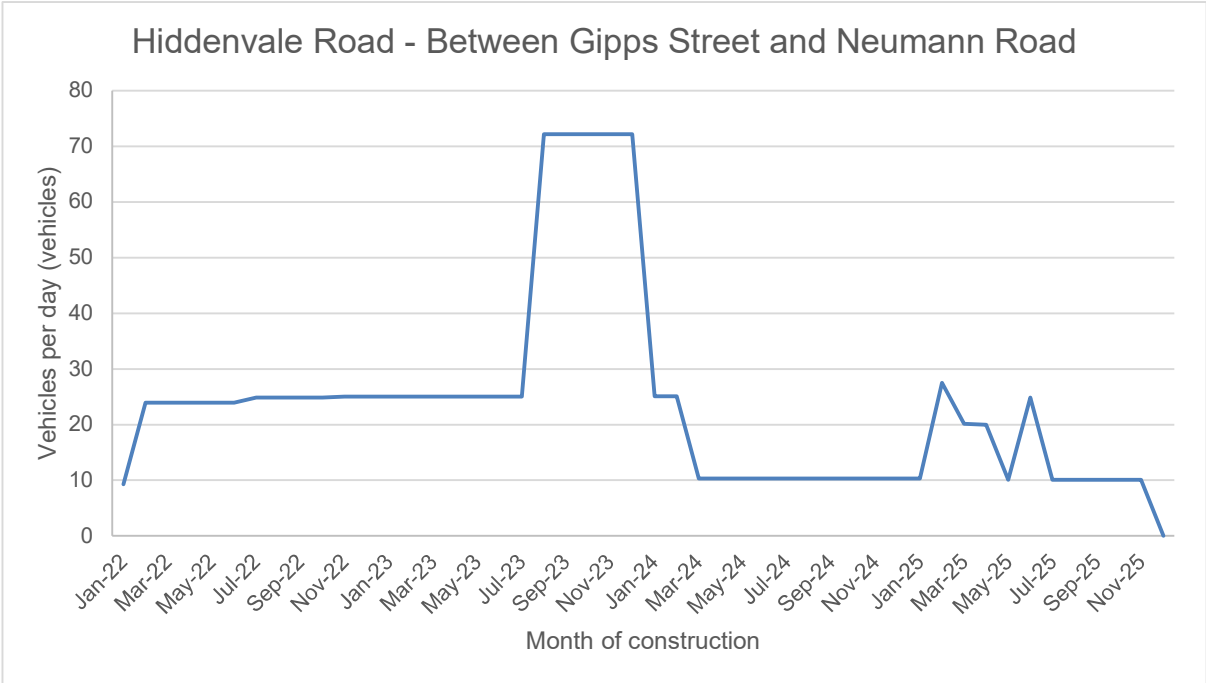
### Grandchester Mort Road - Between Rosewood Laidley Road and School Road



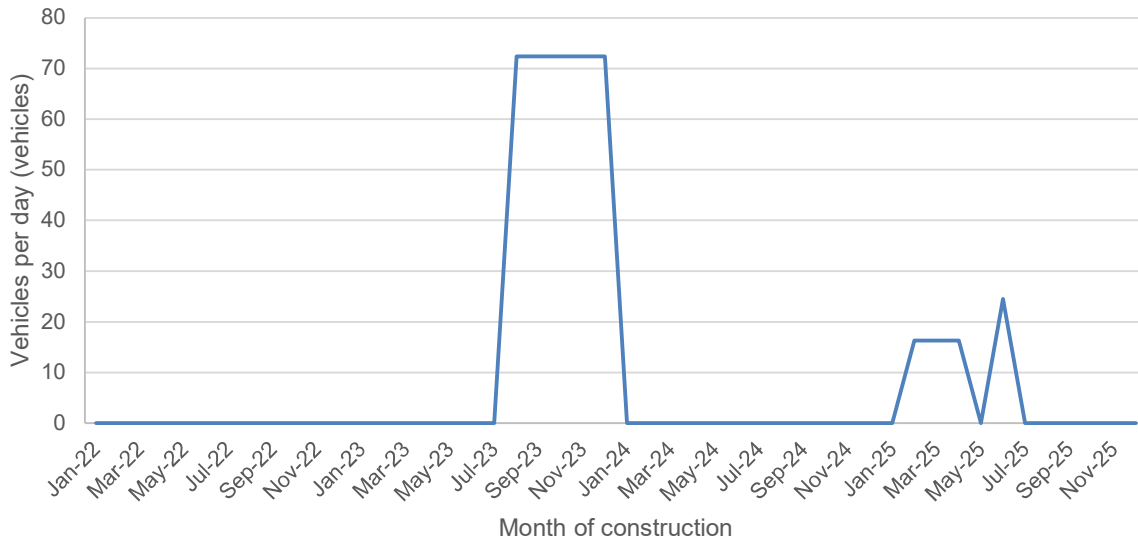
### Hagslea Malabar Road - Between Warrego Highway and Mount Marrow Quarry Road



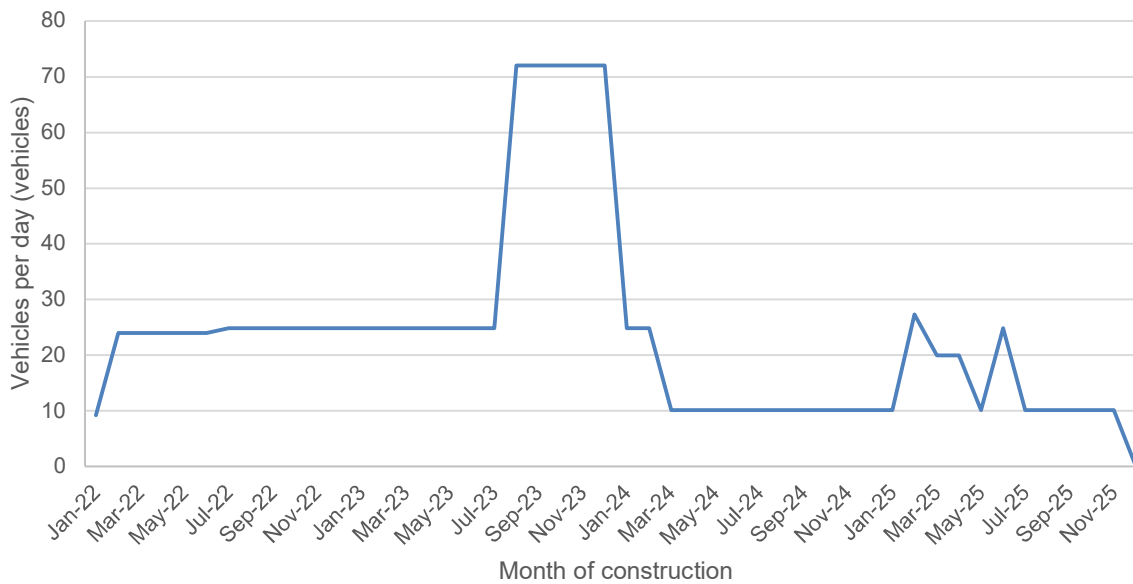




Mount Marrow Quarry Road - Between Thagoona Haigslea Road and Mount Marrow Quarry

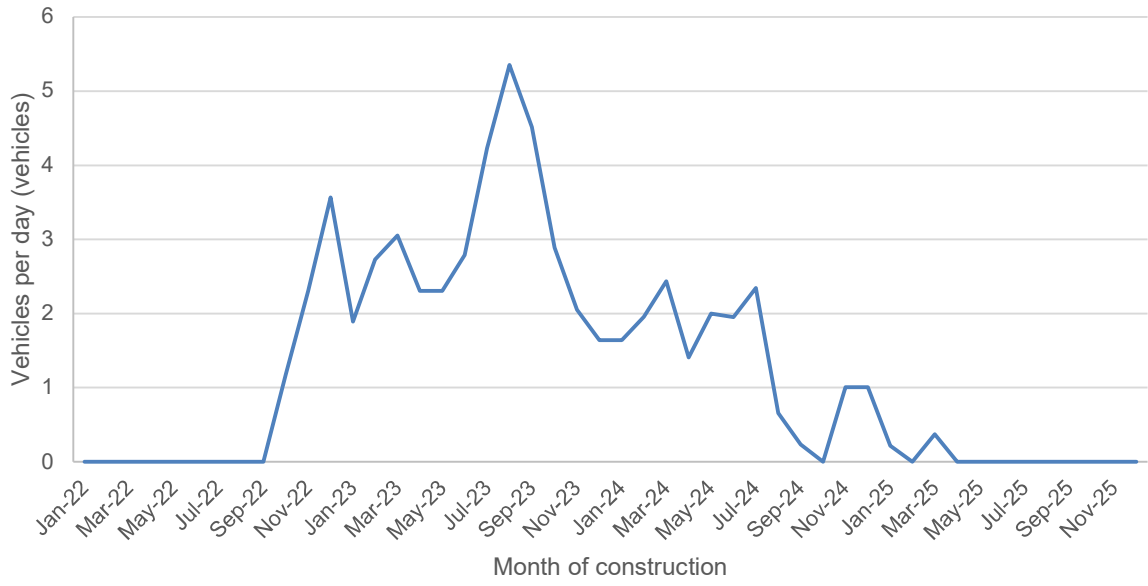


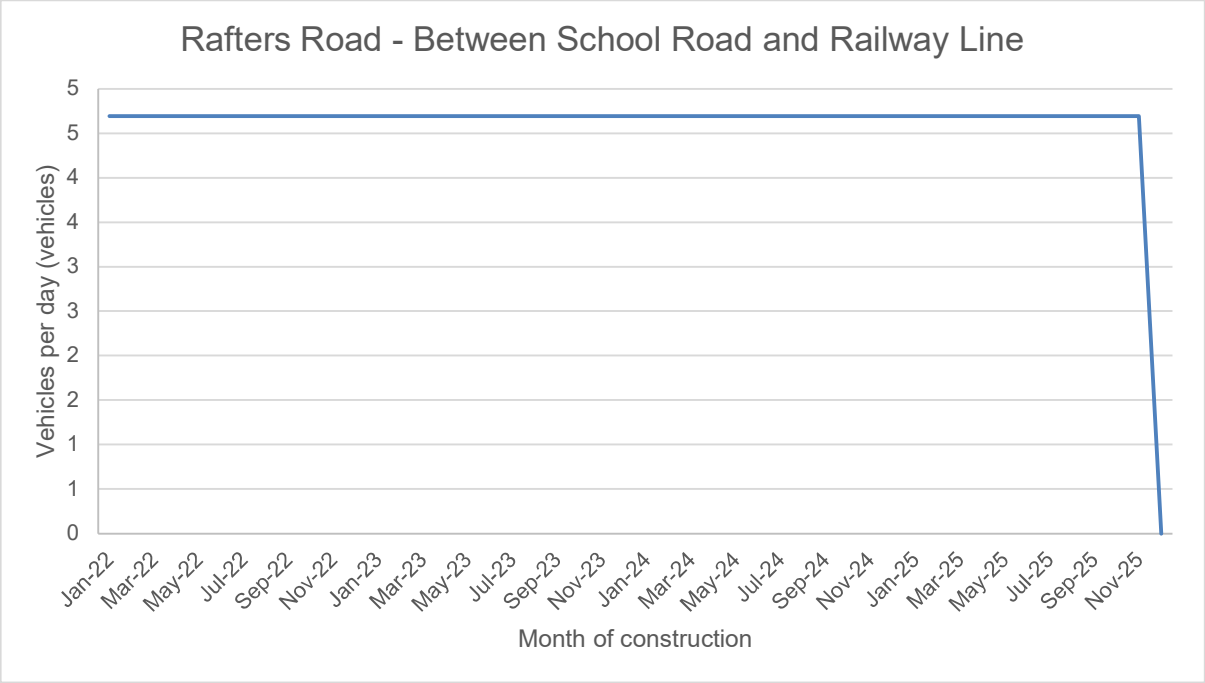
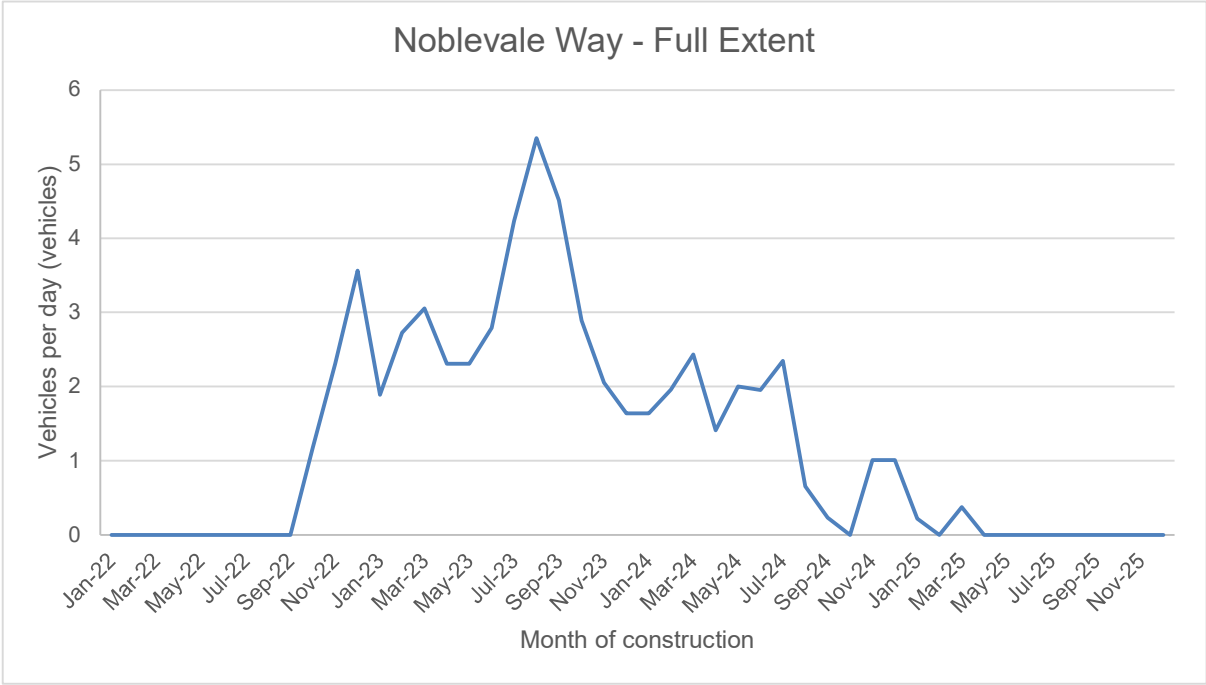
Neumann Road - Full extent





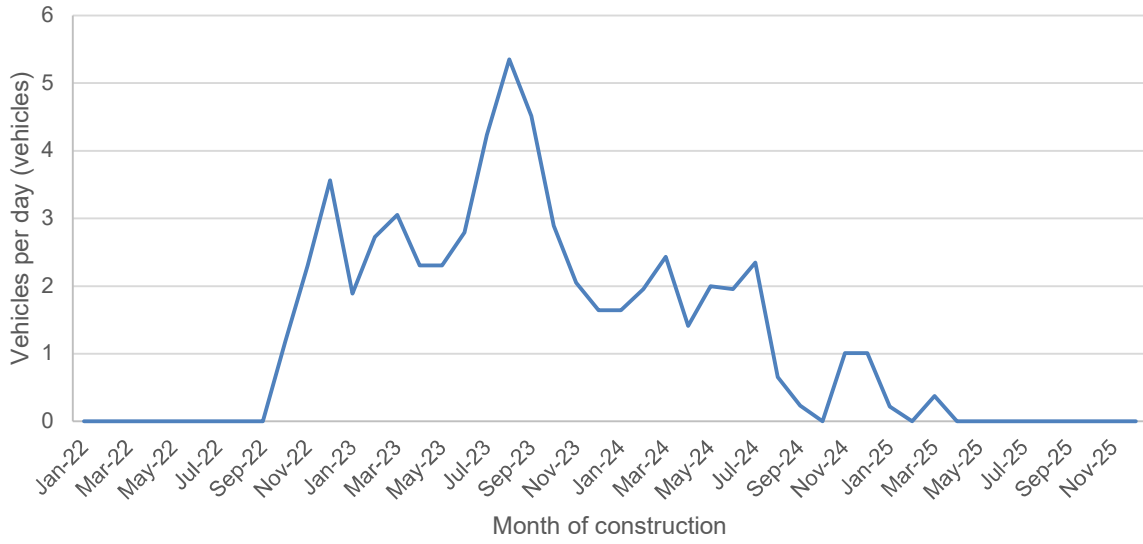
### Newhill Drive - Full Extent



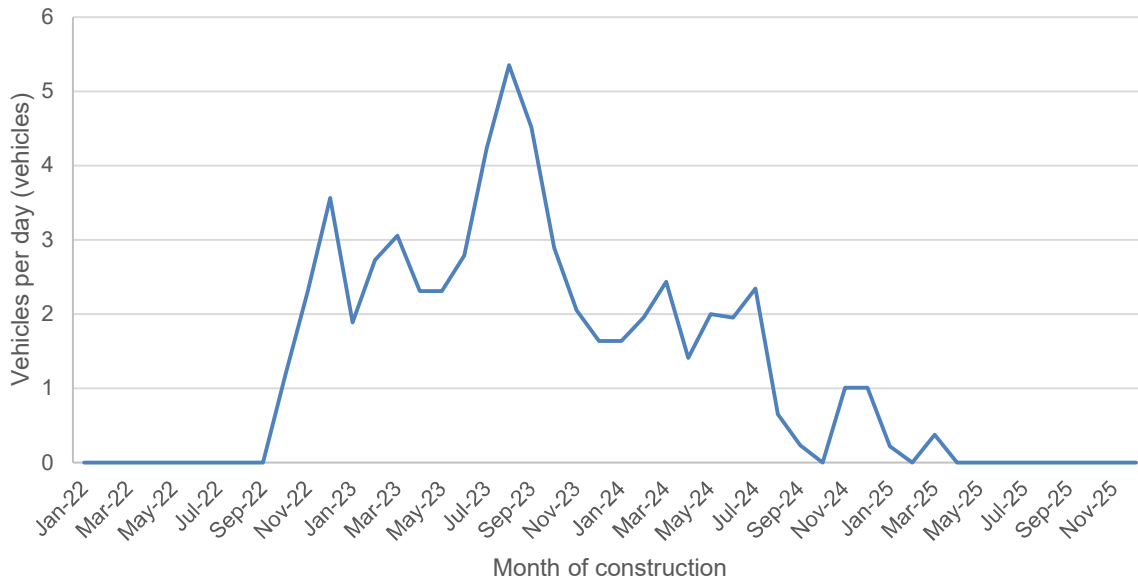




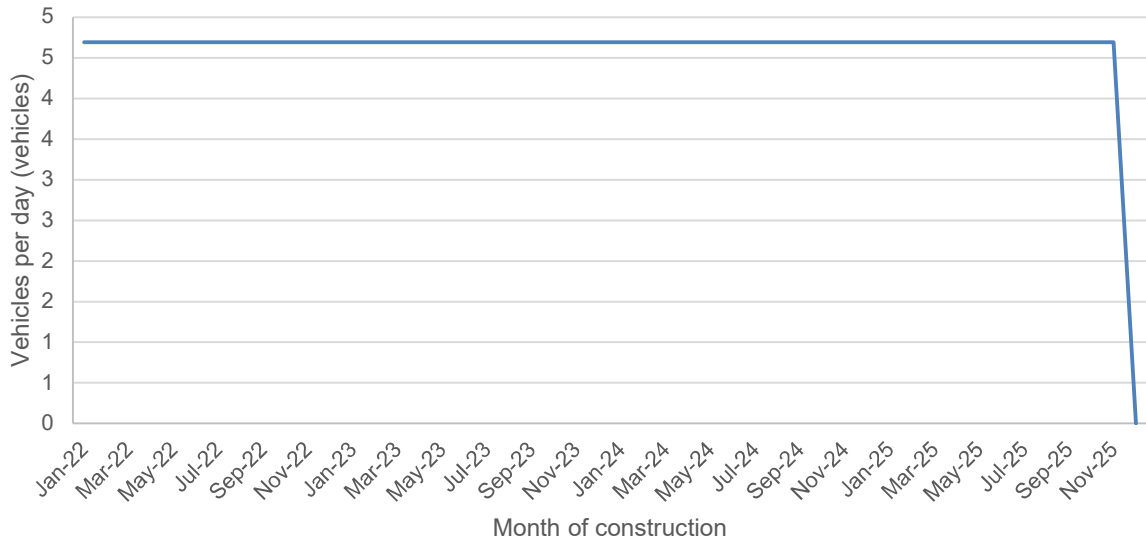
### Redbank Plains Road - Between Cunningham Highway and Newhill Drive



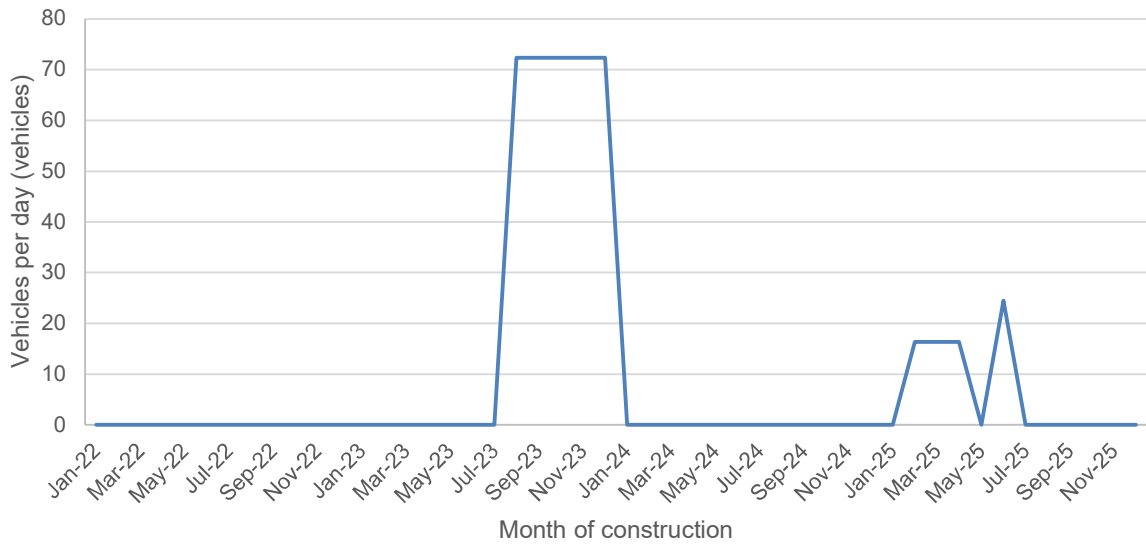
### Rob Roy Way - Full Extent



### School Road - Between Rosewood Laidley Road and Rafters Road

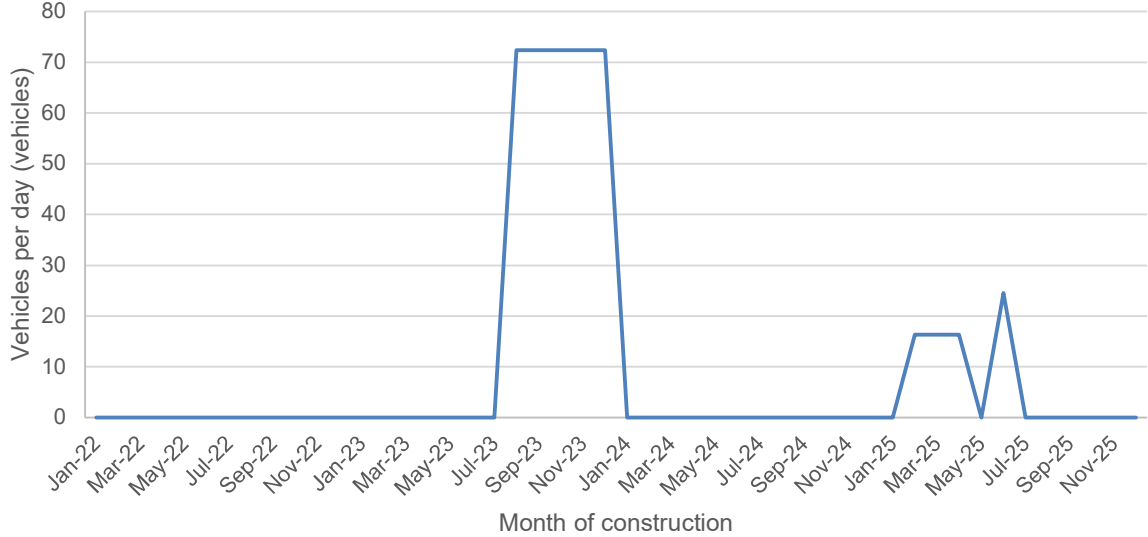


### Thagoona Haigslea Road - Between Karrabin Rosewood Road and Schumanns Road

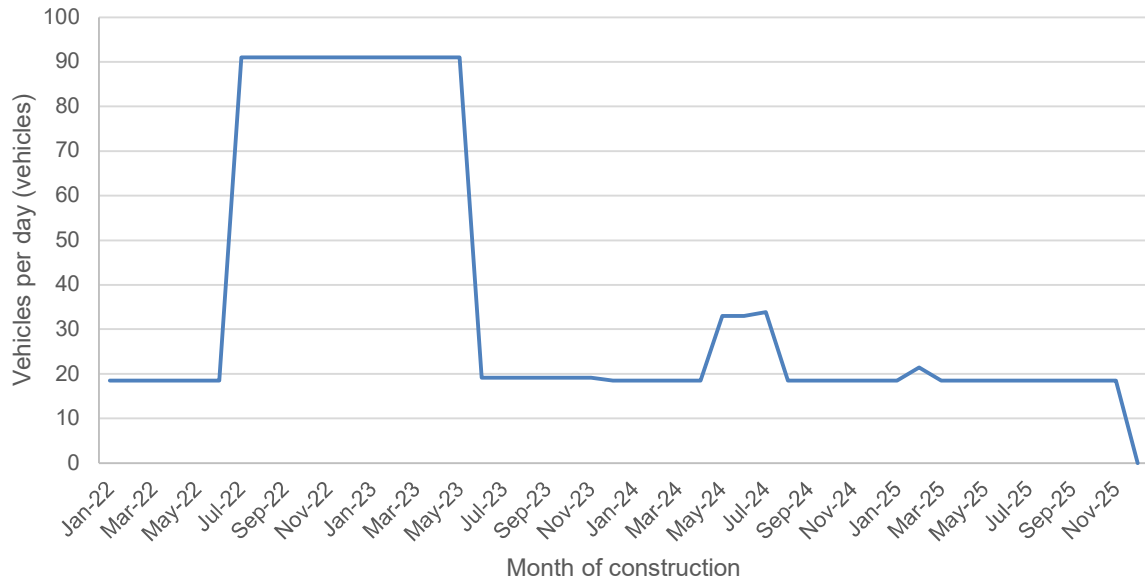




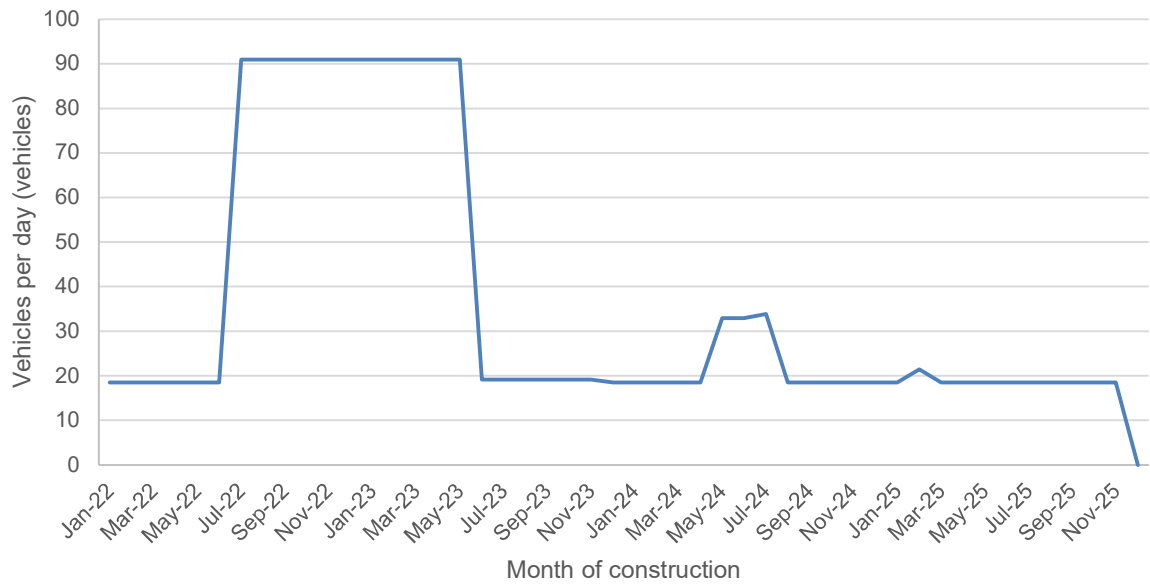
### Thagoona Hagslea Road - Between Schumanns Road and Mount Marrow Quarry Road



### Airforce Road - Between Airforce Road and Railway Line

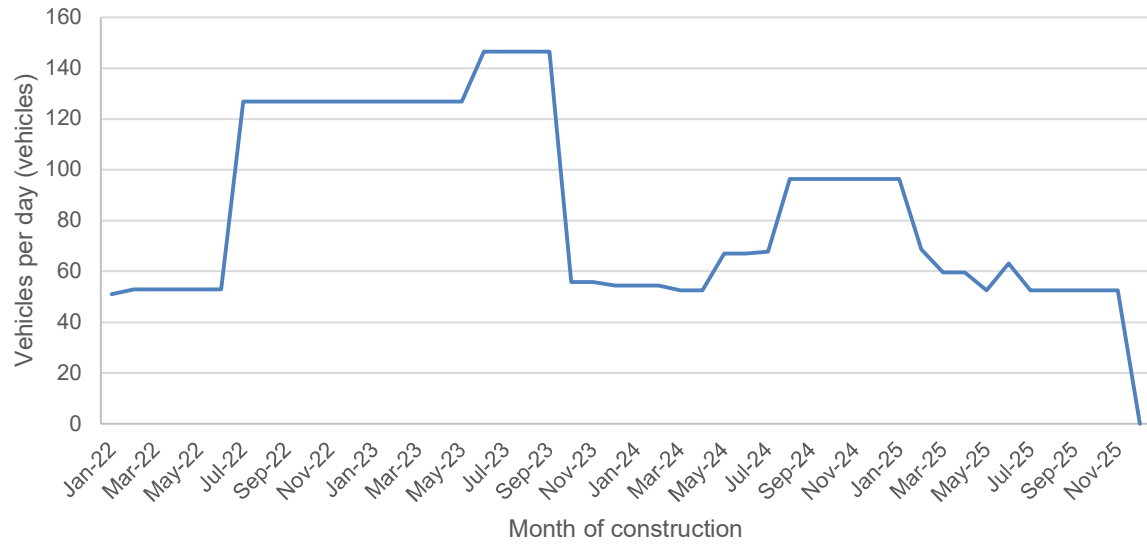


### Arthur Street - Between Bowen Street and Station Street

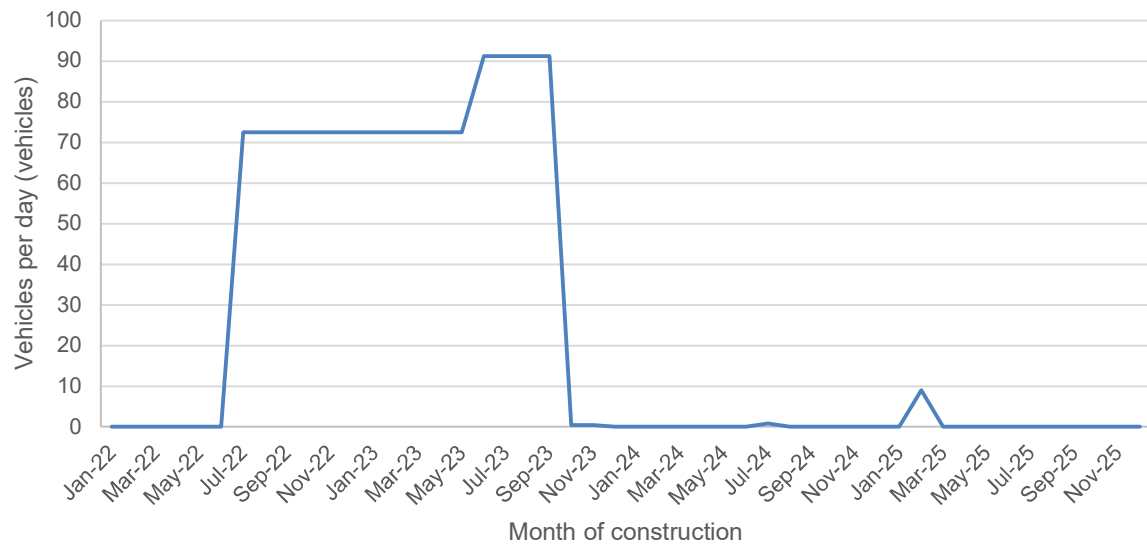




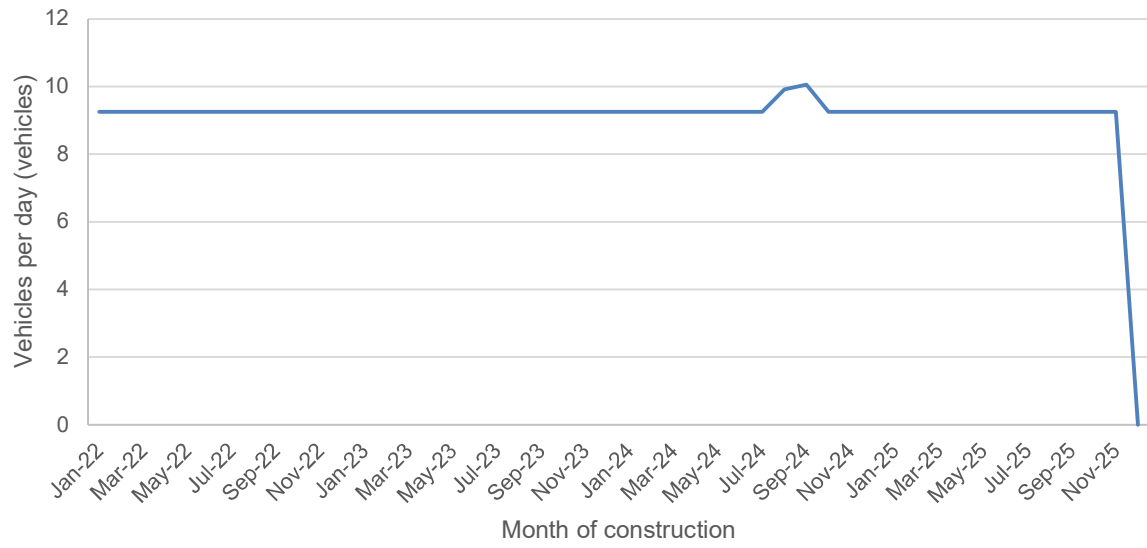
### Arthur Street - Between Station Street and Mary McKillop Street



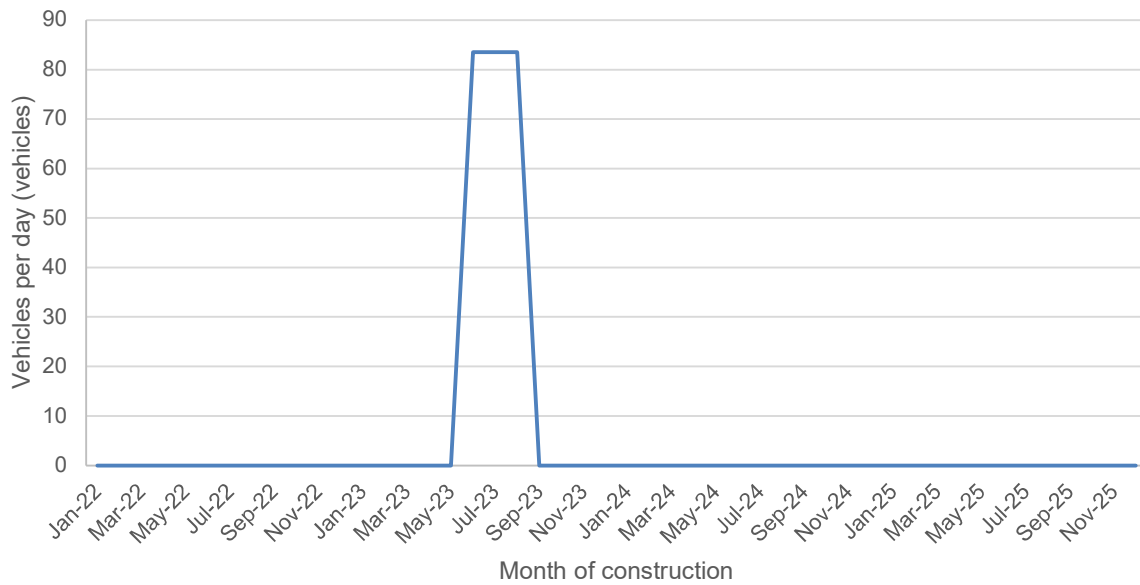
### Arthur Street - Between Mary McKillop Street and Georges Street



### Boundary Road - Between Carrington Road and Williams Road

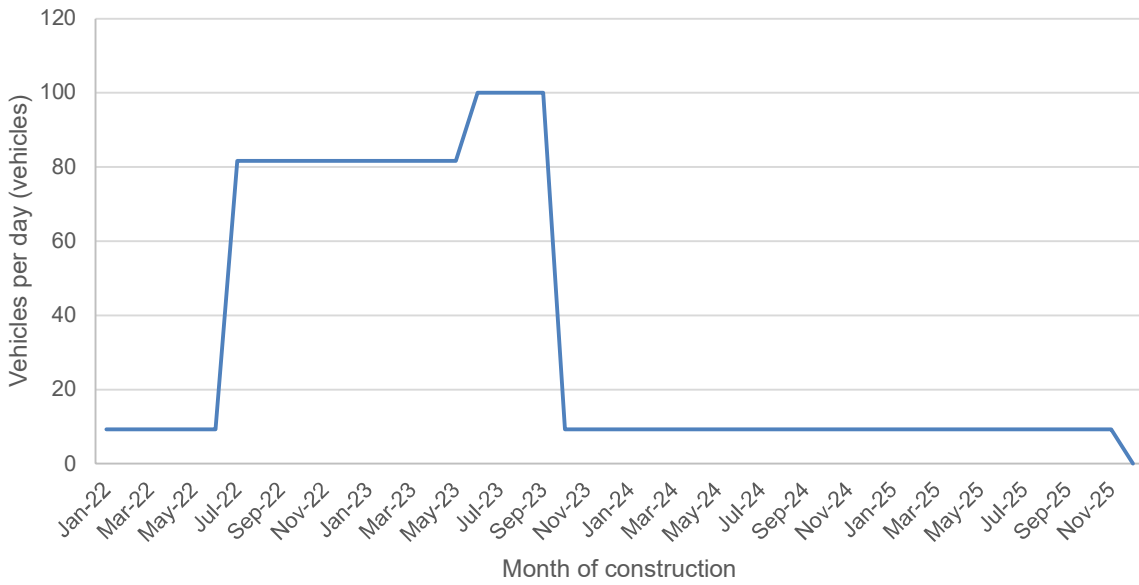


### Bowtells Road - Full extent

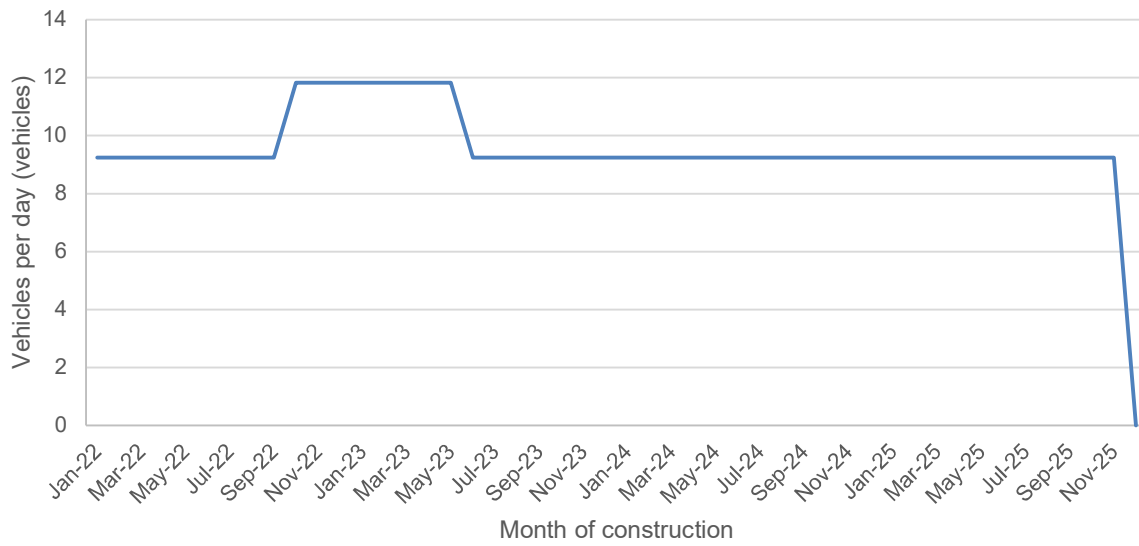




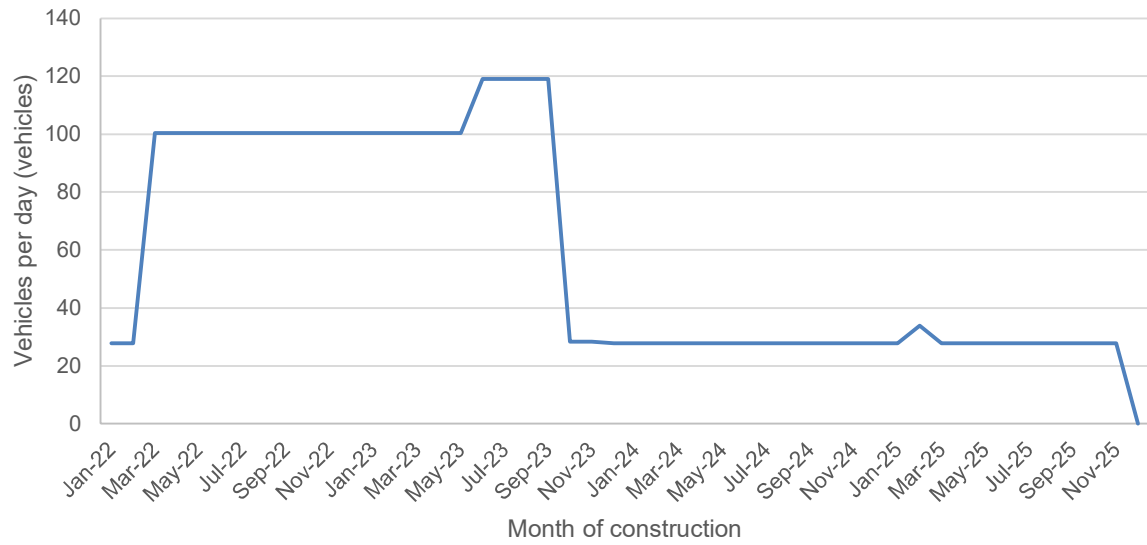
### Boxmoor Street - Between Victor Street and Philps Road



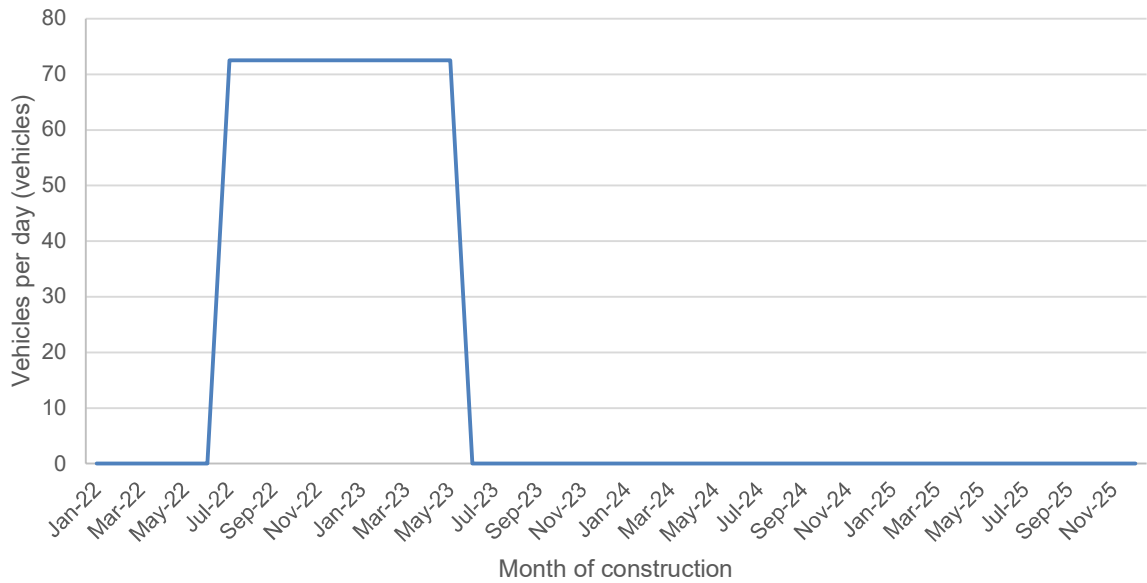
### Burgess Road - Between Old Toowoomba Road and Smithfield Road



Connors Road - Between Seventeen Mile Road and Sandy Creek Road

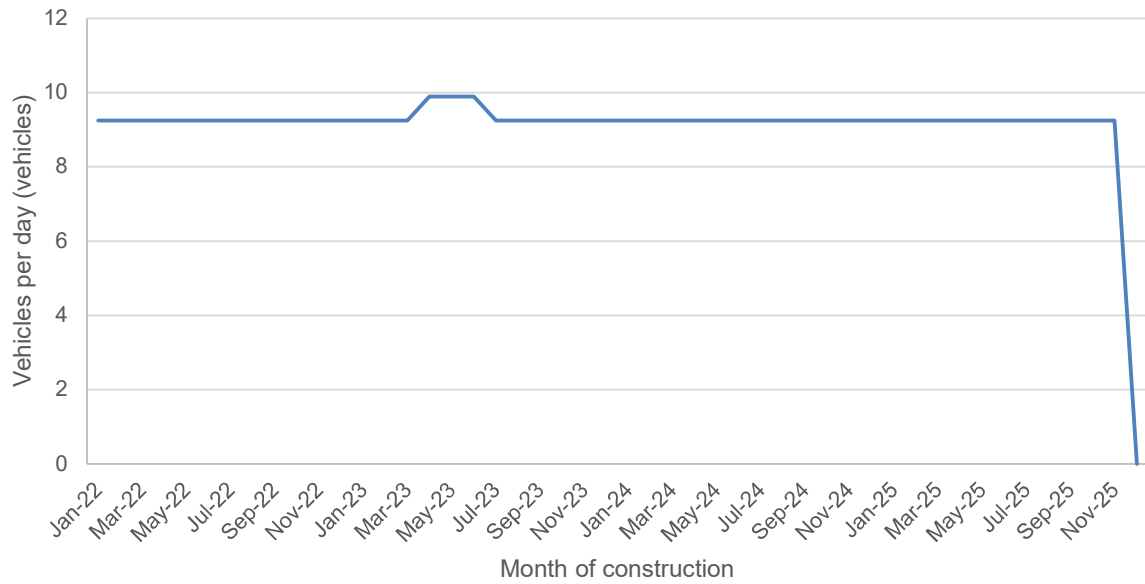


Connors Road - Between Airforce Road and Wrights Road

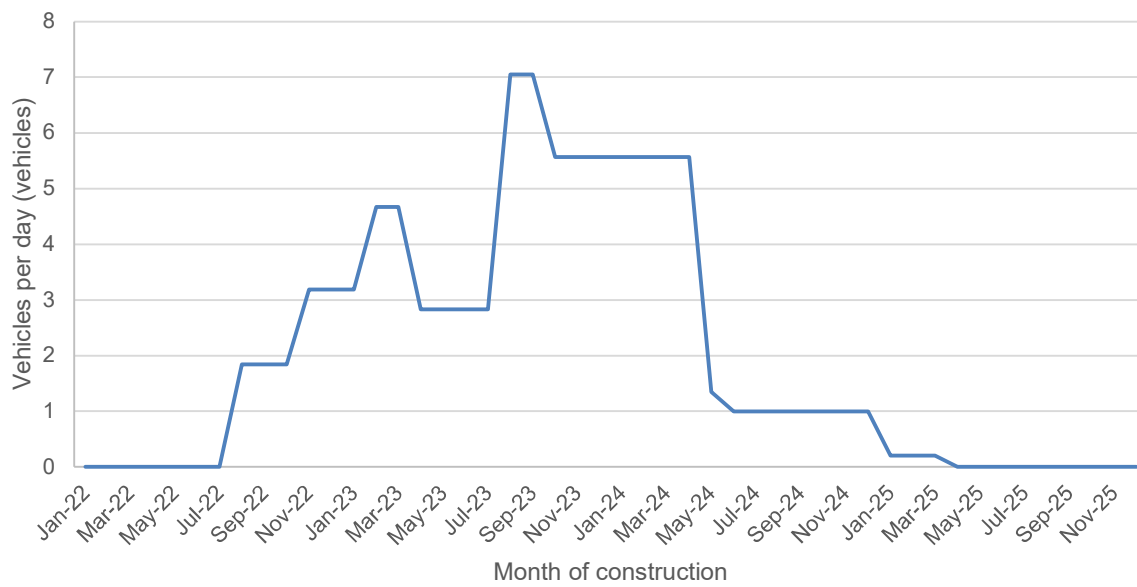




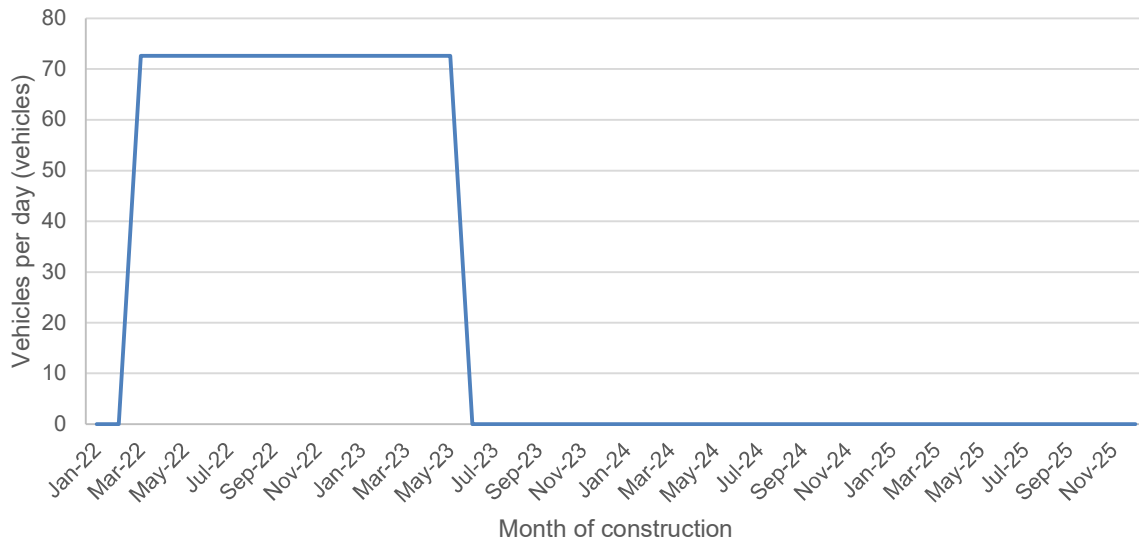
### Crescent Street - Between William Street and East Street



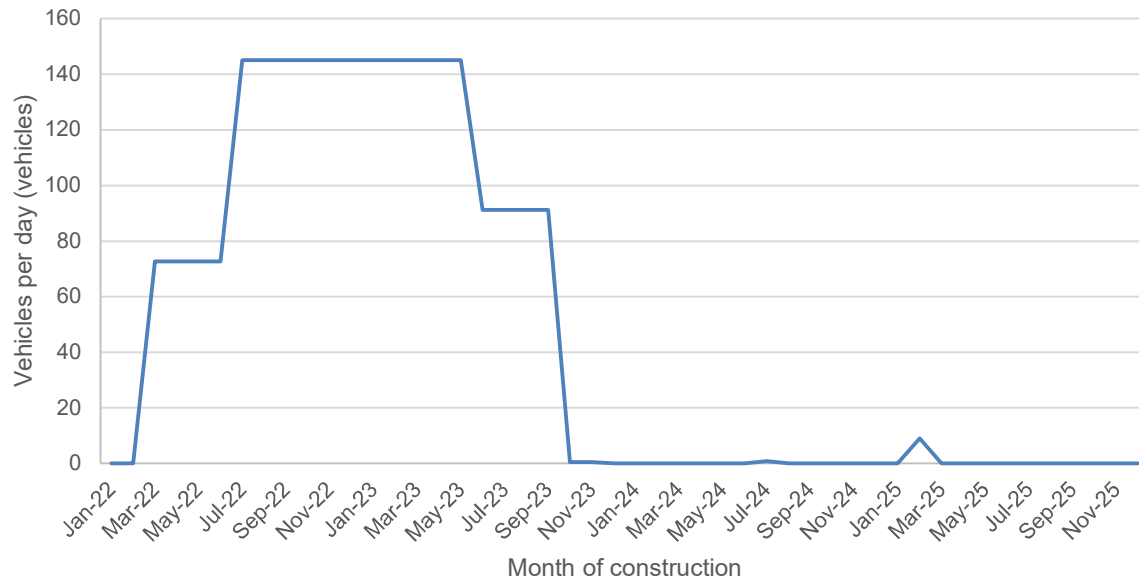
### Crown Street - Full extent



### George Street - Between Seventeen Mile Road and Arthur Street

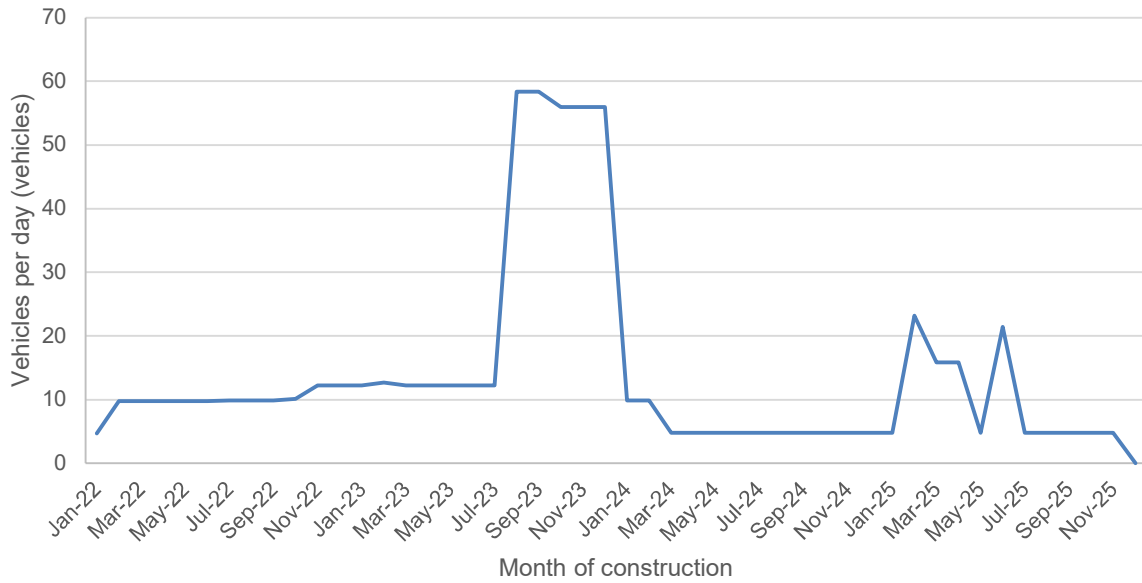


### George Street - Between Arthur Street and Lawlers Road

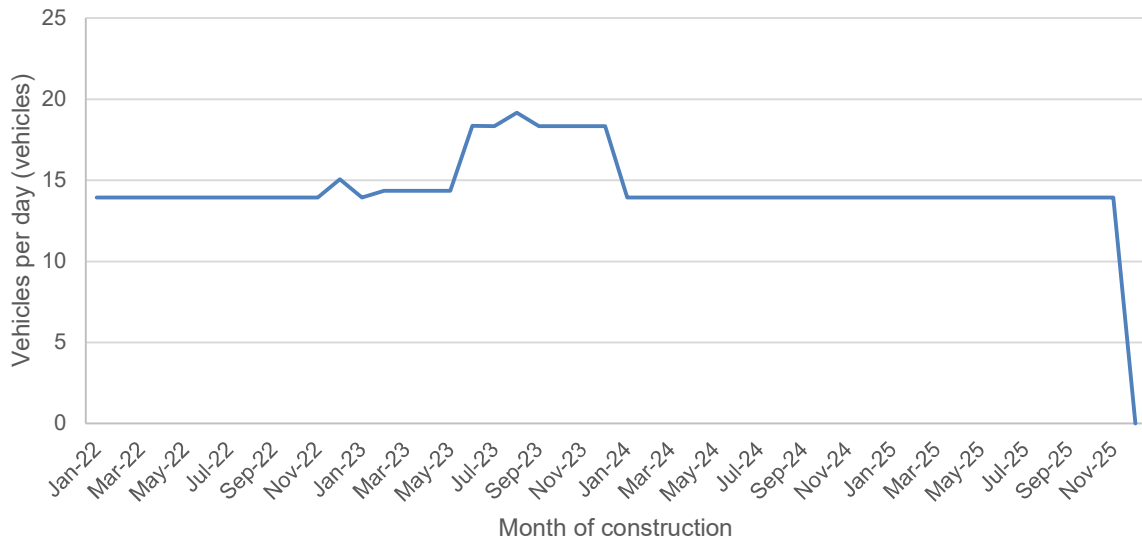




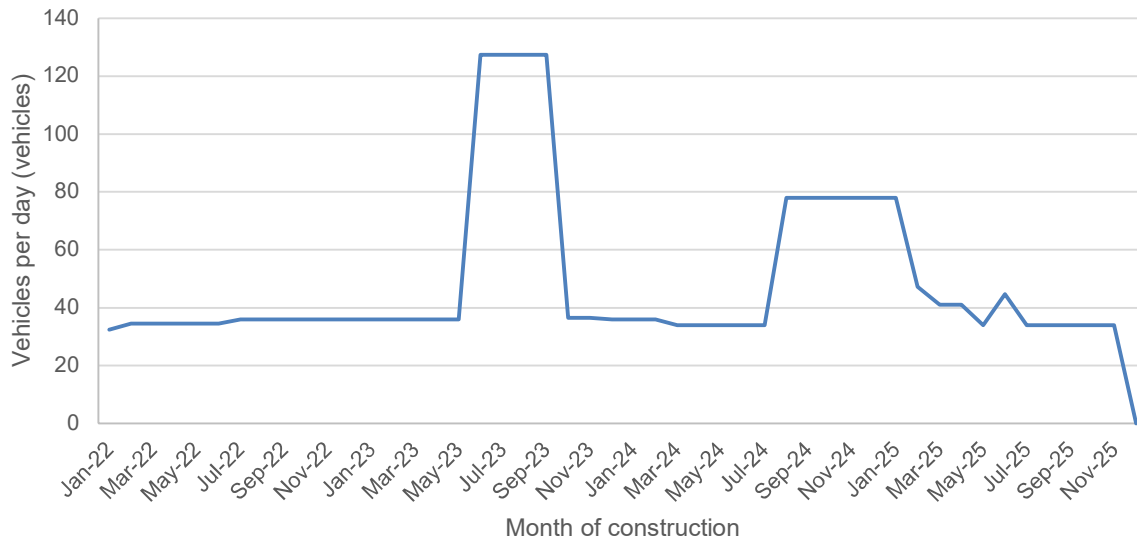
### Hall Road - Full Extent



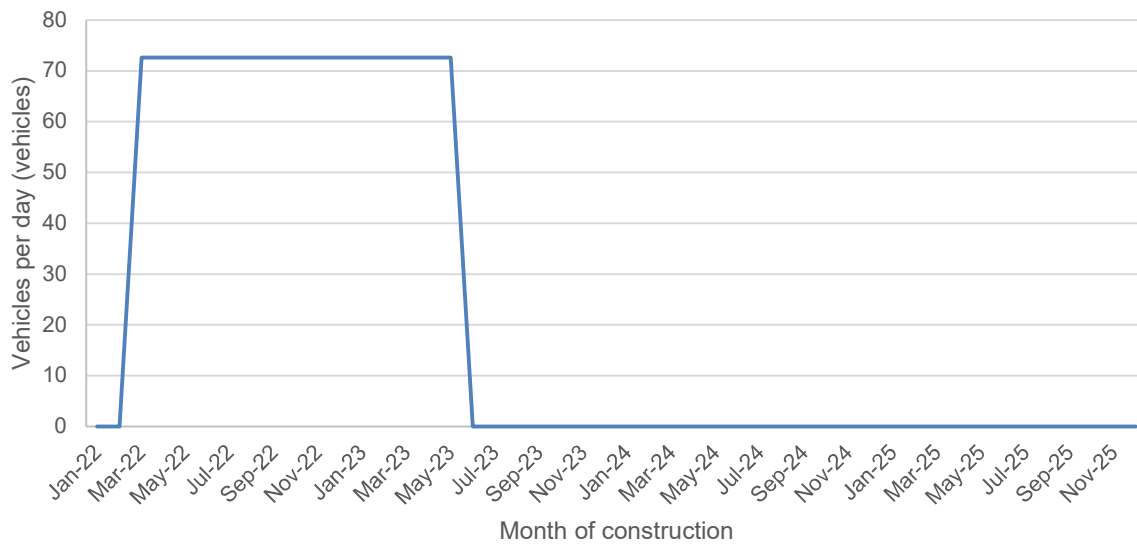
### Hickey Street - Between Old College Road and Buaraba Street



### Laidley Street - Between Station Street and Seventeen Mile Road

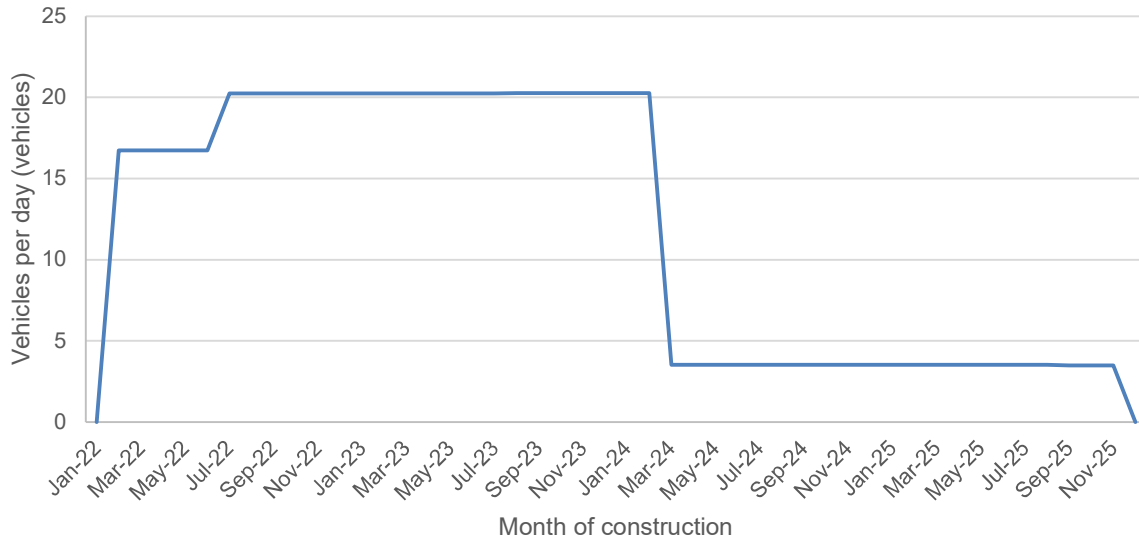


### Laidley Street - Between Seventeen Mile Road and George Street

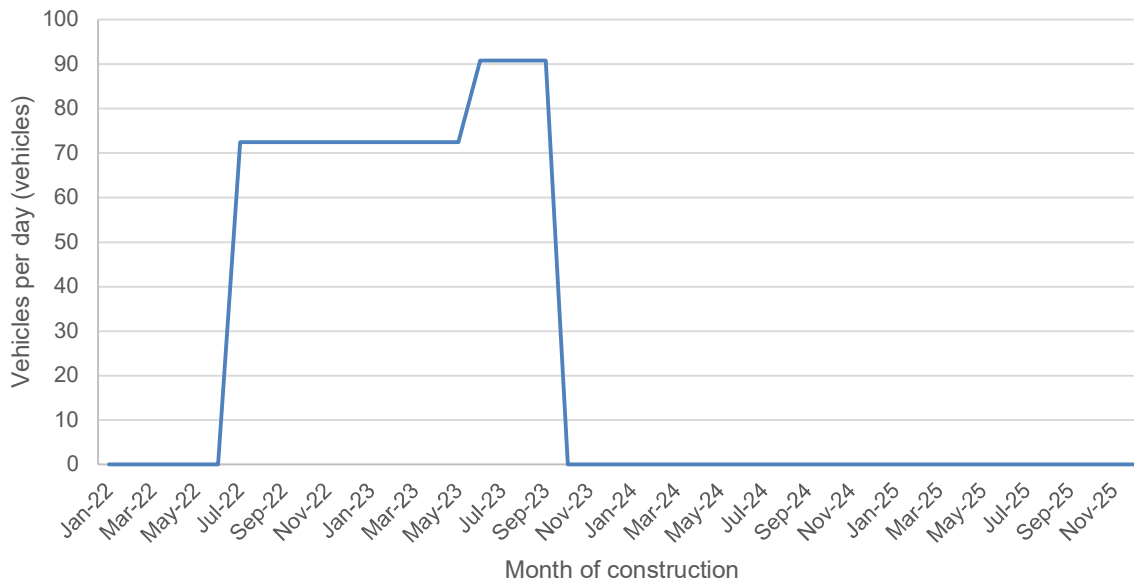


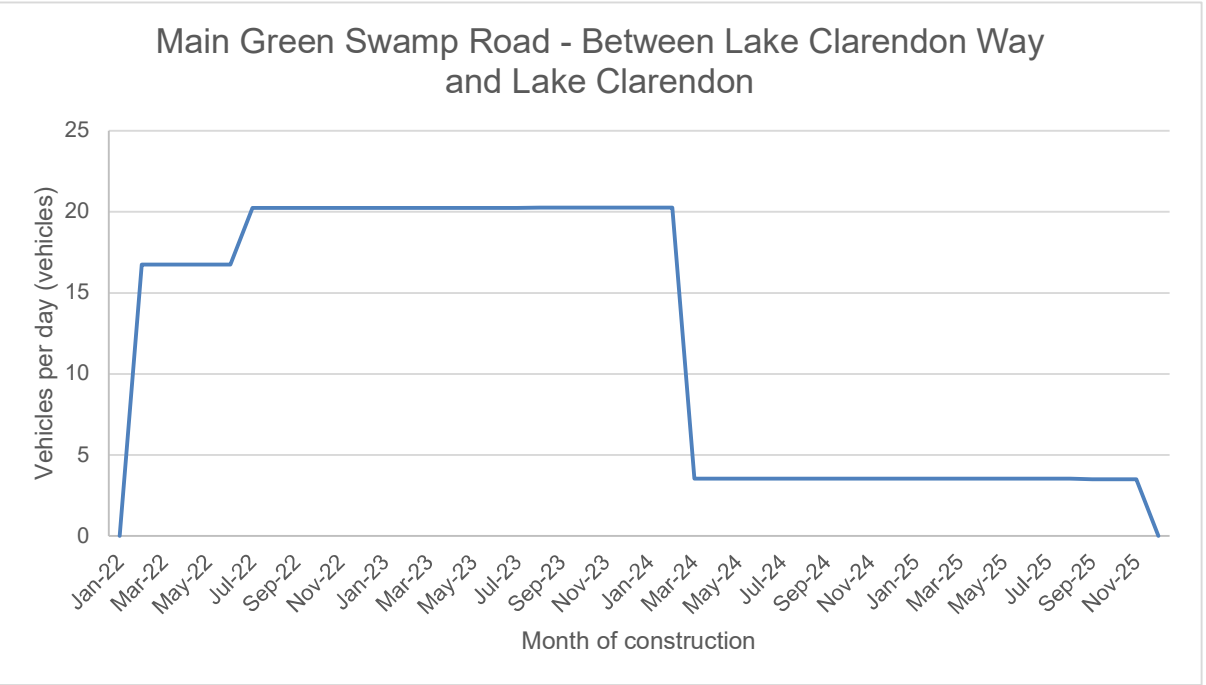
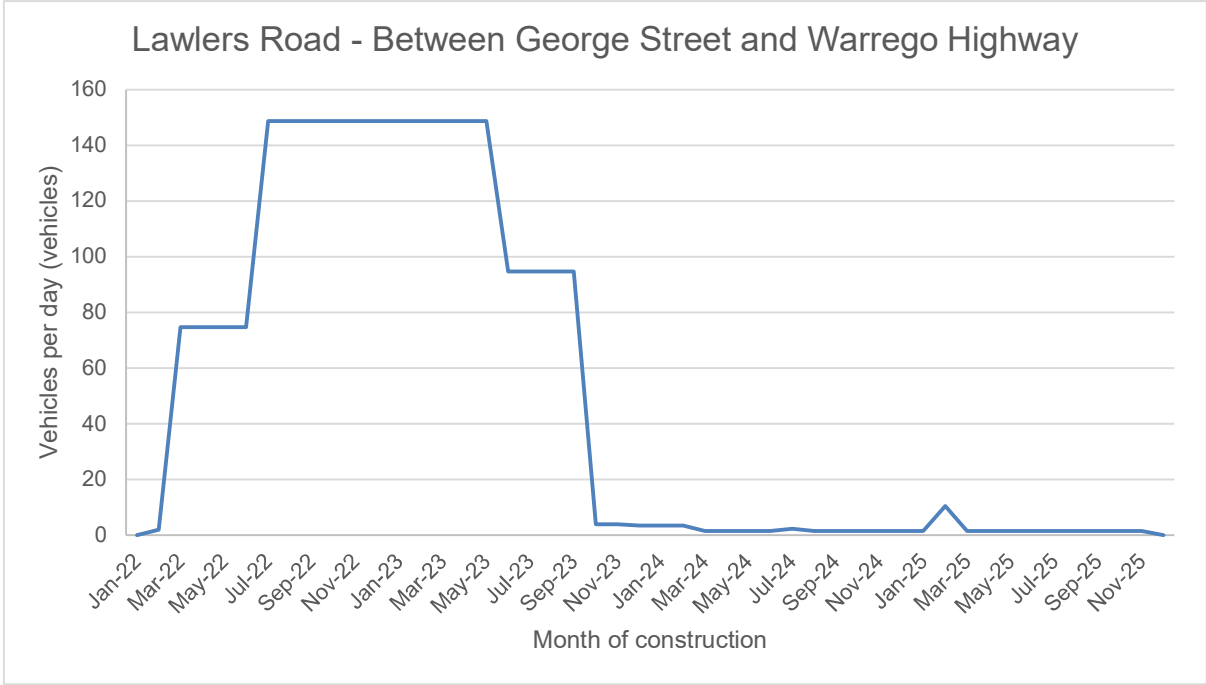


### Lake Clarendon Way - Between Gatton Esk Road and Main Green Swamp Road



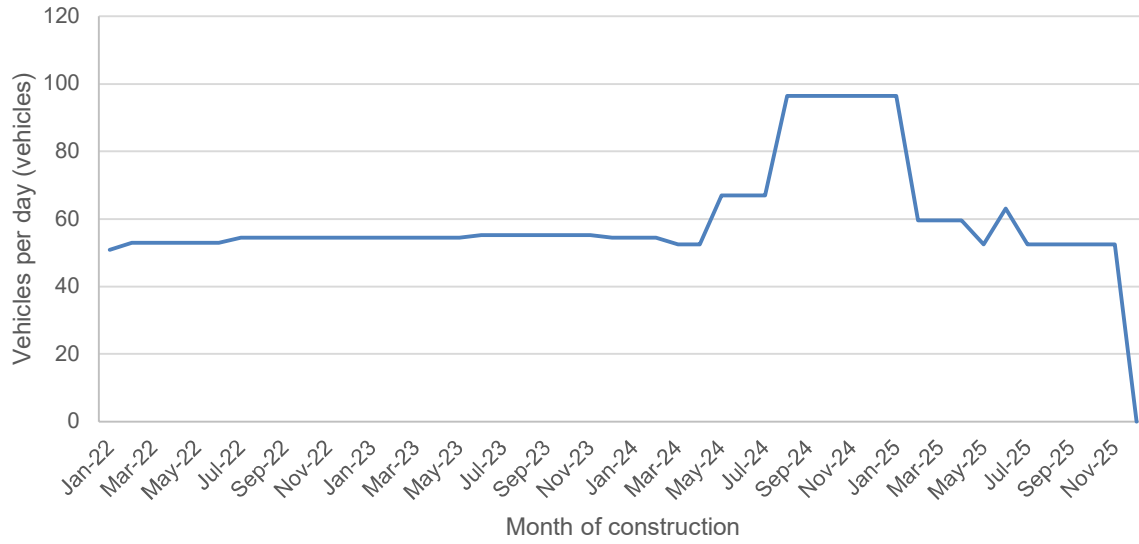
### Lawlers Road - Between Victor Street and George Street



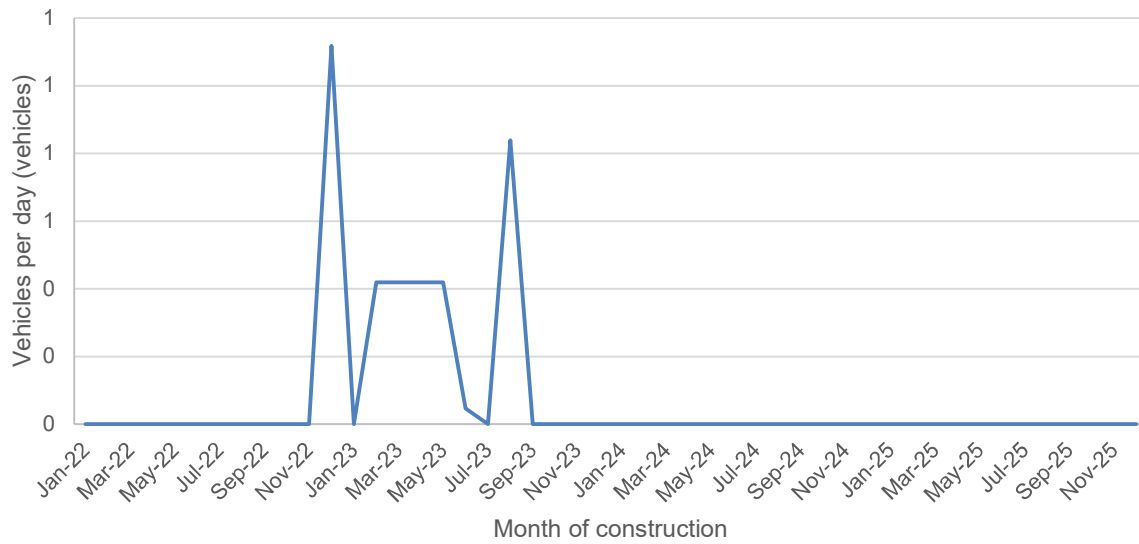




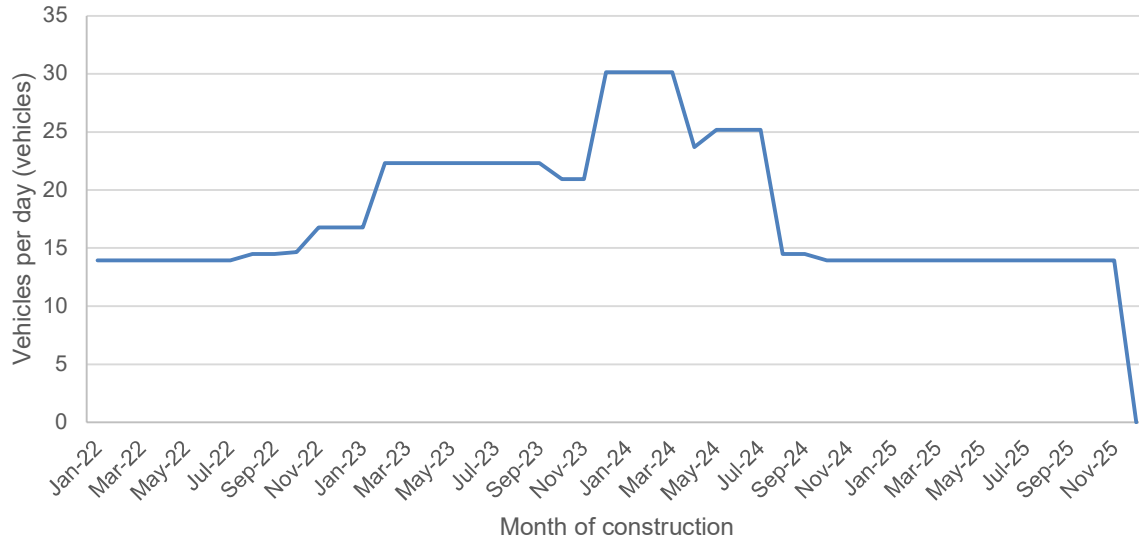
### Mary McKillop Street - Between Turner Street and Arthur Street



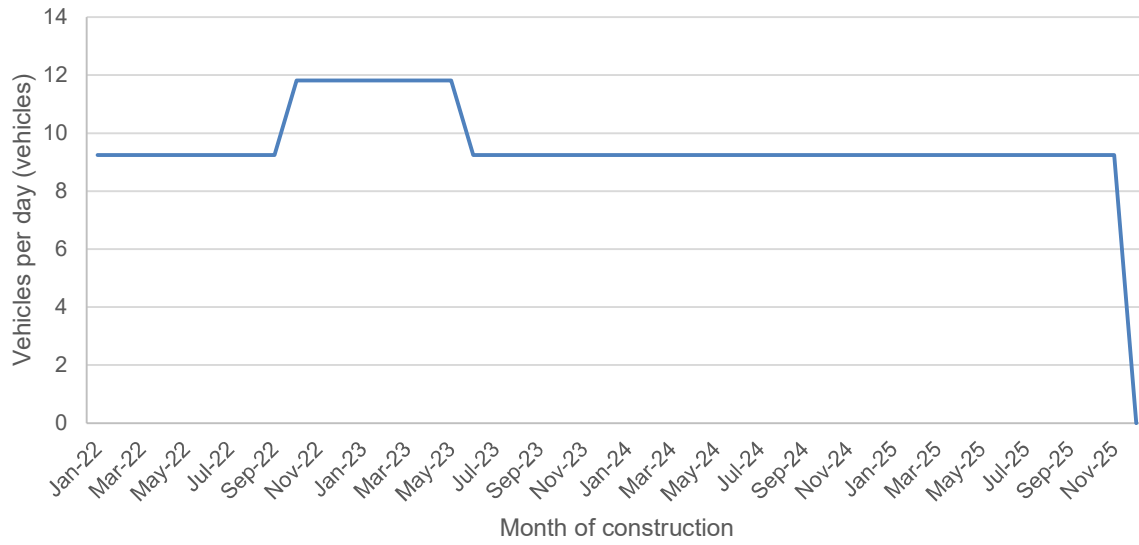
### Old College Road - Between East Street and Gatton Laidley Road



Old Laidley Forest Hill Rd - Between Forest Hill Fernvale Rd and Laidley Plainland Rd

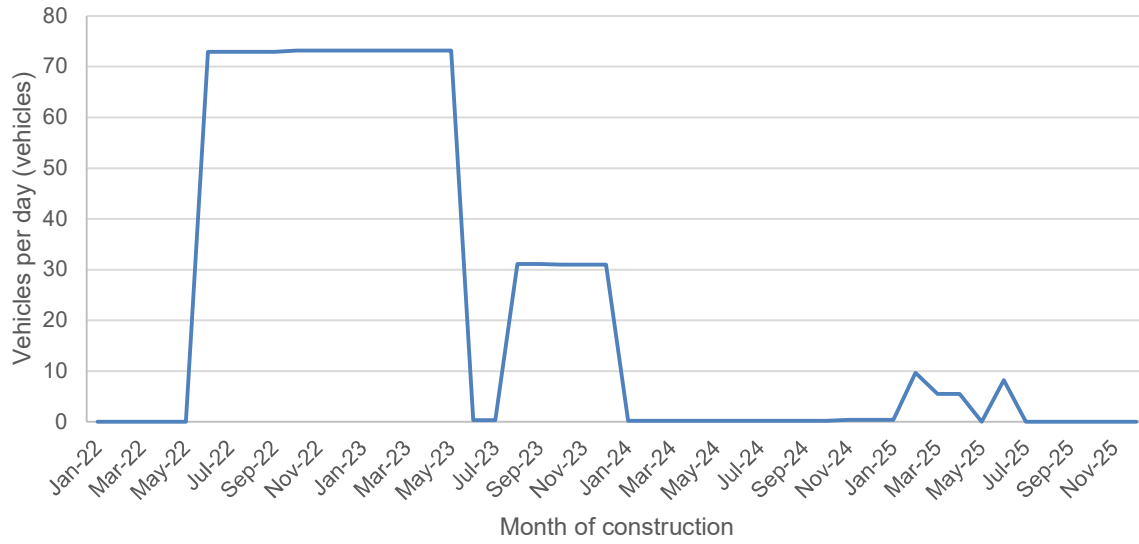


Old Toowoomba Road - Between Gatton Helidon Road and Burgess Road

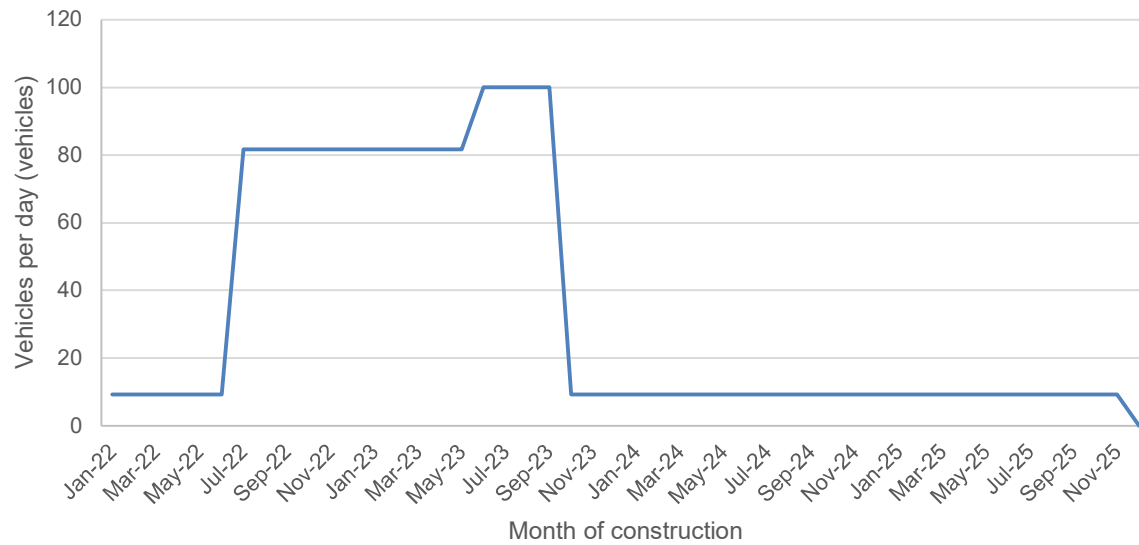




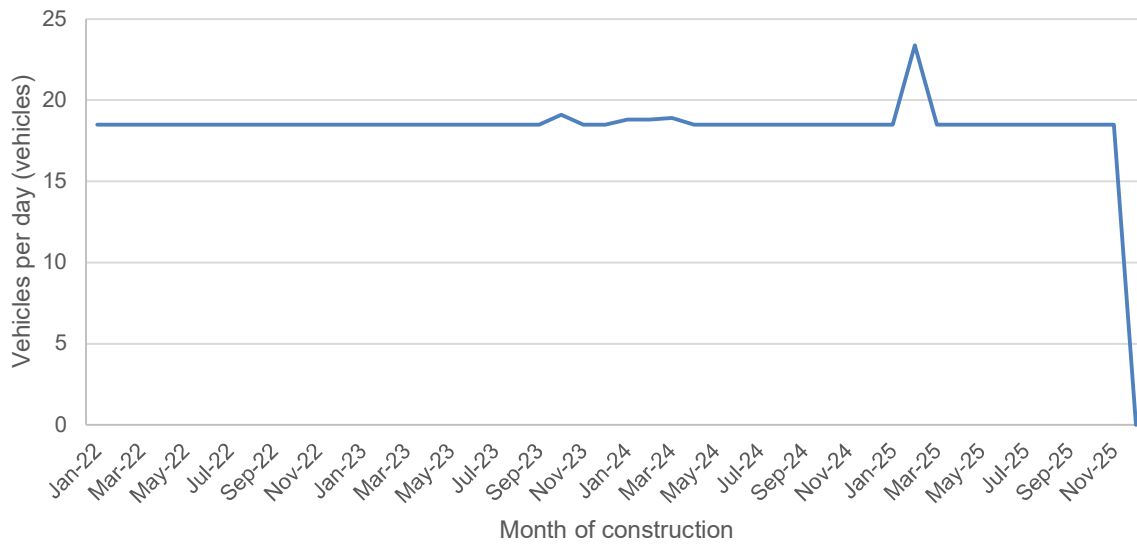
Paroz Road - Between Summer Street and 200 East of Summer Street



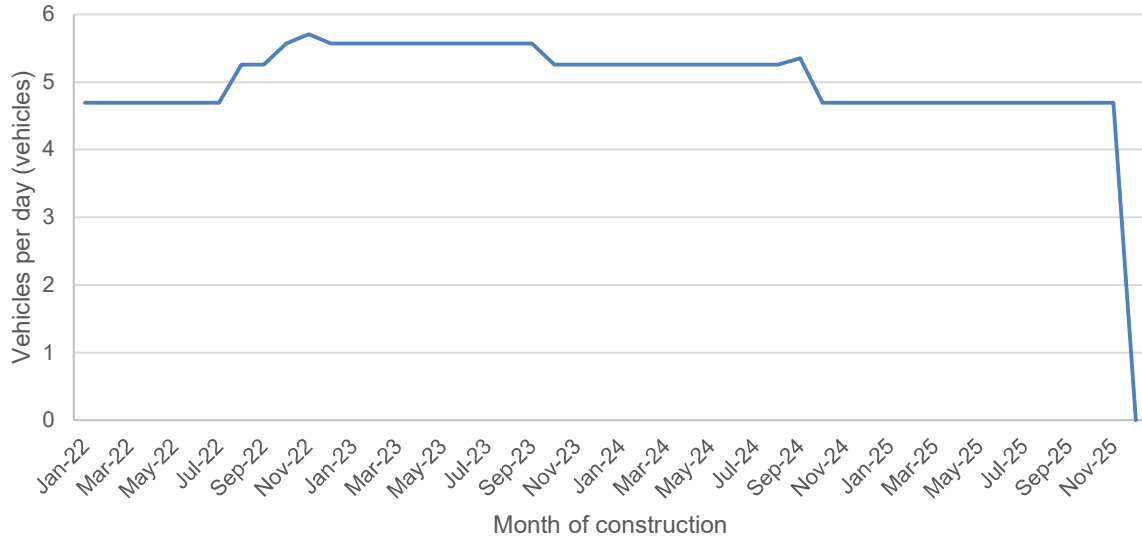
Philipps Road - Between Boxmoor Street and Warrego Highway



### Quiet Ring Road Extension (new road) - Between Gatton Laidley Road West and Railway Line

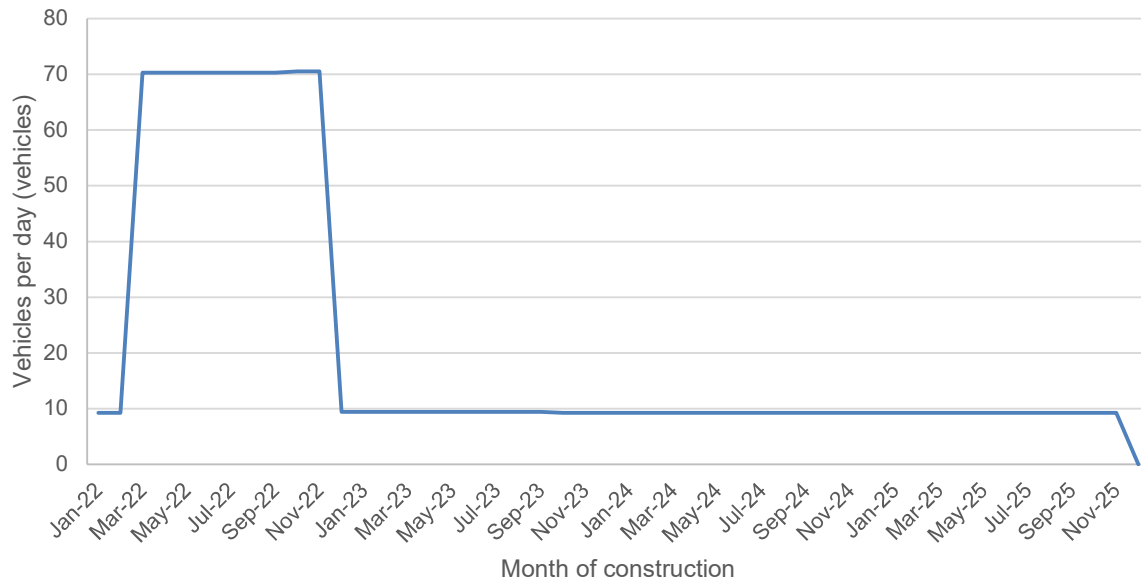


### Railway Road - Between Gatton Laidley Road and Greyfriars Road

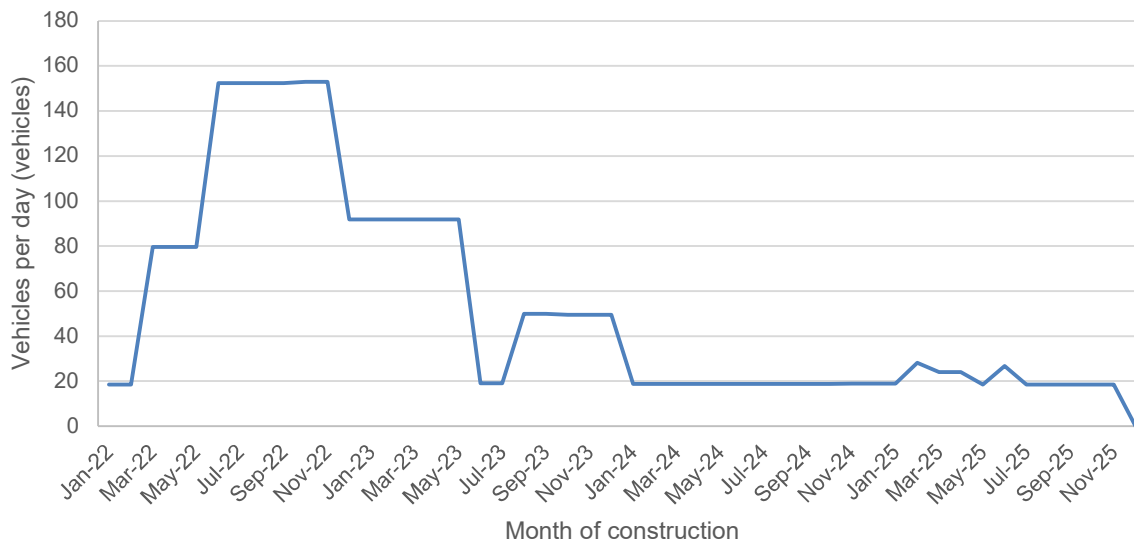




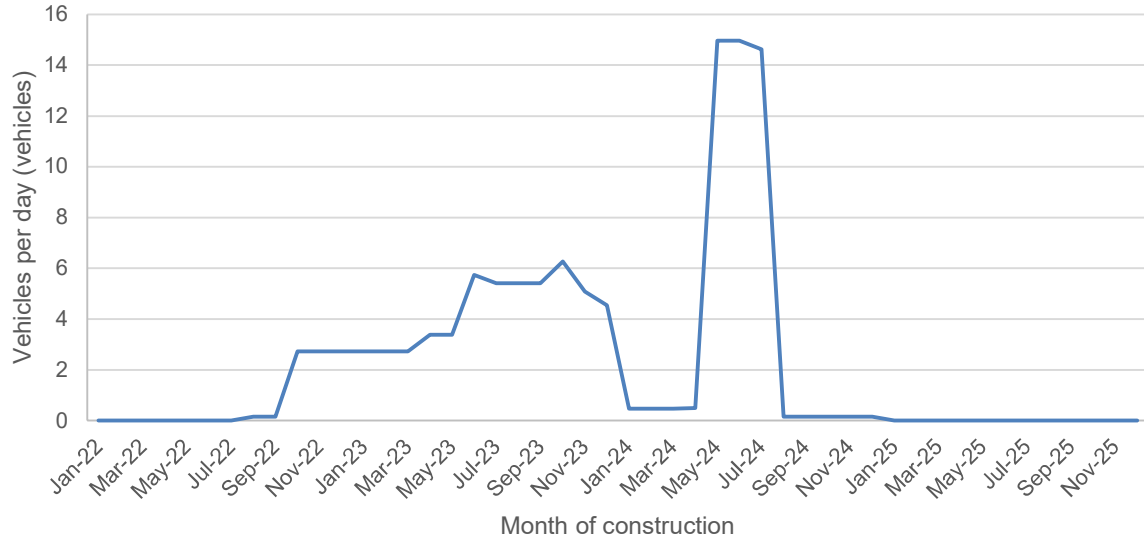
### Railway Street - Between Kessling Drive and Summer Street



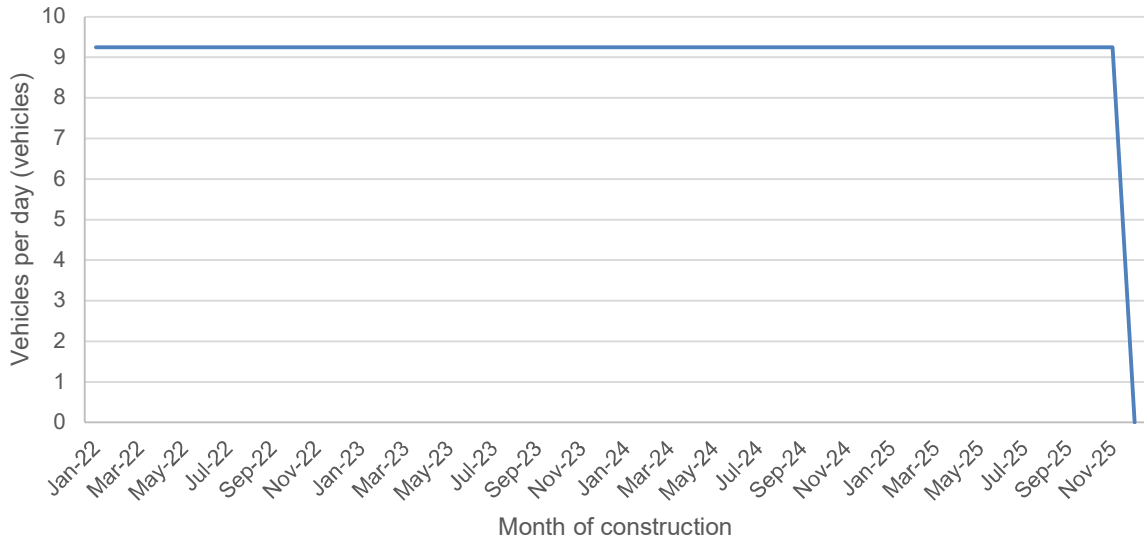
### Railway Street - Between Summer Street and Laidley Plainland Road



### Saleyard Road - Between Tenthill Creek Road and Warrego Highway

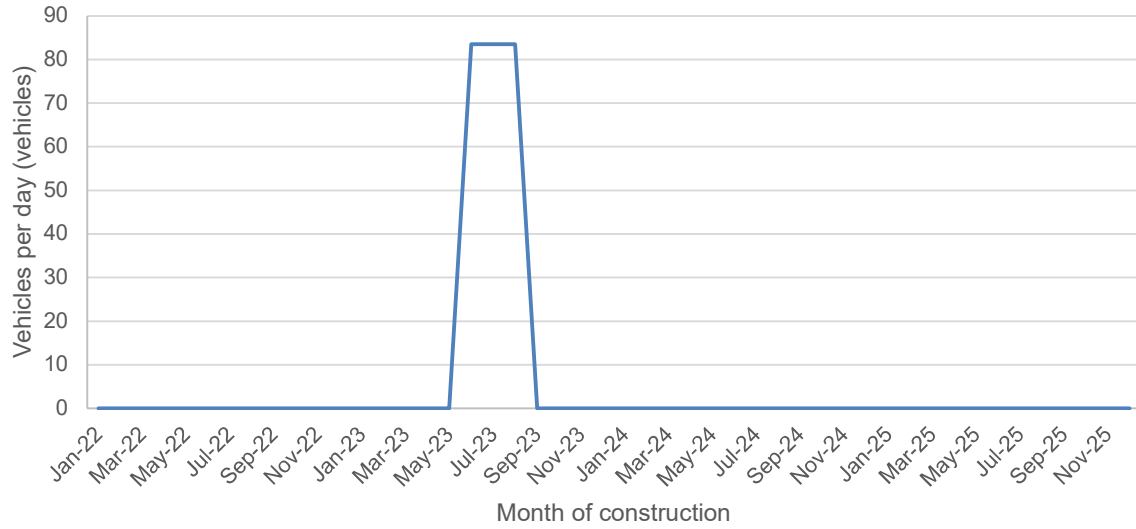


### Sandy Creek Road - Between Connors Road and Warrego Highway

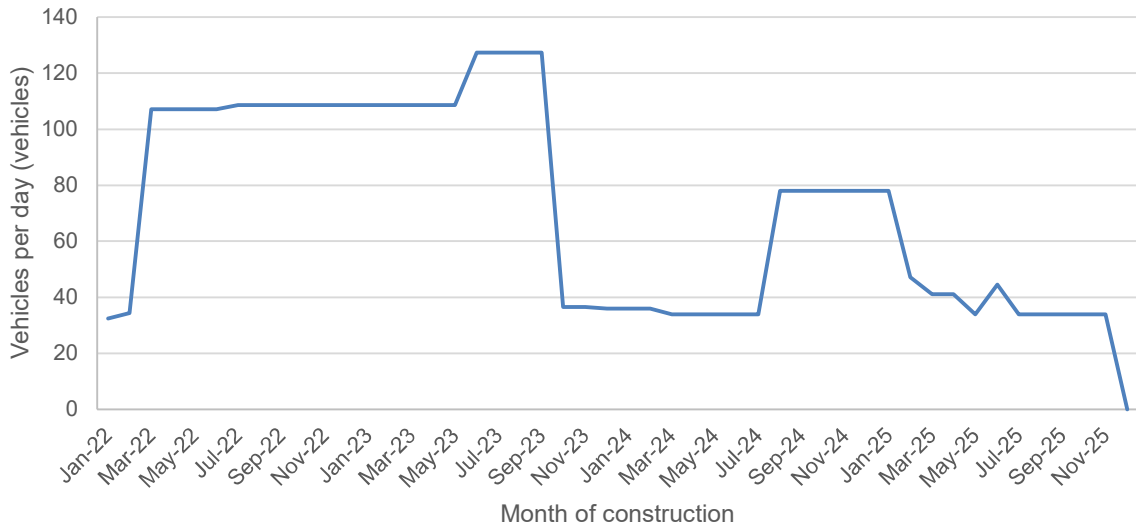




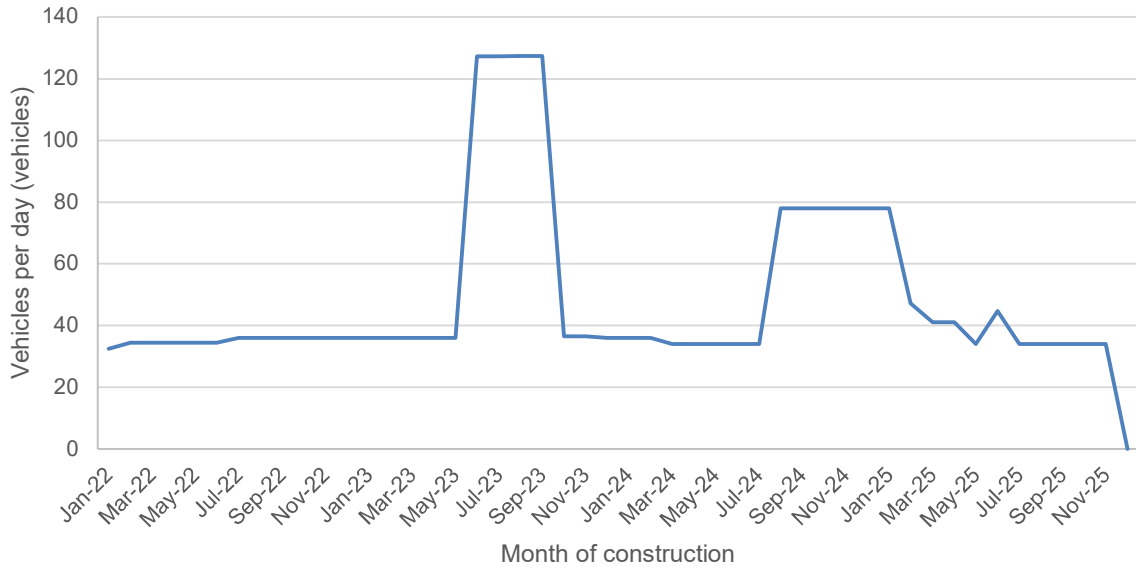
### Sandy Creek Road - Between Warrego Highway and Bowtells Road



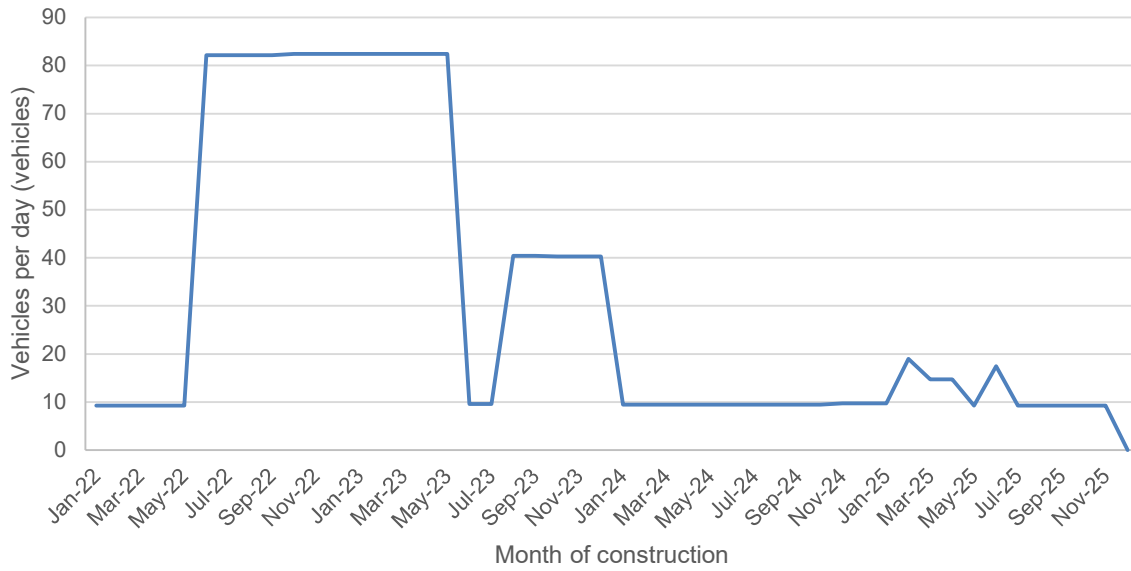
### Seventeen Mile Road - Between Airforce Road and Laidley Street



### Station Street - Between Arthur Street and Laidley Street

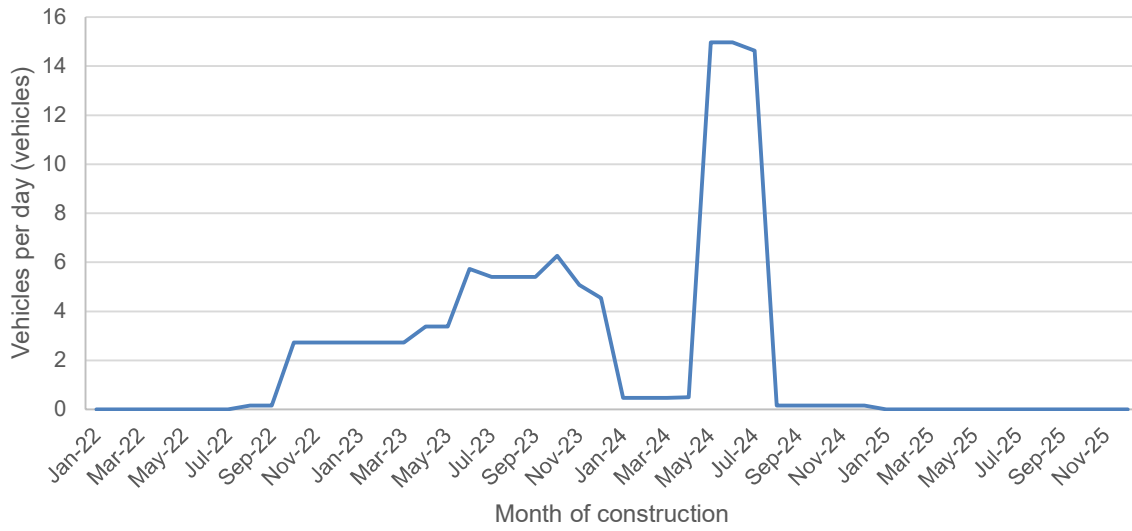


### Summer Street - Btwn Paroz St and Railway Street

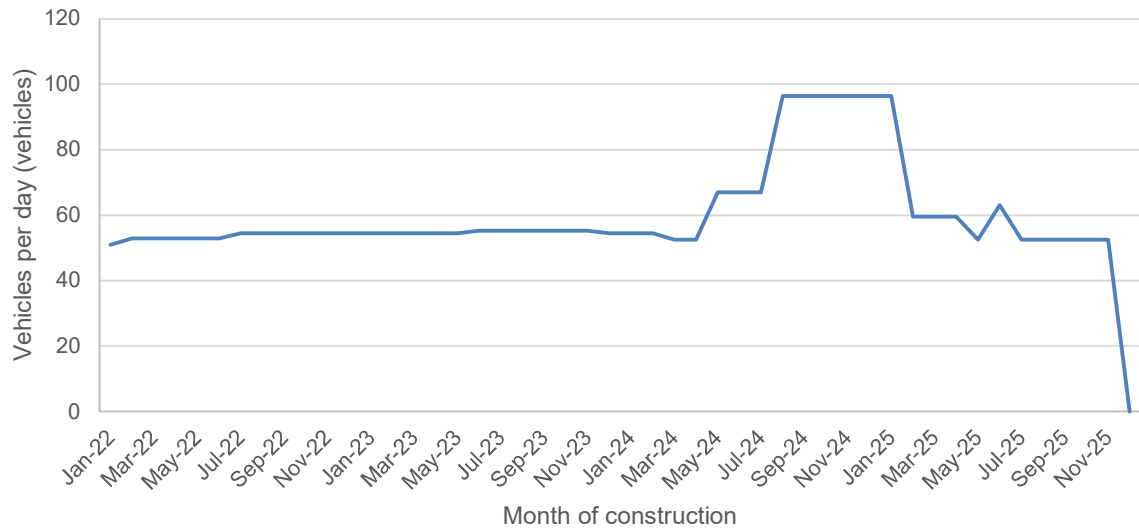


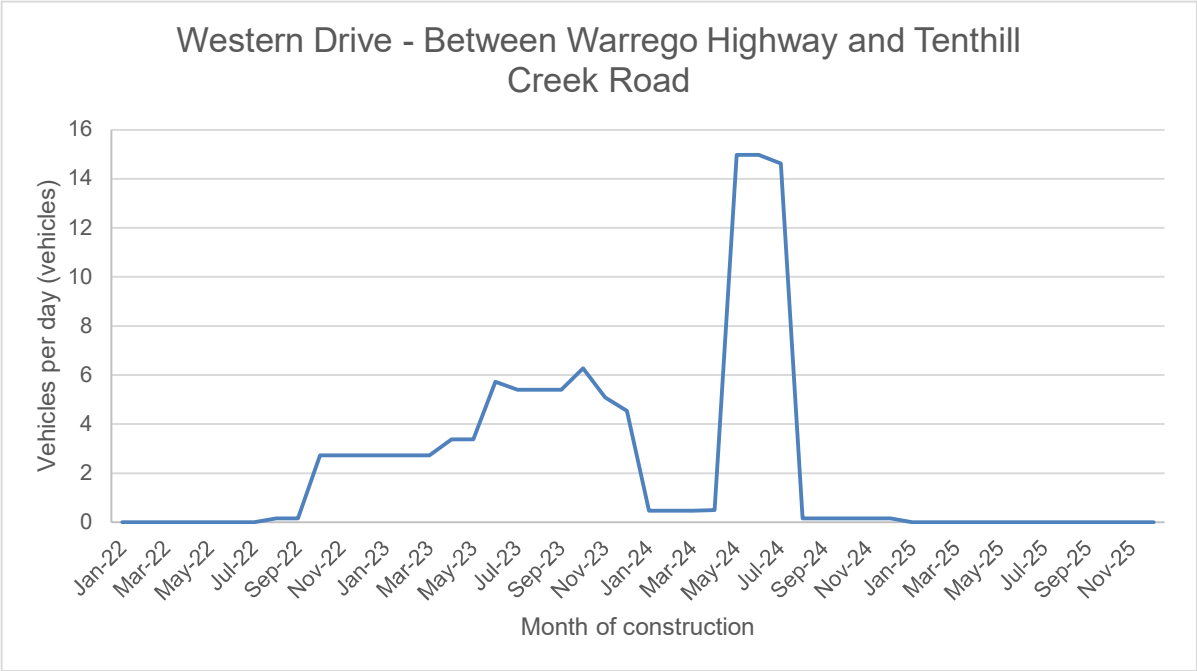
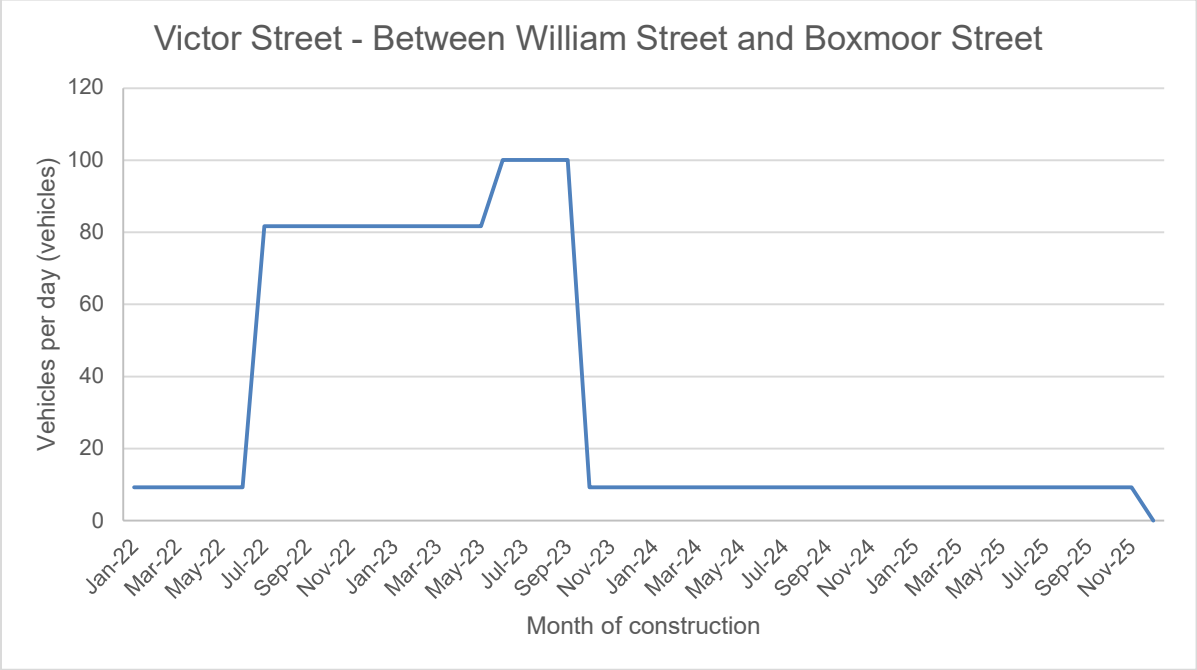


Tenthill Creek Road - Between Warrego Highway and Saleyard Road



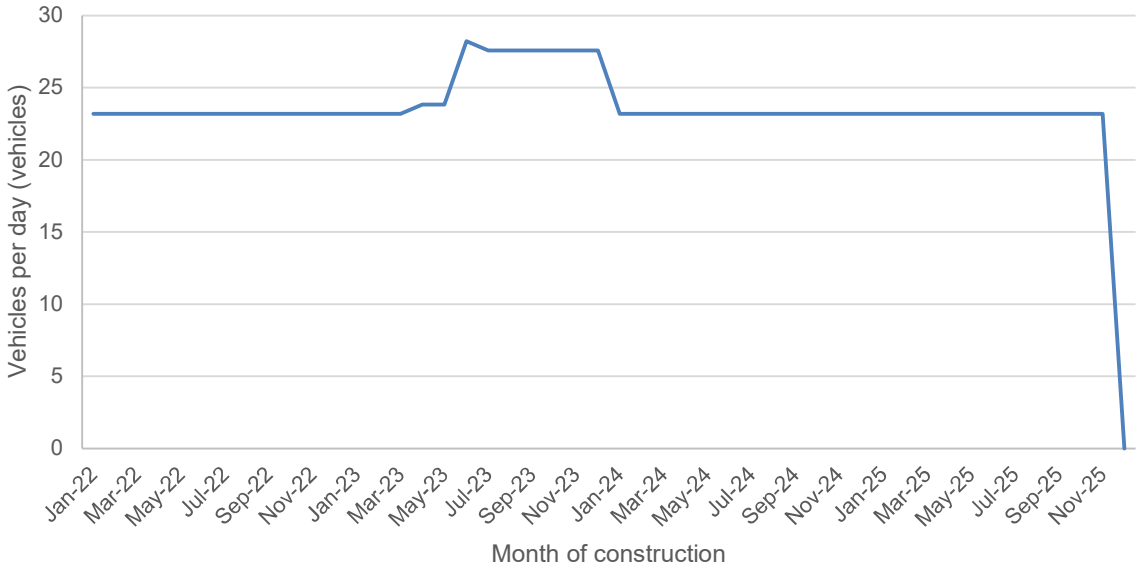
Turner Street - Between Warrego Highway and Mary MacKillop Street



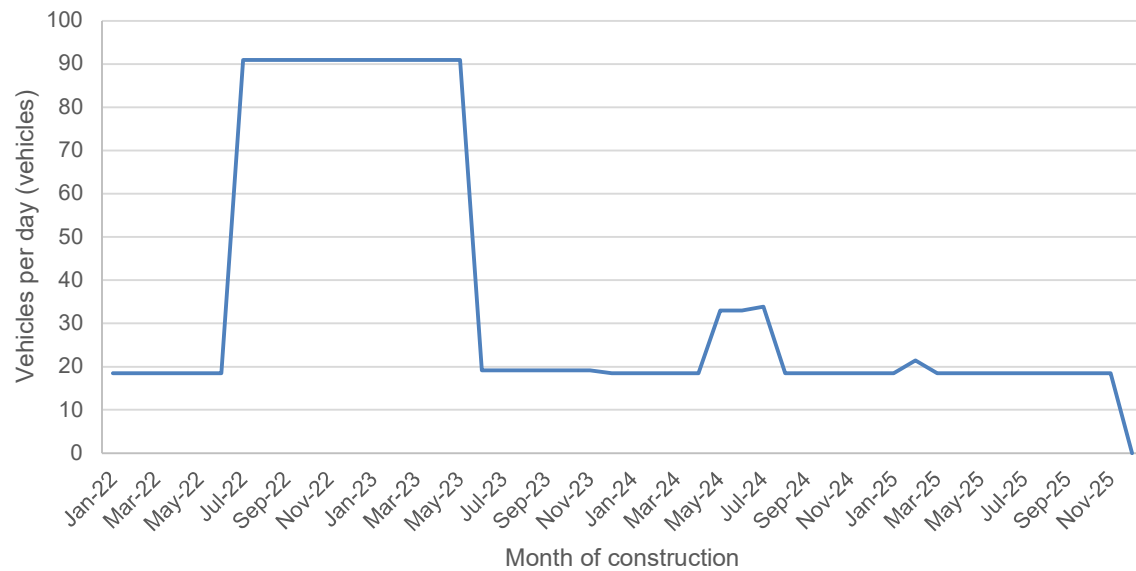




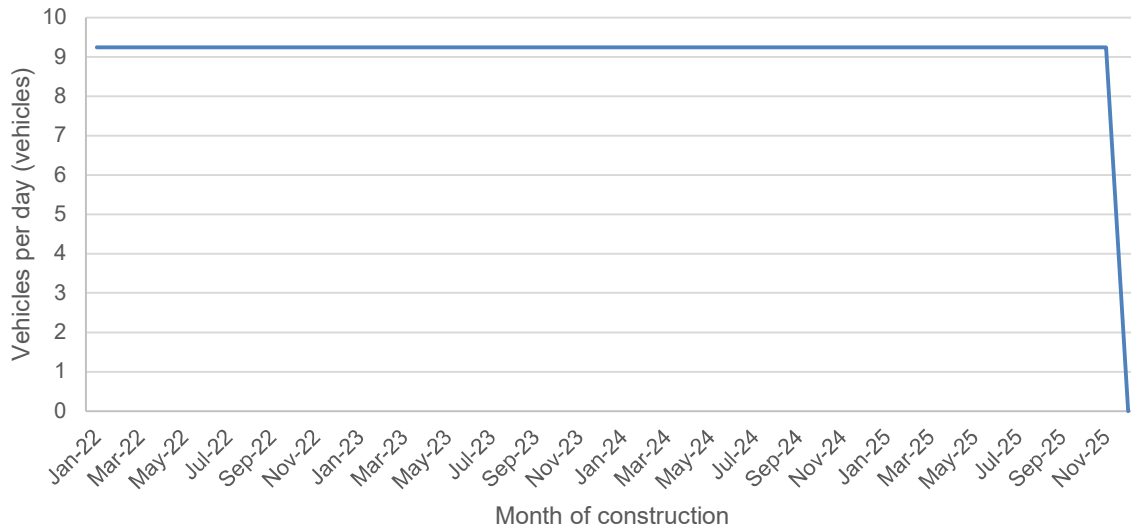
William Street - Between Hickey Street and Cochrane Street



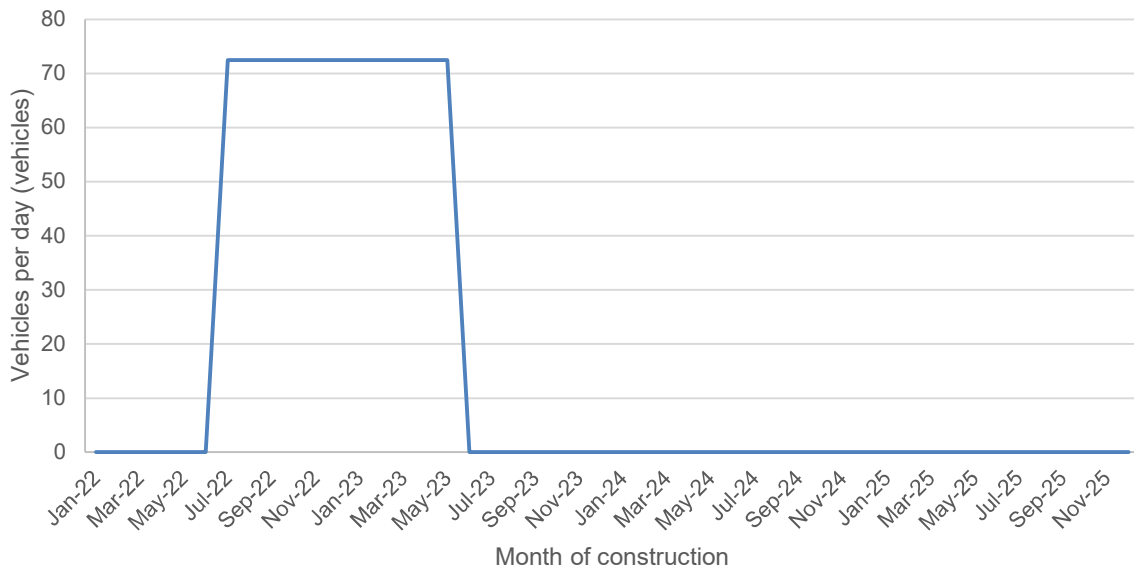
William Street - Between Bowen Street and Laidley Street



### William Street - Between Gatton Helidon Street and Victor Street

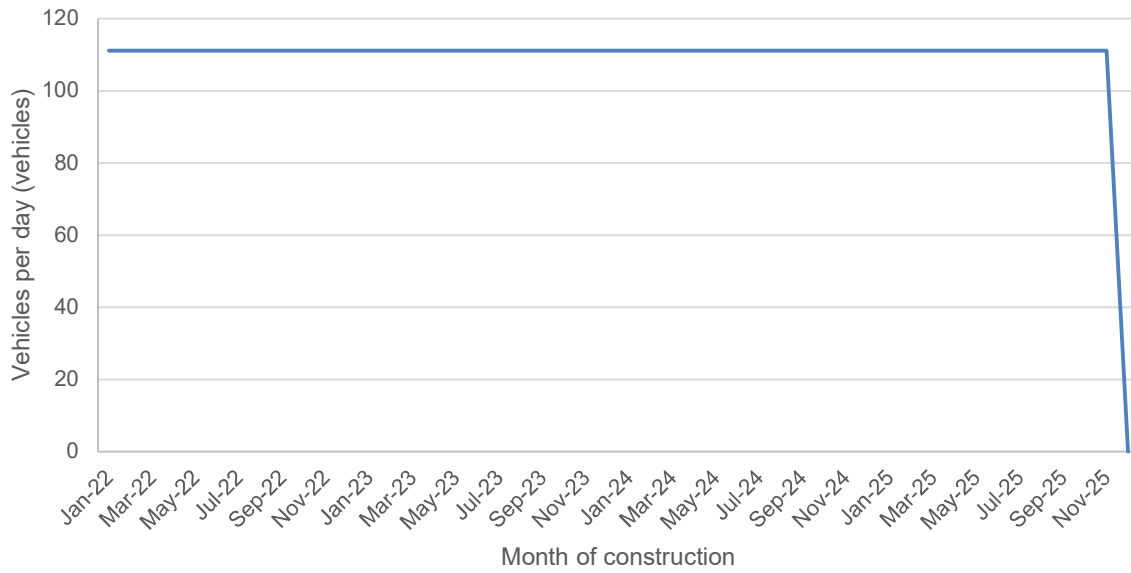


### Wrights Road - Between Connors Road and Andersons Road

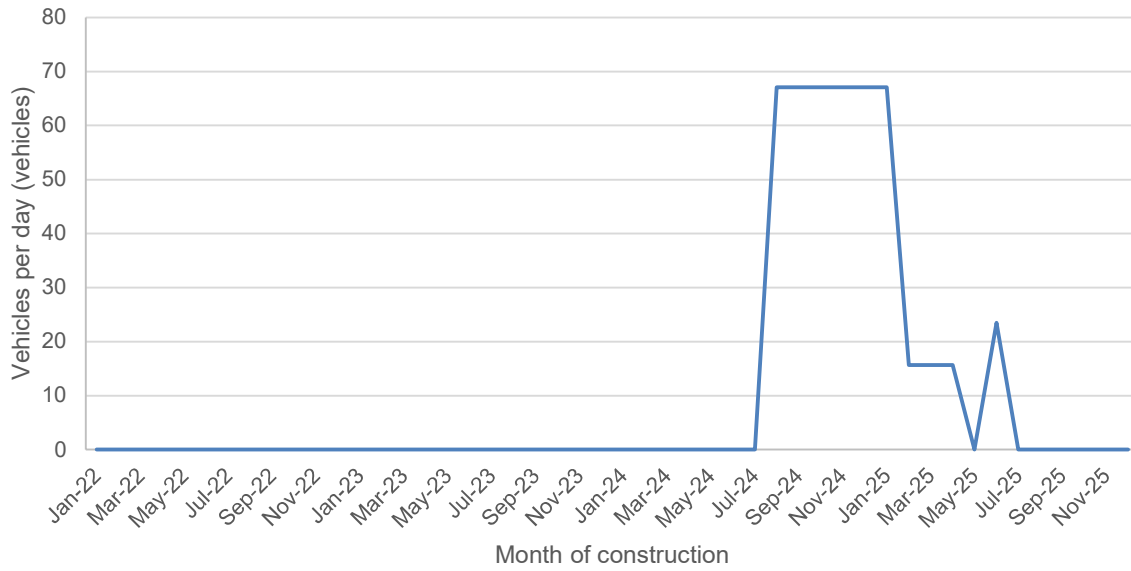




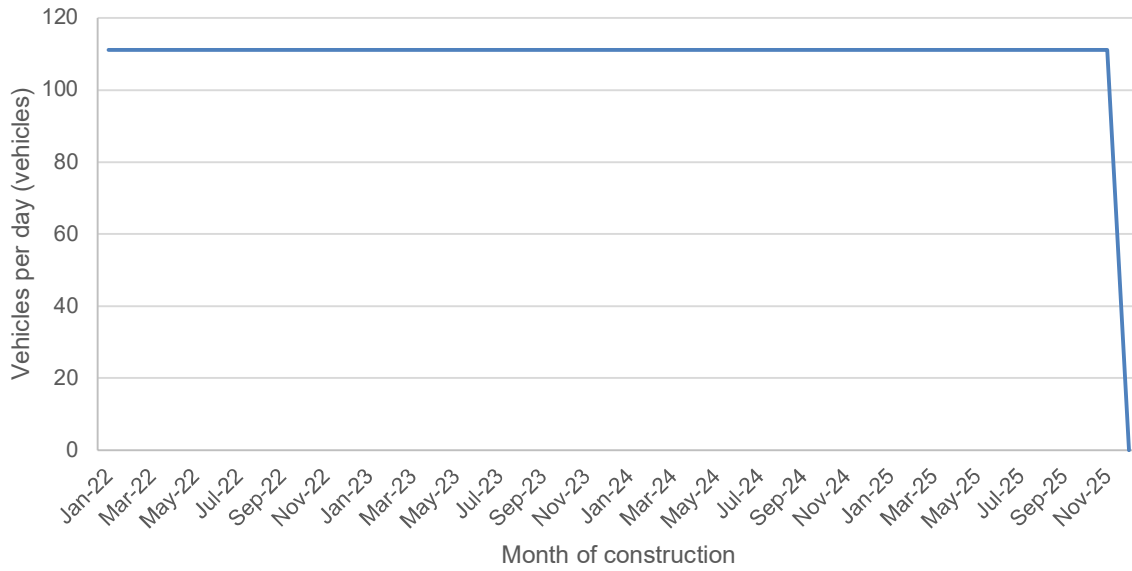
Dent Street - Between Margaret Street and Herries Street



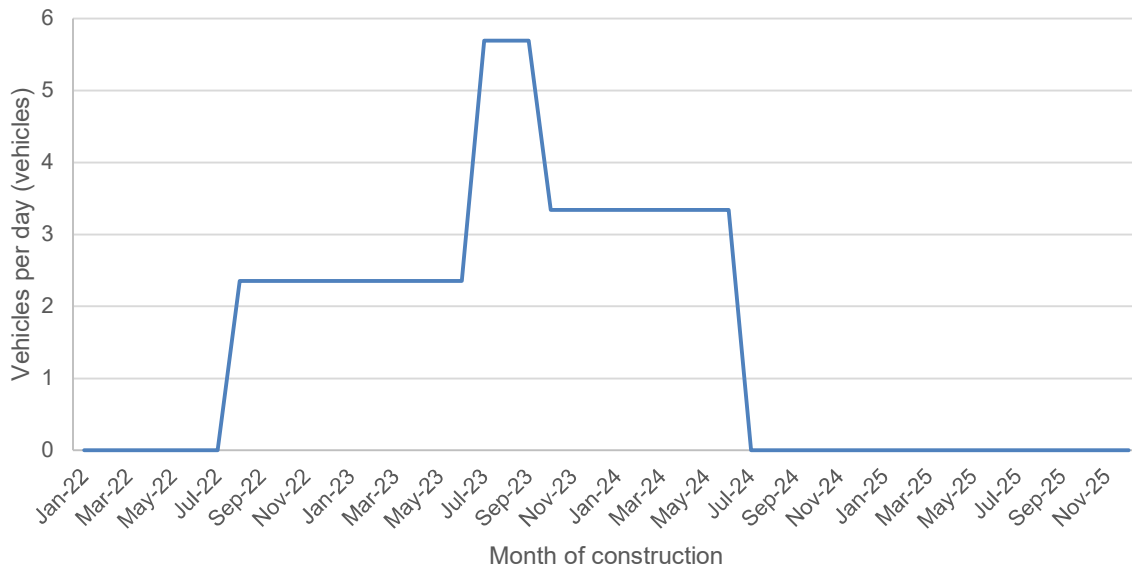
Griffiths Street - Between Mort St and New England Highway



### Herries Street - Between Dent Street and Water Street North

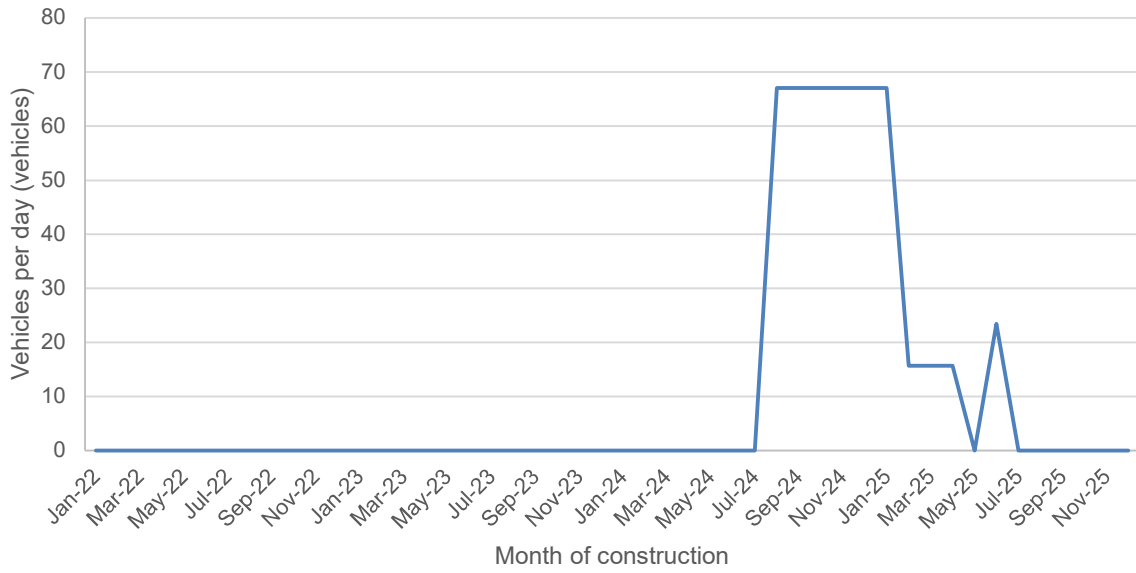


### Larcombe Street - Between North Street and Railway Line

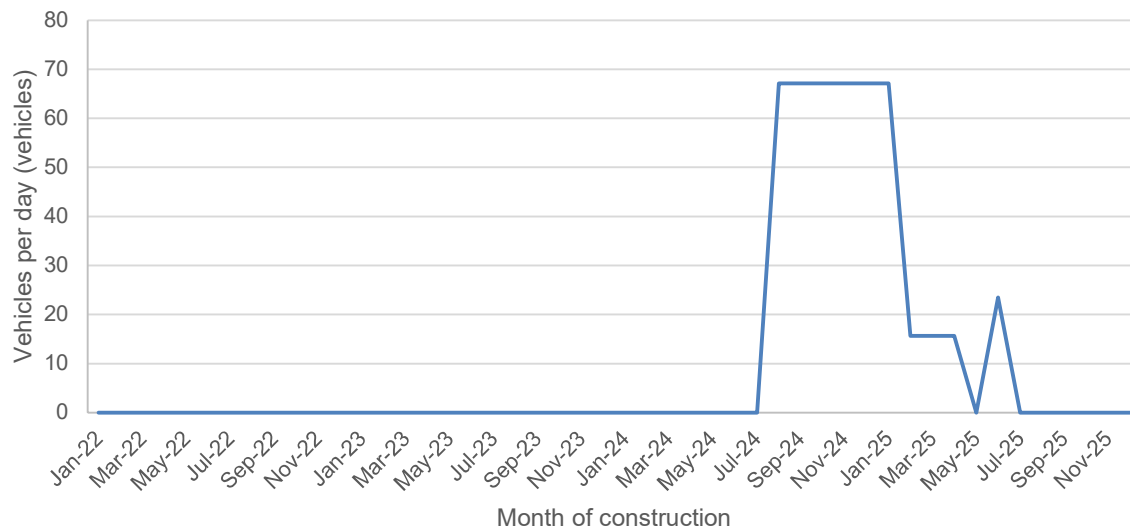




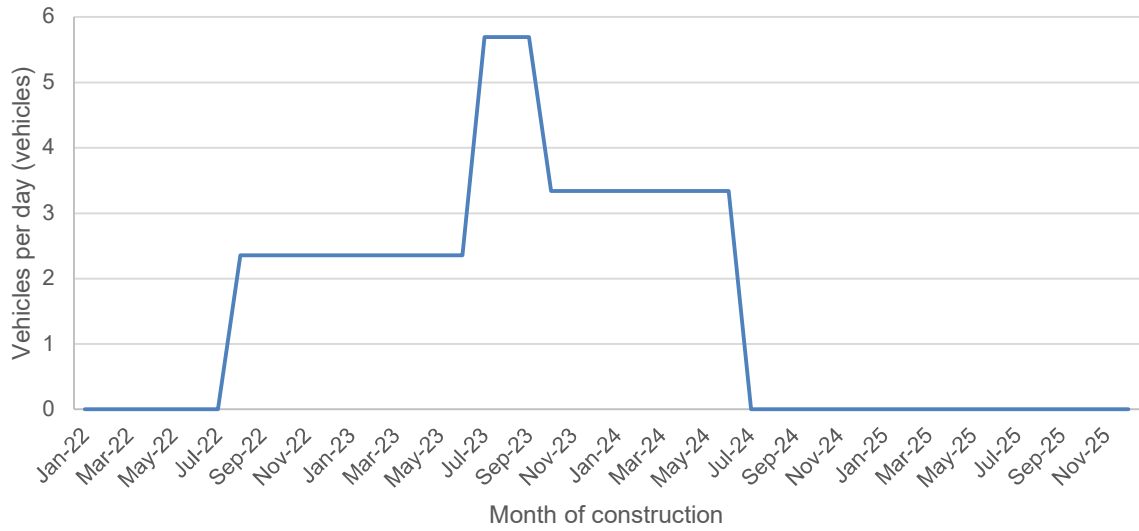
### Mort Street - Between Hermitage Road and North Street



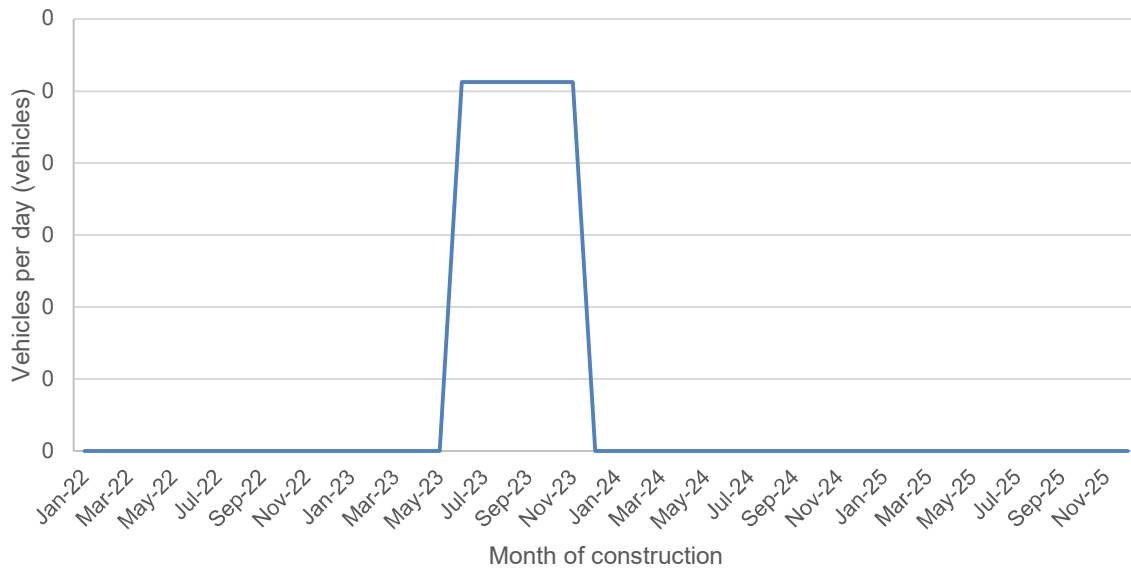
### Munro Street - Between New England Highway and Harlaxton Quarry



North Street - Between Mort Street and New England Highway

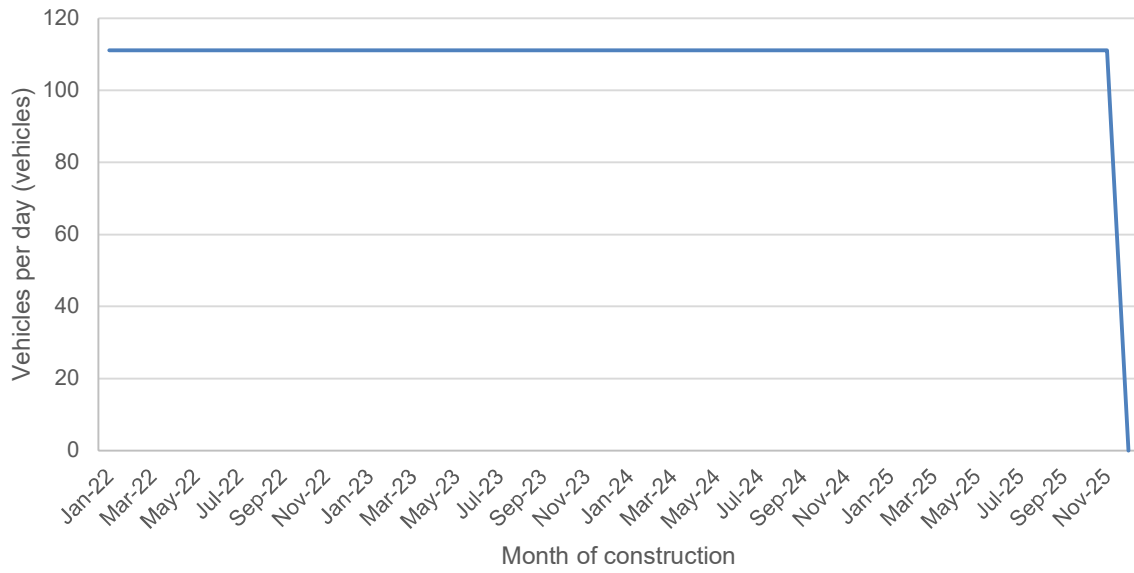


O'Mara's Road - Full extent





### Station Street - Between Margaret Street and Russel Street



### Water Street North - Between Herries Street and Warrego Highway

