Gladstone Regional Council Roads / Transport Strategic Infrastructure Plan Development

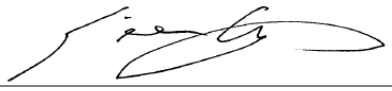
FINAL REPORT

Prepared for
Gladstone Regional Council

June 2014

MWH
BUILDING A BETTER WORLD

QUALITY STATEMENT

PREPARED BY		
Simon Chap		27.06.2014
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1	03.06.2014	Emma Hamilton	Gladstone Regional Council
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Executive Summary

Background

Gladstone Regional Council (GRC) was formed in 2008 from the amalgamation of Calliope Shire Council, Gladstone City Council and Miriam Vale Shire Council. GRC is drafting a planning scheme for the whole of Gladstone Region, to replace the individual planning schemes for the three former shires. As part of GRC's submission of the draft planning scheme for its first State Interest Review in August 2014, one of the submission requirements is to prepare a Local Government Infrastructure Plan (LGIP), formerly known as a Priority Infrastructure Plan (PIP).

GRC engaged MWH to prepare a Roads/Transport Strategic Infrastructure Plan to enable the transport component of the LGIP to be completed. The preparation of strategic infrastructure plans is in accordance with the *Sustainable Planning Act 2009,* Department of Local Government and Planning: Statutory Guideline 01/11 – Priority Infrastructure Plans, Queensland Planning Provisions (QPP) and the State Planning Regulatory Provision (SPRP).

This report documents the development of the plan to support the transport component of the LGIP.

Methodology

An overview of the activities undertaken for each stage of this project is outlined in Table i below.

Table i: Methodology to Prepare the Roads/Transport Strategic Infrastructure Plan

Stage	Activities	Report Reference
Confirm planning assumption inputs	• Confirm population, employment and dwelling projections • Confirm the priority infrastructure areas and development sequencing	Section 2
Identify growth trip generation	• Identify the development timing and catchments • Identify growth trip generation volumes and timing	Section 3
Identify additional network traffic volumes	• Identify movement patterns and route choice for the growth traffic volumes • Identify additional traffic volumes on the network	Section 4
Assess existing and future network performance	• Assess existing network performance • Assess future network performance	Section 5
Identify initiatives to mitigate growth impacts	• Consolidate initiatives from the three previous LGIP documents • Refine the initiatives through high level assessment and inputs from GRC officers • Confirm the initiatives for inclusion in the LGIP	Section 6
Identify the initiative triggers, timing and costs	• Identify the triggers for each initiative, e.g. development driven or traffic capacity • Use the land sequencing and traffic assessments to identify the approximate timing • Use GRC provided unit costs to identify approximate strategic level costs	Section 7

The terms of reference excluded transport modelling and identifying of initiatives not previously identified by GRC.

Initiatives List

Refer to Section 8 for the list of the initiatives for trunk infrastructure developed for the LGIP. Refer to Appendix I for maps showing the initiative locations

Identified Issues from the Assessment

The limited assessment undertaken to develop the Plans for Trunk Infrastructure (PFTI) transport component identified the following issues which should be resolved and refined prior to the development of the next LGIP:

- **OESR Projections:** The OESR population and dwelling projections are high, particularly for the Boyne Island-Tannum Sands SA2 zone. Although the employment projections were not directly used for this assessment, they were observed as being very high in the Boyne Island-Tannum Sand SA2 but are not reflected in the known available developable area.
- **Development Sequencing:** The development sequencing undertaken by GRC for this assessment has been invaluable to determining the locations and scale of additional traffic volumes. However, the assessment has been limited, particularly in boundary areas between SA2 zones.
- **GSDA Exclusion:** The OESR projections and the development sequencing exclude the GSDA. Future development of the GSDA could have a major impact on land use and transport patterns.
- **Major Network Impacts:** The result of the high OESR projections leads to major additional traffic volumes on the network. Although they are manageable in the early years, i.e. around 2016, they amplify significantly by 2021. These high projections place significant stress on primary trunk network, resulting in the theoretical need to upgrade major sections of infrastructure. The reality of these impacts has not been validated in this assessment.
- **Need for a Transport Model:** There is an absence of quantifiable data such as traffic counts in many locations to get a true picture of the network. Likewise, the absence of a transport model means that that the route assignment of additional traffic volumes cannot be adequately determined in this assessment.
- **Need for a Strategic Transport Plan and Feasibility Assessments:** There are several potential initiatives raised by GRC and identified from this broad assessment that could not be incorporated in an Infrastructure Charges Schedule (ICS). This is because they were not included in the previous PIPs, nor could they be assessed to justify their inclusion on growth triggers at this stage. They need to be underpinned by an overarching transport plan for GRC and individual feasibility assessments to determine their viability.
- **Freight Infrastructure:** Gladstone Region has a high industrial base with significant levels of heavy vehicles. A typical transport model focuses on traffic volumes and capacities, rather than the special infrastructure needs for heavy vehicles through pavement strengthening and road safety. This means that the freight infrastructure needs may not be clearly identified through traditional assessment techniques.
- **Walking and Cycling Infrastructure:** The work has focused on road infrastructure for general traffic and freight. Although footpaths and cycling infrastructure are inherently included in the desired standards of road infrastructure, there is no overarching plan for walking and cycling and how the pieces of infrastructure connect. There may be infrastructure sections that should be implemented that are off-road.
- **Cost Estimation:** The cost estimates are applied at very high level unit cost approach. They take no account of the unique complexities of individual sites; therefore these are only an initial magnitude assessment at this stage.

Recommendations

To resolve the residual issues, it is the recommendations of this assessment that Gladstone Regional Council undertakes the following tasks:

- **Review the OESR Projections:** Review the high-level projections that are used to base future planning. It is important to ensure that the projections are rigorously assessed and robust enough to have confidence in planning the types and timing of implementing future infrastructure.
- **Review the Development Sequencing and Include the GSDA:** Review the initial development sequencing assumptions in conjunction with the review of the OESR projections. Include and recognise impact of State-led initiatives such as the GSDA, as they have the potential to have major impacts on GRC infrastructure.
- **Develop a Transport Model and Prepare a Strategic Transport Plan:** Develop a region-wide transport plan that captures GRC's strategic multi-modal transportation response to the land use intent in the new consolidated planning scheme. As part of developing this plan, prepare a transport model that enables a rigour to be applied to determine future traffic volumes and impacts.
- **Undertake Feasibility Studies for Individual Initiatives:** Undertake feasibility studies to justify some of the more significant initiatives not included in the Infrastructure Charges Schedule. This would include the regional road link proposals between Gladstone and Agnes Water, and an assessment of the proposed bridge across the Boyne River as part of the Pioneer Drive Extension. As part of these feasibility studies, undertake more detailed cost estimation to account for the specifics of each initiative.
- **Assess the Freight Infrastructure Needs:** Undertake a specific assessment of freight impacts to GRC infrastructure to provide rigour in determining future freight infrastructure needs, particularly to determine what is triggered by industrial growth.
- **Prepare an Active Transport Plan:** As part of the Strategic Transport Plan, prepare an Active Transport Plan to provide greater clarity in investment decisions for walking and cycling, and outline a clearer distinction between footpaths/shared paths to be provided by GRC for the benefit of existing ratepayers, versus trunk infrastructure that is chargeable under a LGIP.

GLADSTONE REGIONAL COUNCIL ROADS / TRANSPORT STRATEGIC INFRASTRUCTURE PLAN DEVELOPMENT

FINAL REPORT

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ABBREVIATIONS

AADT	Annual Average Daily Traffic
ABS	Australian Bureau of Statistics
CBD	Central Business District
CPI	Consumer Price Index
DSS	Desired Standard of Service
GATS	Gladstone Area Transport Strategy
GRC	Gladstone Regional Council
GSDA	Gladstone State Development Area
ICS	Infrastructure Charges Schedule
IPP	Internal Project Planning
LGIP	Local Government Infrastructure Plan
PIP	Priority Infrastructure Plan
PIA	Priority Infrastructure Area
MFRET	Medium density residential equivalent tenancy
QPP	Queensland Planning Provisions
PFTI	Plans for Trunk Infrastructure
NZTA	New Zealand Transport Agency
OESR	Office of Economic and Statistical Research
GSDA	Gladstone State Development Area
ResET	Low density residential equivalent tenancy
RTA	Roads and Traffic Authority (New South Wales)
SPRP	State Planning Regulatory Provision
SA2	Statistical Area Level 2
TMR	Department of Transport and Main Roads
V/C	Volume / Capacity ratio

1 Introduction

1.1 Background

Gladstone Regional Council (GRC) was formed in 2008 from the amalgamation of Calliope Shire Council, Gladstone City Council and Miriam Vale Shire Council. GRC is drafting a planning scheme for the whole of Gladstone Region, to replace the individual planning schemes for the three former shires. As part of GRC's submission of the draft planning scheme for its first State Interest Review in August 2014, one of the submission requirements is to prepare a Local Government Infrastructure Plan (LGIP), formerly known as a Priority Infrastructure Plan (PIP).

The LGIP outlines the necessary infrastructure required to service the next 10 to 15 years of growth outlined within the planning scheme. The LGIP outlines the local government's plans for providing trunk infrastructure to service urban development growth in a coordinated, efficient and orderly way. Trunk infrastructure is generally defined as 'higher order' infrastructure that is shared between developments, whereas non-trunk infrastructure is 'lower order' and is internal to developments which connects to 'higher order' trunk infrastructure.

To achieve this, the LGIP outlines the following infrastructure types:

- Water supply
- Sewerage
- Stormwater
- Transport
- Public parks and land for community facilities.

GRC engaged MWH to prepare a Roads/Transport Strategic Infrastructure Plan (Transport Infrastructure Plan) to enable the transport component of the LGIP to be completed. The preparation of strategic infrastructure plans is in accordance with the *Sustainable Planning Act 2009,* Department of Local Government and Planning: Statutory Guideline 01/11 – Priority Infrastructure Plans, Queensland Planning Provisions (QPP) and the State Planning Regulatory Provision (SPRP).

This report documents the development of the plan to support the transport component of the LGIP.

1.2 Terms of Reference

The Local Government Infrastructure Plan (LGIP) is structured as follows:

- *Planning Assumptions*, which clearly outlines the type, scale, location and timing of future development and growth and how these align with the local government's preferred land use pattern.
- *Priority Infrastructure Area* (PIA), which defines the parts of a local government area intended to accommodate the next 10-15 years growth for urban purposes.
- *Desired Standard of Service* (DSS), which details the applicable design and service standards to the respective trunk and non-trunk infrastructure networks.
- *Plans for Trunk Infrastructure* (PFTI), which identifies the existing and future trunk infrastructure to service urban development within the PIA.

The Roads/Transport Strategic Infrastructure Plan supports the *Plans for Trunk Infrastructure* component of the LGIP. The terms of reference to prepare the Roads/Transport Strategic Infrastructure Plan requires the following tasks:

- Outline the development and growth factors affecting the need for additional roads and transport for the amalgamated GRC.
- Outline the desired roads and transport conditions to accommodate the region's needs.
- Identify roads and transport initiatives from previously prepared Priority Infrastructure Plans (PIPs).

- Provide a high level of assessment on the initiatives to determine their relative priority and year of implementation need.
- Deliver the Roads/Transport Strategic Infrastructure Plan to support the development of GRC's LGIP.

The terms of reference includes the following significant assumptions and limitations:

- The only initiatives to consider for inclusion in the LGIP were those from the previous three PIPs and other existing GRC documentation. Additional initiatives to resolve identified impacts during preparing the Transport Infrastructure Plan were excluded from the commission.
- Transport modelling was excluded from the commission.
- Cost estimation was limited to GRC provided unit rates.

1.3 Methodology

Table 1-1 outlines the methodology undertaken to prepare the Roads/Transport Strategic Infrastructure Plan.

Table 1-1: Methodology to Prepare the Roads/Transport Infrastructure Strategic Plan

Stage	Activities	Report Reference
Confirm planning assumption inputs	• Confirm population, employment and dwelling projections • Confirm the priority infrastructure areas and development sequencing	Section 2
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To deal with the absence of transport modelling during the commission, the following general approach to identifying growth traffic volumes and network performance was undertaken:

- Focus the assessment on peak hour trips between residential areas and employment areas only
- Use published information to determine development unit trip rates
- Use available traffic counts to estimate existing network capacity using a 'spreadsheet model' approach
- Undertake a qualitative assessment using available information to assign growth traffic movement patterns and route choice
- Add the growth traffic volumes onto existing traffic volumes to estimate future capacity.

The detailed methodology for undertaking each work stage is described in the relevant sections of this report.

2 Planning Assumptions

2.1 Purpose

This section outlines the key planning assumptions used to generate the future demand for transport. Future demand for transport is based on the dwelling growth figures determined by the Office of Economic and Statistical Research (OESR) growth projections and timings per SA2 zone and GRC's local knowledge on the sequence of developments.

A limitation with the OESR dwelling and population projections is that the SA2 zones are too coarse for transport planning to determine where the likely additional demand will impact on to the network. This provided a strategic top-down demand projection.

This was coupled with an additional exercise undertaken by GRC which saw GRC officers list each individual lot developments in an assumed order of development per SA2 zone, including its location and the number of dwellings. This provided a bottom-up indication of demand on where the additional demand will be generated.

2.2 Priority Infrastructure Areas

Figure 2-1 shows GRC's Priority Infrastructure Areas (PIAs), which outlines GRC's preferred locations to accommodate the urban population growth, as defined within the draft LGIP.

The following PIAs were assessed to prepare the Transport Infrastructure Plan:

- Agnes Water
- Boyne Island / Tannum Sands
- Calliope
- Gladstone.

The reasons for limiting the assessment to four urban areas are:

- The transport initiatives in the previous PIPs were focused on Agnes Water, Boyne Island / Tannum Sands, Calliope and Gladstone.
- In line with the preferred land use pattern set within the planning scheme, low population growth is expected in the other areas resulting in a relatively lower need for additional transport infrastructure relative to the available transport infrastructure and capacity.

Initiatives in these lower growth areas would be responding to maintenance to the benefit of existing residents, instead of catering for new residents from additional developments.

2.3 OESR Dwelling Projections

Population, employment and dwelling projections for all strategic infrastructure plans to develop the LGIP have been supplied by the Office of Economic and Statistical Research (OESR). Table 2-1 lists the dwelling projections.

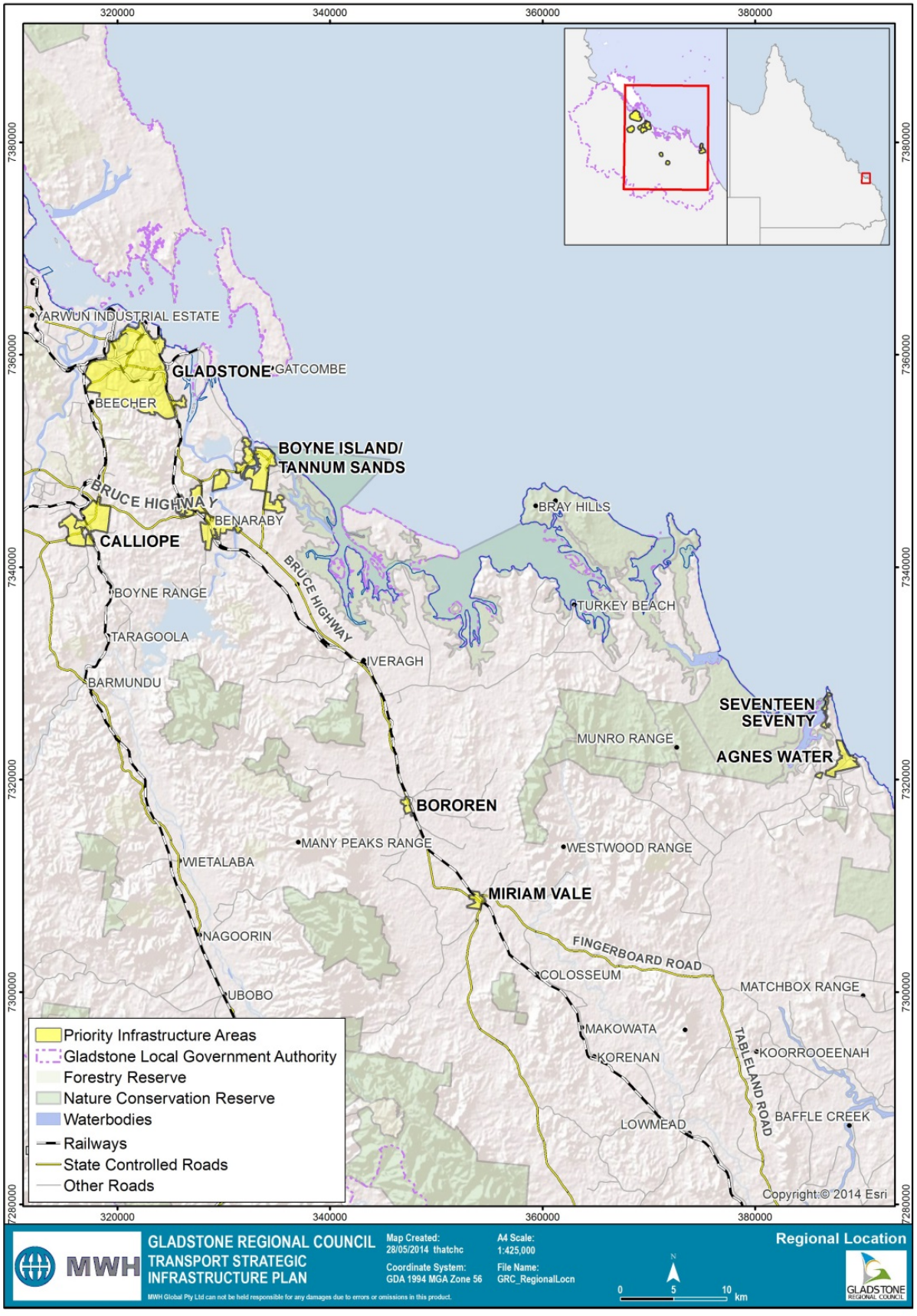

Figure 2-1: Regional Location Context Map

Table 2-1: Gladstone Regional Council Dwelling Projections

PIA Locality	LGIP Projection Category	Existing and Projected Dwellings				
		2011	2016	2021	2026	2031
Gladstone (previously South Gladstone, Barney Point and CBD)	Single Dwelling	2,266	2,660	3,171	3,448	3,744
	Multiple Dwelling	403	473	564	613	666
	Other	85	100	119	129	140
	Total	***2,754***	***3,233***	***3,855***	***4,190***	***4,550***
West Gladstone	Single Dwelling	1,866	2,143	2,644	2,953	3,151
	Multiple Dwelling	332	381	470	525	560
	Other	70	80	99	111	118
	Total	***2,268***	***2,605***	***3,213***	***3,589***	***3,829***
Kin Kora - Sun Valley	Single Dwelling	1,483	1,598	1,802	2,326	2,839
	Multiple Dwelling	264	284	321	414	505
	Other	56	60	68	87	106
	Total	***1,802***	***1,942***	***2,190***	***2,826***	***3,450***
Telina - South Trees- Glen Eden - Tooloola - O'Connell	Single Dwelling	1,988	2,316	2,483	2,510	2,519
	Multiple Dwelling	354	412	442	447	448
	Other	75	87	93	94	94
	Total	***2,416***	***2,815***	***3,017***	***3,051***	***3,061***
Callemondah, Clinton, New Auckland	Single Dwelling	3,981	4,925	5,192	5,984	6,790
	Multiple Dwelling	708	876	924	1,064	1,208
	Other	149	185	195	224	255
	Total	***4,838***	***5,985***	***6,311***	***7,273***	***8,253***
Boyne Island, Tannum Sands and Benaraby	Single Dwelling	1,972	2,487	3,684	4,773	5,728
	Multiple Dwelling	103	130	193	250	300
	Other	236	298	441	571	686
	Total	***2,311***	***2,915***	***4,318***	***5,594***	***6,713***
Gladstone Hinterland (including Calliope)	Single Dwelling	2,105	2,567	3,194	3,710	4,180
	Multiple Dwelling	110	134	167	194	219
	Other	252	307	382	444	500
	Total	***2,467***	***3,008***	***3,743***	***4,348***	***4,899***
Agnes Waters, Miriam Vale	Single Dwelling	1,489	1,725	1,969	2,234	2,402
	Multiple Dwelling	82	95	108	123	132
	Other	297	344	392	445	479
	Total	***1,868***	***2,163***	***2,469***	***2,802***	***3,013***
Outside PIA	Single Dwelling	3,711	4,519	5,898	7,144	8,207
	Multiple Dwelling	197	239	312	378	433
	Other	523	633	811	974	1,110
	Total	***4,431***	***5,391***	***7,020***	***8,496***	***9,750***
Gladstone Regional Area	Single Dwelling	20,860	24,939	30,036	35,082	39,559
	Multiple Dwelling	2,552	3,025	3,500	4,007	4,471
	Other	1,743	2,093	2,600	3,080	3,489
	Total	***25,155***	***30,057***	***36,136***	***42,169***	***47,519***

For the purposes of this assessment, employment growth was ignored. This was to avoid overcomplicating the spreadsheet-based model approach and to avoid duplicating additional trips on the network by counting both trips generated (i.e. from residential land uses) and trips attracted (i.e. from employment land uses).

Residential population was also ignored as the calculations for the number of trips per development are based on the number of dwellings.

Therefore only dwelling growth was used. Employment growth figures did, however, provide an indication on the destination of trips generated which were assumed at a high level. The OESR's SA2 employment projections also excluded the significant future employment area of the Gladstone State Development Area (GSDA) and potential de-population of residential settlements from future heavy industry locations. This uncertainty has the potential to alter the findings of this assessment on revision when new data becomes available.

2.4 GRC's Development Sequencing

GRC's officers undertook an internal workshop in early April 2014 to determine the sequencing of where and when lot parcels are likely to be developed. The outcome of the workshop relevant to the Transport Infrastructure Plan was a schedule per SA2 zone of likely and assumed developments and the number of dwellings developed.

For each SA2 zone, the developments were categorised from Priority 1 (developments that were immediately ready to proceed) onwards in a sequential manner. An example of Gladstone's future developments is shown in Figure 2-2. Where officers were unable to assign a priority to a development, the category assigned was null, with the recommendation that it be not considered within this assessment.

The outcome of the workshop reported the relevant residential type of developments as low density equivalent tenancy (ResET) and medium to high density equivalent tenancy (MFRET), which is an input to assessing the demands for water and sewerage infrastructure rather than transport infrastructure. This is found in the *Gladstone Regional Council Roads/Strategic Infrastructure Plan Future Developments Assessment* spreadsheet.

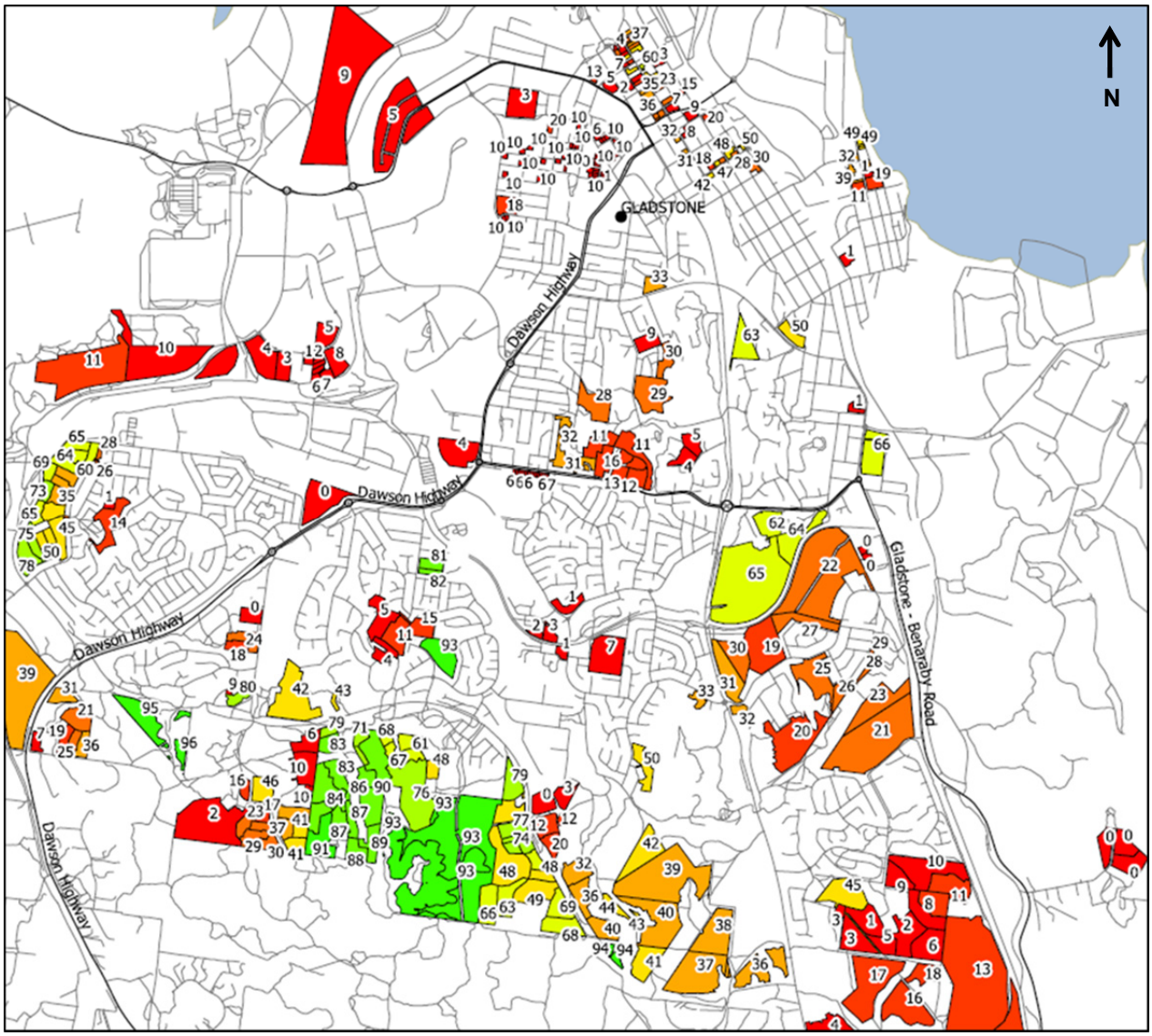

Figure 2-2: Development Sequencing Example – Gladstone

3 Development Sequencing, Timing and Trip Generation

3.1 Purpose

The section outlines the steps taken to convert GRC's development sequencing and priority to the timing of development, based on the OESR's SA2 dwelling projections. Once the overall timing of development by SA2 zone has been determined, development catchment areas were defined based on assumed common trip patterns and travel behaviour data and judgement.

This provides the basis for calculating the number of dwellings per development catchment which leads to the number of trips generated per catchment per time period.

3.2 Development Sequencing and Timing

3.2.1 Process

The list of priority developments per SA2 zone provided by GRC included a sequential priority, i.e. first lot to be developed, second lot to be developed etc. However, because the list did not include a timing for each development, e.g. 2016 to 2021, an assumption was made to align the sequencing of development provided by GRC to OESR's SA2 zone dwelling projection timing.

Table 3-1 contains an example of how GRC's list of priority developments was calibrated against the OESR dwelling projections for the Gladstone SA2 zone.

Table 3-1: Gladstone OESR SA2 Dwelling Projection and Assigned Development Priority

Year	OESR Dwellings Projection	Development Sequencing Dwellings Added	Assigned Development Priority by GRC	Cumulative Number of Dwellings with Sequencing Assigned
2011	2,670	N/A	N/A	N/A
2014	2,950	N/A	N/A	2,950
2016	3,130	150 (2011–2016)	1	3,100
2021	3,740	600 (2016–2021)	2–5	3,690
2026	4,060	300 (2021–2026)	6–7	4,000
2031	4,410	380 (2026–2031)	7–16	4,380
2031+	N/A	2,560 (2031+)	17–65	6,940

In this example, the OESR estimated 2,950 dwellings in 2014 and projected 3,130 dwellings in 2016, thus forecasting an additional 180 dwellings to be built before 2016. From GRC's sequential list of prioritised developments, the three development lots listed as Priority 1 comprise 150 additional dwellings to reach 3,100 dwellings by 2016.

The next development GRC assume would be built, assigned as Priority 2, will add 70 dwellings and is therefore assumed to be built post-2016. This is because the 70 dwellings for the Priority 2 development will reach a total of 3,170 dwellings, which exceeds the 2016 forecast of 3,130 dwellings.

3.2.2 Development Sequencing and Timing Mapping

Figure 3-1 to Figure 3-4 shows the results of the development sequencing and timing exercise for each PIA.

Figure 3-3 highlights a clear limitation with the priority approach. The development area inside the Boyne Island-Tannum Sands SA2 zone adjacent to the Gladstone Hinterland SA2 zone near Wurdong Heights, also known as *Riverstone Rise*, was assigned null priority by GRC's officers. This was due to the difficulties assigning a priority to align the timings across the SA2 zone. This assessment excludes

null priority developments. Therefore there is a risk that this development would be brought forward adding a potential 2,500 dwellings. This will need to be recognised in future updates to the LGIP planning, as the number of trips to employment areas generated will create capacity issues along Boyne Island Road and Gladstone-Benaraby Road.

3.2.3 Development Catchments

Development catchments were defined to aggregate future developments into sub-areas for the purpose of calculating additional traffic flows on major routes using the spreadsheet model. It is assumed that for each sub-area, future residents would share common destination splits and route choices based on their geographical location, proximity to employment centres and access to the wider network. This was based on high level judgement on the likely route choices individuals would make to destinations, and with an indication of existing trip volumes from traffic counts at intersections and links.

This approach is undertaken at a high level, and is understood that the level of detail is not as sophisticated as a four-step transportation model. However, given the outputs of this task, this approach was deemed sufficient.

Figure 3-5 to Figure 3-8 shows the development catchments for each PIA.

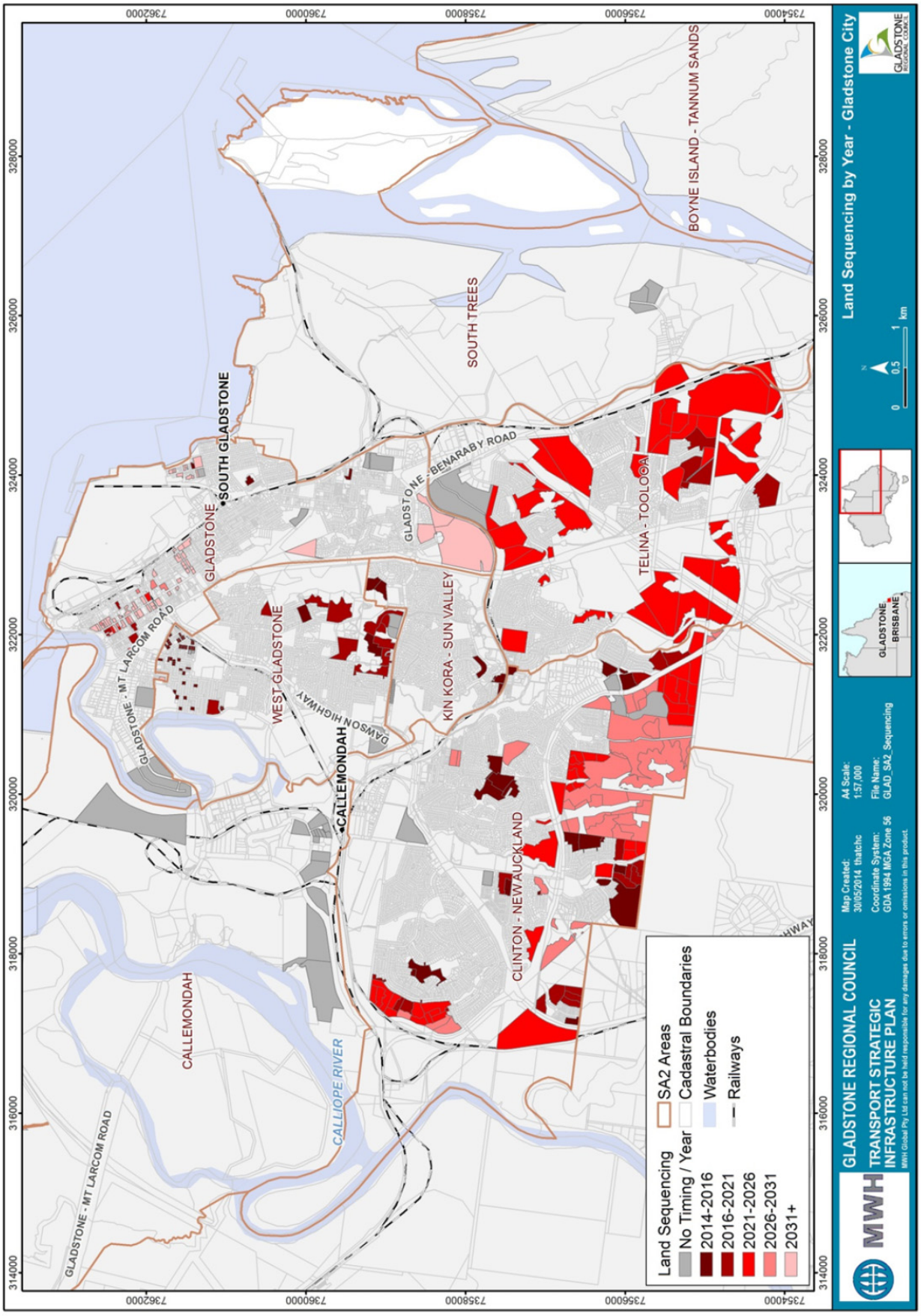

Figure 3-1: Gladstone Land Sequencing

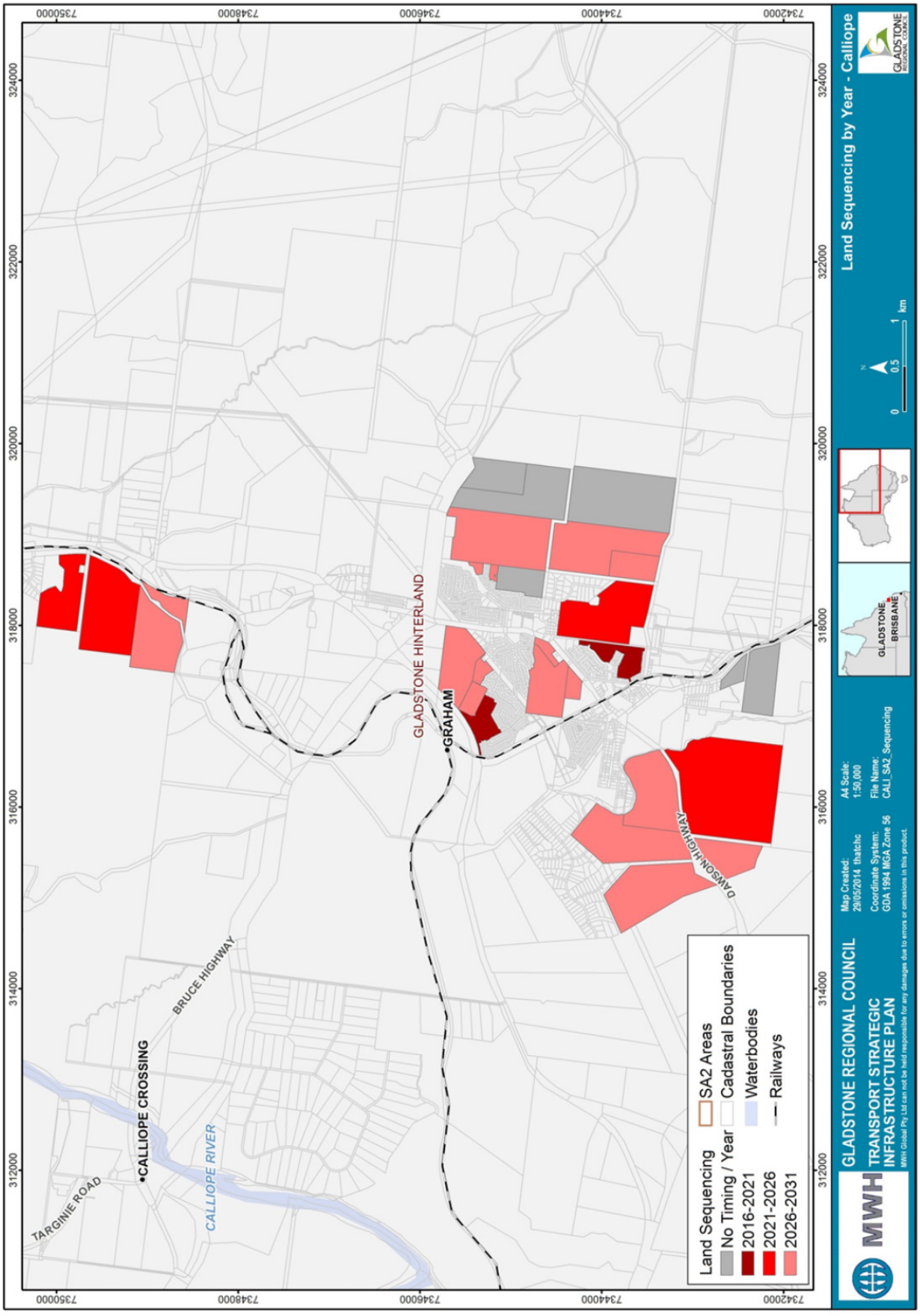

Figure 3-2: Calliope Land Sequencing

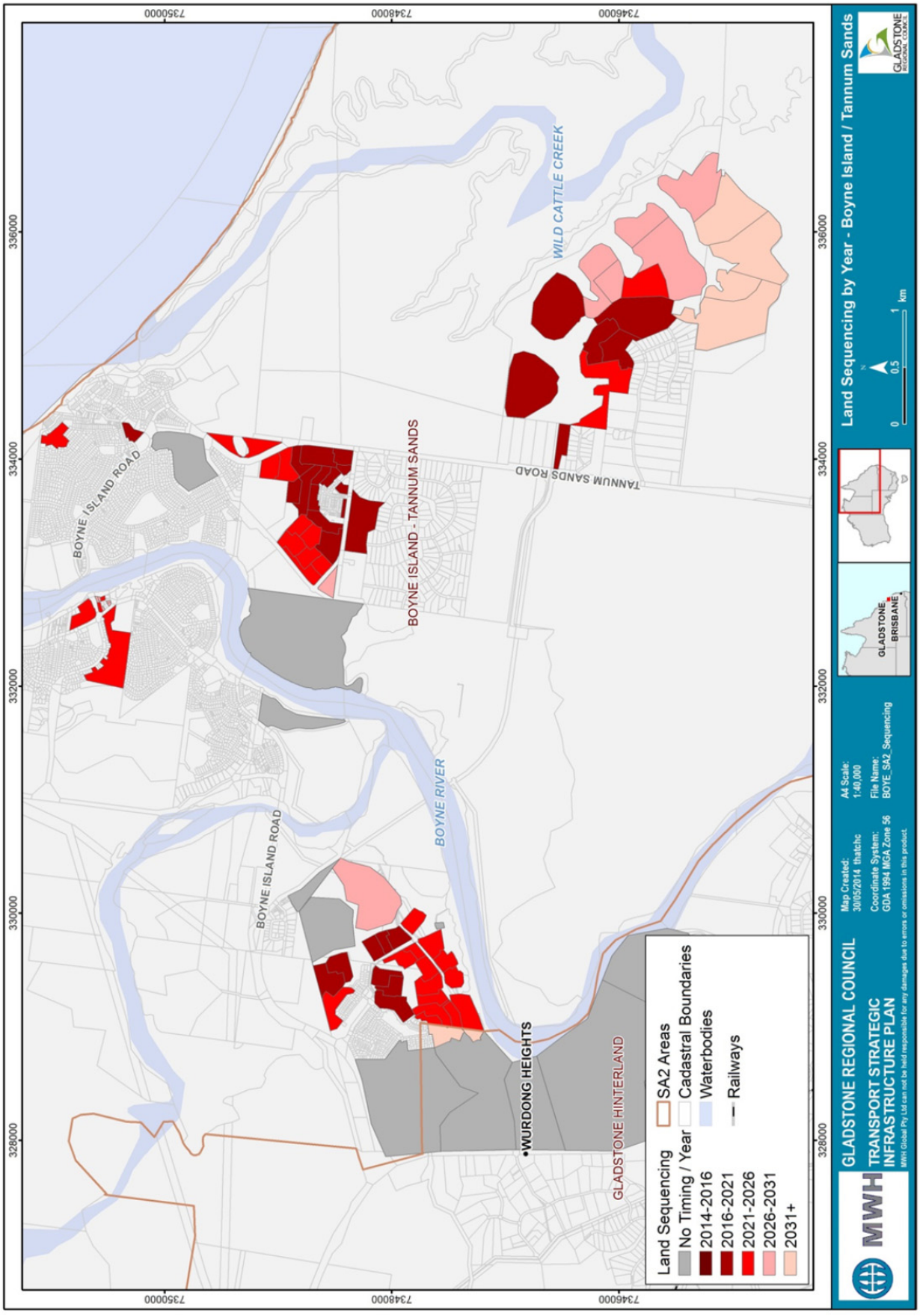

Figure 3-3: Boyne Island / Tannum Sands Land Sequencing

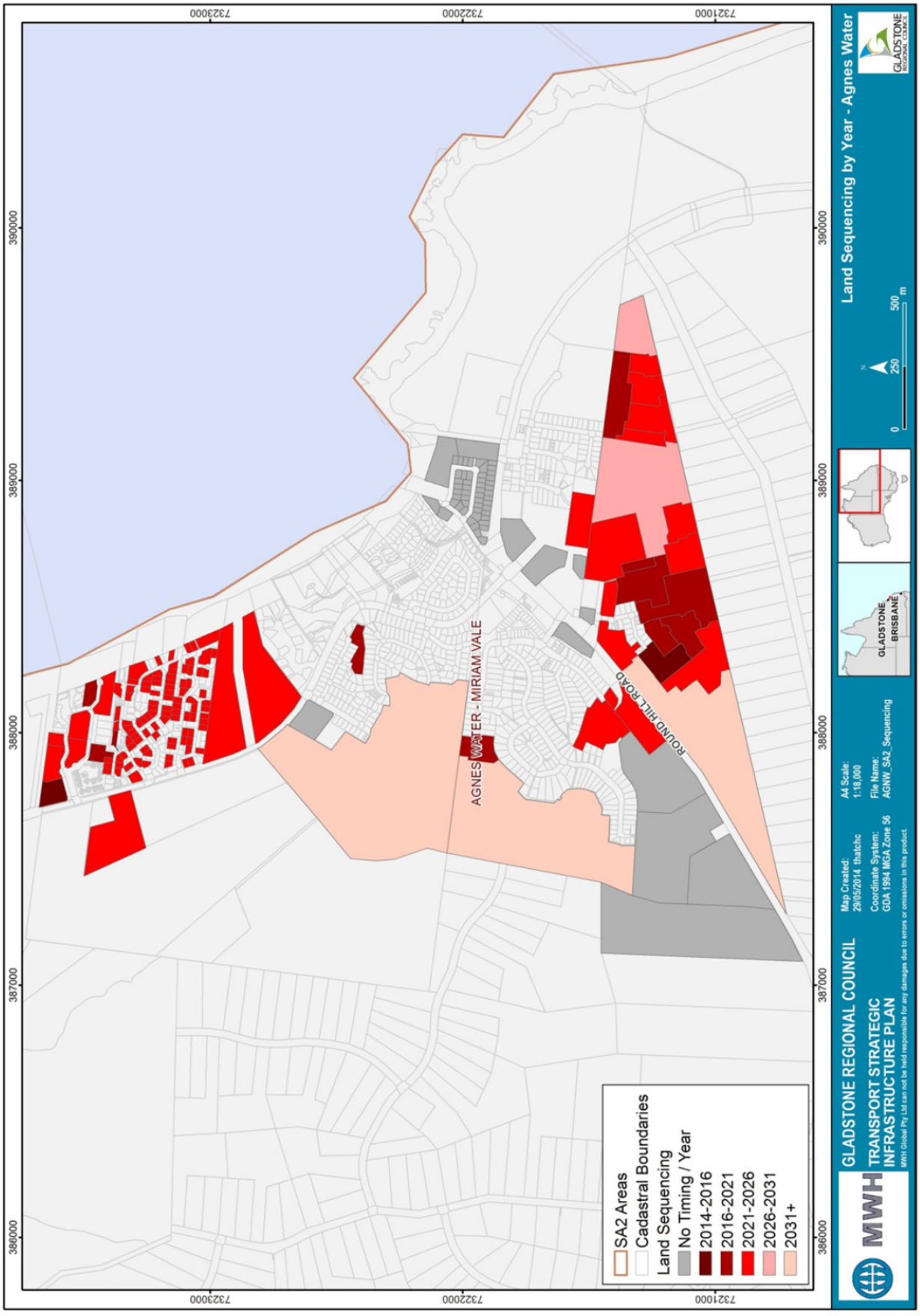

Figure 3-4: Agnes Water Land Sequencing

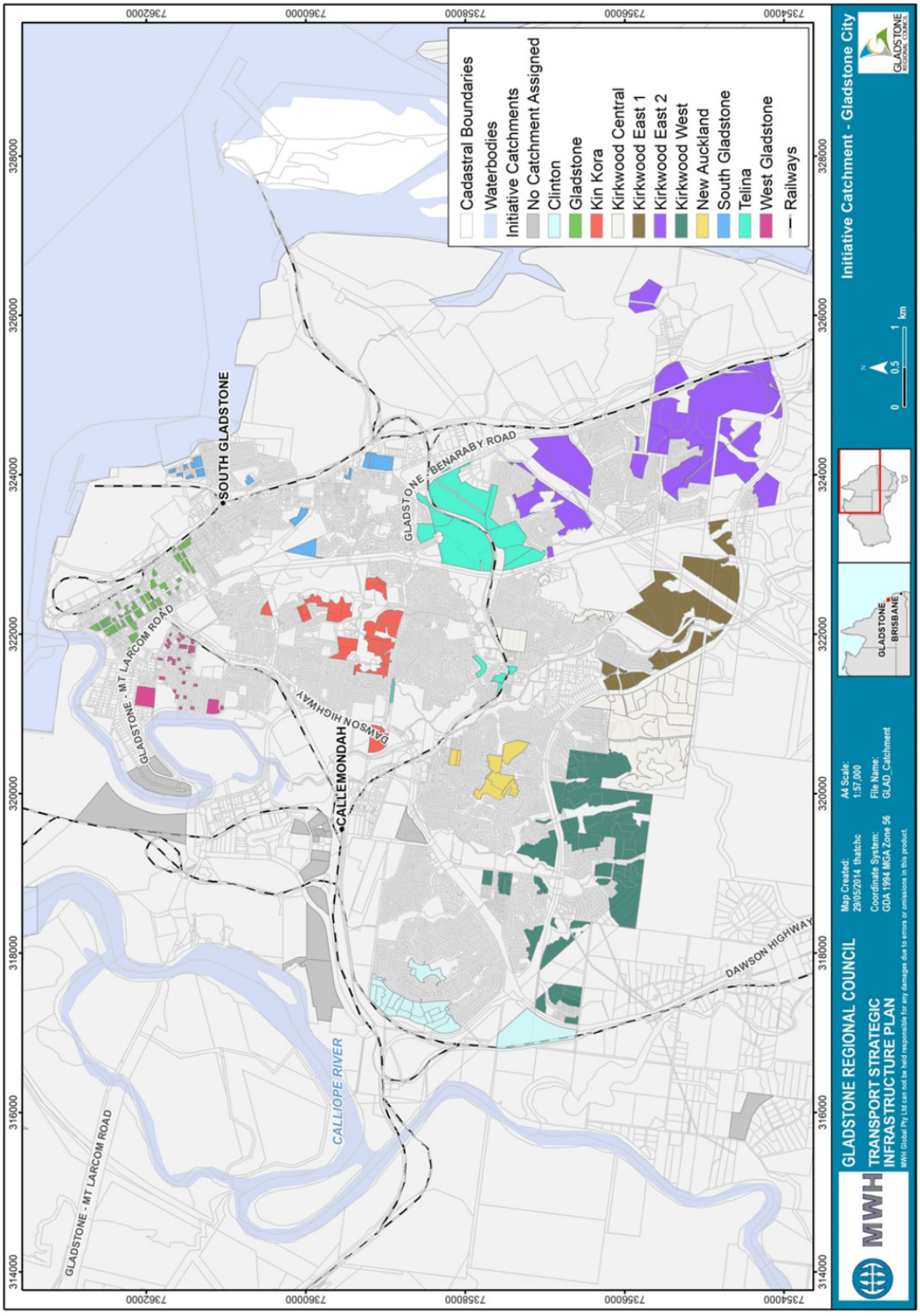

Figure 3-5: Gladstone Development Catchments

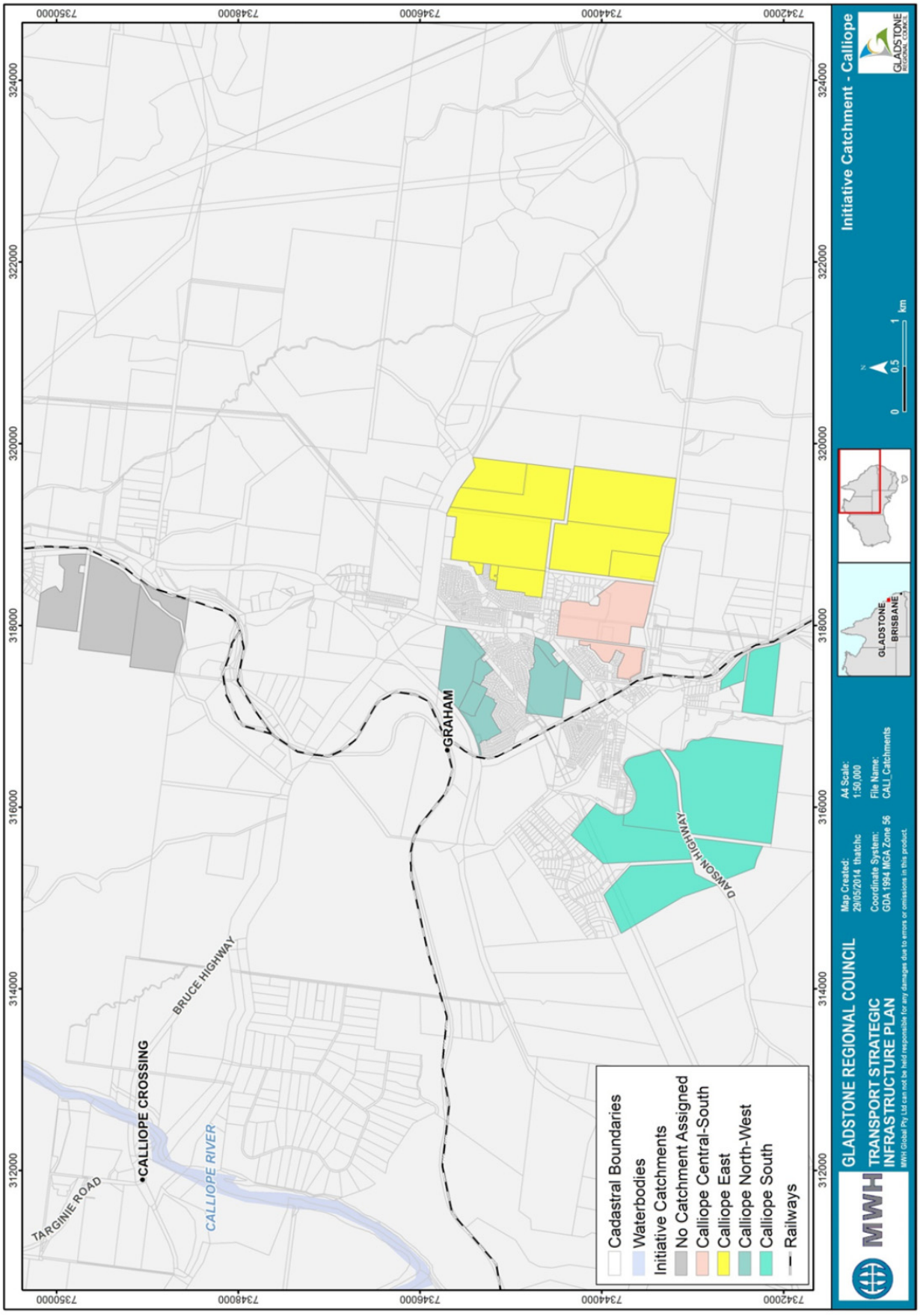

Figure 3-6: Calliope Development Catchments

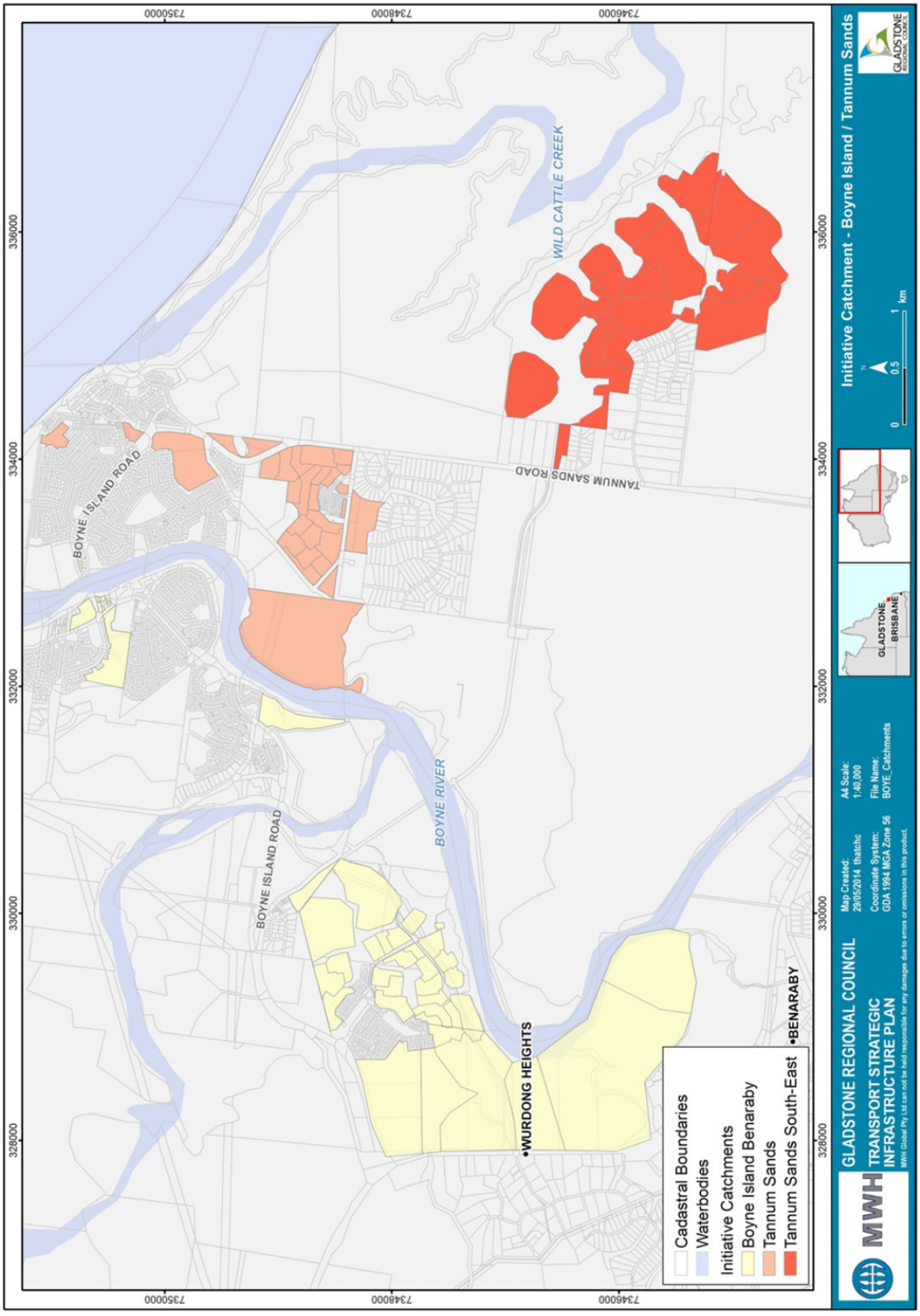

Figure 3-7: Boyne Island / Tannum Sands Development Catchments

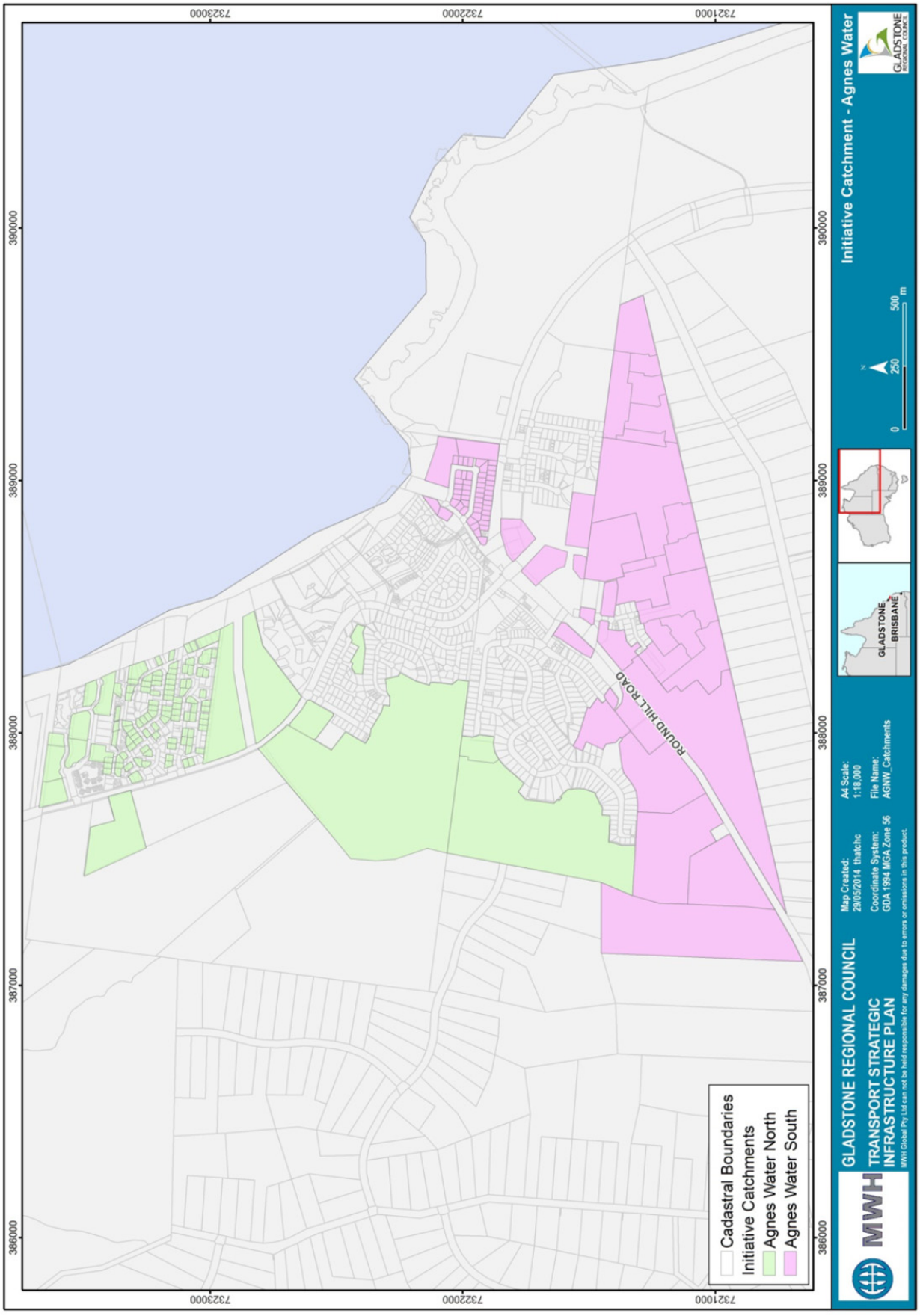

Figure 3-8: Agnes Water Development Catchment

3.2.4 Calculating Dwellings per Catchment

GRC's development sequencing reported the relevant residential type of developments as low density equivalent tenancy (ResET) and medium to high density equivalent tenancy (MFRET) values. These values were converted to dwellings using the calculations in Table 3-2 to give the number of additional dwellings per catchment in Table 3-3. As the rate for the number of trips generated per low density residential and medium density residential dwelling is assumed to be the same, Table 3-3 show the total number of additional dwellings per catchment.

For the purposes of this study, only the number of dwellings per catchment was calculated, as the number of additional trips is based on the number of dwellings instead of populations.

Table 3-2: Dwelling Calculations

Dwelling Type	Number of Dwellings
Low density residential	= ResET
Medium density 1 bedroom residential	= MFRET / 4.333
Medium density 2 bedroom residential	= MFRET / 1.625
Medium density 3 bedroom residential	= MFRET / 2.6

ETs were converted to dwelling based on Table 1 in GRC's Water and Wastewater Planning Guidelines. The proportion of dwelling types in medium density developments were based on information provided by GRC officers with the development sequencing details.

Table 3-3: Total Additional Dwellings per Catchment by Time Period

Catchment	2014–2016	2016–2021	2021–2026	2026–2031	2031+	Total
Gladstone						
Clinton	40	0	70	0	0	110
Gladstone	0	600	300	380	2,560	3,840
Kin Kora	50	330	240	670	850	2,140
New Auckland	80	0	0	0	0	80
South Gladstone	150	0	0	0	0	150
Telina	40	0	0	0	0	40
West Gladstone	50	0	0	0	30	80
Kirkwood Central	80	0	370	250	0	700
Kirkwood East 1	0	40	0	40	0	80
Kirkwood East 2	0	340	30	0	190	550
Kirkwood West	190	300	510	390	0	1,390
Calliope						
Calliope Central-South	0	120	310	0	0	430
Calliope East	0	0	0	40	0	40
Calliope North-West	0	120	0	330	0	450
Calliope South	0	0	170	110	0	280
Boyne Island / Tannum Sands						
Boyne Island Benaraby	0	300	590	220	2,630	3,740
Tannum Sands	0	210	210	0	0	420
Tannum Sands South-East	0	580	340	750	470	2,140

Catchment	2014–2016	2016–2021	2021–2026	2026–2031	2031+	Total
Agnes Water						
Agnes Water North	80	140	80	0	0	300
Agnes Water South	20	110	200	150	150	630

3.3 Development Trip Generation

The focus has been based on weekday peak hour trips between residential areas and work places. This was adopted to be able to coarsely assess impacts to the road network without developing a transport model, as the weekday peak period is likely to represent the period where the network exhibits performance issues.

Assessing daily trip generation would be too complex for this study. Taking into account additional factors such as non-employment trips and trips at different times of the day would need to consider extra destinations and add a level of complexity that wouldn't necessarily provide additional accuracy at this level.

Generation rates have only been determined for residential dwellings, to represent one of the trip ends between the dwelling and the workplace.

Weekday trip generation rates from residential dwellings were extracted from the RTA *Guide to Traffic Generating Developments*[1]. Section 3.3 of the RTA Guide identifies 0.85 weekday peak hour vehicle trips per dwelling. The RTA Guide also identifies 0.5-0.65 trips and 0.29 trips for medium density and high density developments respectively. The medium and high density developments are considered to be appropriate for metropolitan centres with increased use of public transport and active transport associated with these types of dwellings. For the Gladstone Region, it is assumed the travel behaviour of residents in medium and high density developments would be similar to dwellings, i.e. the need to drive to employment. Therefore a consistent trip generation rate of 0.85 weekday peak hour trips has been assigned for all residential development types.

Table 3-4 summarises the additional peak hour trips per catchment. This table shows the additional trips generated within each time period and are not cumulative.

Table 3-4: Additional Peak Hour Trips per Catchment by Time Period (Non-Cumulative)

Catchment	2014–2016	2016–2021	2021–2026	2026–2031	2031+	Total
Gladstone						
Clinton	40	0	60	0	0	100
Gladstone	0	510	260	320	2,180	3,270
Kin Kora	40	280	210	570	720	1,820
New Auckland	70	0	0	0	0	70
South Gladstone	130	0	0	0	0	130
Telina	40	0	0	0	0	40
West Gladstone	40	0	0	0	30	70
Kirkwood Central	70	0	320	210	0	600
Kirkwood East 1	0	30	0	40	0	70
Kirkwood East 2	0	290	30	0	160	480
Kirkwood West	160	250	430	330	0	1,170

[1] RTA 2002, *Guide to Traffic Generating Developments, Version 2.2*, New South Wales.

Catchment	2014–2016	2016–2021	2021–2026	2026–2031	2031+	Total
Calliope						
Calliope Central-South	0	100	260	0	0	360
Calliope East	0	0	0	30	0	30
Calliope North-West	0	100	0	280	0	380
Calliope South	0	0	140	100	0	240
Boyne Island / Tannum Sands						
Boyne Island Benaraby	0	250	500	190	2,240	3,180
Tannum Sands	0	180	180	0	0	350
Tannum Sands South-East	0	500	290	640	400	1,830
Agnes Water						
Agnes Water North	70	120	70	0	0	260
Agnes Water South	20	90	170	130	130	540

4 Development Traffic Volumes

4.1 Purpose

This section outlines a broad estimate of the assignment of development traffic on the network and projected demands on major routes in Gladstone Region. The purpose of projecting future demands from the development generated traffic is to assess the impacts on the existing transport infrastructure.

4.2 Process

The process to identify development traffic volumes was to:

- Identify the locations of key employment attractors
- From the development catchments outlined in Section 3.2.3, determine where development traffic enters the network
- Determine the proportion of trips to each employment attractor, from a high level appreciation of Gladstone employment patterns
- Determine the route choice between the developments and the employment attractors
- Add the trip numbers from each development together to determine additional traffic volumes on the network
- Determine the additional traffic in 2016, 2021, 2026 and 2031.

4.3 Key Employment Attractors

Without developing a transport model, TMR's Gladstone Area Transport Strategy (GATS) report[2] was reviewed to identify overall employment growth areas and trends. This was considered more accurate and suitable for this exercise than identifying the OESR employment projections for each SA2 zone as described in Section 2.3.

Key findings in Chapter 4 of the GATS report relevant to this exercise are:

- *"By 2031 there will be a stronger focus on activity within the GSDA and the wharves on the Western Basin, i.e. west of the Calliope River.*
- *The growth of large industrial complexes and service industries in the GSDA will increase freight movements, both within and to the GSDA. They will also increase general traffic and other movements (including journeys to work) and create or strengthen desire lines of travel, especially from the south.*
- *Gladstone is expected to remain the predominant commercial and administrative centre of the sub-region. Boyne Island and Tannum Sands are expected to develop additional commercial, retail and community facilities to cater for population growth, which will maintain a level of self-containment. Calliope … is likely to remain reliant on Gladstone city for these facilities.*
- *More people are expected to travel further to access jobs in the GSDA. This is particularly relevant to the additional population who settle in Boyne Island/Tannum Sands and Calliope.*
- *Population and employment growth will result in double the number of people using the transport system. This will be particularly pronounced on road corridors connecting the GSDA to Gladstone's inner, west and south fringe urban areas and Calliope.*
- *North Gladstone (including some wharves in the GSDA) is anticipated to be the largest attractor within the study area in 2031, accounting for over 52,000 trips per day (17% of all travel). The next largest attractor could be Boyne Island/Tannum Sands comprising 40,403 trips (13% of all travel).*
- *The growth of the satellite communities into sizeable towns will place increasing pressure on urban arterials during peak periods … notably along the Dawson Hwy and Gladstone-Benaraby Road. There will also be increased movements to the GSDA and Western Basin to access jobs, industries and wharves in these areas."*

[2] TMR, 2013.

The GATS findings identify clear home-to-work desire links. One area of ambiguity is the Boyne Island / Tannum Sands urban area where self-containment is mentioned in the GATS report, yet there is also mention of significant trips to and from the GSDA. It is assumed the difference and potential ambiguity is industrial jobs versus service jobs and retail activities.

4.4 Proportions of Trips to Each Employment Attractor

Based on the key employment attractors, Table 4-1 outlines assumptions that were developed for the proportions of trips to employment attractors.

Table 4-1: Proportions of Trips to Each Employment Attractor

Area	Work Destination	Proportion of Trips
Gladstone, Calliope	GSDA, Gladstone western industrial areas	70%
	Gladstone CBD	15%
	Non-peak direction, e.g. tradesmen, local businesses	15%
Boyne Island/ Tannum Sands	GSDA, Gladstone western industrial areas	60%
	Gladstone CBD	5%
	Non-peak direction, e.g. tradesmen, local businesses	15%
	Boyne Island industrial area	20%
Agnes Water	Town centre and environs	45%
	North of town or 1770	20%
	West of town or Miriam Vale	20%
	Non-peak direction, e.g. tradesmen, local businesses	15%

These proportions were identified by judgement and have not been validated through quantitative analysis.

4.5 Additional Trip Route Patterns

Determining route choice cannot be effectively undertaken without a transport model. However, for the purposes of this assessment, an indicative route choice assignment was developed to be able to identify approximate additional traffic volumes on the network.

This was undertaken by dividing the areas of development into catchments then assuming the same route choice options for all trips to and from a particular catchment. The assignment was identified by judgement, with travel times and distances for alternative routes used as an input. This assignment has not been validated through quantitative analysis.

Figure 4-1 shows the assignment of trips from the Gladstone, Boyne Island/Tannum Sands and Calliope catchments to the GSDA and Gladstone western industrial areas. The figure shows the reliance on the following three existing routes to provide access:

- Hanson Road
- Don Young Drive and Red Rover Road
- Blain Drive.

For the eastern catchments, the primary cross-town routes include Kirkwood Road, Philip Street and Glenlyon Road. Access from Calliope and Boyne Island/Tannum Sands is almost exclusively reliant on the Dawson Highway and Gladstone-Benaraby Road.

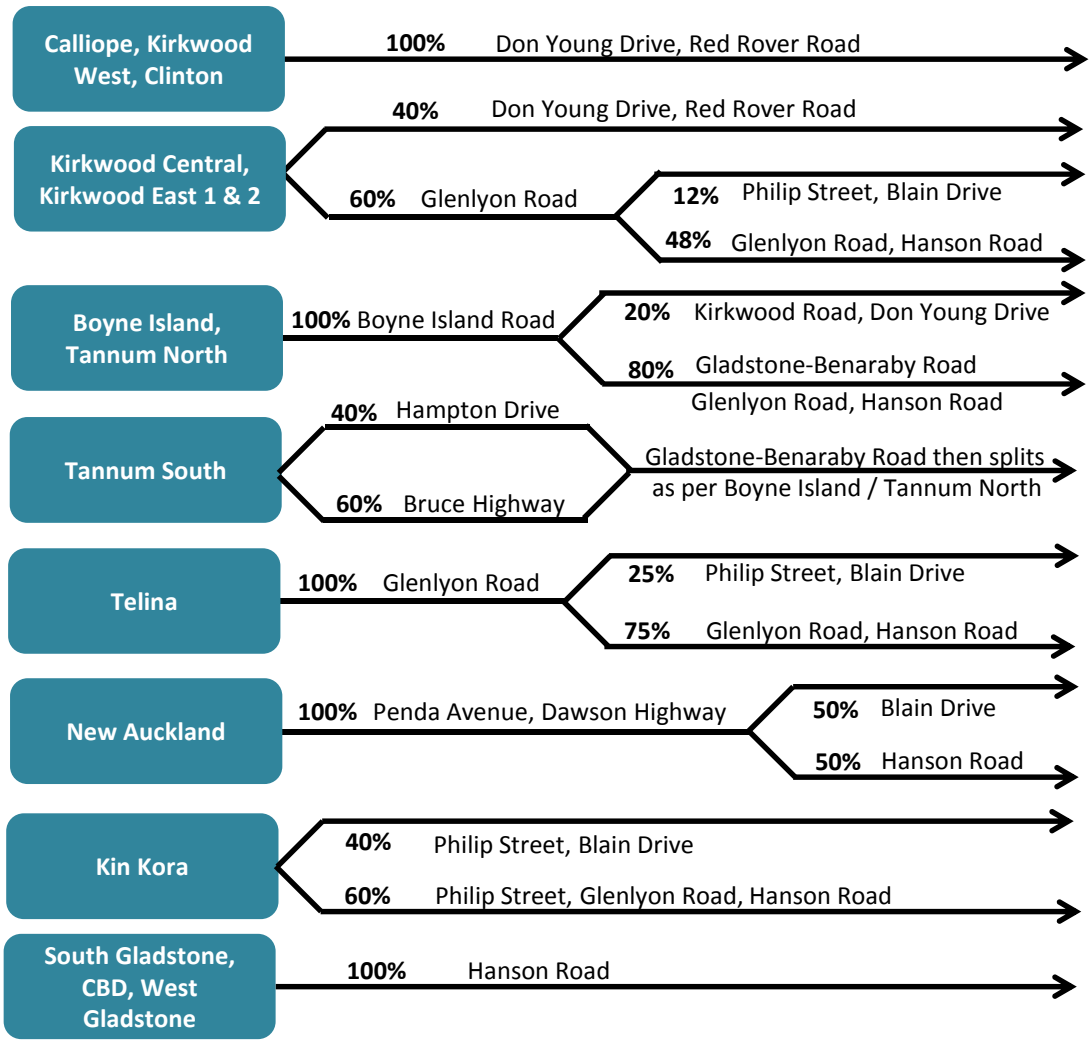

Figure 4-1: Trip Assignments to GSDA and Gladstone Western Industrial Areas

Figure 4-2 shows the assignment of trips from Gladstone, Boyne Island/Tannum Sands and Calliope catchments to the Gladstone CBD.

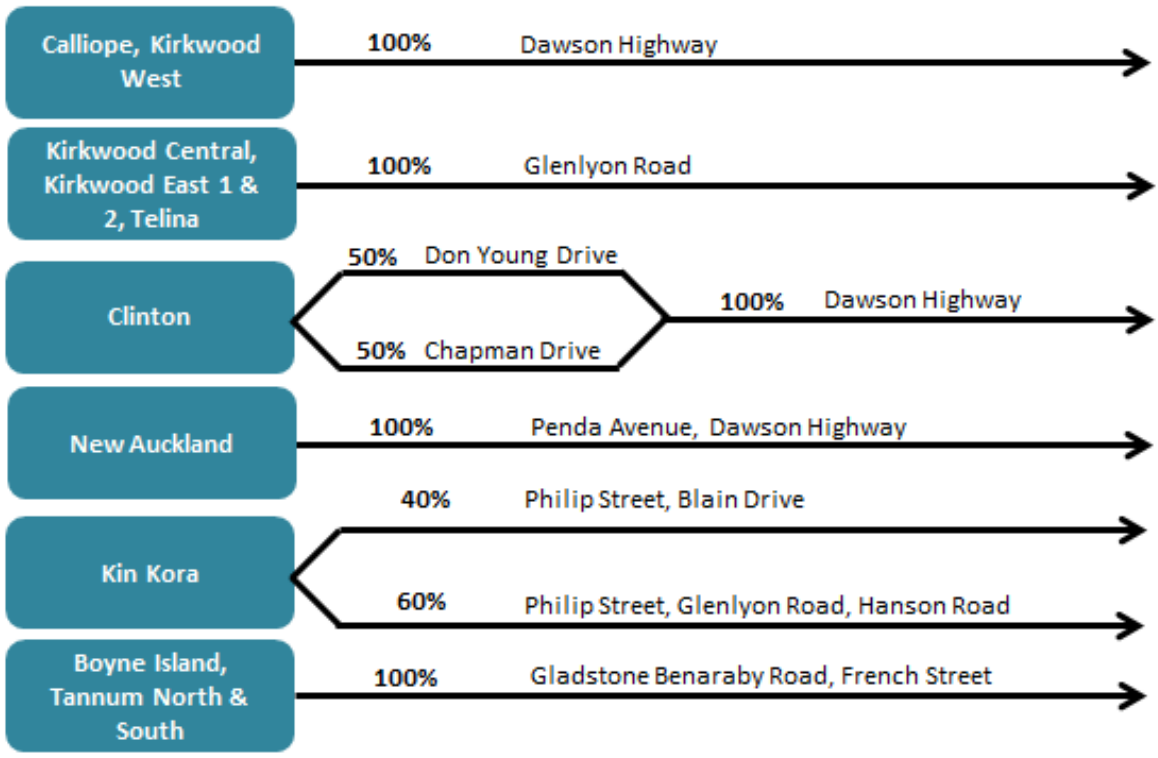

Figure 4-2: Trip Assignments to Gladstone CBD

4.6 Additional Trip Peak Hour Volumes

Appendix A contains additional trip peak hour volumes for 2016, 2021, 2026, 2031. These volumes are the total volumes from all catchments. For the full assignment from individual catchments refer to the *Gladstone Regional Council Roads/Strategic Infrastructure Plan Future Transport Demands Assessment* spreadsheet.

The additional trip peak hour volumes were calculated from using the:

- Trip generation from each catchment described in Section 3.3
- Proportions of trips to each employment attractor described in Table 4-1
- Trip route patterns described in Section 4.5.

Figure 4-3 to Figure 4-6 show a summary of the additional trip peak hour volumes for Gladstone and Boyne Island / Tannum Sands. The peak hour traffic volumes are cumulative, e.g. the 2021 volumes include all additional trips between 2014 and 2021. Based on the employment attractors, traffic to and from Calliope is assumed to travel along the Dawson Highway.

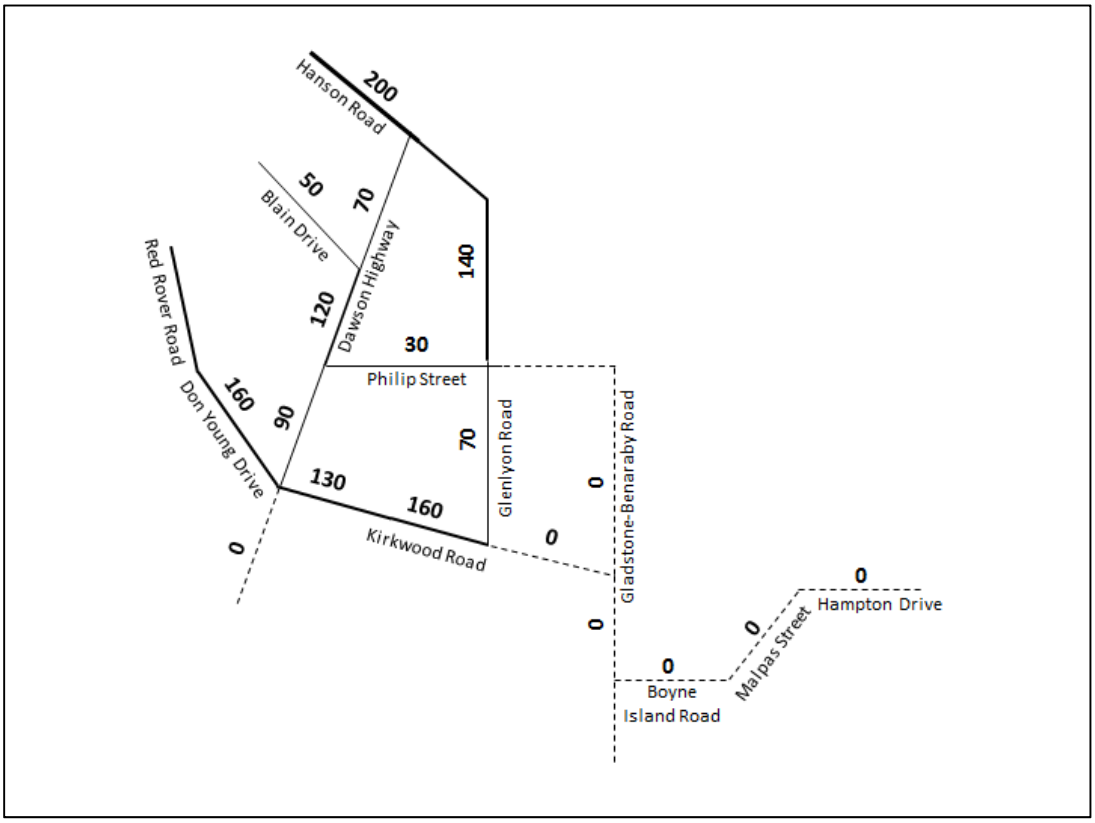

Figure 4-3: Cumulative Peak Hour Volume – Gladstone and Boyne Island/Tannum Sands – 2016

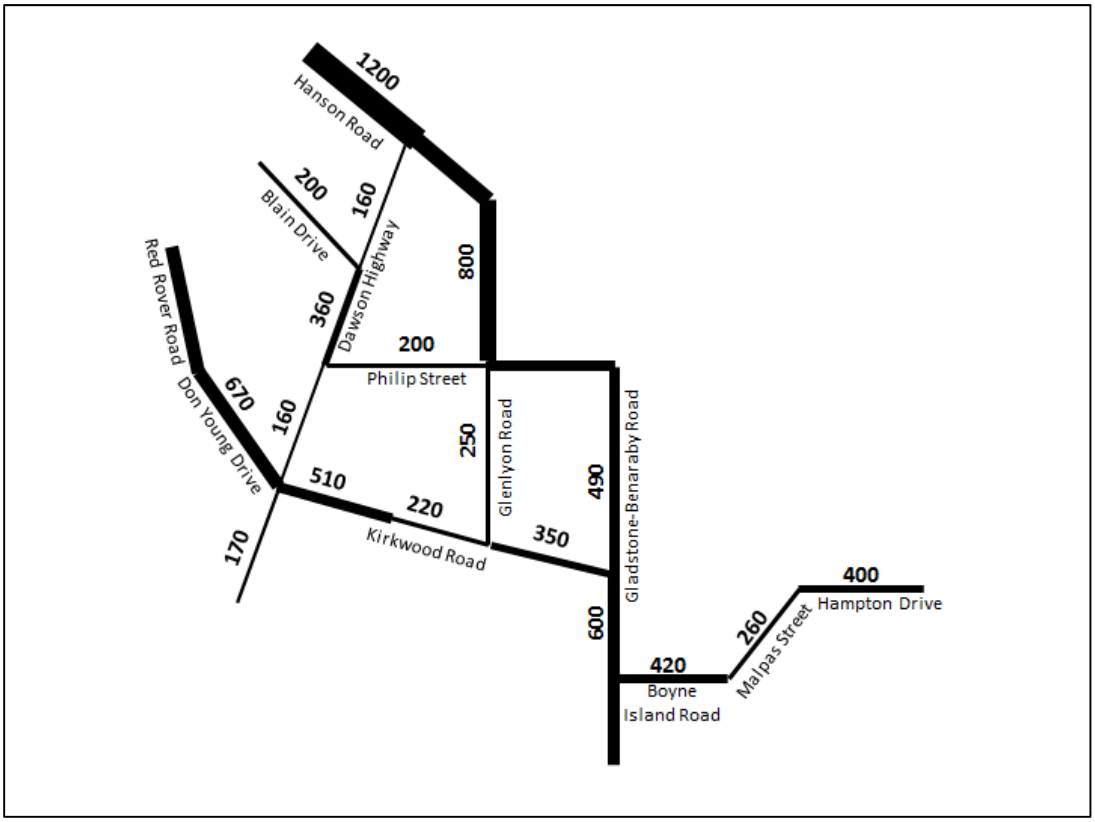

Figure 4-4: Cumulative Peak Hour Volume – Gladstone and Boyne Island/Tannum Sands – 2021

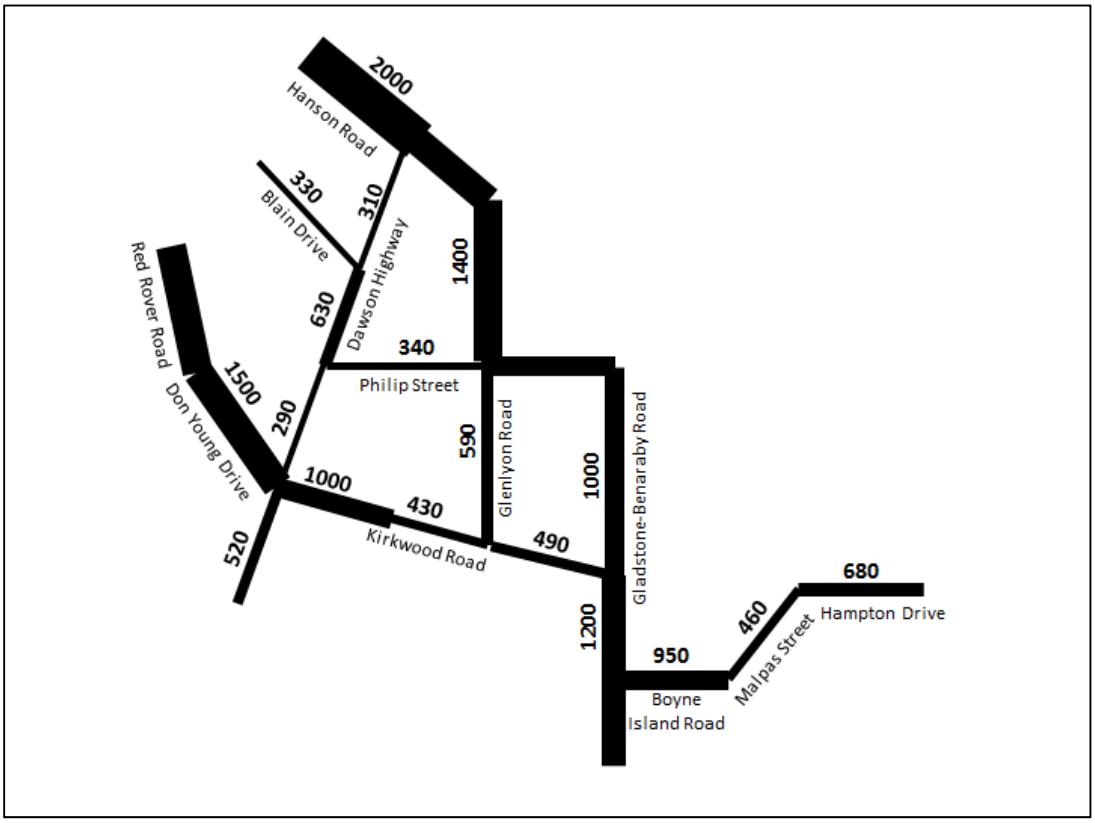

Figure 4-5: Cumulative Peak Hour Volume – Gladstone and Boyne Island/Tannum Sands – 2026

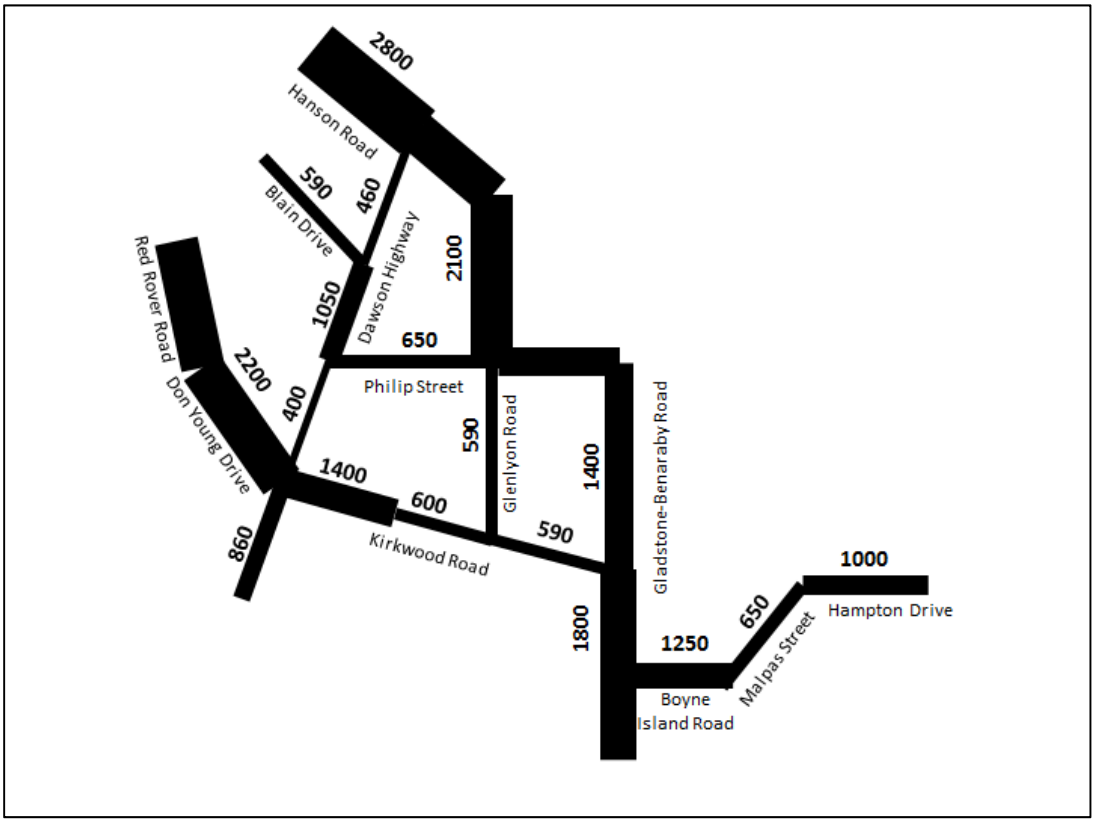

Figure 4-6: Cumulative Peak Hour Volume – Gladstone and Boyne Island/Tannum Sands – 2031

Figure 4-7 to Figure 4-9 show a summary of the additional trip peak hour volumes for Agnes Water.

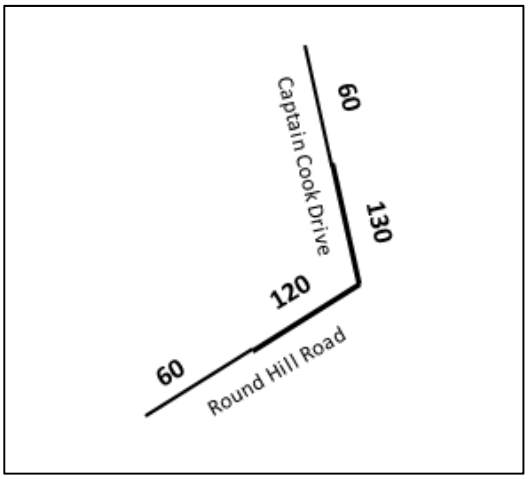

Figure 4-7: Cumulative Peak Hour Volume – Agnes Waters – 2021

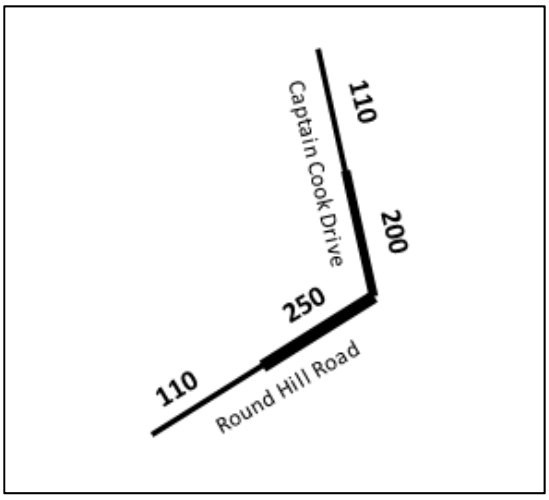

Figure 4-8: Cumulative Peak Hour Volume – Agnes Waters – 2026

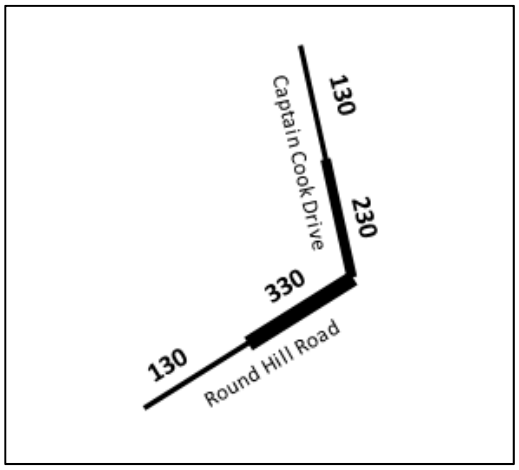

Figure 4-9: Cumulative Peak Hour Volume – Agnes Waters – 2031

Table 4-2 summarises additional peak hour volumes on major routes in Gladstone and Boyne Island / Tannum Sands.

Table 4-2: Summary of Additional Peak Hour Volumes on Major Routes

Road	Location	2016	2021	2026	2031
Boyne Island / Tannum Sands					
Hampton Drive	West of Malpas Street	0	400	700	1,000
Boyne Island Road	West of Gladstone-Benaraby Road	0	420	950	1,250
Cross-Town Routes					
Kirkwood Road	West of Dawson Highway	130	510	1,000	1,400
Glenlyon Street	South of Dawson Road	150	800	1,400	2,100
Glenlyon Road	South of Philip Street	70	250	450	590
Industrial Access					
Don Young Drive	North of Col Brown Avenue	160	670	1,500	2,200
Blain Drive	West of Dawson Highway	50	200	330	600
Hanson Road	West of Lord Street	200	1,200	2,000	2,800
Access from Boyne Island/Tannum Sands and Calliope					
Dawson Highway	South of Kirkwood Road	0	170	520	860
Gladstone-Benaraby Road	South of Kirkwood Road	0	600	1,200	1,800

Table 4-2 shows that there are major high volumes on major routes approaching and throughout Gladstone. These flows are a reflection of the OESR dwelling projections, the location and spread of development and the reliance on the GSDA and Gladstone west industrial areas for employment.

Due to the significance of these volumes, it is recommended that GRC validates the OESR dwelling projections against knowledge of available suitable land for development in each area, and also the benchmarking of previous projections against actual rates of development and resulting population increases.

5 Existing and Future Network Performance

5.1 Purpose

This section outlines the estimated existing and future network performance. The purpose of assessing network performance is to assist with confirming the validity of identified initiatives and estimating the initiative timing based on the development sequencing and OESR dwelling projections.

5.2 General Process

To assess the triggers for the LGIP initiatives without a transport model, the approach taken was to identify the approximate network performance of relevant links and intersections using existing traffic counts and generalised high level approximations to determining the link and intersection capacity.

The methodology for this is:

- Obtain available traffic counts and determine the peak hour relevant flows, including the peak direction flows for links
- Develop an approximate high level approach to determining the capacity for links and intersections
- Calculate the existing volume-to-capacity (v/c) ratios for links and intersections
- Add the additional volumes from Section 4.6 to existing flows
- Calculate the future volume-to-capacity (v/c) ratios for links and intersections.

Figure 5-1 to Figure 5-4 shows the traffic counts locations that were provided by GRC and TMR. These counts cover a good proportion of the expected initiative locations, but there are also many areas where counts were not available to assess performance. Section 7.2.2 outlines the approach taken for assessing initiative triggers and timings for locations where counts were unavailable.

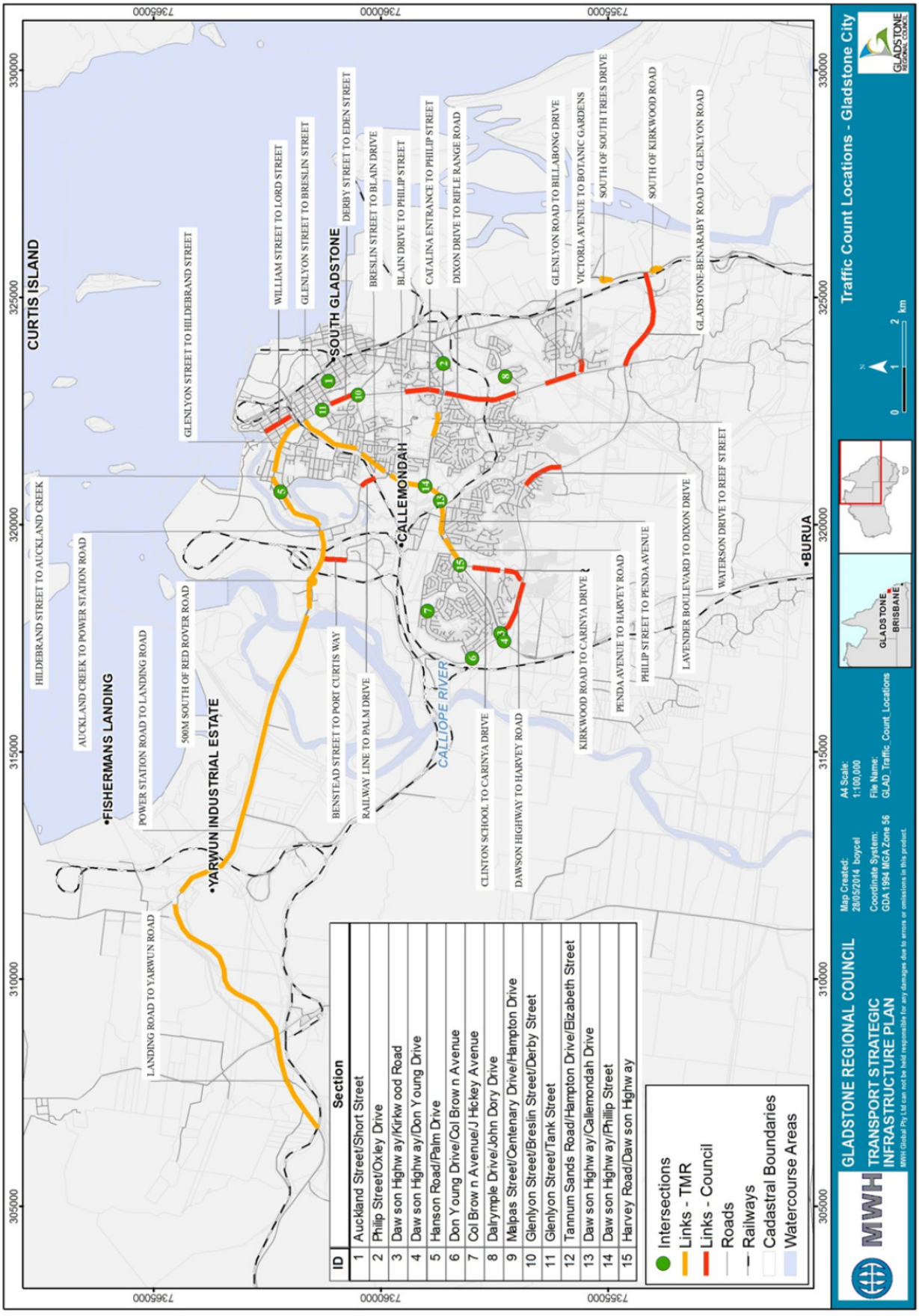

Figure 5-1: Available Traffic Counts Locations – Gladstone

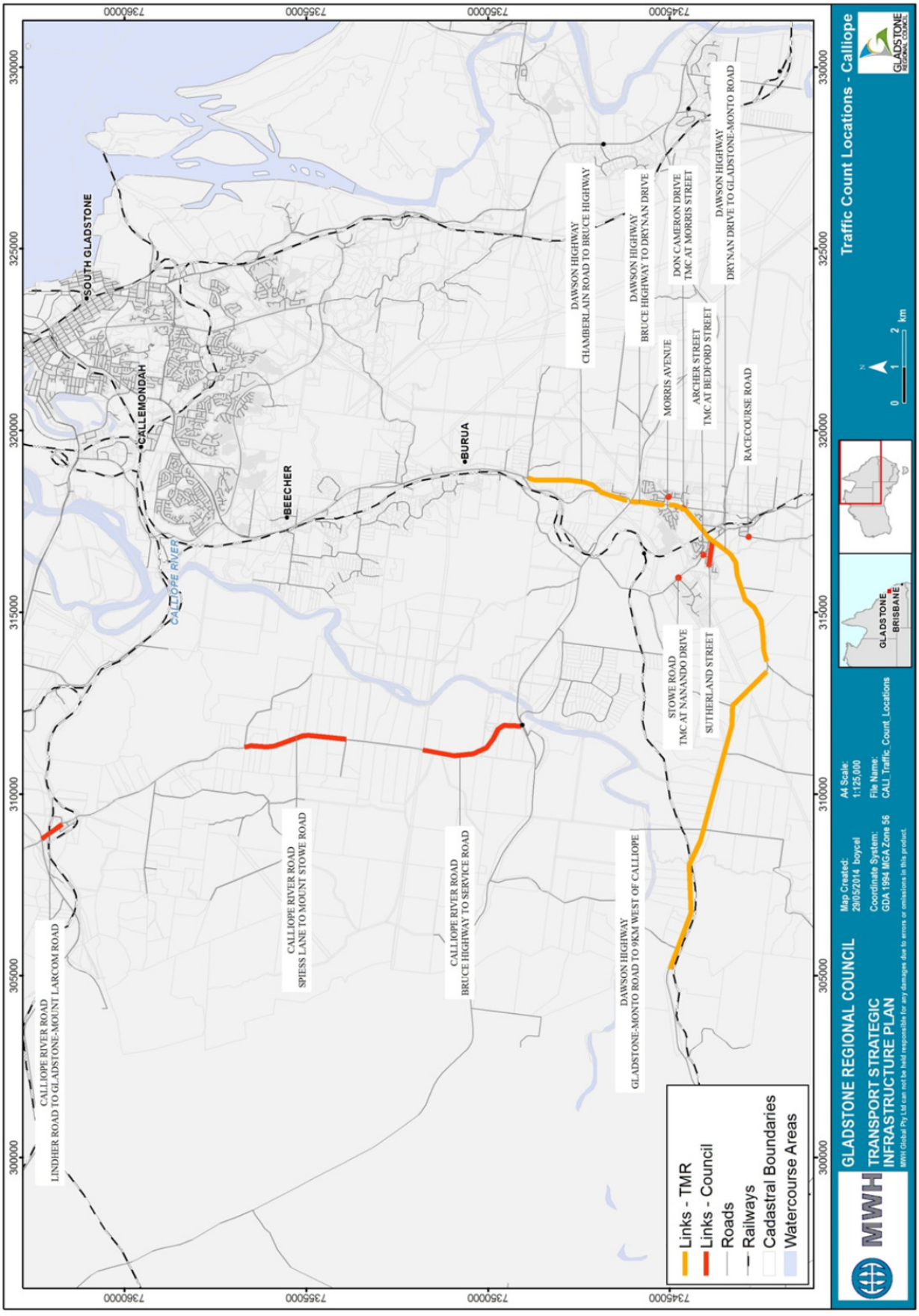

Figure 5-2: Available Traffic Count Locations – Calliope

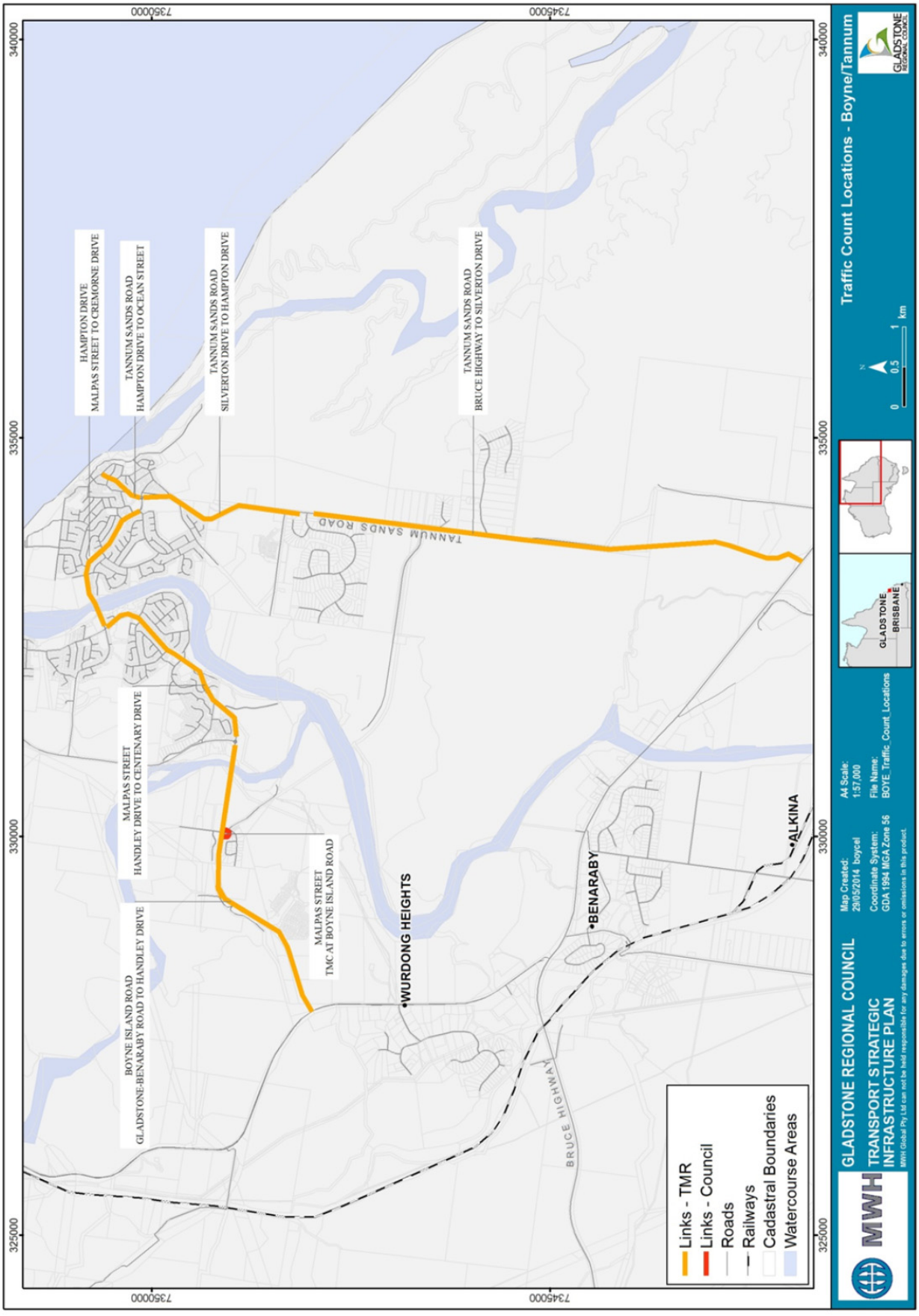

Figure 5-3: Available Traffic Count Locations – Boyne Island / Tannum Sands

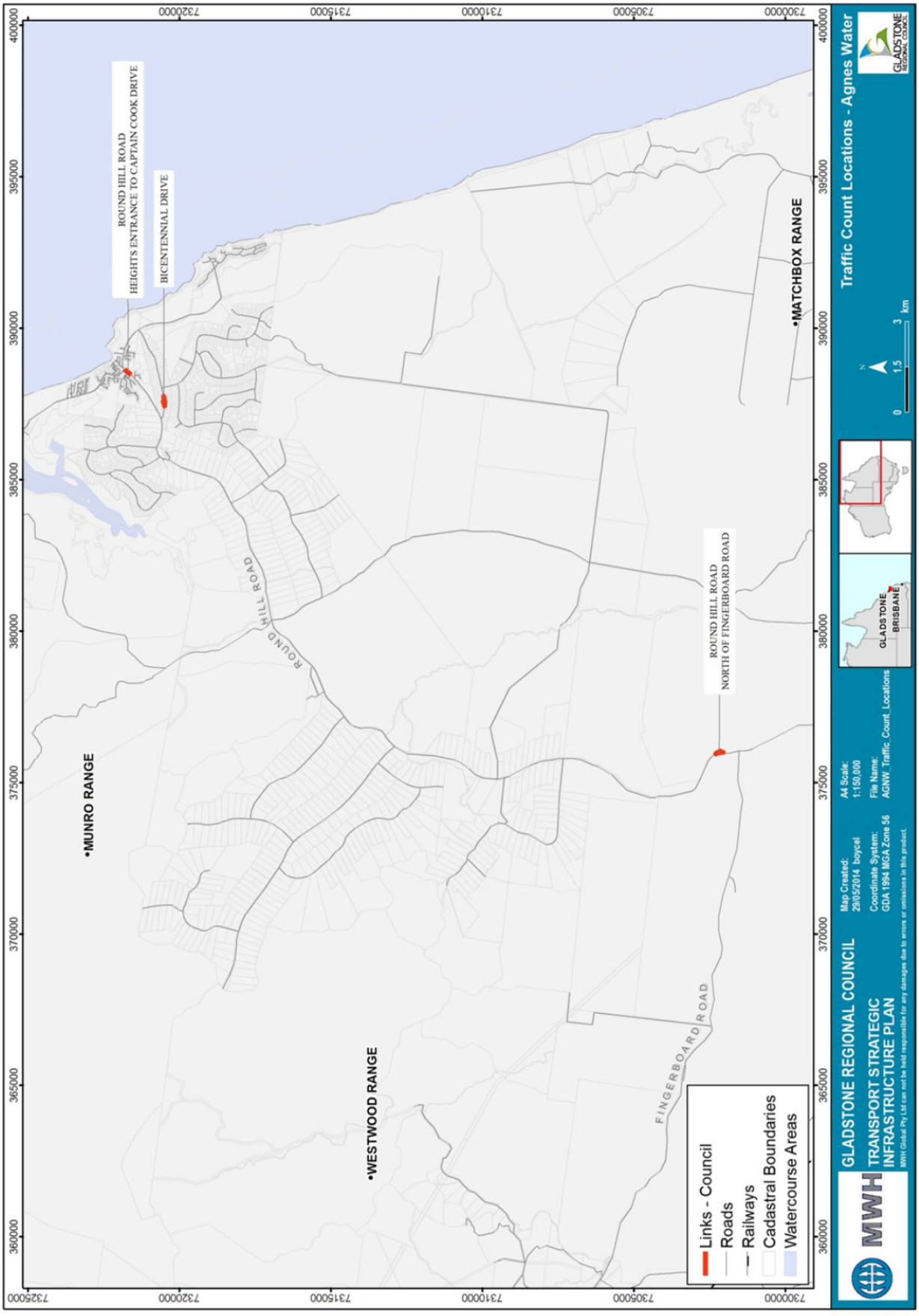

Figure 5-4: Available Traffic Count Locations – Agnes Water

5.3 Calculating Peak Hour Volumes

5.3.1 Links

The methodology for calculating existing peak direction peak hour volumes varied due to the different data sets between the GRC and TMR counts.

The TMR traffic data included bi-directional AADT traffic volumes. An average of the AADT volume in each direction was taken, and a 10% peak hour/AADT ratio was used to estimate an hourly traffic volume.

GRC traffic counts comprised hourly volumes over a 24-hour period, which could be directly used to determine peak hour traffic volumes. As the counts were presented as two-way volumes only, a sample of intersection counts was used to assess the peak direction volume. This assessment identified a 60% peak direction proportion of the two-way volume which was applied to counts with unknown direction splits.

The methodology for calculating future peak direction peak hour volumes is as follows:

- The 2014 base volumes were calculated by assuming a 3% growth rate relative to the count year volume, from the count year volume to 2014.
- For future years, the base volume, without the additional developments, were calculated by assuming a 1% growth rate relative to 2014 traffic volumes. This assumption accounts for additional trips not directly related to the additional developments, and takes into account non-employment trips to future industrial, recreational and retail developments.
- The total future volumes were calculated by adding the future year base volumes to the additional peak hour volumes calculated in Section 4.6.

5.3.2 Intersections

The TMR and GRC intersection counts had peak hour flows for all turning movements.

5.4 Calculating Link and Intersection Capacities

5.4.1 Calculating Link Capacities

For urban roads with interrupted flows, link capacities are usually presented as vehicle speeds rather than vehicles per hour. However Table 5.1 in the Austroads Guide[3] provides the following one-way mid-block capacities for urban roads with interrupted flows:

- Adjacent to parking lane or clearway conditions – 900 vehicles per hour
- Occasional parked vehicles – 600 vehicles per hour.

The Austroads Guide also states that “peak period mid-block traffic volumes may increase to 1,200 to 1,400 passenger cars per hour per lane when” there are fewer interruptions. On this basis, the Austroads capacities are considered conservative in some instances and for the purposes of this exercise Table 5-1 identifies the assigned mid-block capacities .

Table 5-1: Mid-Block Capacities for Urban Roads

Road Features	Road Type	Peak Direction Capacity (veh/hr)
Four-lane divided urban road		3,600
Two-lane road with shoulders and no parking	Suburban Principal	1,200
Two-lane road with some parking	Urban Principal	900
Two-lane road with significant parking, land use, and pedestrian activity	Urban Minor	600

[3] *Austroads Guide to Traffic Management*, Part 3: Traffic Studies and Analysis, 2013, Table 5.1

The terminology and capacities for the two-lane roads comes from Appendix 3.7 of the New Zealand Economic Evaluation Manual[4].

5.4.2 Calculating Intersection Capacities

The major street two-way volumes and minor street approach volumes for priority-controlled intersections were determined from the intersection turning movement counts. The potential capacity of the minor movement was determined by using Equation 17-3 in the Highway Capacity Manual (HCM)5.

Exhibit 10-286 in the HCM was used to determine the level of service for T-intersections and Exhibit 10-29 was used for two-way stop controlled intersections. The volume/capacity ratio was calculated by dividing the sum of the major and minor flows by 1,500 vehicles per hour.

5.5 Link and Intersection Performance Outputs

Details of the existing and future link and intersection performance assessment for the existing and future years are contained in the following appendices:

- Appendix B outlines the link performance.
- Appendix C outlines the intersection performance.
- Appendix D has a series of maps to show the geographical relationships between the link and intersection elements.

Table 5-2 provides a summary of volume-to-capacity ratios for key links.

Table 5-2: Summary of Peak Hour Volume to Capacity Ratios for Key Links

Road	Location	2014	2016	2021	2026	2031
Boyne Island/Tannum Sands						
Hampton Drive	West of Malpas Street	60%	60%	90%	115%	140%
Boyne Island Road	West of Gladstone-Benaraby Road	50%	50%	90%	135%	160%
Cross-Town Routes						
Kirkwood Road	W of Dawson Highway	20%	30%	65%	110%	140%
Glenlyon Street	South of Dawson Road	60%	65%	130%	190%	250%
Glenlyon Road	South of Philip Street	40%	45%	65%	80%	95%
Industrial Access						
Don Young Drive	North of Col Brown Avenue	40%	50%	100%	170%	230%
Blain Drive	West of Dawson Highway	55%	60%	75%	90%	115%
Hanson Road	West of Lord Street	40%	55%	140%	210%	280%
Access from Boyne Island / Tannum Sands and Calliope						
Dawson Highway	South of Kirkwood Road	35%	35%	50%	80%	110%
Gladstone-Benaraby Road	South of Kirkwood Road	50%	55%	105%	160%	210%

Table 5-2 shows the high reliance on a few routes to provide access to and from the major employment areas, e.g. Boyne Island Road, Kirkwood Road and Don Young Drive. It also highlights the severe impacts of the projected development traffic based on the provided development sequencing and OESR dwelling projections. This is reflection of very high development demand volumes, therefore reiterates the recommendation for GRC to validate the OESR dwelling projections.

[4] *NZTA 2013, The NZ Transport Agency's Economic Evaluation Manual, First Edition, Amendment 0*, 1 July 2013.
[5] *Highway Capacity Manual*, 2000, p. 17-8
[6] *Highway Capacity Manual* , p. 10-34

Table 5-3 summarises volume-to-capacity ratios at key intersections in the network for which information was available.

Table 5-3: Summary of Key Intersection Volume to Capacity Ratios

Intersection	2014	2016	2021	2026	2031
Dawson Hwy / Don Young Drive	120%	120%	130%	260%	330%
Dawson Hwy / Kirkwood Road	80%	80%	90%	190%	250%
Hanson Road / Palm Drive	90%	60%	100%	230%	290%
Hampton Drive / Booth Avenue North	80%	85%	90%	140%	170%

High caution is needed with the results as the analysis is coarse. However, the intersection results mirror the link assessment to show the major impacts on existing infrastructure.

6 Initiatives and Transport Planning

6.1 Purpose

The Roads/Transport Strategic Infrastructure Plan Development component of the LGIP requires a list of growth-related initiatives to include in an Infrastructure Charges Schedule (ICS). This section identifies the initiatives for inclusion in the LGIP, plus highlights other infrastructure that should be further assessed for possible inclusion in a future LGIP.

6.2 Process

6.2.1 General Process

The initiatives in the previous PIPs and Infrastructure Charging Schedules were combined into one list along with the projects in GRC's Internal Project Planning (IPP).

Each project in the combined list was initially scanned to determine if it was growth related, hence should either be retained or removed from this list. At this point many projects were questionable so were retained for discussion.

For the projects that should be retained or were questionable, an extensive workshop was held on 15 April 2014 with GRC officers to provide local input and guidance into the process.

Following the workshop the list was refined to recommend projects that should be retained or discarded, based on the workshop discussions.

The refined list went through a review process with GRC officers to result in a final agreed list. Much of the work went into ensuring consistent terminology when naming and describing initiatives.

It was outside the scope of the project to identify initiatives that were not contained in GRC's previous PIPs and ICSs. In the absence of a local government-wide transport plan, it meant that a transport planning top-down approach to identifying initiatives was not undertaken for this assessment. This creates a risk of not having potential initiatives to deal with strategic growth related issues that aligns with the land use intent of the region.

Furthermore, it was outside the scope of the assessment to identify options for initiative locations, to ensure that the initiative description optimised the ability to resolve the growth related issue.

6.2.2 Calliope

In review of the previous initiatives for the town of Calliope, a significant proportion of initiatives contained within the former applicable PIP were determined to be inappropriate for a LGIP. For example in Figure 6-1, Initiatives 28, 31 and 45 were deemed to be non-trunk infrastructure which services single developments to be supplied by the developers. GRC officers explained the reason for including these initiatives in the previous PIP was to capture GRC's intent at the time without having to update their planning scheme. It is recommended that these initiatives be removed from the LGIP and captured in a structure plan.

Figure 6-2 shows a proposed road hierarchy for Calliope which was developed for the Calliope Traffic Study7. The philosophy was to incorporate proposed roads designated as Major Collector or Arterial routes as trunk infrastructure. In discussions with GRC officers, some additional elements of Minor Collectors were also added for consistency.

[7] Cardno Eppell Olsen 2012, *Calliope Townships Traffic Study*, Brisbane.

Figure 6-1: Previous Initiatives for Calliope

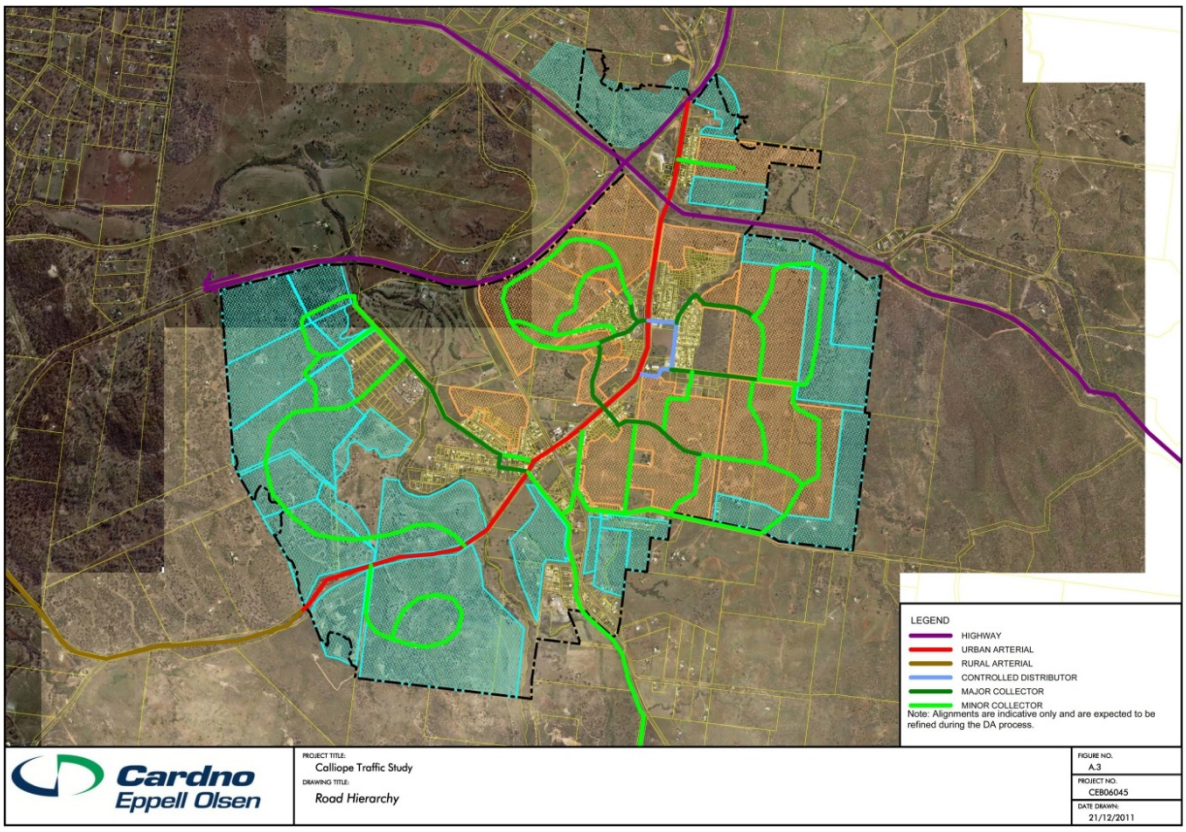

Figure 6-2: Proposed Calliope Road Hierarchy Map[8]

6.3 Outputs

Appendix E contains the list of original initiatives, the final outcome for retaining or removing them, and the reasons why.

6.4 Limitations with the Current Initiatives

6.4.1 GRC Options

In March 2014, GRC Councillors identified roads they would like to see upgraded or developed to reduce the traffic impacts on existing roads. These additional options to be explored represent updated local conditions and changes from the time of the original PIP creation

An extract of the document prepared from the meeting supplied by GRC officers is as follows:

“Councillors identified areas of concern and opportunities in the existing road network: The roads that were identified were:

- Harvey Road was of concern due to school traffic, accesses/intersection issues and amount of traffic using this as a ‘shortcut’ to Kirkwood Road. New Auckland/ Emmadale connectivity was identified as of concern. Councillors indicated that numerous investigations have been undertaken in this area but it is not believed a holistic investigation into the effects of multiple upgrades has been undertaken. The possible connections discussed included:
    - Penda Avenue extension to Vantage Estate or Harvey Road
    - Parksville Drive to Kahler Close/Dixon Drive
    - Dickinson Road to Parsloe Street.

[8] Cardno Eppell Olsen 2012, *Calliope Township Traffic Study*, Brisbane.

- Councillors identified the following as major projects for consideration as part of the development of the Plans For Trunk Infrastructure:
    - Glenlyon Road extension (to provide an alternative to Gladstone Benaraby Road)
    - Chamberlain Road extension to Hughes Road (Bypass around Gladstone for traffic from Tannum Sands/Boyne Island travelling to GSDA and Western Gladstone Industry Area)
    - Haddock Drive upgrade
    - Agnes Water/Turkey Beach Connection and Agnes Water/Baffle Creek Connection.
- GRC officers are building a traffic model and when completed these options will be modelled and the outcome of this modelling will be presented to GRC for discussion.
- Modelling will allow timing to be determined and if feasible the projects will be included in GRC's Priority Infrastructure Plan (PIP)."

6.4.2 Options Identified from the Future Demand Assessment

The limited future demand assessment undertaken during this assessment identified routes that will exhibit traffic performances issues based on the development growth. It is outside the scope of this study to incorporate these into the initiatives list for the current LGIP, but on the basis of the assessment, capacity upgrades should be further assessed for:

- Gladstone-Benaraby Road
- Hanson Road and Port Curtis Drive
- Don Young Drive and Red Rover Road
- The western sections of Kirkwood Road
- Blain Drive.

Future feasibility and transport planning, with confirmation from traffic modelling, will be required to address the performance issues on these routes.

6.4.3 Transport Plan Development and Modelling

The identified initiatives are not currently underpinned by a transport strategy or plan for GRC. TMR has developed a draft Gladstone Area Transport Strategy9, but at the time of writing this strategy has not been endorsed by the Queensland Government. Furthermore, the strategy focuses on major routes for different modes rather than the level of detail needed at a GRC level to frame its future detailed transport planning.

It is outside the scope of this study to develop a transport plan or use the principles of developing a transport plan to identify initiatives from first principles. The options identified from Councillors or through the demand assessment undertaken for this study, the transport plan would need to take a holistic view of transport and also account for existing accessibility and other issues as well as growth. Whilst the new routes and options proposed by Councillors are likely to attract growth related traffic, it cannot be determined at this stage to what extent this would occur. Therefore, there is insufficient evidence that the proposed routes will achieve the objectives behind them or that the routes are driven by growth.

As a result these routes and options have not been incorporated in the current initiatives list. It will be important for GRC to develop a transport model for Gladstone, which will assist with exploring the alternatives and to develop a transport plan. A result of this detailed assessment may result in additional routes and initiatives being incorporated into a future LGIP schedule.

[9] TMR 2013.

7 Initiative Triggers, Timing and Costs

7.1 Purpose

The Local Government Infrastructure Plan requires timing and costs to be assigned to each initiative.

7.2 General Process

7.2.1 Costs

To assign approximate costs to each initiative the updated unit costs from an Infrastructure Unit Rates Study Report[10] prepared for GRC in 2010 was used.

Section 4.3 of the Infrastructure Unit Rates Study Report outlined unit rates for each type of urban and arterial road, along with additional costs for intersections, and costs for bridges. The costs were indexed to March 2010 and the report had used the ABS Road and Bridge Construction Index for Queensland (Index 3101). The rates allowed for owner's costs but excluded contingency and land purchase. The rates were considered appropriate across the Gladstone Region.

This was updated from March 2010 rates to March 2014 unit rates using the Road and Bridge Construction Index for Queensland, resulting in an escalation of 11%. Refer to Appendix F for a summary of the March 2014 unit costs for roads, intersections and bridges.

Each initiative was assigned an assumed road type, e.g. urban arterial. The road type did not always reflect its function, e.g. many arterial roads serving an urban function in Gladstone have a rural arterial cross-section. This includes Glenlyon Road, Blain Drive, and Kirkwood Road. For intersections assumed typical approach lengths of 100m for major intersections and 50m for inner urban and suburban intersections were used.

A template approach was taken to assign costs to infrastructure types. No assessment or validation was undertaken to identify the local and bespoke issues that would occur with every project, which would result in a unique cost. No allowance was made for addressing specific site complexities not covered by the unit costs, e.g. topography, purchase of land, relocation of utilities.

No site visits were undertaken to scope the details of the initiative and hence the specific issues affecting costs.

Therefore the costs provide a generalised and consistent approach to assigning costs across the initiatives throughout the growth areas in Gladstone Region. This will provide consistency across the initiatives.

7.2.2 Triggers and Timing

The initial intent was to use triggers from the network performance assessment to assign timings to initiatives. This has been a major input based on the coarse peak hour network assessment undertaken in this study. However there have been significant limitations due to:

- Insufficient traffic count details to determine the existing network performance on many of the links and intersections. This led to the inability to calculate future network performance impact to the initiatives.
- The developments themselves triggering many of the initiatives passing through development areas or providing direct connections to the existing network.
- Some of the initiatives, particularly those in industrial areas and along heavy vehicle routes, are triggered by heavy vehicle loads and the need for pavement strengthening.

The first step identified inputs to the initiative trigger, such as identifying future network performance where available, looking at inter-relationships between initiatives, and looking at development sequencing and timing.

[10] Harrison Grierson 2010, *Gladstone Regional Council Infrastructure Unit Rates Study, Final Report*, November 2010

These inputs were used to determine the initiative trigger, which was then used to develop the timing. We have categorised the timings in five-year bands to match the analysis years and to reflect the coarse analysis that was undertaken in this study.

The terms of reference requested a specific year. However, the ability to forecast to a specific year cannot be undertaken with any confidence even if a transport model was used. Getting to specific years would rely on the actual timing of development and GRC's future budget cash flow, both of which are outside the scope of this study. Therefore timings have been assigned to a five-year period.

The timings based on network performance are very approximate due to the limitations of the analysis described elsewhere in this report, e.g. development sequencing and timing, trip generation rates, route choice, and the absence of transport modelling.

The timings based on development timing are entirely reliant on the sequencing provided by GRC and the OESR population projections.

7.3 Outputs

Appendix G is a summary of the costs for each initiative. In comparison to costs in the three previous PIPs, there is significant variability between the proposed and previous costs. Appendix H is a summary of the timings for each intiative.

A summary of the cost and timing of each initiative is outlined in Table 8-1.

8 Final Initiatives for Inclusion in the PIP

Table 8-1 lists the initiatives for trunk infrastructure developed for the LGIP. Refer to Appendix I for maps showing the initiative locations.

Table 8-1: List of Initiatives

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Gladstone									
Blain Drive									
Blain Drive	West Gladstone	GRC	West Gladstone	R-BLN-001	Blain Drive (Dawson Highway - Railway Crossing)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Previous completion of pavement strengthening of the Red Rover Road route.	2026-2031	$680,000
Blain Drive	West Gladstone	GRC	West Gladstone	R-BLN-002	Blain Drive (Railway Crossing - Auckland Creek)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Previous completion of pavement strengthening of the Red Rover Road route.	2026-2031	$1,540,000
Blain Drive	West Gladstone	GRC	Gladstone	R-BLN-003	Blain Drive / Palm Drive Intersection	Intersection upgrade (signals)	Traffic capacity	2026-2031	$560,000
Blain Drive	West Gladstone	GRC	West Gladstone	R-BLN-004	Blain Drive (Auckland Creek Bridge)	Bridge upgrade (provide foot/bike path)	Previous completion of pavement strengthening of the Red Rover Road route.	2026-2031	$1,470,000
Blain Drive	Callemondah	GRC	West Gladstone	R-BLN-005	Blain Drive (Auckland Creek - Hanson Road)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Previous completion of pavement strengthening of the Red Rover Road route.	2026-2031	$1,930,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Callemondah									
Callemondah	Callemondah	GRC	Callemondah	R-CAL-001	Callemondah Drive (Roseanna Street - Railyards)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Industrial development	Post 2031	$860,000
Callemondah	Callemondah	GRC	Callemondah	R-CAL-002	Red Rover Road (Power Station Rail Bridge – Benstead Street South)	Road upgrade (pavement strengthening for heavy vehicles)	Strategic implementation of Red Rover Road as a heavy vehicle route.	2016-2021	$580,000
Callemondah	Callemondah	GRC	Callemondah	R-CAL-003	Red Rover Road (Benstead Street South – Benstead Street North)	Road upgrade (pavement strengthening for heavy vehicles)	Strategic implementation of Red Rover Road as a heavy vehicle route.	2016-2021	$1,350,000
Callemondah	Callemondah	GRC	Callemondah	R-CAL-004	Red Rover Road (Benstead Street North - Hanson Road)	Road upgrade (pavement strengthening for heavy vehicles)	Strategic implementation of Red Rover Road as a heavy vehicle route.	2016-2021	$970,000
Callemondah	Callemondah	GRC	Callemondah	R-CAL-005	Red Rover Road / Benstead Street South Intersection	Intersection upgrade (major unsignalised T-intersection)	Industrial development	2016-2021	$750,000
Callemondah	Callemondah	GRC	Callemondah	R-CAL-006	Red Rover Road / Benstead Street North Intersection	Intersection upgrade (major unsignalised T-intersection)	Industrial development	2016-2021	$750,000
Clinton									
Clinton	Clinton-New Auckland	GRC	Clinton	R-CLN-001	Don Young Drive / Col Brown Avenue Intersection	Intersection upgrade (signals)	Traffic capacity	2016-2021	$790,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Clinton	Clinton-New Auckland	TMR	Clinton	R-CLN-002	Dawson Highway / Kirkwood Road / Don Young Drive Intersection	Intersection upgrade (signals, with possible ultimate grade separation)	Traffic capacity	2014-2016	$2,050,000
Clinton	Clinton-New Auckland	GRC	Clinton	R-CLN-003	Dawson Highway / Harvey Road / Chapman Drive Intersection	Upgrade Harvey Road approaches to roundabout	Previous PIP timing	2021-2016	$250,000
Clinton	Clinton-New Auckland	GRC	Clinton	R-CLN-004	J Hickey Avenue / Chapman Drive Intersection	Intersection upgrade (increase existing signal capacity)	Outside PIP horizon	Post 2031	$540,000
Clinton	Clinton-New Auckland	GRC	Clinton	R-CLN-005	Col Brown Avenue / J Hickey Avenue Intersection East	Intersection upgrade (signals)	Development	2021-2026	$540,000
Clinton	Clinton-New Auckland	GRC	Clinton	R-CLN-006	Harvey Road / Carinya Drive Intersection	Intersection upgrade (single lane roundabout)	Development	2021-2026	$410,000
Gladstone CBD and Surrounds									
Gladstone	Gladstone	GRC	Gladstone	R-CBD-001	Goondoon Street (Lord Street - Yarroon Street)	Traffic management to deal with densification	Development	2016-2021	$540,000
Gladstone	Gladstone	GRC	Gladstone	R-CBD-002	Goondoon Street / Yarroon Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$660,000
Gladstone	Gladstone	GRC	Gladstone	R-CBD-003	Goondoon Street / Roseberry Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$660,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Gladstone	Gladstone	GRC	Gladstone	R-CBD-004	Goondoon Street / William Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$660,000
Gladstone	Gladstone	GRC	Gladstone	R-CBD-005	Auckland Street / Herbert Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$660,000
Gladstone	Gladstone	TMR	Gladstone	R-GLD-001	Hanson Road / Palm Drive Intersection	Intersection upgrade (signals)	Traffic capacity	2014-2016	$1,330,000
Gladstone	Gladstone	TMR	Gladstone	R-GLD-002	Hanson Road / Lord Street Intersection	Intersection upgrade (increase existing signal capacity)	Related to any upgrade of Hanson Road	2016-2021	$1,080,000
Glen Eden									
Glen Eden	Telina-Toolooa	GRC	Glen Eden	R-GED-001	John Dory Drive Extension (John Dory Drive - Glen Eden Drive)	New road (2 lane urban major corridor) and intersection with Glen Eden Drive	Outside PIP horizon	Post 2031	$2,030,000
Glen Eden	Telina-Toolooa	GRC	Glen Eden	R-GED-002	Kirkwood Road / Glen Eden Drive Extension Intersection	New intersection (unsignalised T-intersection)	Outside PIP horizon	Post 2031	$590,000
Glen Eden	Telina-Toolooa	GRC	Glen Eden	R-GED-003	John Dory Drive / Glen Eden Drive Intersection	New intersection (unsignalised T-intersection)	Outside PIP horizon	Post 2031	$370,000
Glenlyon Road									
Glenlyon Road	Gladstone	GRC	Gladstone	R-GLY-001	Glenlyon Street (Bramston Street - Herbert Street)	Road upgrade (pavement strengthening)	Timing of upgrade for Glenlyon Road (Bramston Street - Herbert Street)	2016-2021	$1,230,000
Glenlyon Road	Gladstone	GRC	South Gladstone	R-GLY-002	Glenlyon Road (Herbert Street -	Road upgrade (widen to 4 lanes, provide cycle	Traffic capacity	2016-2021	$2,680,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
					Derby Street)	facilities)			
Glenlyon Road	Gladstone	GRC	South Gladstone	R-GLY-003	Glenlyon Road (Derby Street - Philip Street)	Road upgrade (widen to 4 lanes & provide cycle facilities)	Traffic capacity	2016-2021	$5,940,000
Glenlyon Road	Gladstone	GRC	Sun Valley	R-GLY-004	Glenlyon Road (Philip Street - Dixon Drive)	Road upgrade (widen to 4 lanes including rail bridge duplication, provide cycle facilities, & upgrade Derby Street Intersection)	Traffic capacity	2026-2031	$5,650,000
Glenlyon Road	Telina-Toolooa	GRC	Gladstone	R-GLY-005	Glenlyon Road (Dixon Drive - Victoria Avenue)	Road upgrade (widen to 4 lanes, provide cycle facilities, and upgrade Victoria Avenue Intersection to signals)	Outside PIP horizon	Post 2031	$4,760,000
Glenlyon Road	Telina-Toolooa	GRC	Gladstone	R-GLY-006	Glenlyon Road (Victoria Avenue - Kirkwood Road)	Road upgrade (widen to 4 lanes & provide cycle facilities)	Outside PIP horizon	Post 2031	$2,970,000
Glenlyon Road	Telina-Toolooa	GRC	O'Connell	R-GLY-007	Glenlyon Road Extension (Kirkwood Road to Mt Rollo)	Road upgrade to provide new alignment and sealed road	Outside PIP horizon	Post 2031	$3,850,000
Kin Kora									
Kin Kora	Kin Kora-Sun Valley	TMR	Kin Kora	R-KKA-001	Dawson Highway / Philip Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2014-2016	$2,090,000
Kin Kora	West Gladstone	TMR	Kin Kora	R-KKA-002	Philip Street (Waterson Drive - 144 Philip Street)	Road upgrade (widen to 4 lanes), including intersection upgrade at Waterson Street (signals)	Traffic capacity	2026-2031	$2,290,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
New Auckland									
New Auckland	Clinton-New Auckland	GRC	New Auckland	R-NAK-001	Penda Avenue / Shaw Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$2,010,000
South Gladstone									
South Gladstone	Gladstone	GRC	South Gladstone	R-SGL-001	Auckland Street / Short Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$600,000
South Gladstone	Gladstone	GRC	South Gladstone	R-SGL-002	Coon Street / Toolooa Street Intersection	Intersection upgrade (increase existing signal capacity)	Previous PIP timing related to traffic capacity	2021-2026	$660,000
South Gladstone	Gladstone	GRC	South Gladstone	R-SGL-003	Derby Street / Coon Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$660,000
South Gladstone	Gladstone	GRC	South Gladstone	R-SGL-004	Derby Street / Ann Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$1,310,000
South Gladstone	Gladstone	TMR	South Gladstone	R-SGL-005	Philip Street / Oxley Drive Intersection	Intersection upgrade (signals)	Traffic capacity	2021-2026	$540,000
Telina									
Telina	Telina-Toolooa	GRC	Telina	R-TEL-001	Dixon Drive / Witney Street Intersection	Intersection upgrade (signals)	Development	2021-2026	$540,000
Telina	Telina-Toolooa	GRC	Telina	R-TEL-002	Dixon Drive / Mercury Street Intersection	Intersection upgrade (signals)	Development	2021-2026	$540,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Toolooa									
Toolooa	Telina-Toolooa	GRC	Toolooa	R-TOO-001	Dalrymple Drive / John Dory Drive Intersection	Intersection upgrade (roundabout)	Development	2021-2026	$410,000
Toolooa	Telina-Toolooa	TMR	Toolooa	R-TOO-002	Gladstone-Benaraby Road / Dalrymple Road Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2016-2021	$800,000
West Gladstone									
West Gladstone	West Gladstone	TMR	West Gladstone	R-WGL-001	Dawson Highway / Scenery Street Intersection	Intersection upgrade (signals)	Previous PIP timing related to traffic capacity	2021-2026	$1,310,000
West Gladstone	West Gladstone	TMR	West Gladstone	R-WGL-002	Dawson Highway / Paterson Street / Cemetary Street Intersections	Intersection upgrade (coordinated signals for the two staggered-T intersections)	Previous PIP timing related to traffic capacity	2021-2026	$1,500,000
West Gladstone	West Gladstone	GRC	West Gladstone	R-WGL-003	Breslin Street / Boles Street Intersection	Intersection upgrade (increase existing signal capacity)	Outside PIP horizon	Post 2031	$840,000
Yarwun									
Yarwun	Gladstone Hinterland	GRC	Yarwun	R-YAR-001	Red Rover Road / Don Young Drive / Reid Road Extension Intersection	Intersection upgrade (single lane roundabout)	Outside PIP horizon	Post 2031	$760,000
Yarwun	Gladstone Hinterland	TMR	Yarwun	R-YAR-002	Reid Road Extension (Red Rover Road - Calliope River)	New road (2 lane road)	Outside PIP horizon	Post 2031	$2,890,000
Yarwun	Gladstone Hinterland	TMR	Yarwun	R-YAR-003	Reid Road Extension (Calliope River Bridge)	2 Lane (Heavy Vehicle)	Outside PIP horizon	Post 2031	$74,250,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Yarwun	Gladstone Hinterland	TMR	Yarwun	R-YAR-004	Reid Road Extension (Calliope River - Port Curtis Way)	New road (2 lane road along Mt Miller Road alignment)	Outside PIP horizon	Post 2031	$10,590,000
Yarwun	Gladstone Hinterland	GRC	Yarwun	R-YAR-005	Calliope River Road	Road upgrade (alignment improvements and strengthening)	Previous PIP timing related to industrial development	2016-2021	$3,850,000
Boyne Island/Tannum Sands									
Boyne Island (excluding Malpas Street)									
Boyne Island	Boyne Island - Tannum Sands	TMR	Boyne Island	R-BIS-001	Boyne Island Road (undefined)	Road upgrade (not defined).	Traffic capacity	2021-2026	$16,870,000
Hampton Drive/Tannum Sands Road									
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-001	Hampton Drive / Booth Avenue West Intersection	Intersection upgrade (signals)	Traffic capacity	2016-2021	$330,000
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-002	Hampton Drive / Latrobe Street Intersection	Intersection upgrade (signals)	Traffic capacity	2016-2021	$330,000
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-003	Hampton Drive / Garnet Road Intersection	Intersection upgrade (signals)	Traffic capacity	2016-2021	$330,000
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-004	Hampton Drive / Booth Avenue East Intersection	Intersection upgrade (signals)	Traffic capacity	2016-2021	$333,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-005	Hampton Drive / Cremorne Drive Intersection	Intersection upgrade (signals)	Traffic capacity	2016-2021	$333,000
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-006	Hampton Drive / Tannum Sands Road Intersection	Intersection upgrade (signals)	Traffic capacity	2016-2021	$940,000
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-007	Hampton Drive (Malpas Street - Latrobe Street)	Road upgrade (undefined TMR project)	Traffic capacity	2016-2021	$4,910,000
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-008	Tannum Sands Road / Coronation Drive Intersection	Intersection upgrade (roundabout)	Traffic capacity	2026-2031	$1,050,000
Hampton/ Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-009	Tannum Sands Road (Hampton Drive - Silverton Drive)	Road upgrade (undefined TMR project)	Traffic capacity	2026-2031	$4,240,000
Malpas Street									
Malpas Street	Boyne Island - Tannum Sands	TMR	Boyne Island	R-MAL-001	Malpas Street / Beltana Drive Intersection	Intersection upgrade	Traffic capacity	2021-2026	$330,000
Malpas Street	Boyne Island - Tannum Sands	TMR	Boyne Island	R-MAL-002	Malpas Street / Tarcoola Drive Intersection	Intersection upgrade	Traffic capacity	2021-2026	$330,000
Malpas Street	Boyne Island - Tannum Sands	TMR	Boyne Island	R-MAL-003	Malpas Street / Centenary Drive Intersection	Intersection upgrade	Traffic capacity	2021-2026	$450,000
Malpas Street	Boyne Island - Tannum Sands	TMR	Boyne Island	R-MAL-004	Malpas Street (Centenary Drive - Boyne Island Road)	Road upgrade (undefined TMR project)	Traffic capacity	2021-2026	$6,380,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Pioneer Drive									
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-PNR-001	Pioneer Drive (Tannum STP Road)(Tannum Sands Road - Tannum STP)	Road upgrade (widen to arterial road 2 lane standard and pavement strengthening as part of Pioneer Drive Bypass)	Traffic capacity	2021-2026	$5,200,000
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-PNR-002	Pioneer Drive Extension (Tannum STP - Boyne Island Road)	New road (2 lane major urban corridor)	Traffic capacity	2021-2026	$3,080,000
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Boyne Island	R-PNR-003	Pioneer Drive Extension (Boyne River)	New bridge across Boyne River	Traffic capacity	2021-2026	$74,250,000
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Boyne Island	R-PNR-004	Pioneer Drive Extension (Floodway)	New bridge across the Floodway	Traffic capacity	2021-2026	$7,890,000
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Boyne Island	R-PNR-005	Pioneer Drive Extension (Cattle Creek)	New bridge across Cattle Creek	Traffic capacity	2021-2026	$5,610,000
Tannum Sands (excluding Hampton Drive and Tannum Sands Road)									
Tannum Sands	Boyne Island - Tannum Sands	GRC	Tannum Sands	R-TNS-001	Coronation Drive Extension (Coronation Drive - Dahl Road)	New road (2 lane major urban corridor)	Development	2021-2026	$2,550,000
Tannum Sands	Boyne Island - Tannum Sands	GRC	Tannum Sands	R-TNS-002	Coronation Drive Extension (Dahl Road - Pioneer Drive)	New road (2 lane major urban corridor)	Outside PIP horizon	Post 2031	$4,070,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Tannum Sands	Boyne Island - Tannum Sands	GRC	Tannum Sands	R-TNS-003	Dahl Road Extension (Dahl Road - Coronation Drive Extension)	New road (2 lane major urban corridor)	Development	2021-2026	$3,570,000
Tannum Sands	Boyne Island - Tannum Sands	GRC	Tannum Sands	R-TNS-004	Coronation Drive / Cremorne Drive Intersection	Intersection upgrade (single lane roundabout)	Development	2021-2026	$430,000
Agnes Water									
Agnes Water									
Agnes Water	Agnes Water - Miriam Vale	GRC	Agnes Water	R-AGW-001	Seventeen Seventy Link Road (Round Hill Road - Captain Cook Drive)	New road (2 lane urban collector)	Outside PIP horizon	Post 2031	$7,360,000
Agnes Water	Agnes Water - Miriam Vale	GRC	Agnes Water	R-AGW-002	Bicentennial Drive / Round Hill Road Intersection	Intersection upgrade (unsignalised t-intersection)	Outside PIP horizon	Post 2031	$120,000
Agnes Water	Agnes Water - Miriam Vale	GRC	Agnes Water	R-AGW-003	Round Hill Road (various rural sections)	Road upgrade (provision of sealed road shoulders in deficient areas to ensure a consistent formation width)	Development	2016-2026	$2,890,000
Agnes Water	Agnes Water - Miriam Vale	GRC	Agnes Water	R-AGW-004	Round Hill Road / Captain Cook Drive Intersection	Intersection upgrade (roundabout)	Presumed traffic capacity	2026-2031	$730,000
Agnes Water	Agnes Water - Miriam Vale	GRC	Seventeen Seventy	R-AGW-005	Captain Cook Drive (GRC Depot - 1770 Marina)	Road upgrade (widening to and pavement strengthen to rural collector standard)	Development	2021-2026	$3,880,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Calliope									
Calliope East									
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-001	Drynan Drive East (Dawson Highway - Morris Avenue)	Road upgrade (provide 2 lane arterial road standard)	Development	2026-2031	$500,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-002	Morris Avenue (Don Cameron Drive - Central Avenue)	Road upgrade (provide 2 lane arterial road standard)	Development	2026-2031	$800,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-003	Don Cameron Drive (Walker Drive - Central/East Intersection)	Road upgrade (provide 2 lane collector road standard)	Development	2026-2031	$1,600,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-004	Lightning Street (Dawson Highway - Trudy Street)	Road upgrade (provide 2 lane collector road standard)	Development	2016-2021	$430,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-005	Trudy Street (Lightning Street - Herbertson Road)	Road upgrade (provide 2 lane collector road standard), and new road	Development	2016-2021	$370,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-006	Panorama Road 1 (Herbertson Road - Panorama Road 2)	New road (provide 2 lane collector road standard)	Development	2021-2026	$2,210,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-007	Don Cameron Drive / Morris Avenue Intersection	Intersection upgrade (roundabout)	Outside PIP horizon	Post 2031	$410,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-008	Morris Avenue / Drynan Drive Intersection	Intersection upgrade (roundabout)	Outside PIP horizon	Post 2031	$540,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-009	Trudy Street / Herbertson Road / Panorama 1 Intersection	New intersection (priority control)	Development	2016-2021	$550,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-010	Panorama 1 / Panorama 2 Intersection	New intersection (priority control)	Development	2021-2026	$550,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-011	Don Cameron / Central / East Intersection	New intersection (priority control)	Development	2026-2031	$550,000
Calliope East	Gladstone Hinterland	GRC	Calliope	R-CPE-012	Morris Avenue / Central Avenue Intersection	Intersection upgrade (roundabout)	Development	2026-2031	$410,000
Calliope South									
Calliope South	Gladstone Hinterland	GRC	Calliope	R-CPS-001	Sutherland Street (Dawson Highway - Pujolas Street)	Road upgrade (provide 2 lane collector road standard)	Development	2026-2031	$620,000
Calliope South	Gladstone Hinterland	GRC	Calliope	R-CPS-002	Pujolas Street (Bloomfield Street - Sutherland Street)	Road upgrade (provide 2 lane collector road standard)	Development	2026-2031	$270,000
Calliope South	Gladstone Hinterland	GRC	Calliope	R-CPS-003	Archer Street (Pujolas Street - Stowe Road)	Road upgrade (provide 2 lane collector road standard)	Development	2026-2031	$1,600,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Calliope South	Gladstone Hinterland	GRC	Calliope	R-CPS-004	Stowe Road (Archer Street - Ninganga Court)	Road upgrade (provide 2 lane collector road standard)	Development	2026-2031	$1,720,000
Calliope South	Gladstone Hinterland	GRC	Calliope	R-CPS-005	Archer Street / Bloomfield Street / Pujolas Street Intersection	Intersection upgrade (roundabout)	Development	2026-2031	$540,000
Calliope West									
Calliope West	Gladstone Hinterland	GRC	Calliope	R-CPW-001	Drynan Drive West (Dawson Highway - Elliot Drive)	Road upgrade (provide 2 lane collector road standard)	Development	2026-2031	$1,350,000
Calliope West	Gladstone Hinterland	GRC	Calliope	R-CPW-002	Major Collector (Drynan Drive - Dawson Highway)	Road upgrade (provide 2 lane collector road standard) and new road	Development	2026-2031	$1,110,000
Calliope West	Gladstone Hinterland	GRC	Calliope	R-CPW-003	Liffey Way (Drynan Drive - end of existing formation)	Road upgrade (provide 2 lane collector road standard)	Development	2026-2031	$740,000
Calliope West	Gladstone Hinterland	GRC	Calliope	R-CPW-004	Drynan Drive / Liffey Way Intersection	Intersection upgrade (roundabout)	Development	2026-2031	$410,000
Calliope West	Gladstone Hinterland	GRC	Calliope	R-CPW-005	Drynan Drive / Capricornia Drive Intersection	Intersection upgrade (upgraded priority control)	Development	2016-2021	$430,000
Calliope West	Gladstone Hinterland	GRC	Calliope	R-CPW-006	Drynan Drive / Major Collector Intersection	Intersection upgrade (roundabout)	Development	2026-2031	$410,000

Corridor/ Location	SA2 Zone	TMR/ GRC Road	Suburb	New ID	Project description	Project type	Trigger	Timing Band	Cost
Calliope Dawson Hwy									
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-001	Dawson Highway / Drynan Drive Intersection	Intersection upgrade (signals)	Traffic capacity	2026-2031	$990,000
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-002	Dawson Highway / Don Cameron Drive / Herbertson Road Intersection	Intersection upgrade (signals)	Development	2021-2026	$990,000
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-003	Dawson Highway / Lightning Drive Intersection	Intersection upgrade (signals)	Outside PIP horizon	Post 2031	$990,000
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-004	Dawson Highway / Bloomfield Street Intersection	Intersection downgrade (left-in/left-out)	Linked to the Dawson Highway / Sutherland Street Intersection	2026-2031	$150,000
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-005	Dawson Highway / Sutherland Street Intersection	Intersection upgrade (signals)	Traffic capacity	2026-2031	$990,000

9 Conclusions and Recommendations

9.1 Residual Issues

The limited assessment undertaken to develop the Plans for Trunk Infrastructure (PFTI) transport component identified the following issues which should be resolved and refined prior to the development of the next LGIP:

- **OESR Projections:** The OESR population and dwelling projections are high, particularly for the Boyne Island-Tannum Sands SA2 zone. Although the employment projections were not directly used for this assessment, they were observed as being very high in the Boyne Island-Tannum Sand SA2 but are not reflected in the known available developable area.
- **Development Sequencing:** The development sequencing undertaken by GRC for this assessment has been invaluable to determining the locations and scale of additional traffic volumes. However, the assessment has been limited, particularly in boundary areas between SA2 zones.
- **GSDA Exclusion:** The OESR projections and the development sequencing exclude the GSDA. Future development of the GSDA could have a major impact on land use and transport patterns.
- **Major Network Impacts:** The result of the high OESR projections leads to major additional traffic volumes on the network. Although they are manageable in the early years, i.e. around 2016, they amplify significantly by 2021. These high projections place significant stress on primary trunk network, resulting in the theoretical need to upgrade major sections of infrastructure. The reality of these impacts has not been validated in this assessment.
- **Need for a Transport Model:** There is an absence of quantifiable data such as traffic counts in many locations to get a true picture of the network. Likewise, the absence of a transport model means that that the route assignment of additional traffic volumes cannot be adequately determined in this assessment.
- **Need for a Strategic Transport Plan and Feasibility Assessments:** There are several potential initiatives raised by GRC and identified from this broad assessment that could not be incorporated in an Infrastructure Charges Schedule (ICS). This is because they were not included in the previous PIPs, nor could they be assessed to justify their inclusion on growth triggers at this stage. They need to be underpinned by an overarching transport plan for GRC and individual feasibility assessments to determine their viability.
- **Freight Infrastructure:** Gladstone Region has a high industrial base with significant levels of heavy vehicles. A typical transport model focuses on traffic volumes and capacities, rather than the special infrastructure needs for heavy vehicles through pavement strengthening and road safety. This means that the freight infrastructure needs may not be clearly identified through traditional assessment techniques.
- **Walking and Cycling Infrastructure:** The work has focused on road infrastructure for general traffic and freight. Although footpaths and cycling infrastructure are inherently included in the desired standards of road infrastructure, there is no overarching plan for walking and cycling and how the pieces of infrastructure connect. There may be infrastructure sections that should be implemented that are off-road.
- **Cost Estimation:** The cost estimates are applied at very high level unit cost approach. They take no account of the unique complexities of individual sites; therefore these are only an initial magnitude assessment at this stage.

9.2 Recommendations

To resolve the residual issues, it is the recommendations of this assessment that Gladstone Regional Council undertakes the following tasks:

- **Review the OESR Projections:** Review the high-level projections that are used to base future planning. It is important to ensure that the projections are rigorously assessed and robust enough to have confidence in planning the types and timing of implementing future infrastructure.

- **Review the Development Sequencing and Include the GSDA:** Review the initial development sequencing assumptions in conjunction with the review of the OESR projections. Include and recognise impact of State-led initiatives such as the GSDA, as they have the potential to have major impacts on GRC infrastructure.
- **Develop a Transport Model and Prepare a Strategic Transport Plan:** Develop a region-wide transport plan that captures GRC's strategic multi-modal transportation response to the land use intent in the new consolidated planning scheme. As part of developing this plan, prepare a transport model that enables a rigour to be applied to determine future traffic volumes and impacts.
- **Undertake Feasibility Studies for Individual Initiatives:** Undertake feasibility studies to justify some of the more significant initiatives not included in the Infrastructure Charges Schedule. This would include the regional road link proposals between Gladstone and Agnes Water, and an assessment of the proposed bridge across the Boyne River as part of the Pioneer Drive Extension. As part of these feasibility studies, undertake more detailed cost estimation to account for the specifics of each initiative.
- **Assess the Freight Infrastructure Needs:** Undertake a specific assessment of freight impacts to GRC infrastructure to provide rigour in determining future freight infrastructure needs, particularly to determine what is triggered by industrial growth.
- **Prepare an Active Transport Plan:** As part of the Strategic Transport Plan, prepare an Active Transport Plan to provide greater clarity in investment decisions for walking and cycling, and outline a clearer distinction between footpaths/shared paths to be provided by GRC for the benefit of existing ratepayers, versus trunk infrastructure that is chargeable under a LGIP.

10 References

Documents

Austroads 2013, *Austroads Guide to Traffic Management, Part 3: Traffic Studies and Analysis*

Cardno Eppell Olsen 2012, Calliope Township Traffic Study, Brisbane

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New Zealand Transport Agency (NZTA) 2013, *The NZ Transport Agency's Economic Evaluation Manual, First Edition, Amendment 0*, 1 July 2013

Roads and Traffic Authority (RTA) 2002, *Guide to Traffic Generating Developments, Version 2.2*, New South Wales

Transportation Research Board (TRB) 2000, *Highway Capacity Manual 2000*, National Research Council, Washington DC

MWH's Technical Supporting Documents

Gladstone Regional Council Roads/Strategic Infrastructure Plan Future Developments Assessment spreadsheet

Gladstone Regional Council Roads/Strategic Infrastructure Plan Future Demands Assessment spreadsheet

Gladstone Regional Council Roads/Strategic Infrastructure Plan Initiatives Assessment spreadsheet

Gladstone Regional Council Roads/Strategic Infrastructure Plan Initiatives Timings and Costs Assessment spreadsheet

Gladstone Regional Council Roads/Strategic Infrastructure Plan Initiatives Inputs to ICS spreadsheet

Appendix A Future Transport Demands

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips between 2014 and 2016

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Total Additional Trip Generation													
Destination													
Total trip generation		662				160	71		35	103	83	128	83
Peak direction trip generation		562				136	60		30	87	71	108	70
Proportion of total trip generation													
Destination trip generation		562				136	60		30	87	71	108	70
Calliope													
Local Roads (Inbound to Gladstone in Morning Peak)													
Sutherland Street	W of Dawson												
Don Cameron Drive	E of Dawson												
Drynan Street	W of Dawson												
Drynan Street	E of Dawson												
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	Sutherland - Don Cameron												
Dawson Highway	Don Cameron - Drynan												
Dawson Highway	N of Drynan												
Boyne Island - Tannum Sands													
North and Westbound in Morning Peak													
Tannum Sands Road	Pioneer - Dahl												
Tannum Sands Road	Dahl - Hampton												
Hampton Drive	Tannum Sands - Malpas												
Malpas Street	Hampton - Handley												
Boyne Island Road	Handley - Riverstone												
Boyne Island Road	Riverstone - Gladstone-Benaraby												
Tannum Sands Road (Southbound in Morning Peak)													
Tannum Sands Road	Pioneer - Bruce (opposite direction)												
Kirkwood Road Corridor													
Kirkwood Road (Westbound in Morning Peak)													
Kirkwood Road	Gladstone-Benaraby - Glenlyon												
Kirkwood Road	Glenlyon - Dixon												
Kirkwood Road	Dixon - Lavender	20					20						
Kirkwood Road	Lavender - Harvey	155				136	20						
Kirkwood Road	Harvey - Dawson	131				112	20						
Kirkwood Road (Eastbound in Morning Peak)													
Kirkwood Road	Lavender - Dixon (opposite direction)	40					40						
Kirkwood Road	Dixon - Glenlyon (opposite direction)												
Gladstone -Western Corridor													
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	S of Kirkwood												
Dawson Highway	Don Young/Kirkwood - Harvey/Chapm	3								3			
Dawson Highway	Harvey/Chapman - Penda	29				24				5			
Dawson Highway	Penda - Philip	87				24				63			
Dawson Highway	Philip - Blain	120				24	7		6	63	19		
Dawson Highway	Blain - Hanson/Glenlyon	66				24				39	3		
Don Young Drive - Red Rover Road Route (Northbound in Morning Peak)													
Don Young Drive	Dawson - Col Brown	131				112	20						
Don Young Drive	Col Brown - Railway	156				112	20			24			
Red Rover Road	Railway - Port Curtis Way	156				112	20			24			
Blain Drive Route (Westbound in Morning Peak)													
Blain Drive	Dawson - Port Curtis	54					7		6	24	16		

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips between 2014 and 2016

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Hanson Road Route (Westbound in Morning Peak)													
Hanson Road	Dawson/Bramston - Lord	195					22		18	24	42	89	
Hanson Road	Lord - Blain	195					22		18	24	42	89	
Don Young Drive (Eastbound in Morning Peak)													
Don Young	Col Brown - Dawson (opposite directio	3								3			
Other Western Catchment Streets (Inbound to Gladstone CBD in Morning Peak)													
Col Brown Avenue	E of Don Young	27								27			
Chapman Drive	W of Dawson	3								3			
Harvey Road	Kirkwood - Dawson	24				24							
Penda Avenue	S of Dawson	58								58			
Gladstone -Eastern Corridor													
Gladstone-Benaraby Road (Northbound in Morning Peak)													
Gladstone-Benaraby Roa	Bruce - Kirkwood												
Gladstone-Benaraby Roa	Boyne Island - Kirkwood												
Gladstone-Benaraby Roa	Kirkwood - French												
Glenlyon Road/Street (Northbound in Morning Peak)													
Glenlyon Road	Kirkwood - Dixon/Dalrymple												
Glenlyon Road	Dixon - Philip	70					40		30				
Glenlyon Road	Philip - Derby/Breslin	67					33		24		11		
Glenlyon Street	Derby/Breslin - Tank	70					33		24		14		
Glenlyon Street	Tank - Dawson/Bramston	144					22		18		14	89	
Philip Street (Westbound in Morning Peak)													
Philip Street	French - Glenlyon												
Philip Street	Glenlyon - Reef	24					7		6		11		
Philip Street	Reef - Dawson	33					7		6		19		
Other Eastern Catchment Streets (Inbound in Morning Peak)													
Dixon Drive	Kirkwood - Glenlyon	40					40						
Dalrymple Drive	Gladstone-Benaraby - Glenlyon	30							30				
Gladstone - Inner Network													
South Gladstone Streets (Inbound in Morning Peak)													
Boles Street	S of Breslin Street	3									3		
Breslin Street	Boles - Glenlyon	3									3		
French Street	Philip/Gladstone-Benaraby - Derby												
Toolooa Street	S of Tank	108										108	
Gladstone CBD Streets (Inbound in Morning Peak)													
Bramston Street	Hanson/Glenlyon - Goondoon	42				24				15	3		
Tank Street	Glenlyon - Goondoon	14					11				3		
Lord Street	S of Hanson	37									37		
Lord Street	Hanson - Goondoon	7									7		
Gladstone CBD (Outbound in Morning Peak)													
Tank Street	Toolooa - Goondoon (opposite directio	108										108	
Tank Street	Goondoon - Glenlyon (opposite directi	89										89	
Lord Street	Goondoon - Hanson (opposite directio												
Agnes Water													
Agnes Water (South and Westbound in Morning Peak)													
Captain Cook Drive	N Round Hill Road (sbd AM peak)	43											43
Round Hill Road	W Captain Cook Drive (wbd AM peak)	13											13
Round Hill Road	Town outskirts (wbd AM peak)	17											17
Agnes Water (East and Northbound in Morning Peak)													
Round Hill Road	W Captain Cook Drive (ebd AM peak)	11											11
Captain Cook Drive	N Round Hill Road (nbd AM peak)	3											3
Captain Cook Drive	Town outskirts (nbd AM peak)	17											17

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips between 2014 and 2021

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Total Additional Trip Generation													
Destination													
Total trip generation		3354	201	672	254	413	71	317	35	103	359	635	294
Peak direction trip generation		2851	171	571	216	351	60	269	30	88	305	540	250
Proportion of total trip generation													
Destination trip generation		2851	171	571	216	351	60	269	30	88	305	540	250
Calliope													
Local Roads (Inbound to Gladstone in Morning Peak)													
Sutherland Street	W of Dawson												
Don Cameron Drive	E of Dawson	83	83										
Drynan Street	W of Dawson	88	88										
Drynan Street	E of Dawson												
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	Sutherland - Don Cameron												
Dawson Highway	Don Cameron - Drynan	83	83										
Dawson Highway	N of Drynan	171	171										
Boyne Island - Tannum Sands													
North and Westbound in Morning Peak													
Tannum Sands Road	Pioneer - Dahl	243		243									
Tannum Sands Road	Dahl - Hampton	393		393									
Hampton Drive	Tannum Sands - Malpas	393		393									
Malpas Street	Hampton - Handley	259		259									
Boyne Island Road	Handley - Riverstone	259		259									
Boyne Island Road	Riverstone - Gladstone-Benaraby	424		259	165								
Tannum Sands Road (Southbound in Morning Peak)													
Tannum Sands Road	Pioneer - Bruce (opposite direction)	178		178									
Kirkwood Road Corridor													
Kirkwood Road (Westbound in Morning Peak)													
Kirkwood Road	Gladstone-Benaraby - Glenlyon	354		81	30			243					
Kirkwood Road	Glenlyon - Dixon	200		81	30			89					
Kirkwood Road	Dixon - Lavender	220		81	30		20	89					
Kirkwood Road	Lavender - Harvey	571		81	30	351	20	89					
Kirkwood Road	Harvey - Dawson	509		81	30	289	20	89					
Kirkwood Road (Eastbound in Morning Peak)													
Kirkwood Road	Lavender - Dixon (opposite direction)	40					40						
Kirkwood Road	Dixon - Glenlyon (opposite direction)	18						18					
Gladstone -Western Corridor													
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	S of Kirkwood	171	171										
Dawson Highway	Don Young/Kirkwood - Harvey/Chapm	33	30							3			
Dawson Highway	Harvey/Chapman - Penda	97	30			62				5			
Dawson Highway	Penda - Philip	155	30			62				63			
Dawson Highway	Philip - Blain	358	30			62	7	33	6	63	156		
Dawson Highway	Blain - Hanson/Glenlyon	155	30			62				39	24		
Don Young Drive - Red Rover Road Route (Northbound in Morning Peak)													
Don Young Drive	Dawson - Col Brown	650	141	81	30	289	20	89					
Don Young Drive	Col Brown - Railway	674	141	81	30	289	20	89		25			
Red Rover Road	Railway - Port Curtis Way	674	141	81	30	289	20	89		25			
Blain Drive Route (Westbound in Morning Peak)													
Blain Drive	Dawson - Port Curtis	203					7	33	6	24	132		

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips between 2014 and 2021

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Hanson Road Route (Westbound in Morning Peak)													
Hanson Road	Dawson/Bramston - Lord	817		323	122		22	100	18	24	119	90	
Hanson Road	Lord - Blain	1172		323	122		22	100	18	24	119	445	
Don Young Drive (Eastbound in Morning Peak)													
Don Young	Col Brown - Dawson (opposite directio	3								3			
Other Western Catchment Streets (Inbound to Gladstone CBD in Morning Peak)													
Col Brown Avenue	E of Don Young	27								27			
Chapman Drive	W of Dawson	3								3			
Harvey Road	Kirkwood - Dawson	62				62							
Penda Avenue	S of Dawson	58								58			
Gladstone -Eastern Corridor													
Gladstone-Benaraby Road (Northbound in Morning Peak)													
Gladstone-Benaraby Roa	Bruce - Kirkwood	178		178									
Gladstone-Benaraby Roa	Boyne Island - Kirkwood	602		437	165								
Gladstone-Benaraby Roa	Kirkwood - French	491		356	135								
Glenlyon Road/Street (Northbound in Morning Peak)													
Glenlyon Road	Kirkwood - Dixon/Dalrymple	181						181					
Glenlyon Road	Dixon - Philip	251					40	181	30				
Glenlyon Road	Philip - Derby/Breslin	737		323	122		33	147	24		88		
Glenlyon Street	Derby/Breslin - Tank	760		323	122		33	147	24		112		
Glenlyon Street	Tank - Dawson/Bramston	787		323	122		22	100	18		112	90	
Philip Street (Westbound in Morning Peak)													
Philip Street	French - Glenlyon	444		323	122								
Philip Street	Glenlyon - Reef	135					7	33	6		88		
Philip Street	Reef - Dawson	203					7	33	6		156		
Other Eastern Catchment Streets (Inbound in Morning Peak)													
Dixon Drive	Kirkwood - Glenlyon	40					40						
Dalrymple Drive	Gladstone-Benaraby - Glenlyon	30							30				
Gladstone - Inner Network													
South Gladstone Streets (Inbound in Morning Peak)													
Boles Street	S of Breslin Street	24									24		
Breslin Street	Boles - Glenlyon	24									24		
French Street	Philip/Gladstone-Benaraby - Derby	46		34	13								
Toolooa Street	S of Tank	155		34	13							109	
Gladstone CBD Streets (Inbound in Morning Peak)													
Bramston Street	Hanson/Glenlyon - Goondoon	131	30			62				15	24		
Tank Street	Glenlyon - Goondoon	82					11	48			24		
Lord Street	S of Hanson	37									37		
Lord Street	Hanson - Goondoon	7									7		
Gladstone CBD (Outbound in Morning Peak)													
Tank Street	Toolooa - Goondoon (opposite directio	155		34	13							109	
Tank Street	Goondoon - Glenlyon (opposite directi	90										90	
Lord Street	Goondoon - Hanson (opposite directio	355										355	
Agnes Water													
Agnes Water (South and Westbound in Morning Peak)													
Captain Cook Drive	N Round Hill Road (sbd AM peak)	98											98
Round Hill Road	W Captain Cook Drive (wbd AM peak)	30											30
Round Hill Road	Town outskirts (wbd AM peak)	59											59
Agnes Water (East and Northbound in Morning Peak)													
Round Hill Road	W Captain Cook Drive (ebd AM peak)	94											94
Captain Cook Drive	N Round Hill Road (nbd AM peak)	29											29
Captain Cook Drive	Town outskirts (nbd AM peak)	59											59

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips between 2014 and 2026

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Total Additional Trip Generation													
Destination													
Total trip generation		6263	608	1134	751	845	388	343	35	165	564	894	536
Peak direction trip generation		5324	517	964	638	718	330	292	30	140	479	760	456
Proportion of total trip generation													
Destination trip generation		5324	517	964	638	718	330	292	30	140	479	760	456
Calliope													
Local Roads (Inbound to Gladstone in Morning Peak)													
Sutherland Street	W of Dawson	122	122										
Don Cameron Drive	E of Dawson	308	308										
Drynan Street	W of Dawson	88	88										
Drynan Street	E of Dawson												
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	Sutherland - Don Cameron	122	122										
Dawson Highway	Don Cameron - Drynan	429	429										
Dawson Highway	N of Drynan	517	517										
Boyne Island - Tannum Sands													
North and Westbound in Morning Peak													
Tannum Sands Road	Pioneer - Dahl	383		383									
Tannum Sands Road	Dahl - Hampton	683		683									
Hampton Drive	Tannum Sands - Malpas	683		683									
Malpas Street	Hampton - Handley	456		456									
Boyne Island Road	Handley - Riverstone	456		456									
Boyne Island Road	Riverstone - Gladstone-Benaraby	944		456	488								
Tannum Sands Road (Southbound in Morning Peak)													
Tannum Sands Road	Pioneer - Bruce (opposite direction)	281		281									
Kirkwood Road Corridor													
Kirkwood Road (Westbound in Morning Peak)													
Kirkwood Road	Gladstone-Benaraby - Glenlyon	491		136	90			265					
Kirkwood Road	Glenlyon - Dixon	322		136	90			96					
Kirkwood Road	Dixon - Lavender	431		136	90		109	96					
Kirkwood Road	Lavender - Harvey	1149		136	90	718	109	96					
Kirkwood Road	Harvey - Dawson	1022		136	90	592	109	96					
Kirkwood Road (Eastbound in Morning Peak)													
Kirkwood Road	Lavender - Dixon (opposite direction)	221					221						
Kirkwood Road	Dixon - Glenlyon (opposite direction)	18						18					
Gladstone -Western Corridor													
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	S of Kirkwood	517	517										
Dawson Highway	Don Young/Kirkwood - Harvey/Chapm	98	91							7			
Dawson Highway	Harvey/Chapman - Penda	233	91			127				15			
Dawson Highway	Penda - Philip	290	91			127				72			
Dawson Highway	Philip - Blain	631	91			127	41	36	6	72	257		
Dawson Highway	Blain - Hanson/Glenlyon	306	91			127				49	39		
Don Young Drive - Red Rover Road Route (Northbound in Morning Peak)													
Don Young Drive	Dawson - Col Brown	1448	426	136	90	592	109	96					
Don Young Drive	Col Brown - Railway	1516	426	136	90	592	109	96		68			
Red Rover Road	Railway - Port Curtis Way	1516	426	136	90	592	109	96		68			
Blain Drive Route (Westbound in Morning Peak)													
Blain Drive	Dawson - Port Curtis	325					41	36	6	24	218		

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips between 2014 and 2026

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Hanson Road Route (Westbound in Morning Peak)													
Hanson Road	Dawson/Bramston - Lord	1443		544	360		122	108	18	24	176	90	
Hanson Road	Lord - Blain	1979		544	360		122	108	18	24	176	626	
Don Young Drive (Eastbound in Morning Peak)													
Don Young	Col Brown - Dawson (opposite directio	7								7			
Other Western Catchment Streets (Inbound to Gladstone CBD in Morning Peak)													
Col Brown Avenue	E of Don Young	75								75			
Chapman Drive	W of Dawson	7								7			
Harvey Road	Kirkwood - Dawson	127				127							
Penda Avenue	S of Dawson	58								58			
Gladstone -Eastern Corridor													
Gladstone-Benaraby Road (Northbound in Morning Peak)													
Gladstone-Benaraby Roa	Bruce - Kirkwood	281		281									
Gladstone-Benaraby Roa	Boyne Island - Kirkwood	1225		737	488								
Gladstone-Benaraby Roa	Kirkwood - French	999		601	398								
Glenlyon Road/Street (Northbound in Morning Peak)													
Glenlyon Road	Kirkwood - Dixon/Dalrymple	196						196					
Glenlyon Road	Dixon - Philip	446					221	196	30				
Glenlyon Road	Philip - Derby/Breslin	1414		544	360		180	159	24		146		
Glenlyon Street	Derby/Breslin - Tank	1453		544	360		180	159	24		185		
Glenlyon Street	Tank - Dawson/Bramston	1428		544	360		122	108	18		185	90	
Philip Street (Westbound in Morning Peak)													
Philip Street	French - Glenlyon	905		544	360								
Philip Street	Glenlyon - Reef	228					41	36	6		146		
Philip Street	Reef - Dawson	340					41	36	6		257		
Other Eastern Catchment Streets (Inbound in Morning Peak)													
Dixon Drive	Kirkwood - Glenlyon	221					221						
Dalrymple Drive	Gladstone-Benaraby - Glenlyon	30							30				
Gladstone - Inner Network													
South Gladstone Streets (Inbound in Morning Peak)													
Boles Street	S of Breslin Street	39									39		
Breslin Street	Boles - Glenlyon	39									39		
French Street	Philip/Gladstone-Benaraby - Derby	94		57	38								
Toolooa Street	S of Tank	203		57	38							109	
Gladstone CBD Streets (Inbound in Morning Peak)													
Bramston Street	Hanson/Glenlyon - Goondoon	282	91			127				25	39		
Tank Street	Glenlyon - Goondoon	149					58	51			39		
Lord Street	S of Hanson	37									37		
Lord Street	Hanson - Goondoon	7									7		
Gladstone CBD (Outbound in Morning Peak)													
Tank Street	Toolooa - Goondoon (opposite directio	203		57	38							109	
Tank Street	Goondoon - Glenlyon (opposite directi	90										90	
Lord Street	Goondoon - Hanson (opposite directio	536										536	
Agnes Water													
Agnes Water (South and Westbound in Morning Peak)													
Captain Cook Drive	N Round Hill Road (sbd AM peak)	140											140
Round Hill Road	W Captain Cook Drive (wbd AM peak)	43											43
Round Hill Road	Town outskirts (wbd AM peak)	107											107
Agnes Water (East and Northbound in Morning Peak)													
Round Hill Road	W Captain Cook Drive (ebd AM peak)	208											208
Captain Cook Drive	N Round Hill Road (nbd AM peak)	64											64
Captain Cook Drive	Town outskirts (nbd AM peak)	107											107

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips beyond 2031

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Total Additional Trip Generation													
Destination													
Total trip generation		14931	1011	2174	3174	1179	598	538	35	165	1880	3391	786
Peak direction trip generation		12691	859	1848	2698	1002	508	457	30	140	1598	2882	668
Proportion of total trip generation													
Destination trip generation		12691	859	1848	2698	1002	508	457	30	140	1598	2882	668
Calliope													
Local Roads (Inbound to Gladstone in Morning Peak)													
Sutherland Street	W of Dawson	203	203										
Don Cameron Drive	E of Dawson	308	308										
Drynan Street	W of Dawson	323	323										
Drynan Street	E of Dawson	26	26										
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	Sutherland - Don Cameron	203	203										
Dawson Highway	Don Cameron - Drynan	511	511										
Dawson Highway	N of Drynan	859	859										
Boyne Island - Tannum Sands													
North and Westbound in Morning Peak													
Tannum Sands Road	Pioneer - Dahl	783		783									
Tannum Sands Road	Dahl - Hampton	1083		1083									
Hampton Drive	Tannum Sands - Malpas	1083		1083									
Malpas Street	Hampton - Handley	866		866									
Boyne Island Road	Handley - Riverstone	866		866									
Boyne Island Road	Riverstone - Gladstone-Benaraby	3246		866	2381								
Tannum Sands Road (Southbound in Morning Peak)													
Tannum Sands Road	Pioneer - Bruce (opposite direction)	765		765									
Kirkwood Road Corridor													
Kirkwood Road (Westbound in Morning Peak)													
Kirkwood Road	Gladstone-Benaraby - Glenlyon	1014		304	444			265					
Kirkwood Road	Glenlyon - Dixon	899		304	444			151					
Kirkwood Road	Dixon - Lavender	1067		304	444		167	151					
Kirkwood Road	Lavender - Harvey	2069		304	444	1002	167	151					
Kirkwood Road	Harvey - Dawson	1892		304	444	825	167	151					
Kirkwood Road (Eastbound in Morning Peak)													
Kirkwood Road	Lavender - Dixon (opposite direction)	341					341						
Kirkwood Road	Dixon - Glenlyon (opposite direction)	129						129					
Gladstone -Western Corridor													
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	S of Kirkwood	859	859										
Dawson Highway	Don Young/Kirkwood - Harvey/Chapm	159	152							7			
Dawson Highway	Harvey/Chapman - Penda	343	152			177				15			
Dawson Highway	Penda - Philip	401	152			177				72			
Dawson Highway	Philip - Blain	1421	152			177	63	56	6	72	895		
Dawson Highway	Blain - Hanson/Glenlyon	513	152			177				49	136		
Don Young Drive - Red Rover Road Route (Northbound in Morning Peak)													
Don Young Drive	Dawson - Col Brown	2600	708	304	444	825	167	151					
Don Young Drive	Col Brown - Railway	2668	708	304	444	825	167	151		68			
Red Rover Road	Railway - Port Curtis Way	2668	708	304	444	825	167	151		68			
Blain Drive Route (Westbound in Morning Peak)													
Blain Drive	Dawson - Port Curtis	909					63	56	6	24	759		

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips beyond 2031

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Hanson Road Route (Westbound in Morning Peak)													
Hanson Road	Dawson/Bramston - Lord	4041		1217	1777		188	169	18	24	557	90	
Hanson Road	Lord - Blain	6325		1217	1777		188	169	18	24	557	2374	
Don Young Drive (Eastbound in Morning Peak)													
Don Young	Col Brown - Dawson (opposite directio	7								7			
Other Western Catchment Streets (Inbound to Gladstone CBD in Morning Peak)													
Col Brown Avenue	E of Don Young	75								75			
Chapman Drive	W of Dawson	7								7			
Harvey Road	Kirkwood - Dawson	177				177							
Penda Avenue	S of Dawson	58								58			
Gladstone -Eastern Corridor													
Gladstone-Benaraby Road (Northbound in Morning Peak)													
Gladstone-Benaraby Roa	Bruce - Kirkwood	765		765									
Gladstone-Benaraby Roa	Boyne Island - Kirkwood	4011		1631	2381								
Gladstone-Benaraby Roa	Kirkwood - French	3262		1326	1936								
Glenlyon Road/Street (Northbound in Morning Peak)													
Glenlyon Road	Kirkwood - Dixon/Dalrymple	307						307					
Glenlyon Road	Dixon - Philip	677					341	307	30				
Glenlyon Road	Philip - Derby/Breslin	4053		1217	1777		278	250	24		506		
Glenlyon Street	Derby/Breslin - Tank	4189		1217	1777		278	250	24		642		
Glenlyon Street	Tank - Dawson/Bramston	4103		1217	1777		188	169	18		642	90	
Philip Street (Westbound in Morning Peak)													
Philip Street	French - Glenlyon	2995		1217	1777								
Philip Street	Glenlyon - Reef	632					63	56	6		506		
Philip Street	Reef - Dawson	1020					63	56	6		895		
Other Eastern Catchment Streets (Inbound in Morning Peak)													
Dixon Drive	Kirkwood - Glenlyon	341					341						
Dalrymple Drive	Gladstone-Benaraby - Glenlyon	30							30				
Gladstone - Inner Network													
South Gladstone Streets (Inbound in Morning Peak)													
Boles Street	S of Breslin Street	136									136		
Breslin Street	Boles - Glenlyon	136									136		
French Street	Philip/Gladstone-Benaraby - Derby	267		109	159								
Toolooa Street	S of Tank	376		109	159							109	
Gladstone CBD Streets (Inbound in Morning Peak)													
Bramston Street	Hanson/Glenlyon - Goondoon	489	152			177				25	136		
Tank Street	Glenlyon - Goondoon	306					90	81			136		
Lord Street	S of Hanson	61									61		
Lord Street	Hanson - Goondoon	11									11		
Gladstone CBD (Outbound in Morning Peak)													
Tank Street	Toolooa - Goondoon (opposite directio	376		109	159							109	
Tank Street	Goondoon - Glenlyon (opposite directi	90										90	
Lord Street	Goondoon - Hanson (opposite directio	2284										2284	
Agnes Water													
Agnes Water (South and Westbound in Morning Peak)													
Captain Cook Drive	N Round Hill Road (sbd AM peak)	140											140
Round Hill Road	W Captain Cook Drive (wbd AM peak)	43											43
Round Hill Road	Town outskirts (wbd AM peak)	157											157
Agnes Water (East and Northbound in Morning Peak)													
Round Hill Road	W Captain Cook Drive (ebd AM peak)	371											371
Captain Cook Drive	N Round Hill Road (nbd AM peak)	114											114
Captain Cook Drive	Town outskirts (nbd AM peak)	157											157

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips between 2014 and 2031

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Total Additional Trip Generation													
Destination													
Total trip generation		9086	1011	1774	936	1179	598	380	35	165	1134	1213	661
Peak direction trip generation		7723	859	1508	796	1002	508	323	30	140	964	1031	562
Proportion of total trip generation													
Destination trip generation		7723	859	1508	796	1002	508	323	30	140	964	1031	562
Calliope													
Local Roads (Inbound to Gladstone in Morning Peak)													
Sutherland Street	W of Dawson	203	203										
Don Cameron Drive	E of Dawson	308	308										
Drynan Street	W of Dawson	323	323										
Drynan Street	E of Dawson	26	26										
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	Sutherland - Don Cameron	203	203										
Dawson Highway	Don Cameron - Drynan	511	511										
Dawson Highway	N of Drynan	859	859										
Boyne Island - Tannum Sands													
North and Westbound in Morning Peak													
Tannum Sands Road	Pioneer - Dahl	696		696									
Tannum Sands Road	Dahl - Hampton	996		996									
Hampton Drive	Tannum Sands - Malpas	996		996									
Malpas Street	Hampton - Handley	642		642									
Boyne Island Road	Handley - Riverstone	642		642									
Boyne Island Road	Riverstone - Gladstone-Benaraby	1250		642	608								
Tannum Sands Road (Southbound in Morning Peak)													
Tannum Sands Road	Pioneer - Bruce (opposite direction)	512		512									
Kirkwood Road Corridor													
Kirkwood Road (Westbound in Morning Peak)													
Kirkwood Road	Gladstone-Benaraby - Glenlyon	590		213	112			265					
Kirkwood Road	Glenlyon - Dixon	432		213	112			106					
Kirkwood Road	Dixon - Lavender	599		213	112		167	106					
Kirkwood Road	Lavender - Harvey	1601		213	112	1002	167	106					
Kirkwood Road	Harvey - Dawson	1424		213	112	825	167	106					
Kirkwood Road (Eastbound in Morning Peak)													
Kirkwood Road	Lavender - Dixon (opposite direction)	341					341						
Kirkwood Road	Dixon - Glenlyon (opposite direction)	39						39					
Gladstone -Western Corridor													
Dawson Highway (Northbound in Morning Peak)													
Dawson Highway	S of Kirkwood	859	859										
Dawson Highway	Don Young/Kirkwood - Harvey/Chapm	159	152							7			
Dawson Highway	Harvey/Chapman - Penda	343	152			177				15			
Dawson Highway	Penda - Philip	401	152			177				72			
Dawson Highway	Philip - Blain	1049	152			177	63	40	6	72	540		
Dawson Highway	Blain - Hanson/Glenlyon	459	152			177				49	82		
Don Young Drive - Red Rover Road Route (Northbound in Morning Peak)													
Don Young Drive	Dawson - Col Brown	2132	708	213	112	825	167	106					
Don Young Drive	Col Brown - Railway	2200	708	213	112	825	167	106		68			
Red Rover Road	Railway - Port Curtis Way	2200	708	213	112	825	167	106		68			
Blain Drive Route (Westbound in Morning Peak)													
Blain Drive	Dawson - Port Curtis	590					63	40	6	24	458		

Gladstone Roads/Transport Strategic Infrastructure Plan - Additional Network Trips between 2014 and 2031

Road	Section	Total	Calliope	Tannum Sands	Boyne Island	Kirkwood West	Kirkwood Central	Kirkwood East	Telina/Glen Eden	Clinton-New Auckland	Kin Kora-West Gladstone	Gladstone-South Gladstone	Agnes Water
Hanson Road Route (Westbound in Morning Peak)													
Hanson Road	Dawson/Bramston - Lord	2077		852	449		188	120	18	24	336	90	
Hanson Road	Lord - Blain	2836		852	449		188	120	18	24	336	849	
Don Young Drive (Eastbound in Morning Peak)													
Don Young	Col Brown - Dawson (opposite directio	7								7			
Other Western Catchment Streets (Inbound to Gladstone CBD in Morning Peak)													
Col Brown Avenue	E of Don Young	75								75			
Chapman Drive	W of Dawson	7								7			
Harvey Road	Kirkwood - Dawson	177				177							
Penda Avenue	S of Dawson	58								58			
Gladstone -Eastern Corridor													
Gladstone-Benaraby Road (Northbound in Morning Peak)													
Gladstone-Benaraby Roa	Bruce - Kirkwood	512		512									
Gladstone-Benaraby Roa	Boyne Island - Kirkwood	1762		1153	608								
Gladstone-Benaraby Roa	Kirkwood - French	1436		940	496								
Glenlyon Road/Street (Northbound in Morning Peak)													
Glenlyon Road	Kirkwood - Dixon/Dalrymple	217						217					
Glenlyon Road	Dixon - Philip	587					341	217	30				
Glenlyon Road	Philip - Derby/Breslin	2084		852	449		278	177	24		305		
Glenlyon Street	Derby/Breslin - Tank	2166		852	449		278	177	24		387		
Glenlyon Street	Tank - Dawson/Bramston	2104		852	449		188	120	18		387	90	
Philip Street (Westbound in Morning Peak)													
Philip Street	French - Glenlyon	1301		852	449								
Philip Street	Glenlyon - Reef	414					63	40	6		305		
Philip Street	Reef - Dawson	648					63	40	6		540		
Other Eastern Catchment Streets (Inbound in Morning Peak)													
Dixon Drive	Kirkwood - Glenlyon	341					341						
Dalrymple Drive	Gladstone-Benaraby - Glenlyon	30							30				
Gladstone - Inner Network													
South Gladstone Streets (Inbound in Morning Peak)													
Boles Street	S of Breslin Street	82									82		
Breslin Street	Boles - Glenlyon	82									82		
French Street	Philip/Gladstone-Benaraby - Derby	136		89	47								
Toolooa Street	S of Tank	244		89	47							109	
Gladstone CBD Streets (Inbound in Morning Peak)													
Bramston Street	Hanson/Glenlyon - Goondoon	435	152			177				25	82		
Tank Street	Glenlyon - Goondoon	228					90	57			82		
Lord Street	S of Hanson	37									37		
Lord Street	Hanson - Goondoon	7									7		
Gladstone CBD (Outbound in Morning Peak)													
Tank Street	Toolooa - Goondoon (opposite directio	244		89	47							109	
Tank Street	Goondoon - Glenlyon (opposite directi	90										90	
Lord Street	Goondoon - Hanson (opposite directio	760										760	
Agnes Water													
Agnes Water (South and Westbound in Morning Peak)													
Captain Cook Drive	N Round Hill Road (sbd AM peak)	140											140
Round Hill Road	W Captain Cook Drive (wbd AM peak)	43											43
Round Hill Road	Town outskirts (wbd AM peak)	132											132
Agnes Water (East and Northbound in Morning Peak)													
Round Hill Road	W Captain Cook Drive (ebd AM peak)	289											289
Captain Cook Drive	N Round Hill Road (nbd AM peak)	89											89
Captain Cook Drive	Town outskirts (nbd AM peak)	132											132

Appendix B Link Capacity Assessment

Gladstone Roads/Transport Strategic Infrastructure Plan - Link Capacity Assessment

Road	Section	TMR/ Council Road	Count Information				2014		2016				2021			
			Count Year	Peak Direction Capacity	Peak Hour Count	Count V/C	Volume	V/C	Normal Traffic	Additional Traffic	Total Traffic	V/C	Normal Traffic	Additional Traffic	Total Traffic	V/C
Callipe																
Local Roads																
Morris Avenue	Dryan	Council	2013	600	150	25%	155	26%	158	0	158	26%	166	0	166	28%
Don Cameron Drive	Morris	Council	2013	600	100	17%	103	17%	105	0	105	18%	110	83	193	32%
Sutherland Street	W of Dawson	Council	2010	600	30	5%	34	6%	35	0	35	6%	36	0	36	6%
Archer Street	Bedford	Council	2013	900	150	17%	155	17%	158				166			
Stowe Road	Nanando	Council	2013	600	150	25%	155	26%	158				166			
Dawson Highway																
Dawson Highway	Drynan - Gladstone-Monto	TMR	2013	1200	140	12%	144	12%	147	0	147	12%	154	83	237	20%
Dawson Highway	Bruce - Drynan	TMR	2013	1200	390	33%	402	34%	410	0	410	34%	430	171	601	50%
Boyne Island - Tannum Sands																
Tannum Sands Road	Bruce - Silverton	TMR	2012	1200	100	8%	106	9%	108	0	108	9%	113	243	356	30%
Tannum Sands Road	Silverton - Hampton	TMR	2012	1200	180	15%	191	16%	195	0	195	16%	204	393	597	50%
Hampton Drive	Malpas - Cremorne	TMR	2012	900	620	69%	657	73%	670	0	670	74%	703	393	1096	122%
Malpas Street	Handley - Centenary	TMR	2012	900	490	54%	519	58%	529	0	529	59%	555	259	814	90%
Boyne Island Road	Gladstone-Benaraby - Handley	TMR	2012	1200	570	48%	604	50%	616	0	616	51%	646	424	1070	89%
Kirkwood Road Corridor																
Kirkwood Road	Dawson - Harvey	Council	2014	1200	240	20%	240	20%	245	131	376	31%	257	509	766	64%
Kirkwood Road	Lavender - Dixon	Council	2014	1200	300	25%	300	25%	306	20	326	27%	321	220	541	45%
Kirkwood Road	Gladstone-Benaraby - Glenlyon R	Council	2014	1200	280	23%	280	23%	286	0	286	24%	300	354	654	55%
Gladstone - Western Corridor																
Dawson Highway																
Dawson Highway	Kirkwood - Beecher	TMR	2013	1200	400	33%	412	34%	420	0	420	35%	441	171	612	51%
Dawson Highway	Harvey - Kirkwood	TMR	2013	1200	400	33%	412	34%	420	3	423	35%	441	33	474	40%
Dawson Highway	Penda - Harvey	TMR	2013	3600	1320	37%	1360	38%	1387	29	1416	39%	1455	97	1552	43%
Dawson Highway	Philip - Penda	TMR	2013	3600	1520	42%	1566	44%	1597	87	1684	47%	1676	155	1831	51%
Dawson Highway	Blain - Philip	TMR	2013	3600	1410	39%	1452	40%	1481	120	1601	44%	1554	358	1912	53%
Dawson Highway	Breslin - Blain	TMR	2013	3600	1160	32%	1195	33%	1219	66	1285	36%	1279	155	1434	40%
Dawson Highway	Glenlyon - Breslin	TMR	2013	3600	800	22%	824	23%	840	66	906	25%	882	155	1037	29%
Don Young Drive - Red Rover Road																
Red Rover Road	Benstead - Port Curtis	Council	2013	1200	450	38%	464	39%	473	156	629	52%	496	674	1170	98%
Blain Drive																
Blain Drive	Railway - Palm	Council	2012	1200	630	53%	668	56%	681	54	735	61%	715	203	918	77%
Hanson Road																
Hanson Road	Glenlyon - Hildebrand	TMR	2013	3600	560	16%	577	16%	589	195	784	22%	617	1172	1789	50%
Hanson Road	Hildebrand - Auckland Creek	TMR	2013	1200	450	38%	464	39%	473	195	668	56%	496	1172	1668	139%
Hanson Road	Auckland Creek - Power Station	TMR	2013	1200	610	51%	628	52%	641				672			
Port Curtis Way	Power Station - Landing	TMR	2013	1200	420	35%	433	36%	442				463			
Other Western Catchment Streets																
Harvey Road	Clinton School - Carinya	Council	2011	900	210	23%	229	25%	234	24	258	29%	245	62	307	34%
Harvey Road	Kirkwood - Carinya	Council	2011	900	110	12%	120	13%	122	24	146	16%	128	62	190	21%
Gladstone - Eastern Corridor																
Gladstone-Benaraby Road																
Gladstone-Benaraby Road	S of Sth Trees Inlet	TMR	2013	1200	490	41%	505	42%	515	0	515	43%	540	602	1142	95%
Gladstone-Benaraby Road	S of Kirkwood	TMR	2013	1200	610	51%	628	52%	641	0	641	53%	672	602	1274	106%
Glenlyon Road																
Glenlyon Road	Victoria - Botanic Gardens	Council	2014	1200	320	27%	320	27%	326	0	326	27%	342	181	523	44%
Glenlyon Road	Dixon - Rifle Range	Council	2012	1200	440	37%	466	39%	475	70	545	45%	499	251	750	63%
Glenlyon Road	Catalina Entrance - Philip	Council	2013	1200	720	60%	742	62%	757	67	824	69%	794	737	1531	128%
Glenlyon Road	Derby - Eden	Council	2013	1200	690	58%	711	59%	725	70	795	66%	761	760	1521	127%
Philip Street																
Philip Street	E of Reef	TMR	2013	1200	630	53%	649	54%	662	24	686	57%	694	135	829	69%

Gladstone Roads/Transport Strategic Infrastructure Plan - Link Capacity Assessment

Road	Section	TMR/ Council Road	Count Information				2014		2016				2021			
			Count Year	Peak Direction Capacity	Peak Hour Count	Count V/C	Volume	V/C	Normal Traffic	Additional Traffic	Total Traffic	V/C	Normal Traffic	Additional Traffic	Total Traffic	V/C
Agnes Water																
Roundhill Road	N of Fingerboard	Council	2013	900	90	10%	93	10%	95	17	112	12%	100	59	159	18%
Roundhill Road	Heights - Captain Cook	Council	2013	900	90	10%	93	10%	95	17	112	12%	100	94	194	22%

Gladstone Roads/Transport Strategic Infrastructure Plan - Link Capacity Assessment

Road	Section	TMR/ Council Road	2026				2031			
			Normal Traffic	Additional Traffic	Total Traffic	V/C	Normal Traffic	Additional Traffic	Total Traffic	V/C
Callipe										
Local Roads										
Morris Avenue	Dryan	Council	174	0	174	29%	181	26	207	35%
Don Cameron Drive	Morris	Council	115	308	423	71%	121	308	429	72%
Sutherland Street	W of Dawson	Council	38	122	160	27%	40	203	243	41%
Archer Street	Bedford	Council	174				181			
Stowe Road	Nanando	Council	174				181			
Dawson Highway										
Dawson Highway	Drynan - Gladstone-Monto	TMR	161	429	590	49%	168	511	679	57%
Dawson Highway	Bruce - Drynan	TMR	450	517	967	81%	470	859	1329	111%
Boyne Island - Tannum Sands										
Tannum Sands Road	Bruce - Silverton	TMR	119	383	502	42%	124	696	820	68%
Tannum Sands Road	Silverton - Hampton	TMR	214	683	897	75%	223	996	1219	102%
Hampton Drive	Malpas - Cremorne	TMR	736	683	1419	158%	769	996	1765	196%
Malpas Street	Handley - Centenary	TMR	581	456	1037	115%	607	642	1249	139%
Boyne Island Road	Gladstone-Benaraby - Handley	TMR	676	944	1620	135%	707	1250	1957	163%
Kirkwood Road Corridor										
Kirkwood Road	Dawson - Harvey	Council	269	1022	1291	108%	281	1424	1705	142%
Kirkwood Road	Lavender - Dixon	Council	336	431	767	64%	351	599	950	79%
Kirkwood Road	Gladstone-Benaraby - Glenlyon R	Council	314	491	805	67%	328	590	918	77%
Gladstone - Western Corridor										
Dawson Highway										
Dawson Highway	Kirkwood - Beecher	TMR	461	517	978	82%	482	859	1341	112%
Dawson Highway	Harvey - Kirkwood	TMR	461	98	559	47%	482	159	641	53%
Dawson Highway	Penda - Harvey	TMR	1523	233	1756	49%	1591	343	1934	54%
Dawson Highway	Philip - Penda	TMR	1754	290	2044	57%	1832	401	2233	62%
Dawson Highway	Blain - Philip	TMR	1626	631	2257	63%	1699	1049	2748	76%
Dawson Highway	Breslin - Blain	TMR	1338	306	1644	46%	1398	459	1857	52%
Dawson Highway	Glenlyon - Breslin	TMR	923	306	1229	34%	964	459	1423	40%
Don Young Drive - Red Rover Road										
Red Rover Road	Benstead - Port Curtis	Council	520	1516	2036	170%	543	2200	2743	229%
Blain Drive										
Blain Drive	Railway - Palm	Council	748	325	1073	89%	782	590	1372	114%
Hanson Road										
Hanson Road	Glenlyon - Hildebrand	TMR	646	1979	2625	73%	675	2836	3511	98%
Hanson Road	Hildebrand - Auckland Creek	TMR	520	1979	2499	208%	543	2836	3379	282%
Hanson Road	Auckland Creek - Power Station	TMR	703				735			
Port Curtis Way	Power Station - Landing	TMR	485				507			
Other Western Catchment Streets										
Harvey Road	Clinton School - Carinya	Council	256	127	383	43%	268	177	445	49%
Harvey Road	Kirkwood - Carinya	Council	134	127	261	29%	140	177	317	35%
Gladstone - Eastern Corridor										
Gladstone-Benaraby Road										
Gladstone-Benaraby Road	S of Sth Trees Inlet	TMR	566	1225	1791	149%	591	1762	2353	196%
Gladstone-Benaraby Road	S of Kirkwood	TMR	703	1225	1928	161%	735	1762	2497	208%
Glenlyon Road										
Glenlyon Road	Victoria - Botanic Gardens	Council	358	196	554	46%	374	217	591	49%
Glenlyon Road	Dixon - Rifle Range	Council	522	446	968	81%	545	587	1132	94%
Glenlyon Road	Catalina Entrance - Philip	Council	831	1414	2245	187%	868	2084	2952	246%
Glenlyon Road	Derby - Eden	Council	796	1453	2249	187%	832	2166	2998	250%
Philip Street										
Philip Street	E of Reef	TMR	727	228	955	80%	759	414	1173	98%

Gladstone Roads/Transport Strategic Infrastructure Plan - Link Capacity Assessment

Road	Section	TMR/ Council Road	2026				2031			
			Normal Traffic	Additional Traffic	Total Traffic	V/C	Normal Traffic	Additional Traffic	Total Traffic	V/C
Agnes Water										
Roundhill Road	N of Fingerboard	Council	104	107	211	23%	109	132	241	27%
Roundhill Road	Heights - Captain Cook	Council	104	208	312	35%	109	289	398	44%

Appendix C Intersection Capacity Assessment

Gladstone Roads/Transport Strategic Infrastructure Plan - Priority Intersection Capacity Assessment

Traffic Count Assessment

Area	Intersection Name	Count Year	Major Street 2-Way Vol	Minor Street Approach Vol	Sum Major Minor	V/C (1500 Capacity)	Minor Left Movement				Minor Right Movement			
							C_a	Prac C_a	Vol	V/C	C_a	Prac C_a	Vol	V/C
Gladstone	Auckland/Short	2013	477	186	663	44%	592	503	18	4%	502	426	38	9%
Gladstone	Dawson/Kirkwood	2012	1,040	105	1145	76%	282	240	95	40%	210	179	10	6%
Gladstone	Dawson/Don Young	2012	959	687	1,646	110%	314	267	421	158%	239	203	266	131%
Gladstone	Hansen/Palm	2011	1,088	115	1,203	80%	265	225	71	32%	195	166	44	27%
Gladstone	Oxley/Gladstone-Benaraby Rd (Philip St)	2012	816	50	866	58%	380	323	7	2%	298	253	43	17%
Gladstone	Don Young/Col Brown	2011	788	84	872	58%	394	335	32	10%	311	265	52	20%
Gladstone	Col Brown/J Hickey	2011	214	133	347	23%	831	706	84	12%	747	635	49	8%
Gladstone	Dalrymple/Jon Dory	2012	355	52	407	27%	693	589	42	7%	604	513	10	2%
Boyne/Tannum	Malpas/Beltana	2013	822	110	932	62%	377	320	96	30%	295	251	14	6%
Boyne/Tannum	Malpas/Tarcoola	2013	1060	13	1,073	72%	275	234	11	5%	204	173	2	1%
Boyne/Tannum	Hampton/Booth N	2013	1160	80	1,240	83%	240	204	10	5%	174	148	70	47%
Boyne/Tannum	Hampton/Booth S	2012	649	78	727	48%	473	402	56	14%	386	328	22	7%
Boyne/Tannum	Hampton/Latrobe	2013	892	84	976	65%	344	292	78	27%	265	225	6	3%
Boyne/Tannum	Hampton/Garnet	2012	649	78	727	48%	473	402	56	14%	386	328	22	7%
Boyne/Tannum	Hampton/Cremorne	2012	649	78	727	48%	473	402	56	14%	386	328	22	7%
Boyne/Tannum	Tannum Sands/Coronation	2013	338	83	421	28%	709	602	65	11%	620	527	18	3%
Boyne/Tannum	Coronation/Cremorne	2013	338	83	421	28%	709	602	65	11%	620	527	18	3%

2014 Assessment

Area	Intersection Name		Major Street 2-Way Vol	Minor Street Approach Vol	Sum Major Minor	V/C (1500 Capacity)	Minor Left Movement				Minor Right Movement			
							C_a	Prac C_a	Vol	V/C	C_a	Prac C_a	Vol	V/C
Gladstone	Auckland/Short		491.31	191.58	683	46%	581	494	18	4%	491	417	38	9%
Gladstone	Dawson/Kirkwood		1,102	111.3	1214	81%	260	221	95	43%	191	162	10	6%
Gladstone	Dawson/Don Young		1,017	728.22	1,745	116%	291	248	421	170%	218	185	266	143%
Gladstone	Hansen/Palm		1,186	125.35	1,311	87%	232	197	71	36%	167	142	44	31%
Gladstone	Oxley/Gladstone-Benaraby Rd (Philip St)		865	53	918	61%	356	303	7	2%	276	235	43	18%
Gladstone	Don Young/Col Brown		859	91.56	950	63%	359	305	32	10%	279	237	52	22%
Gladstone	Col Brown/J Hickey		233	144.97	378	25%	811	689	84	12%	726	617	49	8%
Gladstone	Dalrymple/Jon Dory		376	55.12	431	29%	675	573	42	7%	585	497	10	2%
Boyne/Tannum	Malpas/Beltana		846.66	113.3	960	64%	365	310	96	31%	284	242	14	6%
Boyne/Tannum	Malpas/Tarcoola		1091.8	13.39	1,105	74%	263	224	11	5%	194	165	2	1%
Boyne/Tannum	Hampton/Booth N		1194.8	82.4	1,277	85%	229	195	10	5%	165	140	70	50%
Boyne/Tannum	Hampton/Booth S		687.94	82.68	771	51%	450	382	56	15%	363	309	22	7%
Boyne/Tannum	Hampton/Latrobe		918.76	86.52	1,005	67%	332	282	78	28%	254	216	6	3%
Boyne/Tannum	Hampton/Garnet		687.94	82.68	771	51%	450	382	56	15%	363	309	22	7%
Boyne/Tannum	Hampton/Cremorne		687.94	82.68	771	51%	450	382	56	15%	363	309	22	7%
Boyne/Tannum	Tannum Sands/Coronation		348.14	85.49	434	29%	700	595	65	11%	610	519	18	3%
Boyne/Tannum	Coronation/Cremorne		348.14	85.49	434	29%	700	595	65	11%	610	519	18	3%

Gladstone Roads/Transport Strategic Infrastructure Plan - Priority Intersection Capacity Assessment

2016 Assessment		Background Volume		Additional Volume		Total Volume				Minor Left Movement				Minor Right Movement			
Area	Intersection Name	Major Street 2-Way Vol	Minor Street Approach Vol	Major Street 2-Way Vol	Minor Street Approach Vol	Major Street 2-Way Vol	Minor Street Approach Vol	Sum Major Minor	V/C (1500 Capacity)	C_a	Prac C_a	Vol	V/C	C_a	Prac C_a	Vol	V/C
Gladstone	Auckland/Short	501	195			501	195	696	46%	574	488	18	4%	484	411	38	9%
Gladstone	Dawson/Kirkwood	1,124	114	3	131	1,127	245	1,372	91%	252	214	95	44%	184	156	10	6%
Gladstone	Dawson/Don Young	1,037	743	3	131	1,039	874	1,913	128%	283	241	421	175%	211	180	266	148%
Gladstone	Hansen/Palm	1,210	128	195	0	1,405	128	1,533	102%	225	191	71	37%	161	137	44	32%
Gladstone	Oxley/Gladstone-Benaraby Rd (Philip St)	882	54	0	0	882	54	936	62%	348	296	7	2%	269	229	43	19%
Gladstone	Don Young/Col Brown	876	93	156	27	1,032	120	1,152	77%	351	298	32	11%	271	231	52	23%
Gladstone	Col Brown/J Hickey	238	148			238	148	386	26%	806	685	84	12%	721	613	49	8%
Gladstone	Dalrymple/Jon Dory	384	56			384	56	440	29%	668	568	42	7%	578	491	10	2%
Boyne/Tannum	Malpas/Beltana	864	116	0	0	864	116	980	65%	357	303	96	32%	277	235	14	6%
Boyne/Tannum	Malpas/Tarcoola	1,114	14	0	0	1,114	14	1128	75%	256	217	11	5%	187	159	2	1%
Boyne/Tannum	Hampton/Booth N	1,219	84	0	0	1,219	84	1303	87%	222	189	10	5%	159	135	70	52%
Boyne/Tannum	Hampton/Booth S	702	84	0	0	702	84	786	52%	442	375	56	15%	356	302	22	7%
Boyne/Tannum	Hampton/Latrobe	937	88	0	0	937	88	1025	68%	324	275	78	28%	247	210	6	3%
Boyne/Tannum	Hampton/Garnet	702	84	0	0	702	84	786	52%	442	375	56	15%	356	302	22	7%
Boyne/Tannum	Hampton/Cremorne	702	84	0	0	702	84	786	52%	442	375	56	15%	356	302	22	7%
Boyne/Tannum	Tannum Sands/Coronation	355	87	0	0	355	87	442	29%	693	589	65	11%	604	513	18	4%
Boyne/Tannum	Coronation/Cremorne	355	87			355	87	442	29%	693	589	65	11%	604	513	18	4%

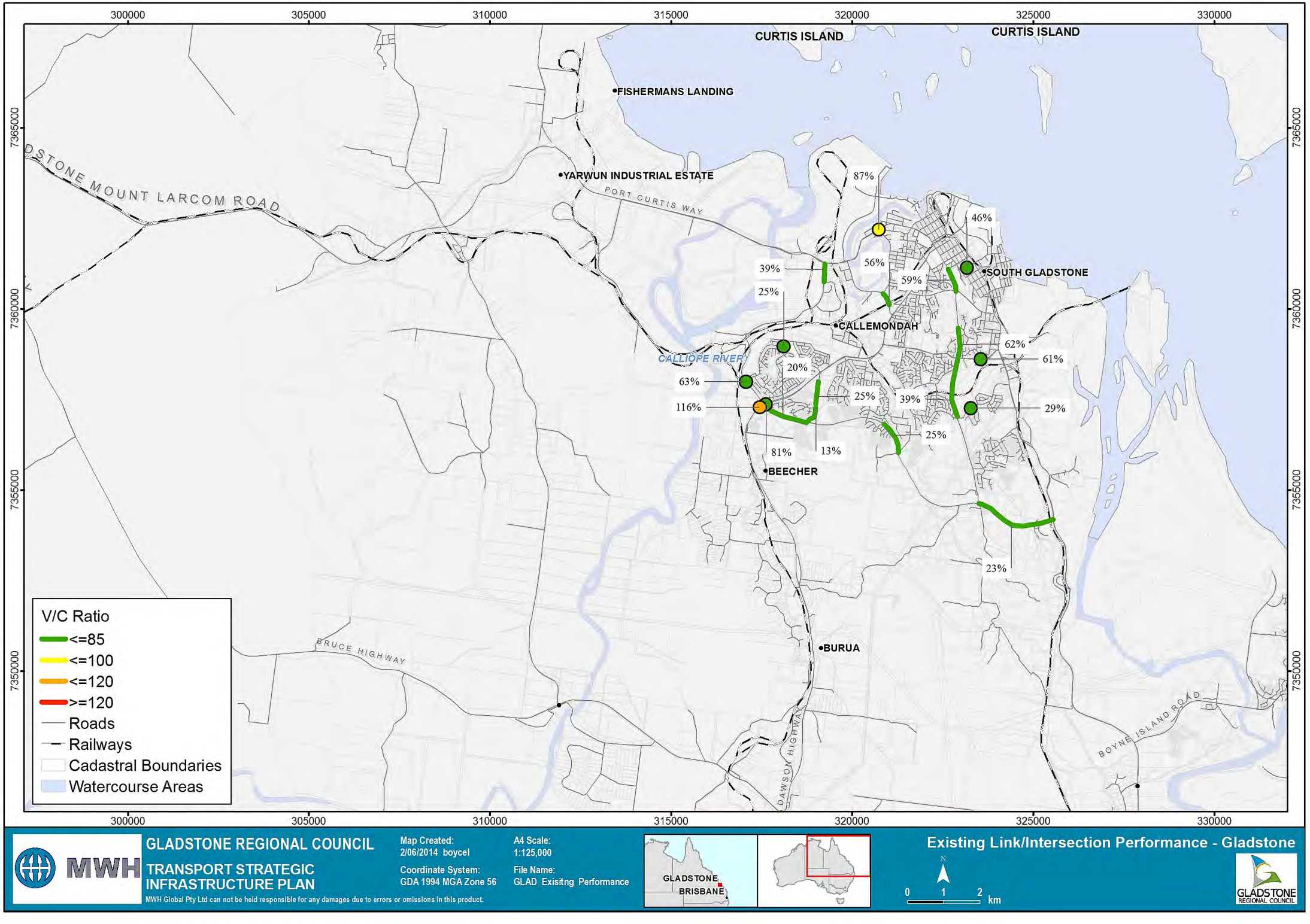
2021 Assessment		Background Volume		Additional Volume		Total Volume				Minor Left Movement				Minor Right Movement			
Area	Intersection Name	Major Street 2-Way Vol	Minor Street Approach Vol	Major Street 2-Way Vol	Minor Street Approach Vol	Major Street 2-Way Vol	Minor Street Approach Vol	Sum Major Minor	V/C (1500 Capacity)	C_a	Prac C_a	Vol	V/C	C_a	Prac C_a	Vol	V/C
Gladstone	Auckland/Short	526	205			526	205	731	49%	556	473	18	4%	466	396	38	10%
Gladstone	Dawson/Kirkwood	1,180	119	33	509	1,212	628	1,840	123%	234	199	95	48%	169	143	10	7%
Gladstone	Dawson/Don Young	1,088	779	33	650	1,120	1,429	2,549	170%	265	225	421	187%	195	166	266	160%
Gladstone	Hansen/Palm	1,269	134	1,172	0	2,441	134	2,575	172%	208	176	71	40%	147	125	44	35%
Gladstone	Oxley/Gladstone-Benaraby Rd (Philip St)	926	57	444	0	1,370	57	1,427	95%	329	279	7	3%	251	214	43	20%
Gladstone	Don Young/Col Brown	919	98	674	27	1,593	125	1,718	115%	332	282	32	11%	254	216	52	24%
Gladstone	Col Brown/J Hickey	250	155			250	155	405	27%	794	675	84	12%	708	602	49	8%
Gladstone	Dalrymple/Jon Dory	403	59			403	59	462	31%	652	554	42	8%	562	478	10	2%
Boyne/Tannum	Malpas/Beltana	906	121	259	0	1,165	121	1286	86%	337	287	96	33%	259	220	14	6%
Boyne/Tannum	Malpas/Tarcoola	1,168	14	259	0	1,427	14	1441	96%	238	202	11	5%	172	146	2	1%
Boyne/Tannum	Hampton/Booth N	1,278	88	393	0	1,671	88	1759	117%	205	174	10	6%	144	123	70	57%
Boyne/Tannum	Hampton/Booth S	736	88	393	0	1,129	88	1217	81%	422	359	56	16%	337	287	22	8%
Boyne/Tannum	Hampton/Latrobe	983	93	393	0	1,376	93	1469	98%	304	259	78	30%	230	195	6	3%
Boyne/Tannum	Hampton/Garnet	736	88	393	0	1,129	88	1217	81%	422	359	56	16%	337	287	22	8%
Boyne/Tannum	Hampton/Cremorne	736	88	393	0	1,129	88	1217	81%	422	359	56	16%	337	287	22	8%
Boyne/Tannum	Tannum Sands/Coronation	373	91	393	0	766	91	857	57%	678	576	65	11%	588	500	18	4%
Boyne/Tannum	Coronation/Cremorne	373	91			373	91	464	31%	678	576	65	11%	588	500	18	4%

Gladstone Roads/Transport Strategic Infrastructure Plan - Priority Intersection Capacity Assessment

2026 Assessment		Background Volume		Additional Volume		Total Volume				Minor Left Movement				Minor Right Movement			
Area	Intersection Name	Major Street 2-Way Vol	Minor Street Approach Vol	Major Street 2-Way Vol	Minor Street Approach Vol	Major Street 2-Way Vol	Minor Street Approach Vol	Sum Major Minor	V/C (1500 Capacity)	C_a	Prac C_a	Vol	V/C	C_a	Prac C_a	Vol	V/C
Gladstone	Auckland/Short	550	215			550	215	765	51%	538	458	18	4%	449	381	38	10%
Gladstone	Dawson/Kirkwood	1,235	125	517	1,022	1,751	1,147	2,898	193%	217	185	95	51%	155	132	10	8%
Gladstone	Dawson/Don Young	1,139	816	517	1,448	1,655	2,264	3,919	261%	247	210	421	200%	180	153	266	174%
Gladstone	Hansen/Palm	1,328	140	1,979	0	3,308	140	3,448	230%	192	163	71	44%	133	113	44	39%
Gladstone	Oxley/Gladstone-Benaraby Rd (Philip St)	969	59	905	0	1,874	59	1,933	129%	310	264	7	3%	235	200	43	22%
Gladstone	Don Young/Col Brown	962	103	1,516	75	2,478	178	2,656	177%	313	266	32	12%	237	202	52	26%
Gladstone	Col Brown/J Hickey	261	162			261	162	423	28%	782	665	84	13%	696	591	49	8%
Gladstone	Dalrymple/Jon Dory	421	62			421	62	483	32%	636	541	42	8%	546	464	10	2%
Boyne/Tannum	Malpas/Beltana	948	127	456		1,404	127	1531	102%	319	271	96	35%	243	206	14	7%
Boyne/Tannum	Malpas/Tarcoola	1,223	15	456		1,679	15	1694	113%	221	188	11	6%	158	134	2	1%
Boyne/Tannum	Hampton/Booth N	1,338	92	683		2,021	92	2113	141%	189	161	10	6%	131	112	70	63%
Boyne/Tannum	Hampton/Booth S	770	93	683		1,453	93	1546	103%	404	343	56	16%	320	272	22	8%
Boyne/Tannum	Hampton/Latrobe	1,029	97	683		1,712	97	1809	121%	286	243	78	32%	214	182	6	3%
Boyne/Tannum	Hampton/Garnet	770	93	683		1,453	93	1546	103%	404	343	56	16%	320	272	22	8%
Boyne/Tannum	Hampton/Cremorne	770	93	683		1,453	93	1546	103%	404	343	56	16%	320	272	22	8%
Boyne/Tannum	Tannum Sands/Coronation	390	96	683		1,073	96	1169	78%	663	563	65	12%	573	487	18	4%
Boyne/Tannum	Coronation/Cremorne	390	96			390	96	486	32%	663	563	65	12%	573	487	18	4%

2031 Assessment		Background Volume		Additional Volume		Total Volume				Minor Left Movement				Minor Right Movement			
Area	Intersection Name	Major Street 2-Way Vol	Minor Street Approach Vol	Major Street 2-Way Vol	Minor Street Approach Vol	Major Street 2-Way Vol	Minor Street Approach Vol	Sum Major Minor	V/C (1,500 Capacity)	C_a	Prac C_a	Vol	V/C	C_a	Prac C_a	Vol	V/C
Gladstone	Auckland/Short	575	224			575	224	799	53%	521	443	18	4%	432	367	38	10%
Gladstone	Dawson/Kirkwood	1,290	130	859	1,424	2,149	1,555	3,704	247%	202	171	95	55%	142	121	10	8%
Gladstone	Dawson/Don Young	1,189	852	859	2,132	2,049	2,984	5,033	336%	231	196	421	214%	166	141	266	188%
Gladstone	Hansen/Palm	1,388	147	2,836	0	4,224	147	4,371	291%	177	150	71	47%	121	103	44	43%
Gladstone	Oxley/Gladstone-Benaraby Rd (Philip St)	1,012	62	1,301	0	2,313	62	2,375	158%	293	249	7	3%	220	187	43	23%
Gladstone	Don Young/Col Brown	1,005	107	2,200	75	3,205	182	3,387	226%	296	251	32	13%	222	189	52	28%
Gladstone	Col Brown/J Hickey	273	170			273	170	443	30%	771	655	84	13%	684	581	49	8%
Gladstone	Dalrymple/Jon Dory	440	64			440	64	504	34%	621	528	42	8%	531	451	10	2%
Boyne/Tannum	Malpas/Beltana	991	133	642		1,632	133	1765	118%	301	256	96	37%	227	193	14	7%
Boyne/Tannum	Malpas/Tarcoola	1,277	16	642		1,919	16	1935	129%	205	174	11	6%	145	123	2	2%
Boyne/Tannum	Hampton/Booth N	1,398	96	996		2,394	96	2490	166%	174	148	10	7%	119	102	70	69%
Boyne/Tannum	Hampton/Booth S	805	97	996		1,801	97	1898	127%	386	328	56	17%	303	258	22	9%
Boyne/Tannum	Hampton/Latrobe	1,075	101	996		2,071	101	2172	145%	269	229	78	34%	199	169	6	4%
Boyne/Tannum	Hampton/Garnet	805	97	996		1,801	97	1898	127%	386	328	56	17%	303	258	22	9%
Boyne/Tannum	Hampton/Cremorne	805	97	996		1,801	97	1898	127%	386	328	56	17%	303	258	22	9%
Boyne/Tannum	Tannum Sands/Coronation	407	100	996		1,404	100	1504	100%	648	551	65	12%	558	474	18	4%
Boyne/Tannum	Coronation/Cremorne	407	100			407	100	507	34%	648	551	65	12%	558	474	18	4%

Appendix D Link and Intersection Performance Maps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CURTIS ISLAND
CURTIS ISLAND
FISHERMANS LANDING
YARWUN INDUSTRIAL ESTATE
PORT CURTIS WAY
DSTONE MOUNT LARCOM ROAD
87%
46%
56%
39%
59%
25%
SOUTH GLADSTONE
CALLEMONDAH
62%
61%
CALLIOPE RIVER
20%
63%
25%
39%
116%
29%
25%
81%
13%
BEECHER
23%
BURUA
BRUCE HIGHWAY
DAWSON HIGHWAY
BOYNE ISLAND ROAD
V/C Ratio
<=85
<=100
<=120
>=120
Roads
Railways
Cadastral Boundaries
Watercourse Areas
GLADSTONE REGIONAL COUNCIL
TRANSPORT STRATEGIC INFRASTRUCTURE PLAN
MWH
MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.
Map Created: 2/06/2014 boycel
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GLADSTONE
BRISBANE
Existing Link/Intersection Performance - Gladstone
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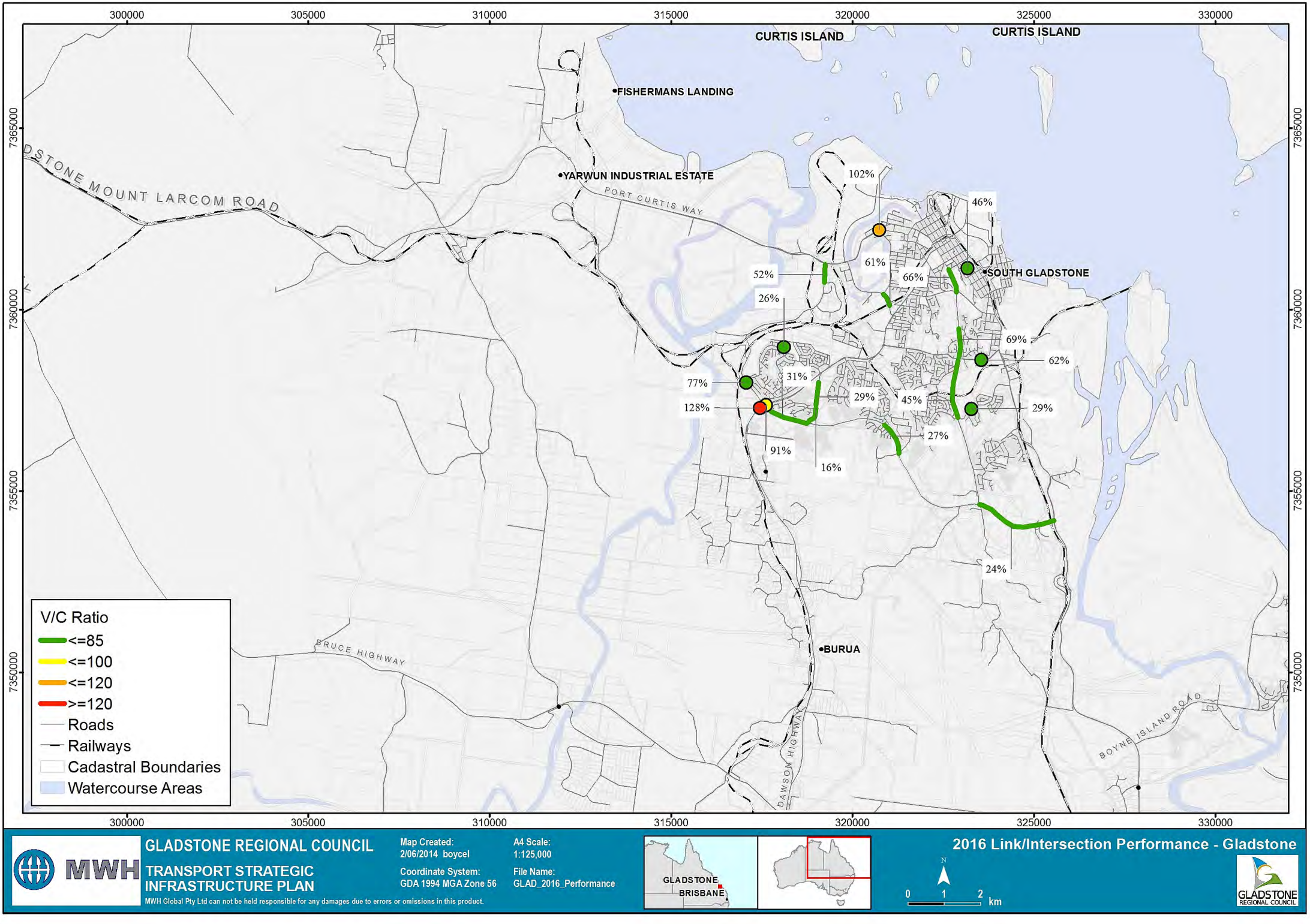
GLADSTONE REGIONAL COUNCIL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FISHERMANS LANDING
YARWUN INDUSTRIAL ESTATE
PORT CURTIS WAY
MOUNT LARCOM ROAD
SOUTH GLADSTONE
BURUA
BRUCE HIGHWAY
DAWSON HIGHWAY
BOYNE ISLAND ROAD
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61%
52%
66%
26%
69%
62%
31%
77%
29%
45%
128%
29%
27%
91%
16%
24%
V/C Ratio
<=85
<=100
<=120
>=120
Roads
Railways
Cadastral Boundaries
Watercourse Areas
GLADSTONE REGIONAL COUNCIL
TRANSPORT STRATEGIC INFRASTRUCTURE PLAN
MWH
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Map Created: 2/06/2014 boycel
Coordinate System: GDA 1994 MGA Zone 56
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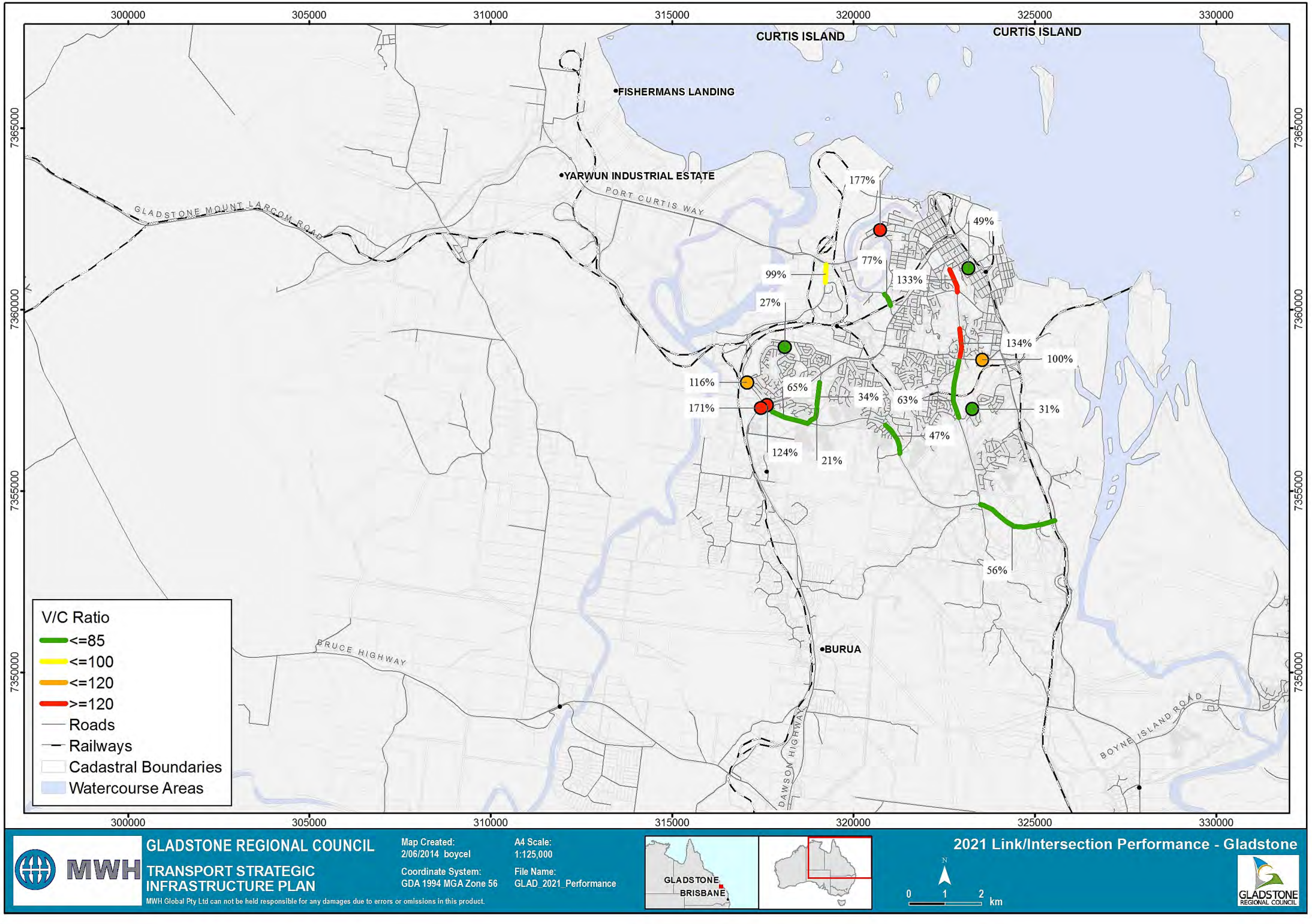
BRISBANE
N
0 1 2 km
2016 Link/Intersection Performance - Gladstone
GLADSTONE REGIONAL COUNCIL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FISHERMANS LANDING
YARWUN INDUSTRIAL ESTATE
PORT CURTIS WAY
GLADSTONE MOUNT LARCOM ROAD
BRUCE HIGHWAY
BURUA
DAWSON HIGHWAY
BOYNE ISLAND ROAD
177%
49%
77%
99%
133%
27%
134%
100%
116%
65%
34%
63%
171%
31%
47%
124%
21%
56%
V/C Ratio
<=85
<=100
<=120
>=120
Roads
Railways
Cadastral Boundaries
Watercourse Areas
GLADSTONE REGIONAL COUNCIL
TRANSPORT STRATEGIC INFRASTRUCTURE PLAN
MWH
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Map Created: 2/06/2014 boycel
Coordinate System: GDA 1994 MGA Zone 56
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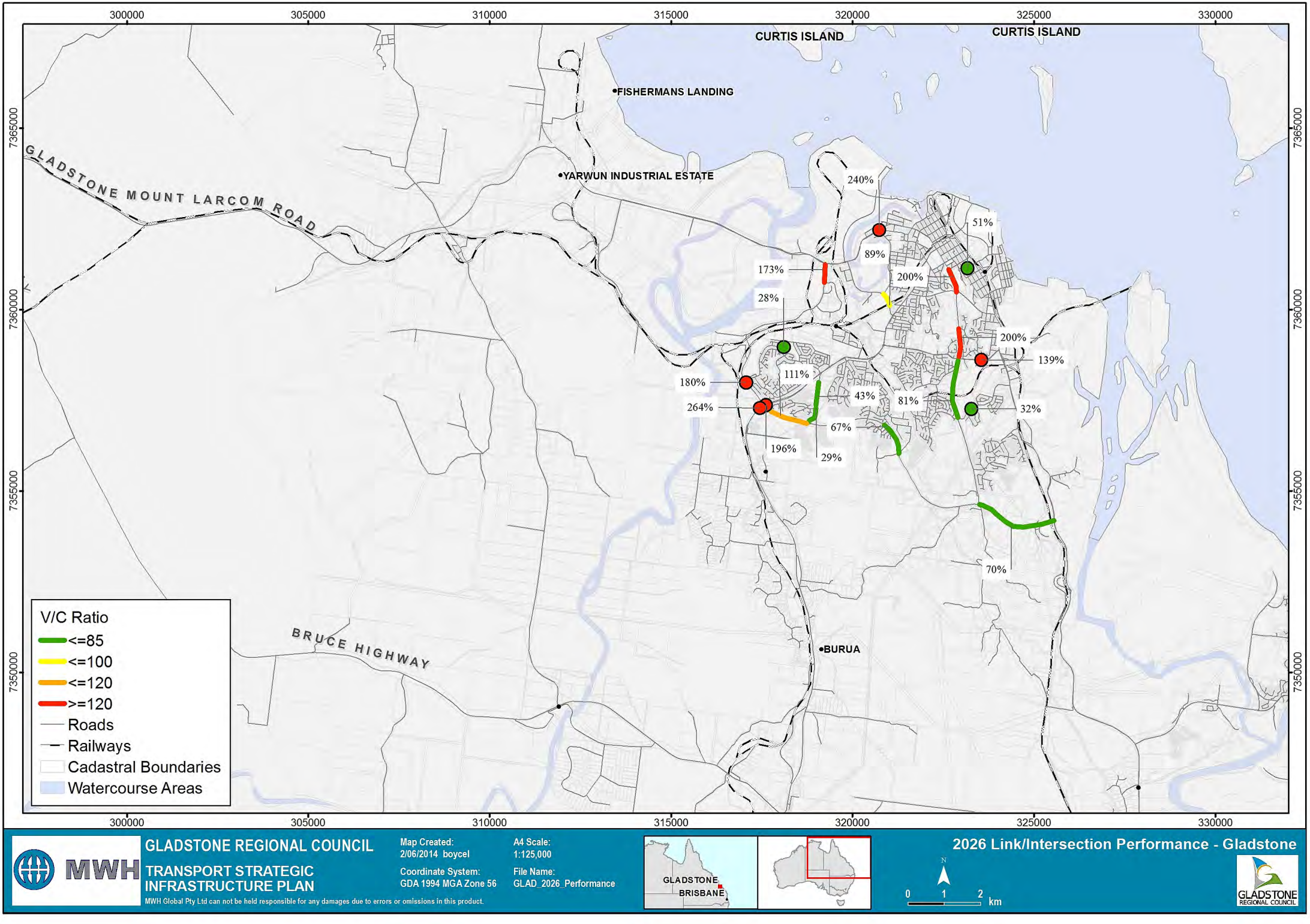
BRISBANE
N
0 1 2 km
2021 Link/Intersection Performance - Gladstone
GLADSTONE REGIONAL COUNCIL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CURTIS ISLAND
CURTIS ISLAND
FISHERMANS LANDING
YARWUN INDUSTRIAL ESTATE
GLADSTONE MOUNT LARCOM ROAD
BRUCE HIGHWAY
BURUA
240%
51%
89%
173%
200%
28%
200%
139%
111%
180%
43%
81%
264%
32%
67%
196%
29%
70%
V/C Ratio
<=85
<=100
<=120
>=120
Roads
Railways
Cadastral Boundaries
Watercourse Areas
GLADSTONE REGIONAL COUNCIL
TRANSPORT STRATEGIC INFRASTRUCTURE PLAN
MWH
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Map Created: 2/06/2014 boycel
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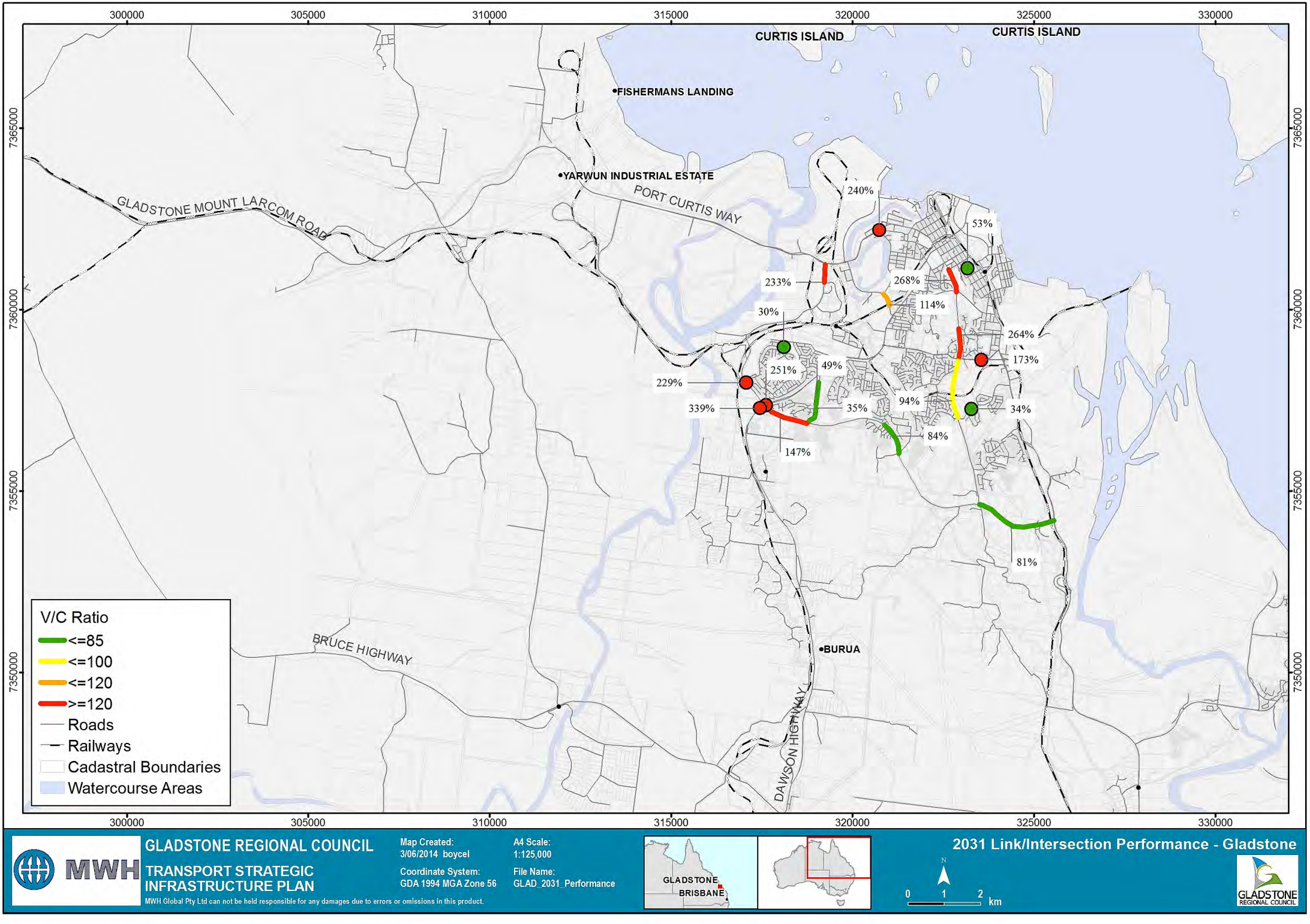
BRISBANE
N
0 1 2 km
2026 Link/Intersection Performance - Gladstone
GLADSTONE REGIONAL COUNCIL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FISHERMANS LANDING
YARWUN INDUSTRIAL ESTATE
GLADSTONE MOUNT LARCOM ROAD
PORT CURTIS WAY
BRUCE HIGHWAY
BURUA
DAWSON HIGHWAY
240%
53%
233%
268%
114%
30%
264%
173%
251%
49%
229%
339%
35%
94%
34%
84%
147%
81%
V/C Ratio
<=85
<=100
<=120
>=120
Roads
Railways
Cadastral Boundaries
Watercourse Areas
GLADSTONE REGIONAL COUNCIL
TRANSPORT STRATEGIC INFRASTRUCTURE PLAN
MWH
MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.
Map Created: 3/06/2014 boycel
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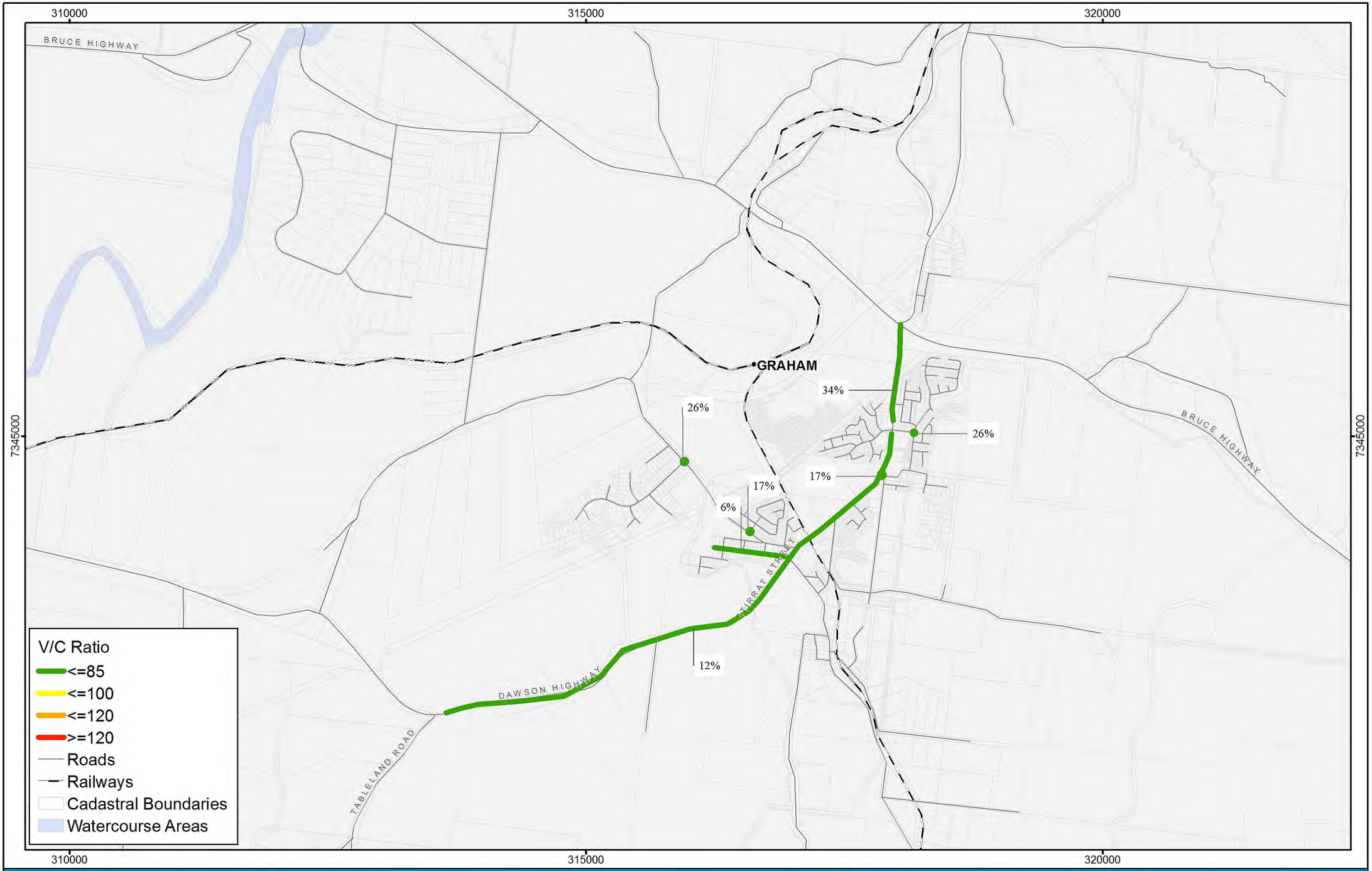
BRISBANE
N
0 1 2 km
2031 Link/Intersection Performance - Gladstone
GLADSTONE REGIONAL COUNCIL



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH

Map Created: 30/05/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

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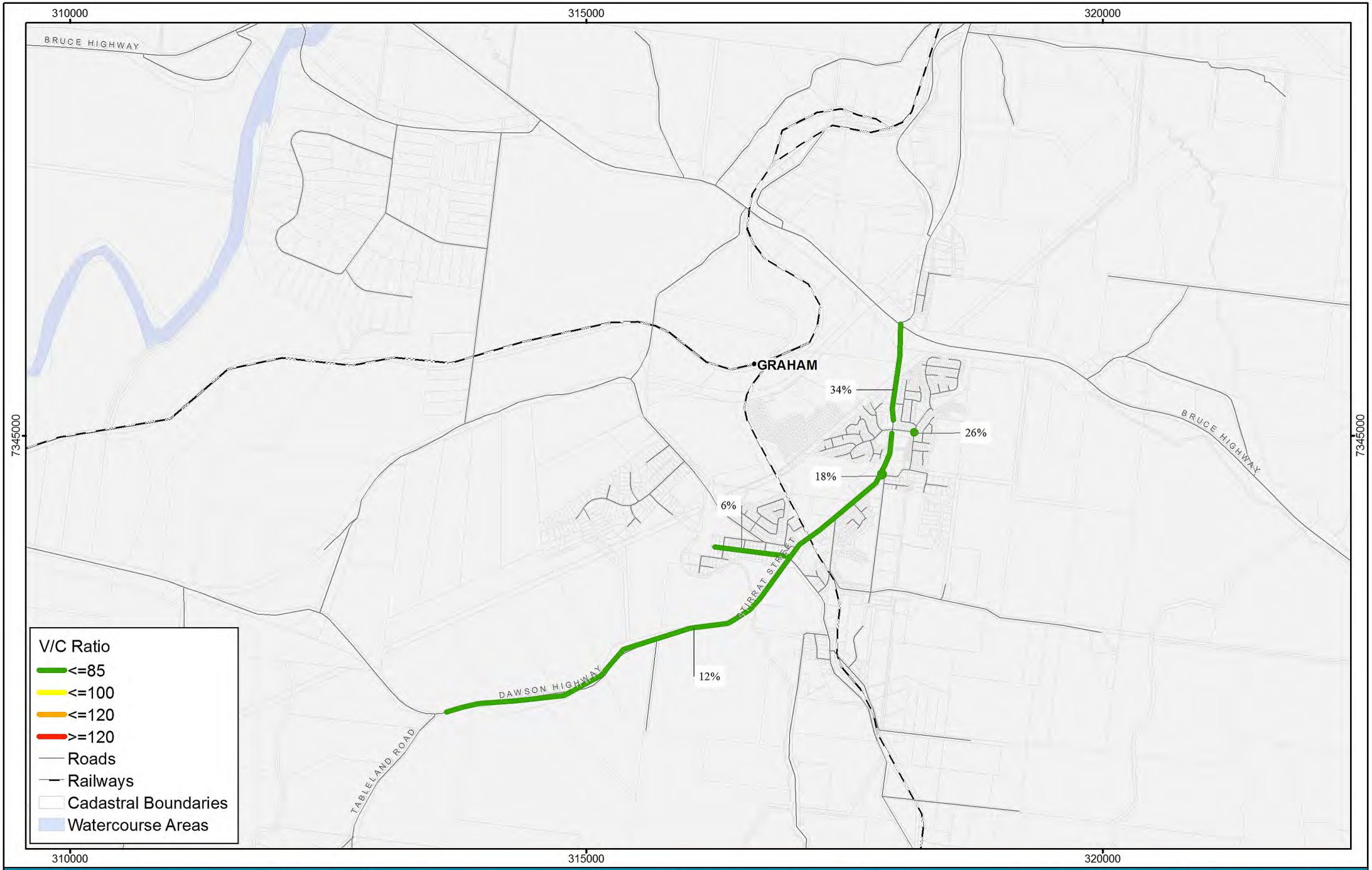
File Name: CALI_Existing_Performance

0 0.5 1 km

Existing Link/Intersection Performance - Calliope

GLADSTONE REGIONAL COUNCIL



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH

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Map Created: 2/06/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:46,000

File Name: CALI_2016_Performance

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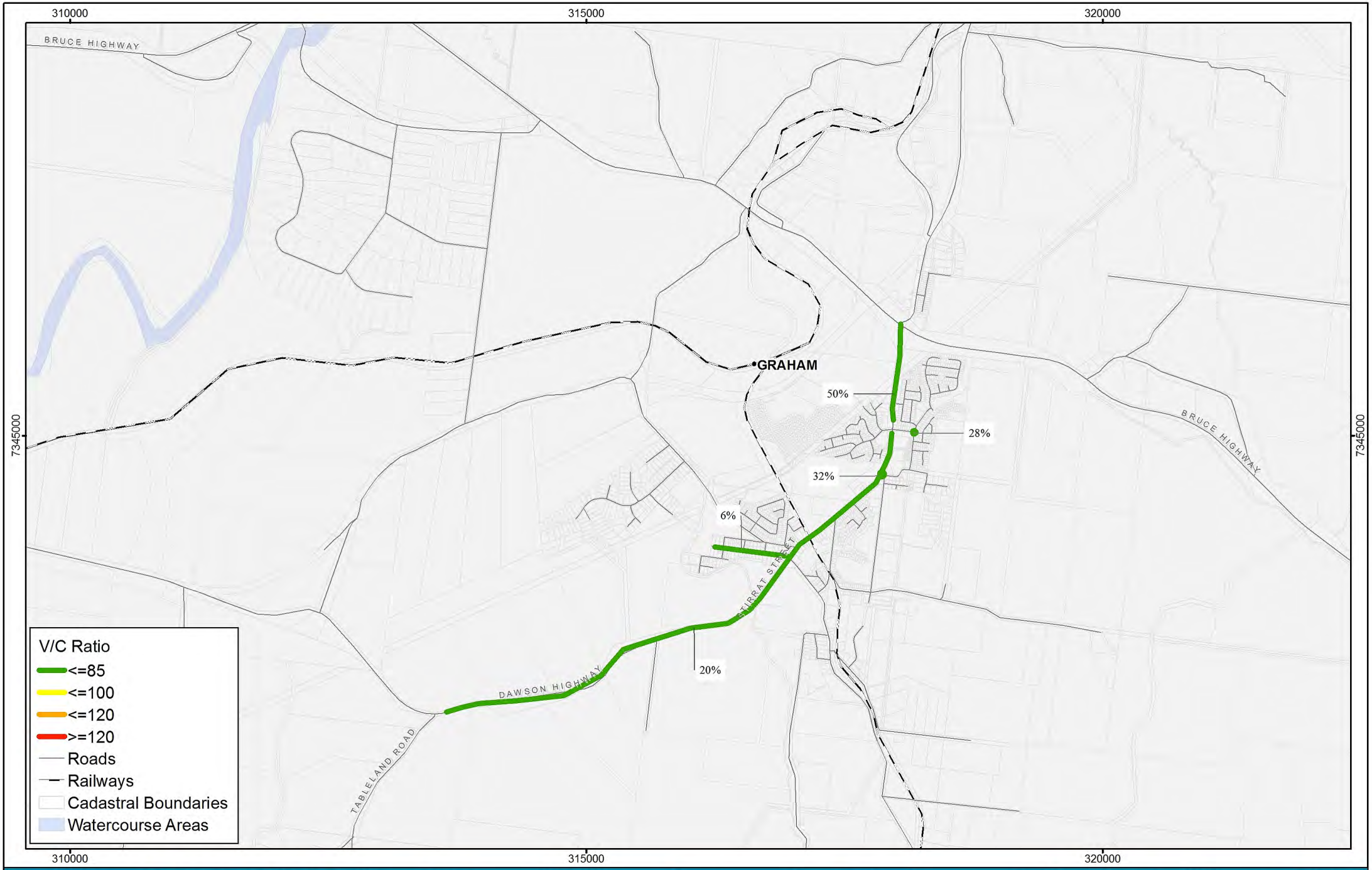
0 0.5 1 km

2016 Link/Intersection Performance - Calliope

GLADSTONE REGIONAL COUNCIL



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GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

Map Created: 2/06/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

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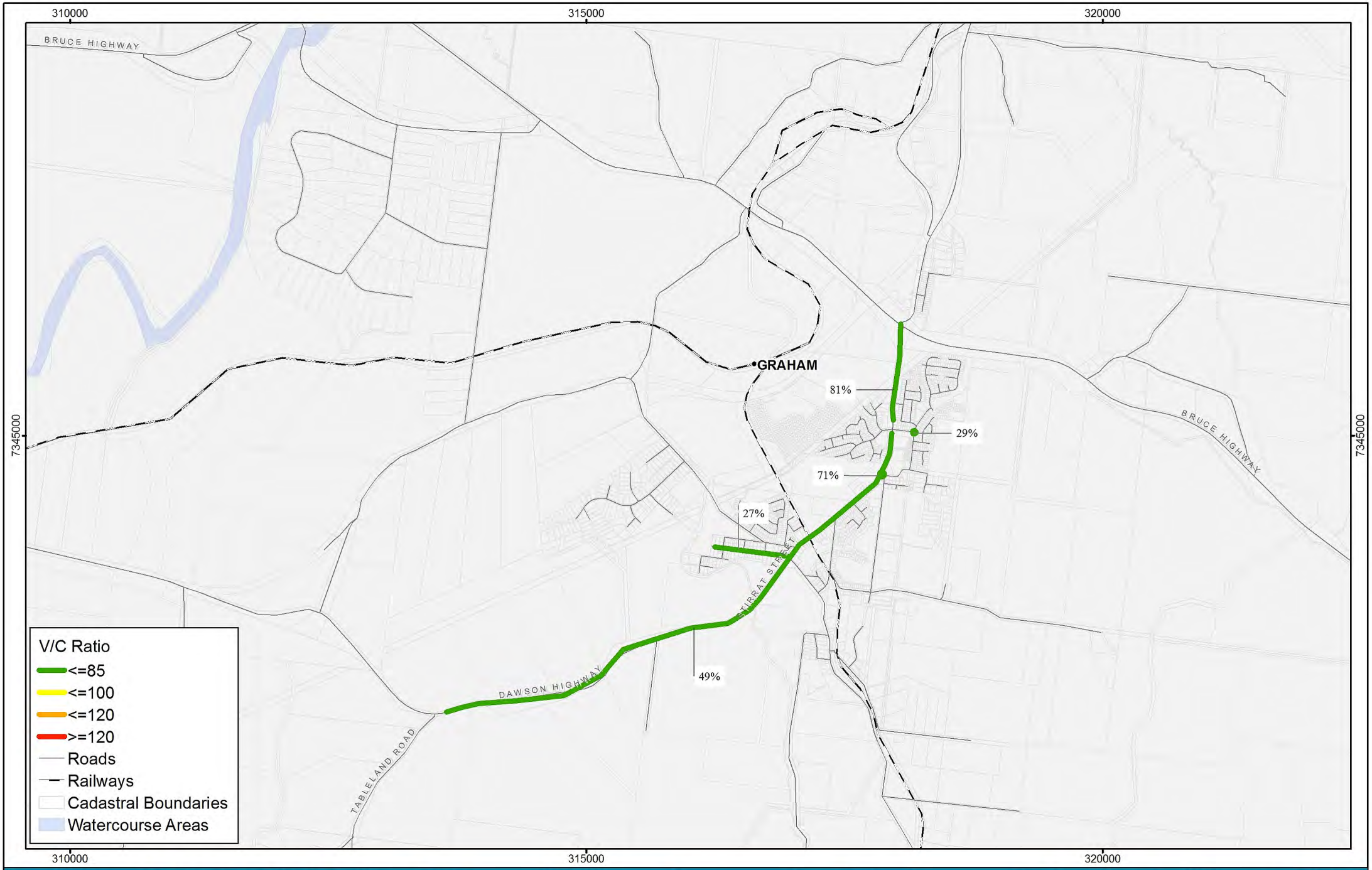
File Name: CALI_2021_Performance

N

0 0.5 1 km

2021 Link/Intersection Performance - Calliope

GLADSTONE REGIONAL COUNCIL



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

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Map Created: 2/06/2014 boycel

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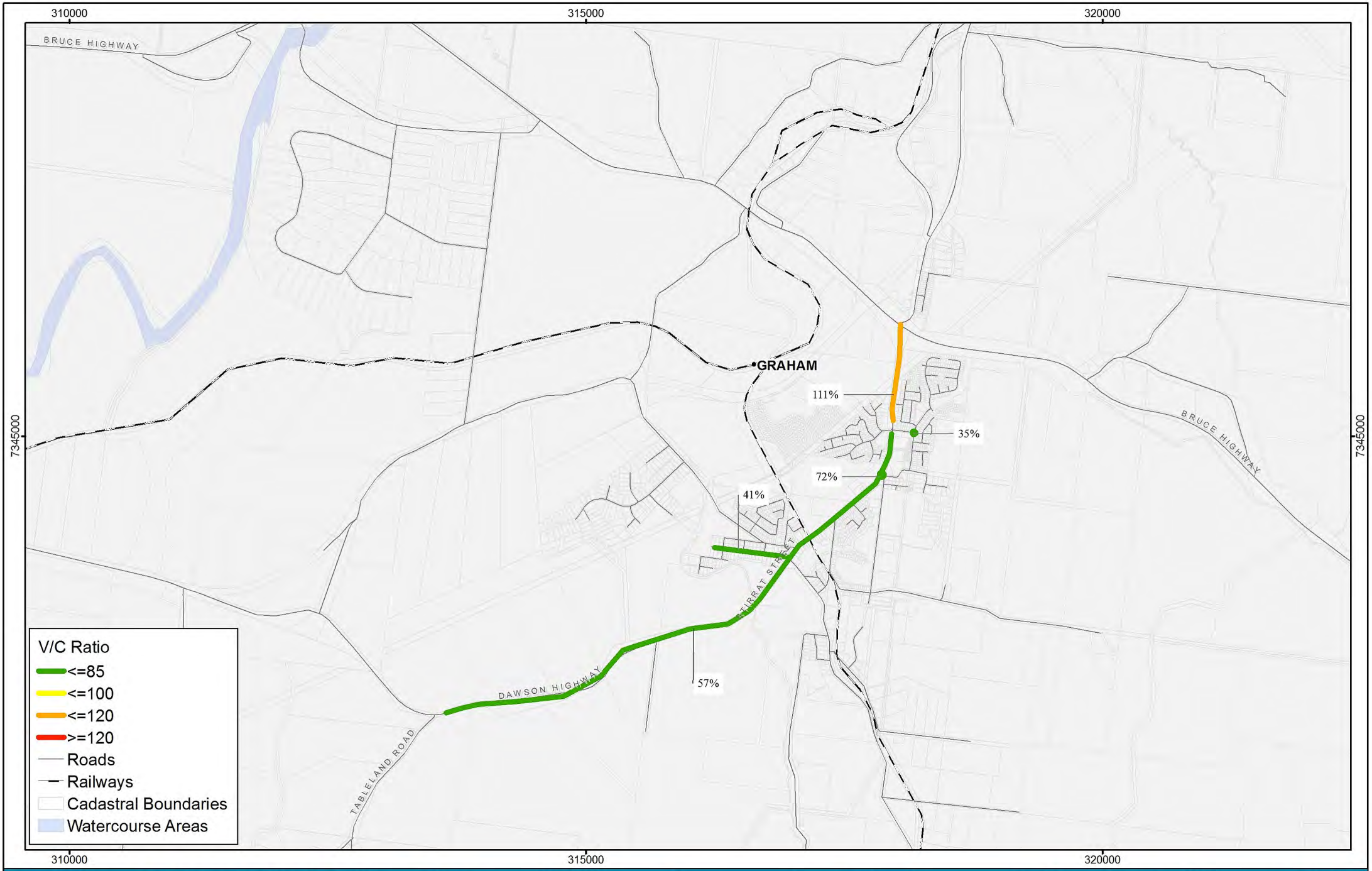
2026 Link/Intersection Performance - Calliope



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH

MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.

Map Created: 30/05/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:46,000

File Name: CALI_2031_Performance

GLADSTONE

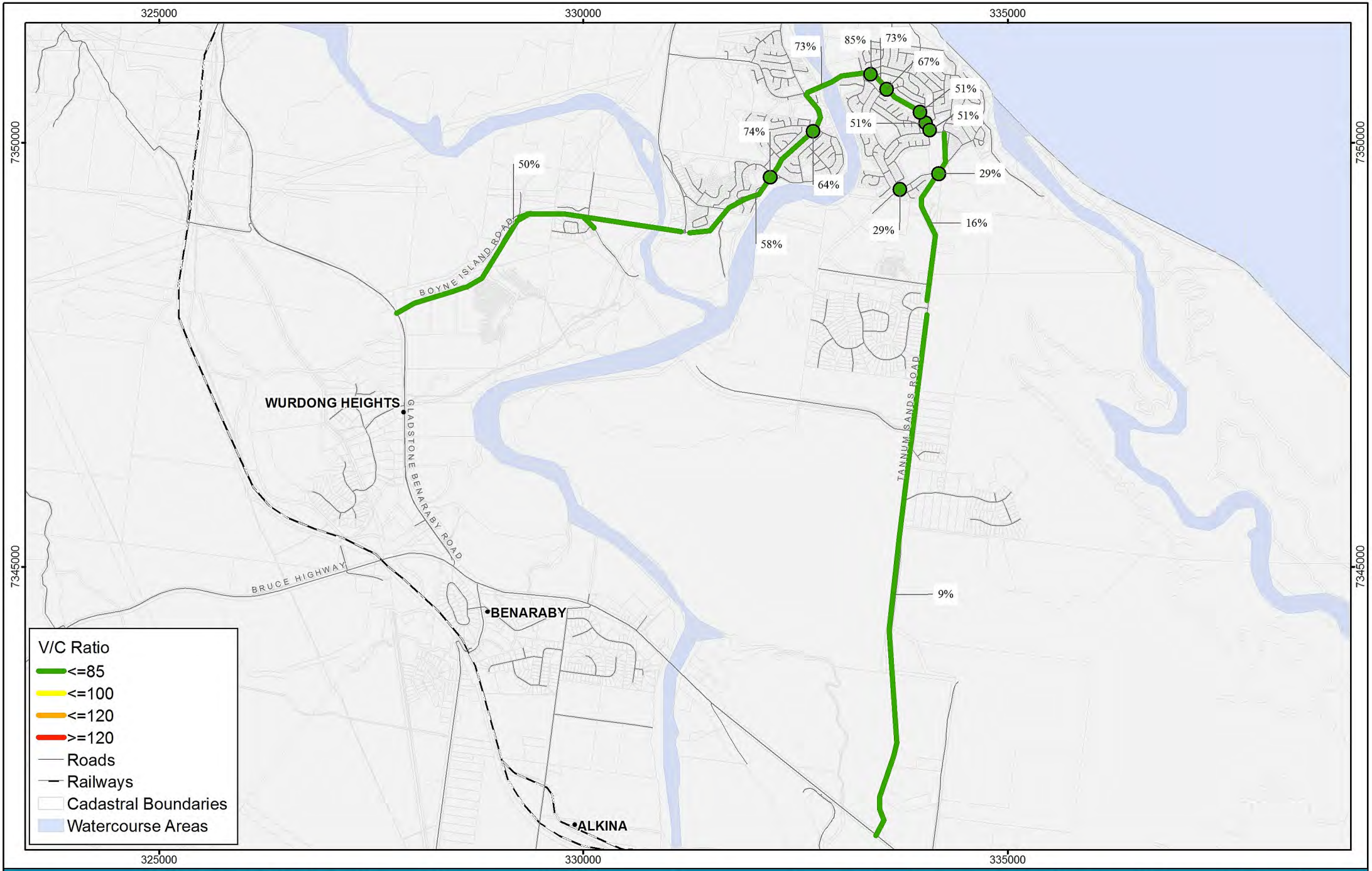
BRISBANE

N

0 0.5 1 km

2031 Link/Intersection Performance - Calliope

GLADSTONE REGIONAL COUNCIL



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GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

Map Created: 30/05/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

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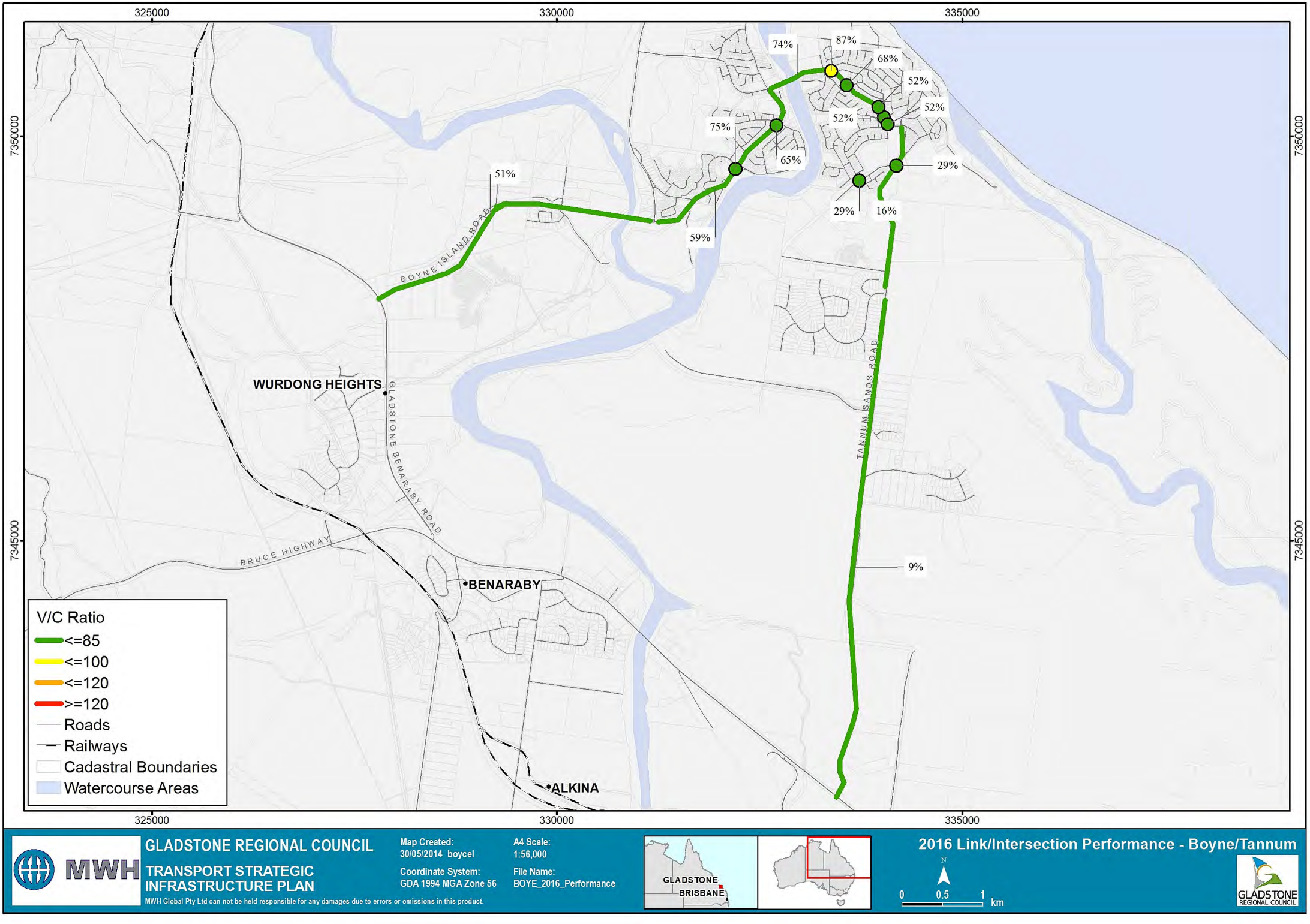
File Name: BOYE_Existing_Performance

Existing Link/Intersection Performance - Boyne/Tannum

N

0 0.5 1 km

GLADSTONE REGIONAL COUNCIL



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GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.

Map Created: 30/05/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:56,000

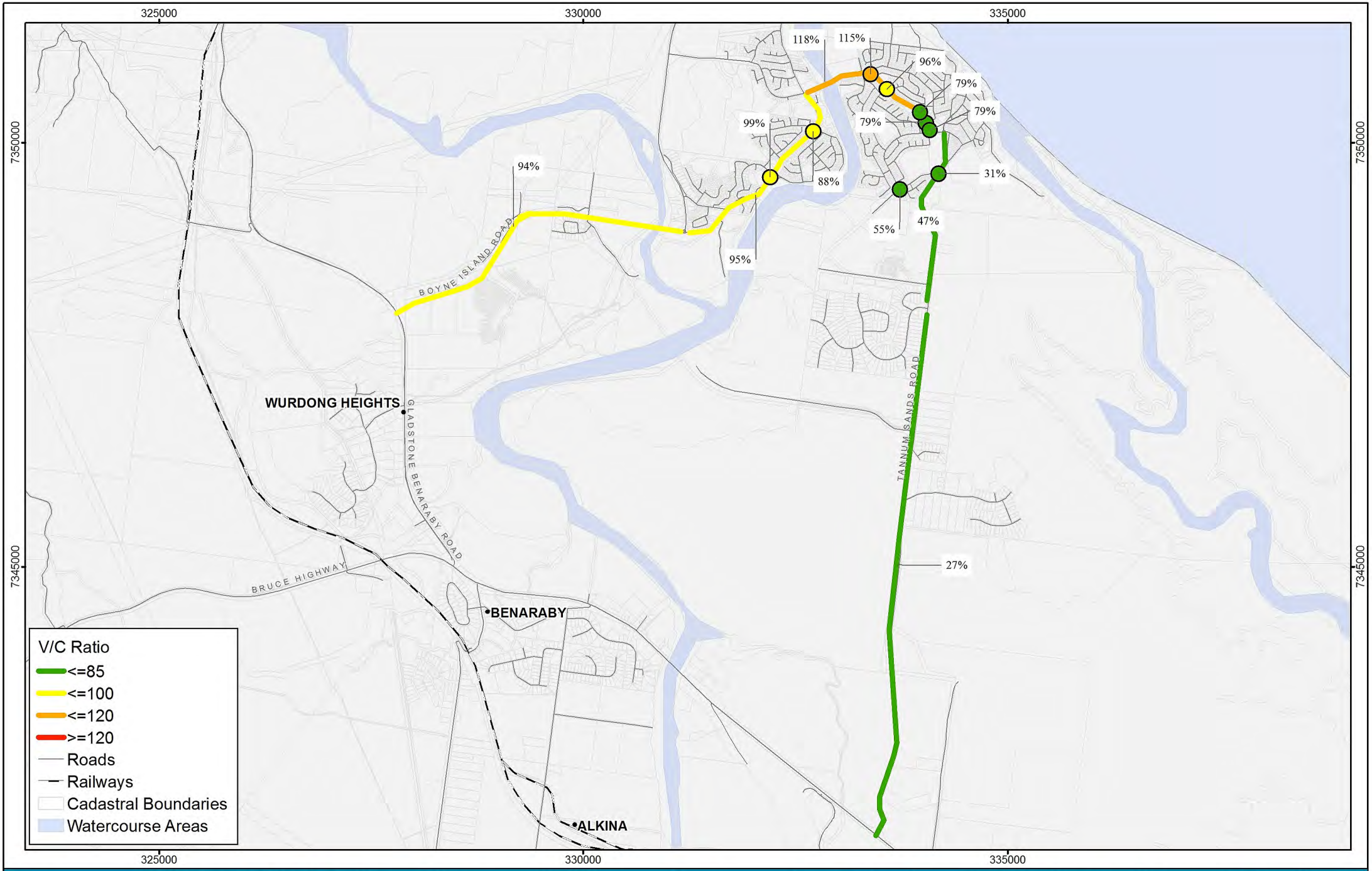
File Name: BOYE_2016_Performance

2016 Link/Intersection Performance - Boyne/Tannum

N

0 0.5 1 km

GLADSTONE REGIONAL COUNCIL



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GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.

Map Created: 30/05/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

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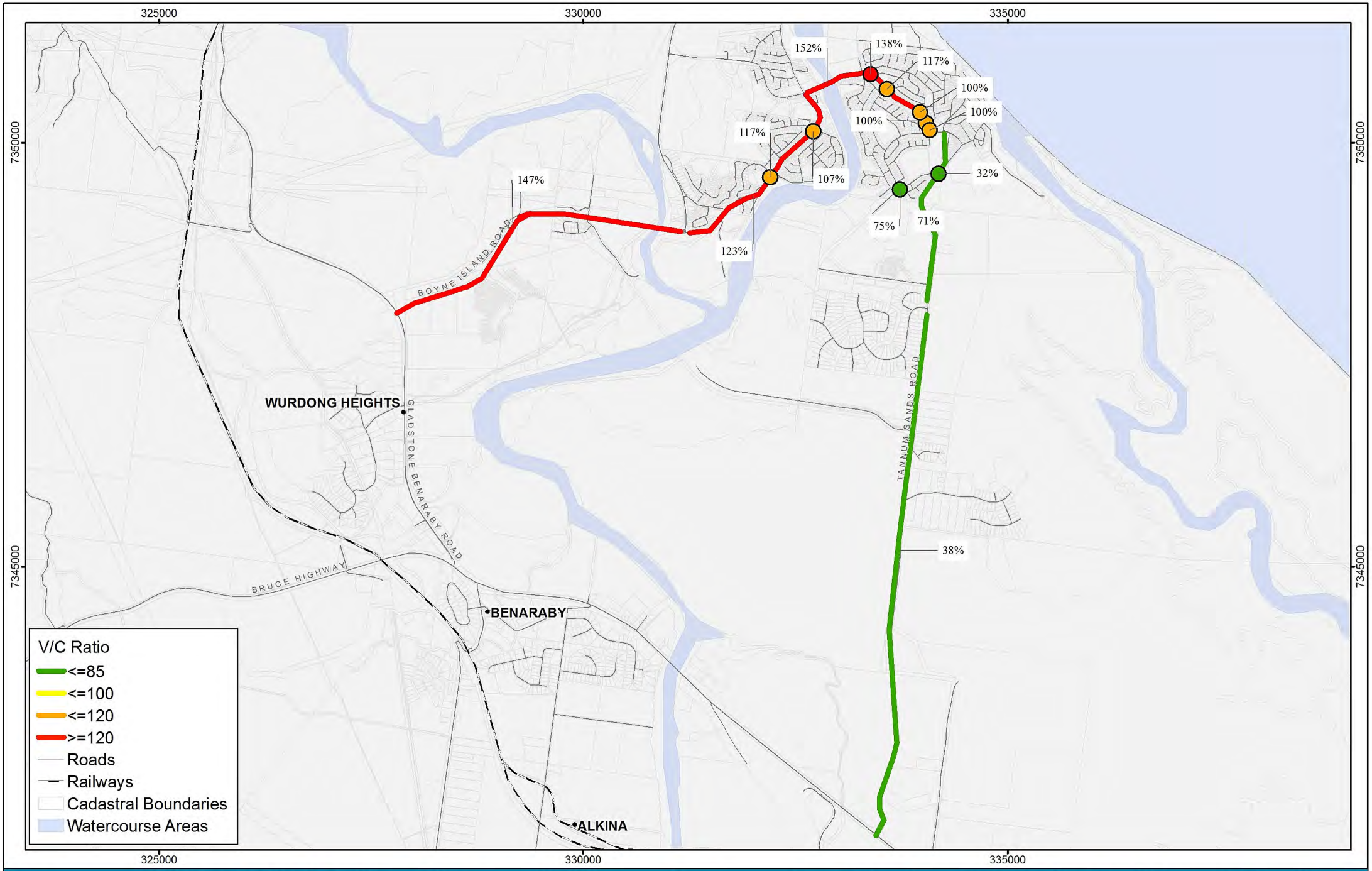
File Name: BOYE_2021_Performance

2021 Link/Intersection Performance - Boyne/Tannum

N

0 0.5 1 km

GLADSTONE REGIONAL COUNCIL



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GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

Map Created: 30/05/2014 boycel

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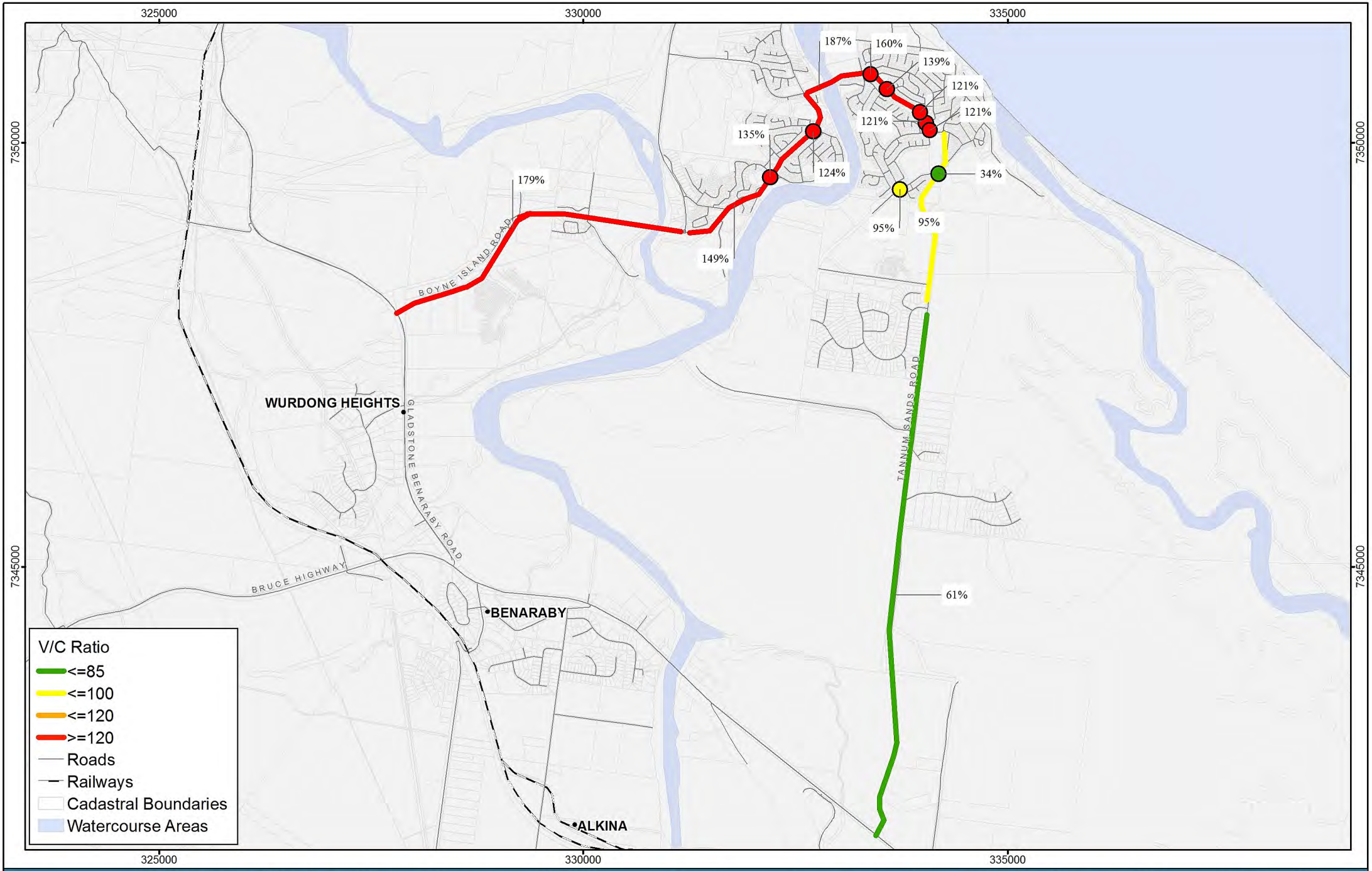
File Name: BOYE_2026_Performance

2026 Link/Intersection Performance - Boyne/Tannum

N

0 0.5 1 km

GLADSTONE REGIONAL COUNCIL



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH

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Map Created: 30/05/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:56,000

File Name: BOYE_2031_Performance

GLADSTONE BRISBANE

2031 Link/Intersection Performance - Boyne/Tannum

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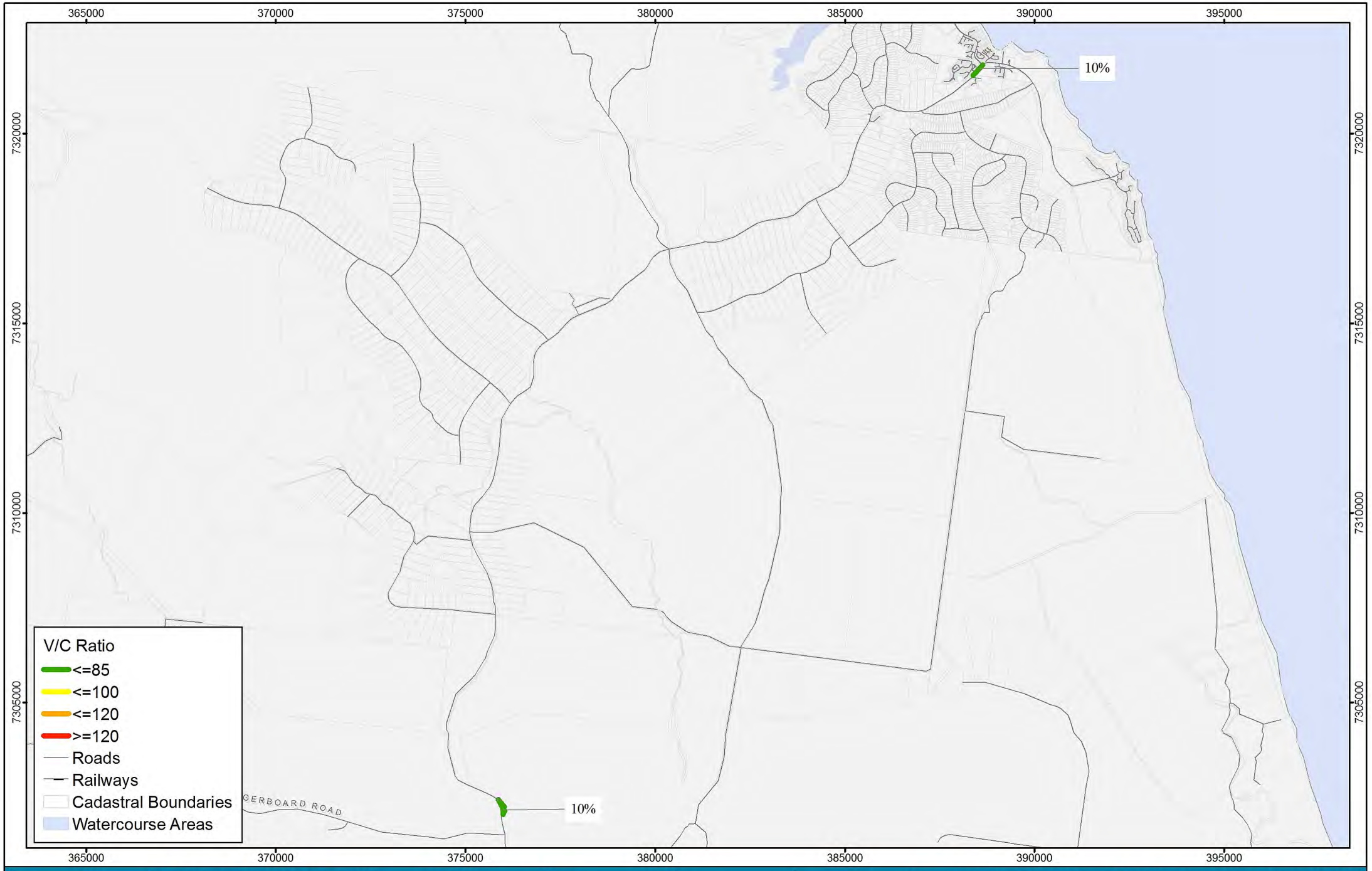
GLADSTONE REGIONAL COUNCIL



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.

Map Created: 2/06/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:125,000

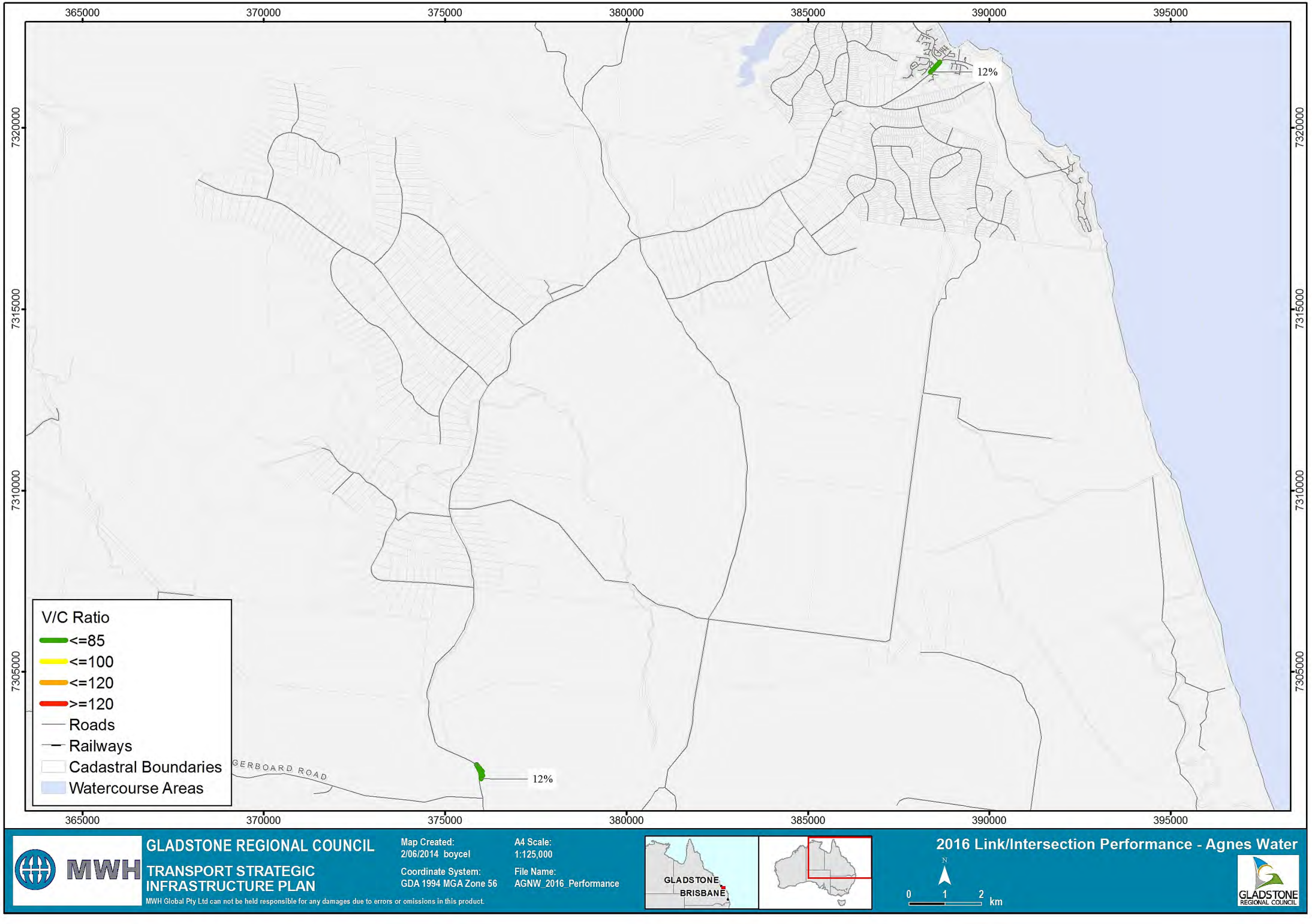
File Name: AGNW_Existing_Performance

Existing Link/Intersection Performance - Agnes Water

N

0 1 2 km

GLADSTONE REGIONAL COUNCIL



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.

Map Created: 2/06/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

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File Name: AGNW_2016_Performance

2016 Link/Intersection Performance - Agnes Water

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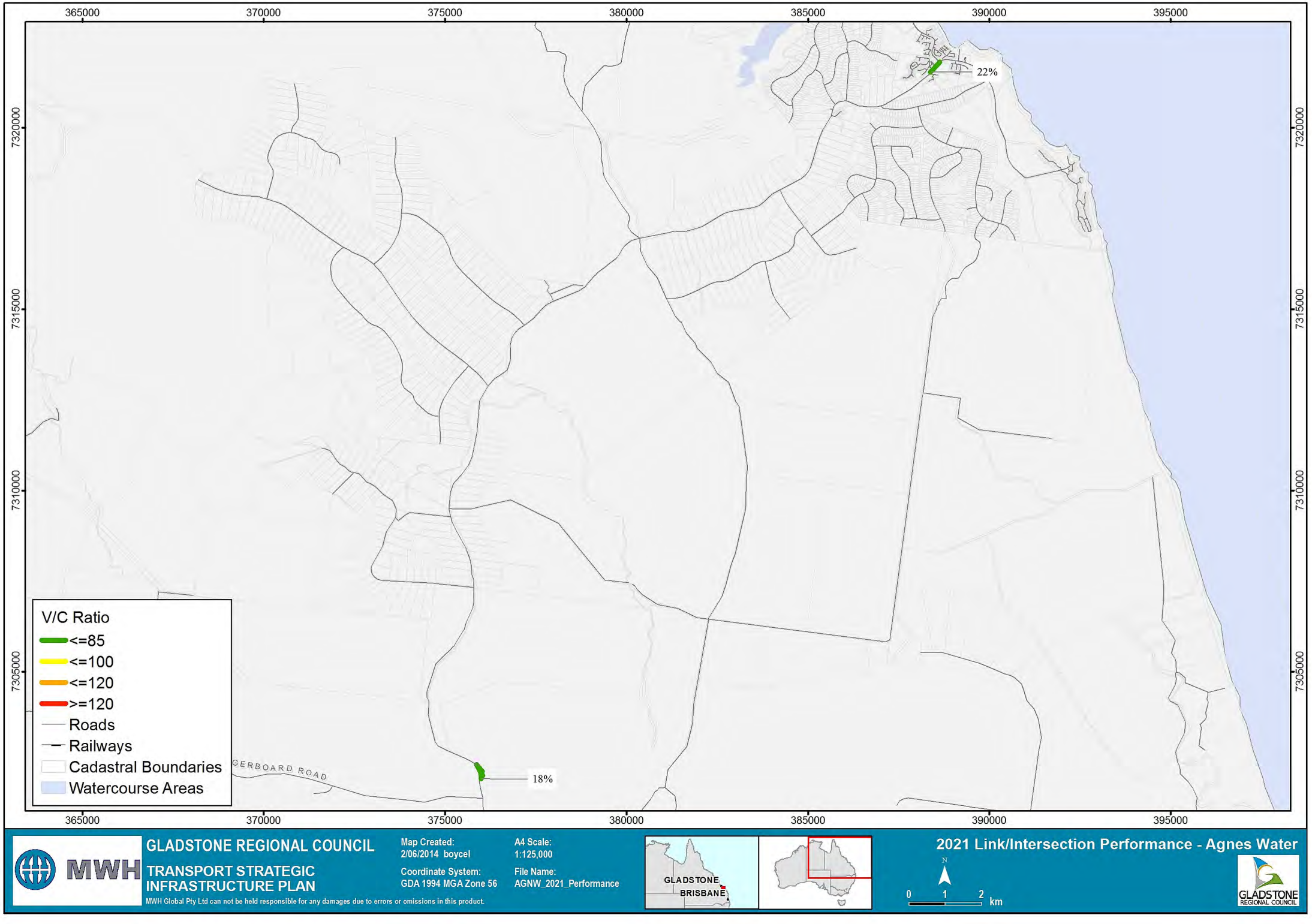
GLADSTONE REGIONAL COUNCIL



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.

Map Created: 2/06/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:125,000

File Name: AGNW_2021_Performance

GLADSTONE

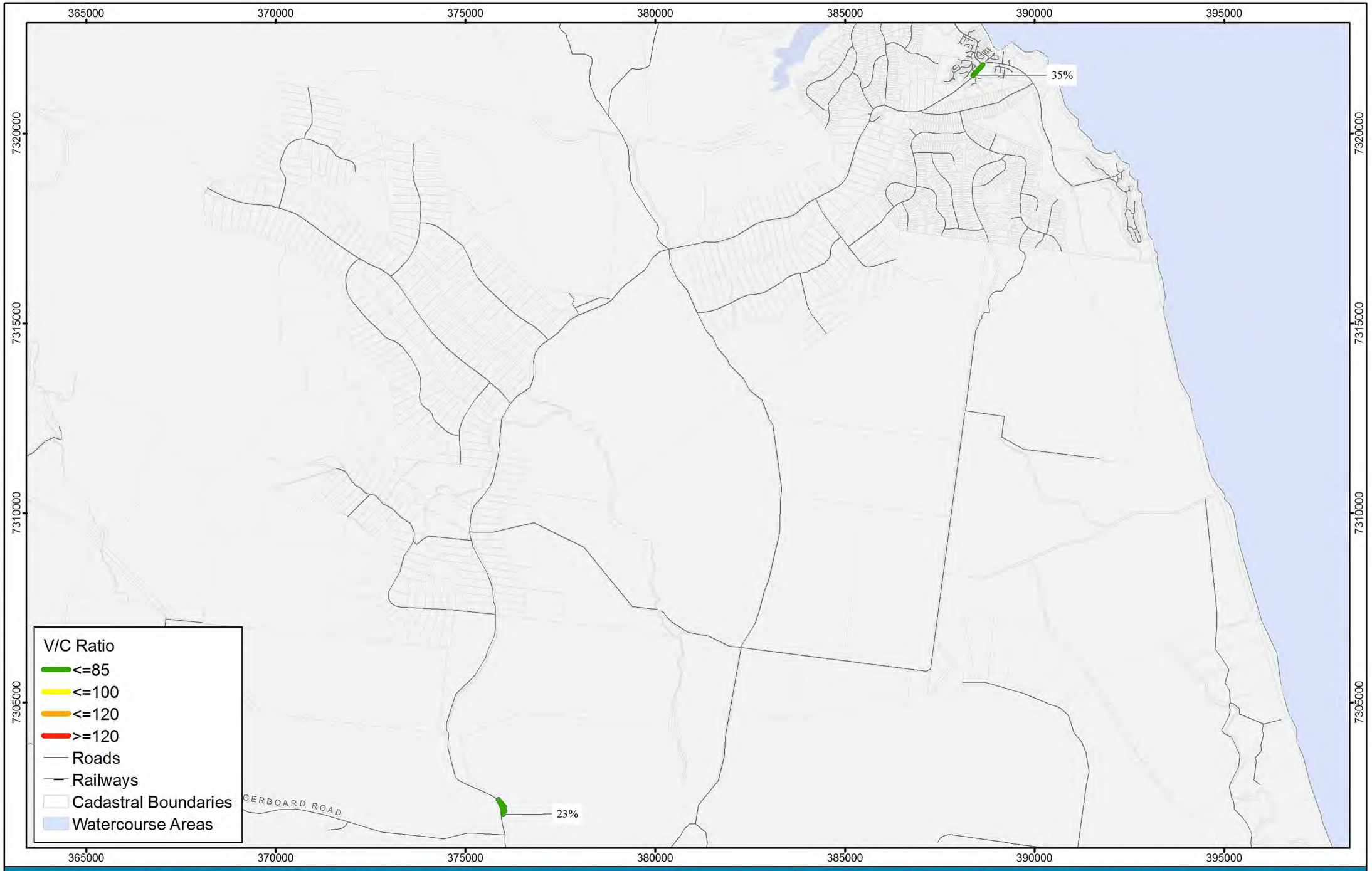
BRISBANE

N

0 1 2 km

2021 Link/Intersection Performance - Agnes Water

GLADSTONE REGIONAL COUNCIL



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

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Map Created: 2/06/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:125,000

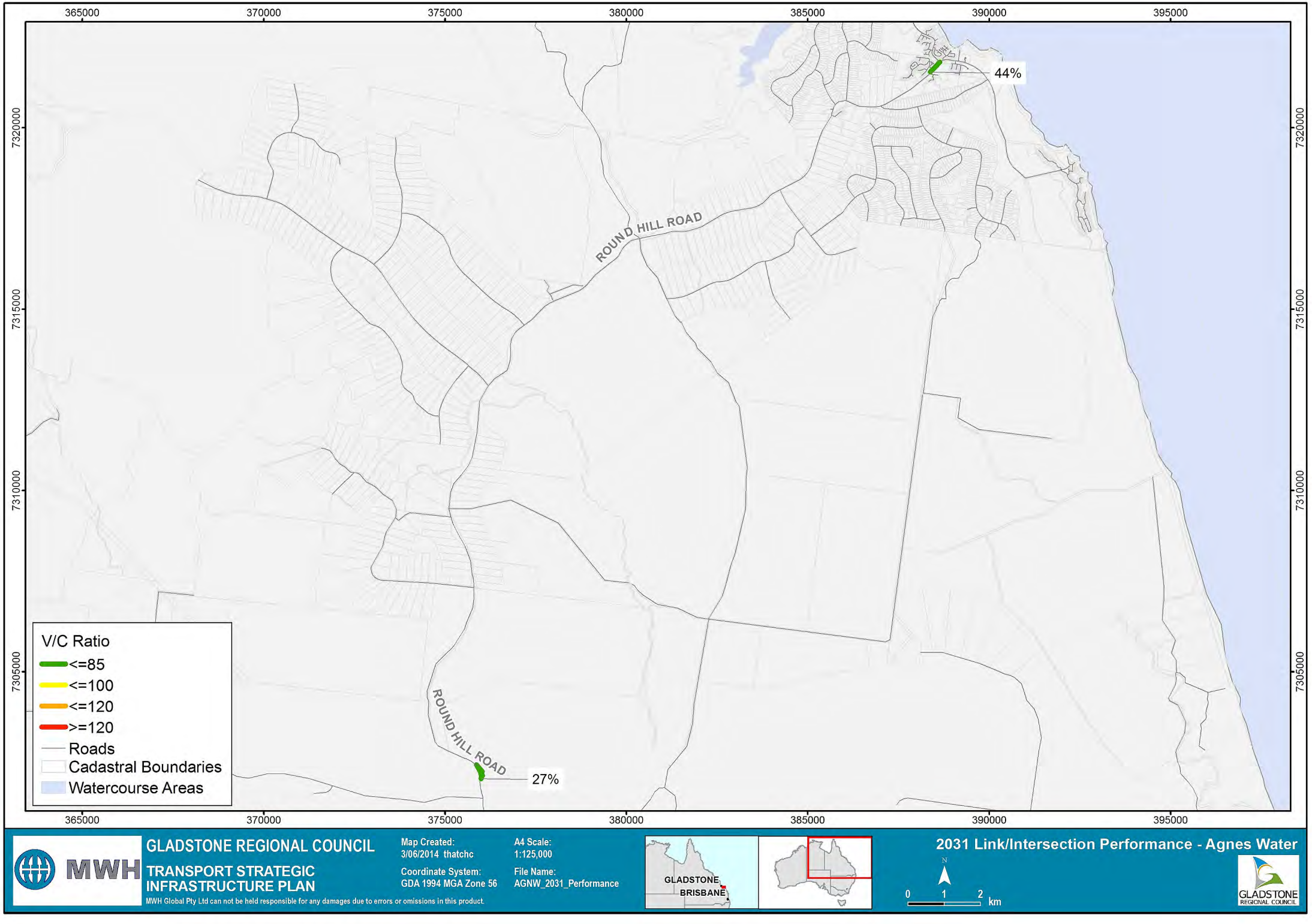
File Name: AGNW_2026_Performance

2026 Link/Intersection Performance - Agnes Water

N

0 1 2 km

GLADSTONE REGIONAL COUNCIL



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GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

Map Created: 3/06/2014 thatchc

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:125,000

File Name: AGNW_2031_Performance

2031 Link/Intersection Performance - Agnes Water

GLADSTONE REGIONAL COUNCIL

Appendix E Gladstone Final List PIP

Gladstone Roads/Transport Strategic Infrastructure Plan - List of Transport Initiatives

Corridor/ Location	SA2 Zone	TMR/ Council Road	Document	Suburb	New ID	Original ID	Project description	Project type	Assumptions	Final comments	Final outcome
Gladstone											
Blain Drive											
Blain Drive	West Gladstone	Council	ICS	West Gladstone	R-BLN-001	R16	Blain Drive (Dawson Highway - Railway Crossing)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Updated description. Removed reference to 4 lanes as Blain Drive will remain a 2 lane road	Include
Blain Drive	West Gladstone	Council	ICS	West Gladstone	R-BLN-002	R14	Blain Drive (Railway Crossing - Auckland Creek)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Updated description. Removed reference to 4 lanes as Blain Drive will remain a 2 lane road	Include
Blain Drive	West Gladstone	Council	IPP	Gladstone	R-BLN-003	ES-PB492	Blain Drive / Palm Drive Intersection	Intersection upgrade (signals)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	An additional item from the IPP. Although it it is within the road strengthening sections, it is a standalone item as the timing could be different.	Include
Blain Drive	West Gladstone	Council	ICS	West Gladstone	R-BLN-004	B3	Blain Drive (Auckland Creek Bridge)	Bridge upgrade (provide foot/bike path)	Trunk infrastructure serving industrial/employment growth	Updated description. Removed reference to 4 lanes as Blain Drive will remain a 2 lane road	Include
Blain Drive	Callemondah	Council	ICS	West Gladstone	R-BLN-005	R15	Blain Drive (Auckland Creek - Hanson Road)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Updated description. Removed reference to 4 lanes as Blain Drive will remain a 2 lane road	Include
Blain Drive	West Gladstone	Council	ICS	West Gladstone	Deleted	B2	Blain Drive (Railway Crossing)	Grade Separated Railway Xing	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Removed because a grade separated railway crossing was considered to be impractical.	Remove
Callemondah											
Callemondah	Callemondah	Council	IPP	Callemondah	R-CAL-001	ES-PB11	Callemondah Drive (Roseanna Street - Railyards)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	An additional item from the IPP.	Include
Callemondah	Callemondah	Council	IPP	Callemondah	R-CAL-002	ES-PB10	Red Rover Road (Power Station Rail Bridge - Benstead Street South)	Road upgrade (pavement strengthening for heavy vehicles)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Additional item from the IPP.	Include
Callemondah	Callemondah	Council	IPP	Callemondah	R-CAL-003	ES-PB10	Red Rover Road (Benstead Street South - Benstead Street North)	Road upgrade (pavement strengthening for heavy vehicles)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Additional item from the IPP.	Include
Callemondah	Callemondah	Council	IPP	Callemondah	R-CAL-004	ES-PB10	Red Rover Road (Benstead Street North - Hanson Road)	Road upgrade (pavement strengthening for heavy vehicles)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Additional item from the IPP.	Include
Callemondah	Callemondah	Council	ICS	Callemondah	R-CAL-005	I12	Red Rover Road / Benstead Street South Intersection	Intersection upgrade (major unsignalised T-intersection)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Updated description. Same location as ES-PB10 but timing could be different.	Include
Callemondah	Callemondah	Council	ICS	Callemondah	R-CAL-006	I11	Red Rover Road / Benstead Street North Intersection	Intersection upgrade (major unsignalised T-intersection)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Updated description. Same location as ES-PB10 but timing could be different.	Include

Gladstone Roads/Transport Strategic Infrastructure Plan - List of Transport Initiatives

Corridor/ Location	SA2 Zone	TMR/ Council Road	Document	Suburb	New ID	Original ID	Project description	Project type	Assumptions	Final comments	Final outcome
Clinton											
Clinton	Clinton-New Auckland	Council	ICS	Clinton	R-CLN-001	I13	Don Young Drive / Col Brown Avenue Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description.	Include
Clinton	Clinton-New Auckland	TMR	ICS	Clinton	R-CLN-002	I30	Dawson Highway / Kirkwood Road / Don Young Drive Intersection	Intersection upgrade (signals, with possible ultimate grade separation)	Capacity upgrade to cater for growth.	Updated description.	Include
Clinton	Clinton-New Auckland	Council	ICS	Clinton	R-CLN-003	I24	Dawson Highway / Harvey Road / Chapman Drive Intersection	Upgrade Harvey Road approaches to roundabout	Capacity upgrade to cater for growth.	Updated description. Excludes signalisation as that would be a sole TMR project.	Include
Clinton	Clinton-New Auckland	Council	IPP	Clinton	R-CLN-004	ES-PB489	J Hickey Avenue / Chapman Drive Intersection	Intersection upgrade (increase existing signal capacity)	Capacity upgrade to cater for growth	New item from the IPP.	Include
Clinton	Clinton-New Auckland	Council	ICS	Clinton	R-CLN-005	I20	Col Brown Avenue / J Hickey Avenue Intersection East	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description, including differentiating it from the Col Brown Ave / J Hickey Ave Intersection West Intersection.	Include
Clinton	Clinton-New Auckland	Council	ICS	Clinton	R-CLN-006	I27	Harvey Road / Carinya Drive Intersection	Intersection upgrade (single lane roundabout)	Capacity upgrade to cater for growth	Updated description.	Include
Clinton	Clinton-New Auckland	Council	ICS	Clinton	Deleted	I14	J Hickey Avenue / Anderson Street Intersection	Roundabout	Council workshop questioned that this was due to existing safety issues hence unlikely to be growth related.	Deleted as unlikely to be growth related.	Remove
Clinton	Clinton-New Auckland	TMR	ICS	Clinton	Deleted	I32	Dawson Highway / Callemondah Drive Intersection	Signals (part of Airport Terminal Relocation)	External to PIP growth drivers: airport terminal relocation.	Deleted as not PIP growth related.	Remove
Clinton	Clinton-New Auckland	TMR	ICS	Clinton	Deleted	I31	Kirkwood Road / Dawson Highway Intersection	Intersection Seperation	Highly unlikely to be warranted in within the PIP horizon or a 20-30 year period.	Deleted as well outside the PIP horizon. Would need evidence to support subsequent inclusion.	Remove
Gladstone CBD and Surrounds											
Gladstone	Gladstone	Council	ICS	Gladstone	R-CBD-001	R9	Goondoon Street (Lord Street - Yarroon Street)	Traffic management to deal with densification	Capacity upgrade to cater for growth in and around the CBD.	Updated description to focus on infrastructure to deal with growth rather than the term 'LATM'.	Include
Gladstone	Gladstone	Council	ICS	Gladstone	R-CBD-002	I3	Goondoon Street / Yarroon Street Intersection	Intesection upgrade (signals)	Capacity upgrade to cater for growth in and around the CBD.	Updated description.	Include
Gladstone	Gladstone	Council	ICS	Gladstone	R-CBD-003	R8	Goondoon Street / Roseberry Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth in and around the CBD.	Split into two intersection treatments to provide signals only.	Include
Gladstone	Gladstone	Council	ICS	Gladstone	R-CBD-004	R8	Goondoon Street / William Street Intersection	Intesection upgrade (signals)	Capacity upgrade to cater for growth in and around the CBD.	Split into two intersection treatments to provide signals only.	Include
Gladstone	Gladstone	Council	ICS	Gladstone	R-CBD-005	I2	Auckland Street / Herbert Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth in and around the CBD.	Updated description	Include
Gladstone	Gladstone	TMR	ICS	Gladstone	R-GLD-001	I10	Hanson Road / Palm Drive Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description. This would be a sole TMR project.	Include
Gladstone	Gladstone	TMR	ICS	Gladstone	R-GLD-002	I36	Hanson Road / Lord Street Intersection	Intersection upgrade (increase existing signal capacity)	Capacity upgrade to cater for growth.	Updated description. This would be a sole TMR project.	Include
Gladstone	Gladstone	Council	ICS	CBD	Deleted	R10	Flinders Parade (Lord to Auckland)	Waterfront (Parking and Amenity)	Primarily amenity hence unlikely to be growth related.	Deleted as not growth related.	Remove
Glen Eden											
Glen Eden	Telina-Toolooa	Council	ICS	Glen Eden	R-GED-001	R19	John Dory Drive Extension (John Dory Drive - Glen Eden Drive)	New road (2 lane urban major corridor) and intersection with Glen Eden Drive	Capacity upgrade to cater for growth	Updated description. Council will review planning in this area to review if Whiting Street is a preferred route, but retain for now.	Include

Gladstone Roads/Transport Strategic Infrastructure Plan - List of Transport Initiatives

Corridor/ Location	SA2 Zone	TMR/ Council Road	Document	Suburb	New ID	Original ID	Project description	Project type	Assumptions	Final comments	Final outcome
Glen Eden	Telina-Toolooa	Council	ICS	Glen Eden	R-GED-002	I25	Kirkwood Road / Glen Eden Drive Extension Intersection	New intersection (unsignalised T-intersection)	Capacity upgrade to cater for growth	Updated description.	Include
Glen Eden	Telina-Toolooa	Council	ICS	Glen Eden	R-GED-003	I19	John Dory Drive / Glen Eden Drive Intersection	New intersection (unsignalised T-intersection)	Capacity upgrade to cater for growth	Updated description. Council will review planning in this area to review if Whiting Street is a preferred route, but retain for now.	Include
Glen Eden	Telina-Toolooa	Council	ICS	Glen Eden	Deleted	R21	Victoria Avenue	2 Lane Urban Major Collector	Already built.	Deleted as this has been built.	Remove
Glen Eden	Telina-Toolooa	Council	ICS	Glen Eden	Deleted	I22	Glen Eden / Victoria	Unsignalised Tee (2 Lane)	Already built.	Deleted as this has been built.	Remove
Glen Eden	Telina-Toolooa	Council	ICS	Glen Eden	Deleted	R7	Kirkwood Road	2 Lane Urban Sub Arterial	Already built.	Deleted as this has been built.	Remove
Glen Eden	Telina-Toolooa	Council	ICS	Glen Eden	Deleted	I33	Gladstone-Benaraby / Kirkwood	Roundabout	Already built.	Deleted as this has been built.	Remove
Glenlyon Road											
Glenlyon Road	Gladstone	Council	IPP	Gladstone	R-GLY-001	New Initiative	Glenlyon Street (Bramston Street - Herbert Street)	Road upgrade (pavement strengthening)	Pavement strengthening to cater for growth.	An additional initiative determined through a Council workshop.	Include
Glenlyon Road	Gladstone	Council	IPP	South Gladstone	R-GLY-002	R17	Glenlyon Road (Herbert Street - Derby Street)	Road upgrade (widen to 4 lanes, provide cycle facilities)	Capacity upgrade to cater for growth.	Updated description.	Include
Glenlyon Road	Gladstone	Council	IPP	South Gladstone	R-GLY-003	R2	Glenlyon Road (Derby Street - Philip Street)	Road upgrade (widen to 4 lanes & provide cycle facilities)	Capacity upgrade to cater for growth.	Updated description.	Include
Glenlyon Road	Gladstone	Council	IPP	Sun Valley	R-GLY-004	R30	Glenlyon Road (Philip Street - Dixon Drive)	Road upgrade (widen to 4 lanes including rail bridge duplication, provide cycle facilities, & upgrade Derby Street Intersection)	Capacity upgrade to cater for growth.	Updated description. Incorporates an intersection ugprade at Dixon Street as defined in I16.	Include
Glenlyon Road	Telina-Toolooa	Council	IPP	Gladstone	R-GLY-005	ES-PB165	Glenlyon Road (Dixon Drive - Victoria Avenue)	Road upgrade (widen to 4 lanes, provide cycle facilities, and upgrade Victoria Avenue Intersection to signals)	Capacity upgrade to cater for growth.	An additional item from the IPP, which is part of initiative R4/R5. Incorporates I21.	Include
Glenlyon Road	Telina-Toolooa	Council	IPP	Gladstone	R-GLY-006	ES-PB170	Glenlyon Road (Victoria Avenue - Kirkwood Road)	Road upgrade (widen to 4 lanes & provide cycle facilities)	Capacity upgrade to cater for growth.	An additional item from the IPP, which is part of initiative R4/R5.	Include
Glenlyon Road	Telina-Toolooa	Council	ICS	O'Connell	R-GLY-007	R6	Glenlyon Road Extension (Kirkwood Road to Mt Rollo)	Road upgrade to provide new alignment and sealed road	Future road in growth area.	Updated description.	Include
Glenlyon Road	Gladstone	Council	ICS	CBD	Deleted	I37	Glenlyon Street / Tank Street Intersection and Ambulance Access	Intersection upgrade (increase existing signal capacity)	Capacity upgrade to cater for growth.	Deleted as the intersection would be completed as part of R17.	Remove
Glenlyon Road	Telina-Toolooa	Council	ICS	South Gladstone	Deleted	I1	Glenlyon / Breslin / Derby	Signals & Remove Slipways	Already built.	Deleted as it is already built. Further capacity upgrades will be built as part of initiative R17.	Remove
Glenlyon Road	Telina-Toolooa	Council	ICS	Telina	Deleted	I16	Glenlyon/Dixon/Dalrymple	Hi Volume Roundabout	Capacity upgrade to cater for growth.	Deleted as the intersection would be completed as part of R30.	Remove
Glenlyon Road	Telina-Toolooa	Council	ICS	Glen Eden	Deleted	R4	Glenlyon (Dixon - Kirkwood)	80K Standard (incl Bike Path)	Capacity upgrade to cater for growth.	Deleted as it is a duplication of other initiatives, which breaks up Glenlyon Road into smaller sections.	Remove
Glenlyon Road	Telina-Toolooa	Council	ICS	Glen Eden	Deleted	R5	Glenlyon (Dixon - Kirkwood)	4 Laning (incl Bike Path)	Capacity upgrade to cater for growth.	Deleted as it is a duplication of other initiatives, which breaks up Glenlyon Road into smaller sections.	Remove
Glenlyon Road	Telina-Toolooa	Council	ICS	Glen Eden	Deleted	I21	Glenlyon Road / Victoria Avenue Intersection	Intersection upgrade (unsignalised t-intersection)	Capacity upgrade to cater for growth.	Deleted as the intersection would be completed as part of the ES-PB165.	Remove
Glenlyon Road	Telina-Toolooa	Council	ICS	Glen Eden	Deleted	I23	Kirkwood / Glenlyon	Signals	Already built.	Deleted as this has been built.	Remove

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Glenlyon Road	Telina-Toolooa	Council	ICS	O'Connell	Deleted	R22	Glenlyon Road Extension (Kirkwood Road to Mt Rollo)	Planning & Survey Future	Future road in growth area.	Deleted as it is a duplication of R6.	Remove
Kin Kora											
Kin Kora	Kin Kora-Sun Valley	TMR	ICS	Kin Kora	R-KKA-001	I29	Dawson Highway / Philip Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description. This would be a sole TMR project.	Include
Kin Kora	West Gladstone	TMR	IPP	Kin Kora	R-KKA-002	R30	Philip Street (Waterson Drive - 144 Philip Street)	Road upgrade (widen to 4 lanes), including intersection upgrade at Waterson Street (signals)	Capacity upgrade to cater for growth	Updated description. This would be a sole TMR project which would also incorporate I7.	Include
Kin Kora		TMR	ICS	Sun Valley		I7	Philip / Waterson	Signals	Capacity upgrade to cater for growth.	Deleted as this would be built as part of R30.	Remove
New Auckland											
New Auckland	Clinton-New Auckland	Council	ICS	New Auckland	R-NAK-001	I15	Penda Avenue / Shaw Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description. Would need to be undertaken in conjunction with an upgrade to the Dawson Hwy / Penda Ave Intersection, which is controlled by TMR.	Include
New Auckland	Clinton-New Auckland	Council	ICS	New Auckland	Deleted	B1	Dixon Drive / Police Creek	2 Lane + Foot/Bike Path	Already built.	Deleted as this has been built.	Remove
New Auckland	Clinton-New Auckland	Council	ICS	New Auckland	Deleted	R17	Dixon Drive	2 Lane Urban Major Collector	Already built.	Deleted as this has been built.	Remove
New Auckland	Clinton-New Auckland	Council	ICS	New Auckland	Deleted	I17	Kirkwood / Dixon	Unsignalised Tee	Already built.	Deleted as this has been built.	Remove
South Gladstone											
South Gladstone	Gladstone	Council	ICS	South Gladstone	R-SGL-001	I4	Auckland Street / Short Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth in and around the CBD.	Updated description.	Include
South Gladstone	Gladstone	Council	IPP	South Gladstone	R-SGL-002	ES-PB490	Coon Street / Toolooa Street Intersection	Intersection upgrade (increase existing signal capacity)	Capacity upgrade to cater for growth.	An additional item from the IPP.	Include
South Gladstone	Gladstone	Council	IPP	South Gladstone	R-SGL-003	ES-PB491	Derby Street / Coon Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	An additional item from the IPP.	Include
South Gladstone	Gladstone	Council	ICS	South Gladstone	R-SGL-004	I5	Derby Street / Ann Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description.	Include
South Gladstone	Gladstone	TMR	ICS	South Gladstone	R-SGL-005	I6	Philip Street / Oxley Drive Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth	Updated description.	Include
Telina											
Telina	Telina-Toolooa	Council	ICS	Telina	R-TEL-001	I8	Dixon Drive / Witney Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description.	Include
Telina	Telina-Toolooa	Council	ICS	Telina	R-TEL-002	I9	Dixon Drive / Mercury Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description.	Include
Toolooa											
Toolooa	Telina-Toolooa	Council	ICS	Toolooa	R-TOO-001	I18	Dalrymple Drive / John Dory Drive Intersection	Intersection upgrade (roundabout)	Capacity upgrade to cater for growth	Updated description. Council will review planning in this area to review if Whiting Street is a preferred route, but retain for now.	Include
Toolooa	Telina-Toolooa	TMR	ICS	Toolooa	R-TOO-002	I34	Gladstone-Benaraby Road / Dalrymple Road Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description.	Include
West Gladstone											
West Gladstone	West Gladstone	TMR	ICS	West Gladstone	R-WGL-001	I35	Dawson Highway / Scenery Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth.	Updated description.	Include
West Gladstone	West Gladstone	TMR	ICS	West Gladstone	R-WGL-002	I26	Dawson Highway / Paterson Street / Cemetary Street Intersections	Intersection upgrade (coordinated signals for the two staggered-T intersections)	Capacity upgrade to cater for growth.	Updated description. This would be a sole TMR project.	Include

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Corridor/ Location	SA2 Zone	TMR/ Council Road	Document	Suburb	New ID	Original ID	Project description	Project type	Assumptions	Final comments	Final outcome
West Gladstone	West Gladstone	Council	IPP	West Gladstone	R-WGL-003	ES-PB494	Breslin Street / Boles Street Intersection	Intersection upgrade (increase existing signal capacity)	Capacity upgrade to cater for growth.	An additional item from the IPP.	Include
Yarwun											
Yarwun	Gladstone Hinterland	Council	ICS	Yarwun	R-YAR-001	I28	Red Rover Road / Don Young Drive / Reid Road Extension Intersection	Intersection upgrade (single lane roundabout)	Trunk infrastructure serving industrial and employment growth, particularly for heavy vehicles.	Updated description.	Include
Yarwun	Gladstone Hinterland	TMR	ICS	Yarwun	R-YAR-002	R12	Reid Road Extension (Red Rover Road - Calliope River)	New road (2 lane road)	Trunk infrastructure to cater for expected significant growth to service the GSDA.	Updated description.	Include
Yarwun	Gladstone Hinterland	TMR	ICS	Yarwun	R-YAR-003	B4	Reid Road Extension (Calliope River Bridge)	2 Lane (Heavy Vehicle)	Trunk infrastructure to cater for expected significant growth to service the GSDA.	Updated description. Would be a sole TMR project.	Include
Yarwun	Gladstone Hinterland	TMR	ICS	Yarwun	R-YAR-004	R13	Reid Road Extension (Calliope River - Port Curtis Way)	New road (2 lane road along Mt Miller Road alignment)	Trunk infrastructure to cater for expected significant growth to service the GSDA.	Updated description.	Include
Yarwun	Gladstone Hinterland	Council	IPP	Yarwun	R-YAR-005	ES-PB541	Calliope River Road	Road upgrade (alignment improvements and strengthening)	Trunk infrastructure to cater for expected significant growth to service the GSDA.	An additional item from the IPP.	Include
Boyne Island/Tannum Sands											
Boyne Island (excluding Malpas Street)											
Boyne Island	Boyne Island - Tannum Sands	Council	ICS	Boyne Island	Deleted	R6	Western Bypass	Roads	Internal to a development therefore not trunk infrastructure.	Deleted as not trunk infrastructure.	Remove
Boyne Island	Boyne Island - Tannum Sands	TMR	ICS	Boyne Island	R-BIS-001	R1	Boyne Island Road (undefined)	Road upgrade (not defined).	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Hampton Drive/Tannum Sands Road											
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-001	I4	Hampton Drive / Booth Avenue West Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-002	I5	Hampton Drive / Latrobe Street Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-003	I6	Hampton Drive / Garnet Road Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-004	I7	Hampton Drive / Booth Avenue East Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-005	I8	Hampton Drive / Cremorne Drive Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-006	I9	Hampton Drive / Tannum Sands Road Intersection	Intersection upgrade (signals)	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-007	R3	Hampton Drive (Malpas Street - Latrobe Street)	Road upgrade (undefined TMR project)	Potentially catering for growth.	Retain but this is a sole TMR project with zero cost.	Include
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-008	I10	Tannum Sands Road / Coronation Drive Intersection	Intersection upgrade (roundabout)	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-HTS-009	R4	Tannum Sands Road (Hampton Drive - Silverton Drive)	Road upgrade (undefined TMR project)	Potentially catering for growth.	Retain but this is a sole TMR project with zero cost.	Include
Malpas Street											
Malpas Street	Boyne Island - Tannum Sands	TMR	ICS	Boyne Island	R-MAL-001	I1	Malpas Street / Beltana Drive Intersection	Intersection upgrade	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Malpas Street	Boyne Island - Tannum Sands	TMR	ICS	Boyne Island	R-MAL-002	I2	Malpas Street / Tarcoola Drive Intersection	Intersection upgrade	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Malpas Street	Boyne Island - Tannum Sands	TMR	ICS	Boyne Island	R-MAL-003	I3	Malpas Street / Centenary Drive Intersection	Intersection upgrade	Capacity upgrade to cater for growth	Updated description. TMR project.	Include
Malpas Street	Boyne Island - Tannum Sands	TMR	ICS	Boyne Island	R-MAL-004	R2	Malpas Street (Centenary Drive - Boyne Island Road)	Road upgrade (undefined TMR project)	Potentially catering for growth.	Retain but this is a sole TMR project with zero cost.	Include

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Corridor/ Location	SA2 Zone	TMR/ Council Road	Document	Suburb	New ID	Original ID	Project description	Project type	Assumptions	Final comments	Final outcome
Pioneer Drive											
Pioneer Drive	Boyne Island - Tannum Sands	TMR	IPP	Tannum Sands	R-PNR-001	ES-PB107	Pioneer Drive (Tannum STP Road)(Tannum Sands Road - Tannum STP)	Road upgrade (widen to arterial road 2 lane standard and pavement strengthening as part of Pioneer Drive Bypass)	Capacity upgrade to cater for growth	Changed name to Pioneer Drive Extension.	Include
Pioneer Drive	Boyne Island - Tannum Sands	TMR	ICS	Tannum Sands	R-PNR-002	R5	Pioneer Drive Extension (Tannum STP - Boyne Island Road)	New road (2 lane major urban corridor)	Capacity upgrade to cater for growth	Changed name to Pioneer Drive Extension. Shortened to only include new road west of the STP.	Include
Pioneer Drive	Boyne Island - Tannum Sands	TMR	ICS	Boyne Island	R-PNR-003	B1	Pioneer Drive Extension (Boyne River)	New bridge across Boyne River	Capacity upgrade to cater for growth	Changed name to Pioneer Drive Extension.	Include
Pioneer Drive	Boyne Island - Tannum Sands	TMR	ICS	Boyne Island	R-PNR-004	B2	Pioneer Drive Extension (Floodway)	New bridge across the Floodway	Capacity upgrade to cater for growth	Changed name to Pioneer Drive Extension.	Include
Pioneer Drive	Boyne Island - Tannum Sands	TMR	ICS	Boyne Island	R-PNR-005	B3	Pioneer Drive Extension (Cattle Creek)	New bridge across Cattle Creek	Capacity upgrade to cater for growth	Changed name to Pioneer Drive Extension.	Include
Tannum Sands (excluding Hampton Drive and Tannum Sands Road)											
Tannum Sands	Boyne Island - Tannum Sands	Council	ICS	Tannum Sands	R-TNS-001	R7	Coronation Drive Extension (Coronation Drive - Dahl Road)	New road (2 lane major urban corridor)	Capacity upgrade to cater for growth	Split into two stages.	Include
Tannum Sands	Boyne Island - Tannum Sands	Council	ICS	Tannum Sands	R-TNS-002	R7	Coronation Drive Extension (Dahl Road - Pioneer Drive)	New road (2 lane major urban corridor)	Capacity upgrade to cater for growth	Split into two stages.	Include
Tannum Sands	Boyne Island - Tannum Sands	Council	ICS	Tannum Sands	R-TNS-003	R8	Dahl Road Extension (Dahl Road - Coronation Drive Extension)	New road (2 lane major urban corridor)	Capacity upgrade to cater for growth	Updated description.	Include
Tannum Sands	Boyne Island - Tannum Sands	Council	ICS	Tannum Sands	R-TNS-004	I11	Coronation Drive / Cremorne Drive Intersection	Intersection upgrade (single lane roundabout)	Capacity upgrade to cater for growth	Updated description.	Include
Agnes Water											
Agnes Water											
Agnes Water	Agnes Water - Miriam Vale	Council	ICS	Agnes Water	R-AGW-001	#	Seventeen Seventy Link Road (Round Hill Road - Captain Cook Drive)	New road (2 lane urban collector)	Serves Agnes Water town centre and PIA growth areas	Changed name to Seventeen Seventy Link Road. Removed reference to Discovery Drive.	Include
Agnes Water	Agnes Water - Miriam Vale	Council	ICS	Agnes Water	R-AGW-002	New Initiative	Bicentennial Drive / Round Hill Road Intersection	Intersection upgrade (unsignalised t-intersection)	Serves outer growth areas of Agnes Water	New initiative to replace the Bicentennial Drive upgrade.	Include
Agnes Water	Agnes Water - Miriam Vale	Council	IPP	Agnes Water	R-AGW-003	ES-PB584	Round Hill Road (various rural sections)	Road upgrade (provision of sealed road shoulders in deficient areas to ensure a consistent formation width)	Consistent road formation on the approaches to Agnes Water is driven by growth.	Additional item from IPP. Combined ES-PB584, ES-PB585 and ES-PB586 and ES-PB587.	Include
Agnes Water	Agnes Water - Miriam Vale	Council	IPP	Agnes Water	R-AGW-004	ES-PB91	Round Hill Road / Captain Cook Drive Intersection	Intersection upgrade (roundabout)	Capacity upgrade to cater for growth.	Additional item from IPP.	Include
Agnes Water	Agnes Water - Miriam Vale	Council	IPP	Seventeen Seventy	R-AGW-005	ES-PB114	Captain Cook Drive (GRC Depot - 1770 Marina)	Road upgrade (widening to and pavement strengthen to rural collector standard)	Upgrading road formation to cater for growth and urbanisation.	Additional item from IPP.	Include
Agnes Water	Agnes Water - Miriam Vale	Council	ICS	Agnes Water	Deleted	#	Bicentennial Drive (Round Hill Road - Springs Road)	Road upgrade (2 lane urban collector including kerbing & footpaths)	Serves outer growth areas of Agnes Water	Deleted at GRC's request. Replaced with an upgrade to the Bicentennial Drive / Round Hill Road Intersection.	Remove
Agnes Water	Agnes Water - Miriam Vale	Council	ICS	Miriam Vale Shire	Deleted	#	Northern Corridor (Baffle Creek - Agnes Water)	New road (2 lane rural arterial corridor)	Difficult to justify as growth related without additional investigation.	Delete from the current PIP schedule, but include in the report as being under investigation for potential future inclusion.	Remove
Agnes Water	Agnes Water - Miriam Vale	Council	ICS	Miriam Vale Shire	Deleted	#	Southern Corridor (Round Hill Road - Turkey Beach Road)	New road (2 lane rural arterial corridor)	Difficult to justify as growth related without additional investigation.	Delete from the current PIP schedule, but include in the report as being under investigation for potential future inclusion.	Remove

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Agnes Water	Agnes Water - Miriam Vale	Council	ICS	Baffle Creek	Deleted	ES-PB338	Investigate alternative route to southern corridor along Maude Hill Road and other existing roads	New - Roads	Difficult to justify as growth related without additional investigation.	Delete from the current PIP schedule, but include in the report as being under investigation for potential future inclusion.	Remove
Calliope											
Calliope East											
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-001	4	Drynan Drive East (Dawson Highway - Morris Avenue)	Road upgrade (provide 2 lane arterial road standard)	Upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-002	5, 13	Morris Avenue (Don Cameron Drive - Central Avenue)	Road upgrade (provide 2 lane arterial road standard)	Upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-003	12	Don Cameron Drive (Walker Drive - Central/East Intersection)	Road upgrade (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description. Don Cameron trunk road to extend to eastern edge of Lot 331 SP244606.	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-004	9	Lightning Street (Dawson Highway - Trudy Street)	Road upgrade (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-005	10	Trudy Street (Lightning Street - Herbertson Road)	Road upgrade (provide 2 lane collector road standard), and new road	Upgrade to cater for growth on a major collector.	Updated description	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-006	11	Panorama Road 1 (Herbertson Road - Panorama Road 2)	New road (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description. Panorama 1 trunk road to extend to eastern edge of Lot 1 RP897095.	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-007	i	Don Cameron Drive / Morris Avenue Intersection	Intersection upgrade (roundabout)	Intersection upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-008	ii	Morris Avenue / Drynan Drive Intersection	Intersection upgrade (roundabout)	Intersection upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-009	vi	Trudy Street / Herbertson Road / Panorama 1 Intersection	New intersection (priority control)	Intersection upgrade to cater for growth on a major collector.	Updated description	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-010	vii	Panorama 1 / Panorama 2 Intersection	New intersection (priority control)	Intersection upgrade to cater for growth on a major collector.	Retained because Panorama 1 truck road to extend to eastern edge of Lot 1 RP897095	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-011	viii	Don Cameron / Central / East Intersection	New intersection (priority control)	Intersection upgrade to cater for growth on a major collector.	Retained because Don Cameron trunk road to extend to eastern edge of Lot 331 SP244606	Include
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	Deleted	ix	Zeus Way / New road Intersection	New intersection (priority control)	Part of development therefore not trunk infrastructure.	Deleted	Remove
Calliope East	Gladstone Hinterland	Council	ICS	Calliope	R-CPE-012	x	Morris Avenue / Central Avenue Intersection	Intersection upgrade (roundabout)	Intersection upgrade to cater for growth on a major collector.	Updated description	Include
Calliope South											
Calliope South	Gladstone Hinterland	Council	ICS	Calliope	R-CPS-001	16	Sutherland Street (Dawson Highway - Pujolas Street)	Road upgrade (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope South	Gladstone Hinterland	Council	IPP	Calliope	R-CPS-002	17	Pujolas Street (Bloomfield Street - Sutherland Street)	Road upgrade (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope South	Gladstone Hinterland	Council	ICS	Calliope	R-CPS-003	18	Archer Street (Pujolas Street - Stowe Road)	Road upgrade (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope South	Gladstone Hinterland	Council	ICS	Calliope	R-CPS-004	19	Stowe Road (Archer Street - Ninganga Court)	Road upgrade (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope South	Gladstone Hinterland	Council	ICS	Calliope	R-CPS-005	xii	Archer Street / Bloomfield Street / Pujolas Street Intersection	Intersection upgrade (roundabout)	Intersection upgrade to cater for growth on a major collector.	Updated description	Include
Calliope West											
Calliope West	Gladstone Hinterland	Council	ICS	Calliope	R-CPW-001	7	Drynan Drive West (Dawson Highway - Elliot Drive)	Road upgrade (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description	Include

Gladstone Roads/Transport Strategic Infrastructure Plan - List of Transport Initiatives

Corridor/ Location	SA2 Zone	TMR/ Council Road	Document	Suburb	New ID	Original ID	Project description	Project type	Assumptions	Final comments	Final outcome
Calliope West	Gladstone Hinterland	Council	ICS	Calliope	R-CPW-002	8	Major Collector Road (Drynan Drive - Dawson Highway)	New road (provide 2 lane collector road standard)	Upgrade to cater for growth on a major collector.	Updated description. Name changed from Elliot Drive.	Include
Calliope West	Gladstone Hinterland	Council	ICS	Calliope	R-CPW-003	15	Liffey Way (Drynan Drive - end of existing formation)	Road upgrade (provide 2 lane collector road standard)	Although only a minor collector, considered trunk infrastructure for the purposes of the PIP.	Updated description.	Include
Calliope West	Gladstone Hinterland	Council	ICS	Calliope	R-CPW-004	iii	Drynan Drive / Liffey Way Intersection	Intersection upgrade (roundabout)	Intersection upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope West	Gladstone Hinterland	Council	ICS	Calliope	R-CPW-005	iv	Drynan Drive / Capricornia Drive Intersection	Intersection upgrade (upgraded priority control)	Intersection upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope West	Gladstone Hinterland	Council	ICS	Calliope	R-CPW-006	v	Drynan Drive / Major Collector Intersection	Intersection upgrade (roundabout)	Intersection upgrade to cater for growth on a major collector.	Updated description.	Include
Calliope West	Gladstone Hinterland	Council	ICS	Calliope	Deleted	xi	Liffey Way / New road Intersection	New intersection (priority control)	Part of development therefore not trunk infrastructure.	Deleted	Remove
Calliope Dawson Hwy											
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope Traffic Report	Calliope	R-CPD-001	New	Dawson Highway / Drynan Drive Intersection	Intersection upgrade (signals)	Intersection upgrade to cater for growth.	New initiative based on traffic report findings.	Include
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope Traffic Report	Calliope	R-CPD-002	New	Dawson Highway / Don Cameron Drive / Herbertson Road Intersection	Intersection upgrade (signals)	Intersection upgrade to cater for growth.	New initiative based on traffic report findings.	Include
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope Traffic Report	Calliope	R-CPD-003	New	Dawson Highway / Lightning Drive Intersection	Intersection upgrade (signals)	Intersection upgrade to cater for growth.	New initiative based on traffic report findings.	Include
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope Traffic Report	Calliope	R-CPD-004	New	Dawson Highway / Bloomfield Street Intersection	Intersection downgrade (left-in/left-out)	Intersection downgrade associated with the Sutherland Street Intersection.	New initiative based on traffic report findings.	Include
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope Traffic Report	Calliope	R-CPD-005	New	Dawson Highway / Sutherland Street Intersection	Intersection upgrade (signals)	Intersection upgrade to cater for growth.	New initiative based on traffic report findings.	Include
Beecher											
Beecher	Gladstone Hinterland	Council	ICS	Beecher	Deleted	#	Wyndham Road / Schulze Road	Roads	Unlikely to be growth related.	Deleted	Remove
Beecher	Gladstone Hinterland	Council	ICS	Beecher	Deleted	#	Jefferis Road	Roads	Unlikely to be growth related.	Deleted	Remove
Beecher	Gladstone Hinterland		ICS	Beecher	Deleted	#	Siding Road (from Jefferis Road to Devils Elbow)	Roads	Unlikely to be growth related.	Deleted	Remove
Beecher	Gladstone Hinterland	Council	ICS	Beecher	Deleted	#	Upgrade of Wyndham Road, Dawson Highway intersection from auxiliary passing lane to a protected right turn lane	Roads	Not growth related.	Deleted	Remove
Beecher	Gladstone Hinterland	Council	ICS	Beecher	Deleted	#	Provide culverts along Wyndham Rd to at least a 1in 10 yr ARI immunity for a 6.3m bitumen seal (7m wide travel lane)	Roads	Not growth related.	Deleted	Remove

Appendix F Unit Rates

Gladstone Roads/Transport Strategic Infrastructure Plan
Unit Road Infrastructure Costs

Roads

Hierarchy	Unit Rate ($/m)	
	Mar-10	Mar-14
Urban - Arterial	$5,700	$6,270
Urban - Arterial Main Street	$5,570	$6,127
Urban - Traffic Distributer	$2,700	$2,970
Urban - Controlled Distributor	$2,610	$2,871
Urban - Sub Arterial Main Street	$2,600	$2,860
Urban - Major Collector	$2,230	$2,453
Urban - Minor Collector	$2,160	$2,376
Urban - Access Street	$1,510	$1,661
Rural - Arterial	$1,750	$1,925
Rural - Traffic Distributor	$1,410	$1,551
Rural - Minor Collector	$810	$891
Rural - Access Street	$600	$660

Urban Intersections

Hierarchy	Unit Rate ($)			
	Mar-10		Mar-14	
	Roundabouts	Signals	Roundabouts	Signals
Arterial	$165,200	$186,180	$181,720	$204,798
Arterial Main Street	$89,100	$186,180	$98,010	$204,798
Traffic Distributer	$157,500	$151,510	$173,250	$166,661
Controlled Distributor	$157,500	$151,510	$173,250	$166,661
Sub Arterial Main Street	$84,300	$151,510	$92,730	$166,661
Major Collector	$37,200		$40,920	
Minor Collector	$24,700		$27,170	

These costs are in addition to the road construction costs.

Gladstone Roads/Transport Strategic Infrastructure Plan
Unit Road Infrastructure Costs

Rural Intersections

Hierarchy	Unit Rate ($)	
	Mar-10	Mar-14
Arterial	$148,400	$163,240
Traffic Distributor	$104,700	$115,170
Minor Collector	$48,300	$53,130
Access Street	$17,300	$19,030

These costs are in addition to the road construction costs.

Minor Bridges (<35m total length)

Superstructure Costs

Hierarchy	Unit Rate ($/m)	
	Mar-10	Mar-14
Urban - Access Street	$24,300	$26,730
Urban - Minor Collector	$30,900	$33,990
Urban - Major Collector	$30,900	$33,990
Urban - Sub-Arterial Main Street	$44,200	$48,620
Urban - Distributor	$39,700	$43,670
Urban - Arterial Main Street	$39,700	$43,670
Urban - Arterial	$36,400	$40,040
Rural - Collector/Local	$23,200	$25,520
Rural - Arterial	$34,200	$37,620

Gladstone Roads/Transport Strategic Infrastructure Plan
Unit Road Infrastructure Costs

Abutment Costs

Hierarchy	Unit Rate ($)	
	Mar-10	Mar-14
Urban - Access Street	$480,000	$528,000
Urban - Minor Collector	$614,000	$675,400
Urban - Major Collector	$614,000	$675,400
Urban - Sub-Arterial Main Street	$862,000	$948,200
Urban - Distributor	$749,000	$823,900
Urban - Arterial Main Street	$749,000	$823,900
Urban - Arterial	$749,000	$823,900
Rural - Collector/Local	$480,000	$528,000
Rural - Arterial	$614,000	$675,400

The abutment costs are in addition to the superstructure costs.

Multi-Span Bridges

Hierarchy	Unit Rate ($/m)							
	Mar-10				Mar-14			
	35-50m	50-100m	100-150m	150-250m	35-50m	50-100m	100-150m	150-250m
Urban - Access Street	$40,400	$36,800	$34,200	$33,400	$44,440	$40,480	$37,620	$36,740
Urban - Minor Collector	$52,200	$47,600	$44,500	$43,400	$57,420	$52,360	$48,950	$47,740
Urban - Major Collector	$52,200	$47,600	$44,500	$43,400	$57,420	$52,360	$48,950	$47,740
Urban - Sub-Arterial Main Street	$73,400	$67,000	$62,300	$60,800	$80,740	$73,700	$68,530	$66,880
Urban - Distributor	$65,500	$59,900	$55,900	$54,700	$72,050	$65,890	$61,490	$60,170
Urban - Arterial Main Street	$65,500	$59,900	$55,900	$54,700	$72,050	$65,890	$61,490	$60,170
Urban - Arterial	$62,200	$56,500	$52,600	$51,400	$68,420	$62,150	$57,860	$56,540
Rural - Collector/Local	$39,400	$35,800	$33,100	$32,300	$43,340	$39,380	$36,410	$35,530
Rural - Arterial	$55,600	$51,000	$47,800	$46,800	$61,160	$56,100	$52,580	$51,480

These costs are total bridge costs including abutments.

Boyne River Bridge (and other major bridges)

Crossing	Unit Rate ($)	
	Mar-10	Mar-14
Boyne/Calliope River	$135,000	$148,500

Appendix G Costs Assessment

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
Gladstone													
Blain Drive													
Blain Drive	R-BLN-001	Blain Drive (Dawson Highway - Railway Crossing)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	$222,000	Road	Rural - Arterial	m	350	1,925	673,750	673,750	680,000	
Blain Drive	R-BLN-002	Blain Drive (Railway Crossing - Auckland Creek)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	$2,238,000	Road	Rural - Arterial	m	800	1,925	1,540,000	1,540,000	1,540,000	
Blain Drive	R-BLN-003	Blain Drive / Palm Drive Intersection	Intersection upgrade (signals)	$243,000	Road	Rural - Arterial	m	200	1,925	385,000	551,661	560,000	
					Intersection	Urban - Traffic Distributor Signals	m	1	166,661	166,661			
Blain Drive	R-BLN-004	Blain Drive (Auckland Creek Bridge)	Bridge upgrade (provide foot/bike path)	$7,100,000	Minor bridge	Urban - Access (ped/cycle)	m	35	26,730	935,550	1,463,550	1,470,000	
					Minor bridge abutments	Urban - Access (ped/cycle)	ea	1	528,000	528,000			
Blain Drive	R-BLN-005	Blain Drive (Auckland Creek - Hanson Road)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	$1,252,000	Road	Rural - Arterial	m	1000	1,925	1,925,000	1,925,000	1,930,000	
Callemondah													
Callemondah	R-CAL-001	Callemondah Drive (Roseanna Street - Railyards)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	$820,000	Road	Rural - Traffic Distributor	m	550	1,551	853,050	853,050	860,000	
Callemondah	R-CAL-002	Red Rover Road (Power Station Rail Bridge - Benstead Street South)	Road upgrade (pavement strengthening for heavy vehicles)	$1,250,000	Road	Rural - Arterial	m	300	1,925	577,500	577,500	580,000	
Callemondah	R-CAL-003	Red Rover Road (Benstead Street South - Benstead Street North)	Road upgrade (pavement strengthening for heavy vehicles)	$1,250,000	Road	Rural - Arterial	m	700	1,925	1,347,500	1,347,500	1,350,000	
Callemondah	R-CAL-004	Red Rover Road (Benstead Street North - Hanson Road)	Road upgrade (pavement strengthening for heavy vehicles)	$1,250,000	Road	Rural - Arterial	m	500	1,925	962,500	962,500	970,000	
Callemondah	R-CAL-005	Red Rover Road / Benstead Street South Intersection	Intersection upgrade (major unsignalised T-intersection)	$613,000	Road	Rural - Arterial	m	300	1,925	577,500	740,740	750,000	
					Intersection	Rural - Arterial	ea	1	163,240	163,240			
Callemondah	R-CAL-006	Red Rover Road / Benstead Street North Intersection	Intersection upgrade (major unsignalised T-intersection)	$773,000	Road	Rural - Arterial	m	300	1,925	577,500	740,740	750,000	
					Intersection	Rural - Arterial	ea	1	163,240	163,240			
Clinton													
Clinton	R-CLN-001	Don Young Drive / Col Brown Avenue Intersection	Intersection upgrade (signals)	$736,000	Road	Rural - Arterial	m	300	1,925	577,500	782,298	790,000	
					Intersection	Urban - Traffic Distributor Signals	ea	1	204,798	204,798			
Clinton	R-CLN-002	Dawson Highway / Kirkwood Road / Don Young Drive Intersection	Intersection upgrade (signals, with possible ultimate grade separation)	$2,597,000	Road	Urban - Traffic Distributor	m	550	2,970	1,633,500	2,043,096	2,050,000	
					Intersection	Urban - Traffic Distributor Signals	ea	1	204,798	204,798			
					Intersection	Urban - Traffic Distributor Signals	ea	1	204,798	204,798			
Clinton	R-CLN-003	Dawson Highway / Harvey Road / Chapman Drive Intersection	Upgrade Harvey Road approaches to roundabout	$928,000	Road	Urban - Major Collector	m	100	2,453	245,300	245,300	250,000	
Clinton	R-CLN-004	J Hickey Avenue / Chapman Drive Intersection	Intersection upgrade (increase existing signal capacity)	Not available	Road	Urban - Major Collector	m	150	2,453	367,950	534,611	540,000	

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
Clinton	R-CLN-005	Col Brown Avenue / J Hickey Avenue Intersection East	Intersection upgrade (signals)	$359,000	Road	Urban - Major Collector	m	150	2,453	367,950	534,611	540,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
Clinton	R-CLN-006	Harvey Road / Carinya Drive Intersection	Intersection upgrade (single lane roundabout)	$343,000	Road	Urban - Major Collector	m	150	2,453	367,950	408,870	410,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			
Gladstone CBD and Surrounds													
Gladstone	R-CBD-001	Goondoon Street (Lord Street - Yarroon Street)	Traffic management to deal with densification	$569,000	Road	Urban - Major Collector	m	220	2,453	539,660	539,660	540,000	
Gladstone	R-CBD-002	Goondoon Street / Yarroon Street Intersection	Intesection upgrade (signals)	Not available	Road	Urban - Major Collector	m	200	2,453	490,600	657,261	660,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
Gladstone	R-CBD-003	Goondoon Street / Roseberry Street Intersection	Intersection upgrade (signals)	$393,000	Road	Urban - Major Collector Signals	m	200	2,453	490,600	657,261	660,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
Gladstone	R-CBD-004	Goondoon Street / William Street Intersection	Intesection upgrade (signals)	Not available	Road	Urban - Major Collector Signals	m	200	2,453	490,600	657,261	660,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
Gladstone	R-CBD-005	Auckland Street / Herbert Street Intersection	Intersection upgrade (signals)	$359,000	Road	Urban - Major Collector Signals	m	200	2,453	490,600	657,261	660,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
Gladstone	R-GLD-001	Hanson Road / Palm Drive Intersection	Intersection upgrade (signals)	$857,000	Road	Urban - Arterial Main Street	m	150	6,270	940,500	1,329,273	1,330,000	
					Road	Urban - Major Collector	m	75	2,453	183,975			
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Gladstone	R-GLD-002	Hanson Road / Lord Street Intersection	Intersection upgrade (increase existing signal capacity)	$751,000	Road	Urban - Arterial Main Street	m	100	6,270	627,000	1,077,098	1,080,000	
					Road	Urban - Major Collector	m	100	2,453	245,300			
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Glen Eden													
Glen Eden	R-GED-001	John Dory Drive Extension (John Dory Drive - Glen Eden Drive)	New road (2 lane urban major corridor) and intersection with Glen Eden Drive	$1,619,000	Road	Urban - Major Collector	m	825	2,453	2,023,725	2,023,725	2,030,000	
Glen Eden	R-GED-002	Kirkwood Road / Glen Eden Drive Extension Intersection	New intersection (unsignalised T-intersection)	$549,000	Road	Rural - Traffic Distributor	m	300	1,551	465,300	580,470	590,000	
					Intersection	Rural - Traffic Distributor	ea	1	115,170	115,170			
Glen Eden	R-GED-003	John Dory Drive / Glen Eden Drive Intersection	New intersection (unsignalised T-intersection)	$416,000	Road	Urban - Major Collector	m	150	2,453	367,950	367,950	370,000	

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
Glenlyon Road													
Glenlyon Road	R-GLY-001	Glenlyon Street (Bramston Street - Herbert Street)	Road upgrade (pavement strengthening)	Not available	Road	Urban - Arterial Main Street	m	200	6,127	1,225,400	1,225,400	1,230,000	
Glenlyon Road	R-GLY-002	Glenlyon Road (Herbert Street - Derby Street)	Road upgrade (widen to 4 lanes, provide cycle facilities)	$2,330,000	Road	Urban - Traffic Distributor	m	900	2,970	2,673,000	2,673,000	2,680,000	Assumes a new two lane parallel road will be built.
Glenlyon Road	R-GLY-003	Glenlyon Road (Derby Street - Philip Street)	Road upgrade (widen to 4 lanes & provide cycle facilities)	$4,055,000	Road	Urban - Traffic Distributor	m	2000	2,970	5,940,000	5,940,000	5,940,000	Assumes a new two lane parallel road will be built.
Glenlyon Road	R-GLY-004	Glenlyon Road (Philip Street - Dixon Drive)	Road upgrade (widen to 4 lanes including rail bridge duplication, provide cycle facilities, & upgrade Derby Street Intersection)	$3,600,000	Road	Urban - Traffic Distributor	m	1900	2,970	5,643,000	5,643,000	5,650,000	Assumes a new two lane parallel road will be built.
Glenlyon Road	R-GLY-005	Glenlyon Road (Dixon Drive - Victoria Avenue)	Road upgrade (widen to 4 lanes, provide cycle facilities, and upgrade Victoria Avenue Intersection to signals)	$2,100,000	Road	Urban - Traffic Distributor	m	1600	2,970	4,752,000	4,752,000	4,760,000	Assumes a new two lane parallel road will be built.
Glenlyon Road	R-GLY-006	Glenlyon Road (Victoria Avenue - Kirkwood Road)	Road upgrade (widen to 4 lanes & provide cycle facilities)	$5,328,000	Road	Urban - Traffic Distributor	m	1000	2,970	2,970,000	2,970,000	2,970,000	Assumes a new two lane parallel road will be built.
Glenlyon Road	R-GLY-007	Glenlyon Road Extension (Kirkwood Road to Mt Rollo)	Road upgrade to provide new alignment and sealed road	$9,550,000	Road	Rural - Arterial	m	2000	1,925	3,850,000	3,850,000	3,850,000	Assumes a new two lane parallel road will be built.
Kin Kora													
Kin Kora	R-KKA-001	Dawson Highway / Philip Street Intersection	Intersection upgrade (signals)	$2,535,000	Road	Urban - Arterial Main Street	m	300	6,270	1,881,000	2,085,798	2,090,000	
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Kin Kora	R-KKA-002	Philip Street (Waterson Drive - 144 Philip Street)	Road upgrade (widen to 4 lanes), including intersection upgrade at Waterson Street (signals)	$1,068,000	Road	Urban - Traffic Distributor	m	700	2,970	2,079,000	2,283,798	2,290,000	Assumes a new two lane parallel road will be built
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
New Auckland													
New Auckland	R-NAK-001	Penda Avenue / Shaw Street Intersection	Intersection upgrade (signals)	$1,006,000	Road	Urban - Arterial Main Street	m	200	6,127	1,225,400	2,000,809	2,010,000	
					Road	Urban - Major Collector	m	150	2,453	367,950			
					Intersection	Urban - Arterial Signals	ea	1	240,798	240,798			
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
South Gladstone													
South Gladstone	R-SGL-001	Auckland Street / Short Street Intersection	Intersection upgrade (signals)	$345,000	Road	Urban - Major Collector	m	200	2,453	490,600	657,261	660,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
South Gladstone	R-SGL-002	Coon Street / Toolooa Street Intersection	Intersection upgrade (increase existing signal capacity)	$220,000									
South Gladstone	R-SGL-003	Derby Street / Coon Street Intersection	Intersection upgrade (signals)	$258,000	Road	Urban - Major Collector	m	200	2,453	490,600	657,261	660,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
South Gladstone	R-SGL-004	Derby Street / Ann Street Intersection	Intersection upgrade (signals)	$571,000	Road	Urban - Major Collector	m	200	2,453	490,600	657,261	660,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
South Gladstone	R-SGL-005	Philip Street / Oxley Drive Intersection	Intersection upgrade (signals)	$792,000	Road	Urban - Arterial Main Street	m	150	6,127	919,050	1,307,823	1,310,000	
					Road	Urban - Major Collector	m	75	2,453	183,975			
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Telina													
Telina	R-TEL-001	Dixon Drive / Witney Street Intersection	Intersection upgrade (signals)	$375,000	Road	Urban - Major Collector	m	150	2,453	367,950	534,611	540,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
Telina	R-TEL-002	Dixon Drive / Mercury Street Intersection	Intersection upgrade (signals)	$373,000	Road	Urban - Major Collector	m	150	2,453	367,950	534,611	540,000	
					Intersection	Urban - Major Collector Signals	ea	1	166,661	166,661			
Toolooa													
Toolooa	R-TOO-001	Dalrymple Drive / John Dory Drive Intersection	Intersection upgrade (roundabout)	$313,000	Road	Urban - Major Collector	m	150	2,453	367,950	408,870	410,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			
Toolooa	R-TOO-002	Gladstone-Benaraby Road / Dalrymple Road Intersection	Intersection upgrade (signals)	$348,000	Road	Urban - Traffic Distributor	m	150	2,970	445,500	796,136	800,000	
					Road	Urban - Major Collector	m	75	2,453	183,975			
					Intersection	Urban - Traffic Distributor Signals	ea	1	204,798	166,661			
West Gladstone													
West Gladstone	R-WGL-001	Dawson Highway / Scenery Street Intersection	Intersection upgrade (signals)	$933,000	Road	Urban - Arterial Main Street	m	150	6,127	919,050	1,307,823	1,310,000	
					Road	Urban - Major Collector	m	75	2,453	183,975			
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
West Gladstone	R-WGL-002	Dawson Highway / Paterson Street / Cemetary Street Intersections	Intersection upgrade (coordinated signals for the two staggered-T intersections)	$1,153,000	Road	Urban - Arterial Main Street	m	150	6,127	919,050	1,491,798	1,500,000	
					Road	Urban - Major Collector	m	150	2,453	367,950			
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
West Gladstone	R-WGL-003	Breslin Street / Boles Street Intersection	Intersection upgrade (increase existing signal capacity)	$243,000	Road	Urban - Traffic Distributor	m	225	2,970	668,250	834,911	840,000	
					Intersection	Urban - Traffic Distributor Signals	ea	1	166,661	166,661			
Yarwun													
Yarwun	R-YAR-001	Red Rover Road / Don Young Drive / Reid Road Extension Intersection	Intersection upgrade (single lane roundabout)	$269,000	Road	Rural - Arterial	m	300	1,925	577,500	750,750	760,000	

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
					Intersection	Urban - Traffic Distributor Roundabout	ea	1	173,250	173,250			
Yarwun	R-YAR-002	Reid Road Extension (Red Rover Road - Calliope River)	New road (2 lane road)	$2,472,000	Road	Rural - Arterial	m	1500	1,925	2,887,500	2,887,500	2,890,000	
Yarwun	R-YAR-003	Reid Road Extension (Calliope River Bridge)	2 Lane (Heavy Vehicle)	$62,000,000	Bridge	Major Bridge	m	148500	500	74,250,000	74,250,000	74,250,000	
Yarwun	R-YAR-004	Reid Road Extension (Calliope River - Port Curtis Way)	New road (2 lane road along Mt Miller Road alignment)	$3,096,000	Road	Rural - Arterial	m	5500	1,925	10,587,500	10,587,500	10,590,000	
Yarwun	R-YAR-005	Calliope River Road	Road upgrade (alignment improvements and strengthening)	$650,000	Road	Rural - Arterial	m	2000	1,925	3,850,000	3,850,000	3,850,000	Assumed a nominal 2km length. Need to verify
Boyne Island/Tannum Sands													
Boyne Island (excluding Malpas Street)													
Boyne Island	R-BIS-001	Boyne Island Road (undefined)	Road upgrade (not defined).	$2,100,000	Road	Rural - Arterial	m	3900	1,925	7,507,500	16,867,500	16,870,000	Assumes new two lane parallel road
					Bridge	Multispan Bridge - Rural Arterial	m	200	46,800	9,360,000			
Hampton Drive/Tannum Sands Road													
Hampton/Tannum Sands	R-HTS-001	Hampton Drive / Booth Avenue West Intersection	Intersection upgrade (signals)	$370,000	Road	Urban - Minor Collector	m	50	2,376	118,800	323,598	330,000	Assumes this is built as part the Hampton Drive four laning
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Hampton/Tannum Sands	R-HTS-002	Hampton Drive / Latrobe Street Intersection	Intersection upgrade (signals)	$380,000	Road	Urban - Minor Collector	m	50	2,376	118,800	323,598	330,000	Assumes this is built as part the Hampton Drive four laning
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Hampton/Tannum Sands	R-HTS-003	Hampton Drive / Garnet Road Intersection	Intersection upgrade (signals)	$390,000	Road	Urban - Minor Collector	m	50	2,376	118,800	323,598	330,000	Assumes this is built as part the Hampton Drive four laning
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Hampton/Tannum Sands	R-HTS-004	Hampton Drive / Booth Avenue East Intersection	Intersection upgrade (signals)	$370,000	Road	Urban - Minor Collector	m	50	2,376	118,800	323,598	330,000	Assumes this is built as part the Hampton Drive four laning
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Hampton/Tannum Sands	R-HTS-005	Hampton Drive / Cremorne Drive Intersection	Intersection upgrade (signals)	$380,000	Road	Urban - Minor Collector	m	50	2,376	118,800	323,598	330,000	Assumes this is built as part the Hampton Drive four laning
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Hampton/Tannum Sands	R-HTS-006	Hampton Drive / Tannum Sands Road Intersection	Intersection upgrade (signals)	$970,000	Road	Urban - Arterial Main Street	m	100	6,127	612,700	936,298	940,000	Assumes this is built as part the Hampton Drive four laning

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
					Road	Urban - Major Collector	m	50	2,376	118,800			
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Hampton/Tannum Sands	R-HTS-007	Hampton Drive (Malpas Street - Latrobe Street)	Road upgrade (undefined TMR project)	$490,000	Road	Urban - Major Collector	m	2000	2,453	4,906,000	4,906,000	4,910,000	Assumes new two lane parallel road
Hampton/Tannum Sands	R-HTS-008	Tannum Sands Road / Coronation Drive Intersection	Intersection upgrade (roundabout)	$510,000	Road	Urban - Traffic Distributor	m	200	2,970	594,000	1,044,098	1,050,000	
					Road	Urban - Major Collector	m	100	2,453	245,300			
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Hampton/Tannum Sands	R-HTS-009	Tannum Sands Road (Hampton Drive - Silverton Drive)	Road upgrade (undefined TMR project)	$3,450,000	Road	Rural - Arterial	m	2200	1,925	4,235,000			Assumes new two lane parallel road
Malpas Street													
Malpas Street	R-MAL-001	Malpas Street / Beltana Drive Intersection	Intersection upgrade	$510,000	Road	Urban - Minor Collector	m	50	2,376	118,800	323,598	330,000	Assumes this is built as part the Malpas Street four laning
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Malpas Street	R-MAL-002	Malpas Street / Tarcoola Drive Intersection	Intersection upgrade	$460,000	Road	Urban - Minor Collector	m	50	2,376	118,800	323,598	330,000	Assumes this is built as part the Malpas Street four laning
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Malpas Street	R-MAL-003	Malpas Street / Centenary Drive Intersection	Intersection upgrade	$770,000	Road	Urban - Minor Collector	m	100	2,376	237,600	442,398	450,000	Assumes this is built as part the Malpas Street four laning
					Intersection	Urban - Arterial Signals	ea	1	204,798	204,798			
Malpas Street	R-MAL-004	Malpas Street (Centenary Drive - Boyne Island Road)	Road upgrade (undefined TMR project)	$1,980,000	Road	Urban - Major Collector	m	2600	2,453	6,377,800	6,377,800	6,380,000	Assumes new two lane parallel road
Pioneer Drive													
Pioneer Drive	R-PNR-001	Pioneer Drive (Tannum STP Road)(Tannum Sands Road - Tannum STP)	Road upgrade (widen to arterial road 2 lane standard and pavement strengthening as part of Pioneer Drive Bypass)		Road	Rural - Arterial	m	2700	1,925	5,197,500	5,197,500	5,200,000	
Pioneer Drive	R-PNR-002	Pioneer Drive Extension (Tannum STP - Boyne Island Road)	New road (2 lane major urban corridor)	$7,480,000	Road	Rural - Arterial	m	1600	1,925	3,080,000	3,080,000	3,080,000	
Pioneer Drive	R-PNR-003	Pioneer Drive Extension (Boyne River)	New bridge across Boyne River	$15,383,000	Bridge	Major Bridge	m	500	148,500	74,250,000	74,250,000	74,250,000	
Pioneer Drive	R-PNR-004	Pioneer Drive Extension (Floodway)	New bridge across the Floodway	$5,809,000	Bridge	Multispan Bridge - Rural Arterial	m	150	52,580	7,887,000	7,887,000	7,890,000	
Pioneer Drive	R-PNR-005	Pioneer Drive Extension (Cattle Creek)	New bridge across Cattle Creek	$3,087,000	Bridge	Multispan Bridge - Rural Arterial	m	100	56,100	5,610,000	5,610,000	5,610,000	
Tannum Sands (excluding Hampton Drive and Tannum Sands Road)													
Tannum Sands	R-TNS-001	Coronation Drive Extension (Coronation Drive - Dahl Road)	New road (2 lane major urban corridor)	$3,810,000	Road	Urban - Major Collector	m	1000	2,543	2,543,000	2,543,000	2,550,000	
Tannum Sands	R-TNS-002	Coronation Drive Extension (Dahl Road - Pioneer Drive)	New road (2 lane major urban corridor)		Road	Urban - Major Collector	m	1600	2,543	4,068,800	4,068,800	4,070,000	

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
Tannum Sands	R-TNS-003	Dahl Road Extension (Dahl Road - Coronation Drive Extension)	New road (2 lane major urban corridor)	$780,000	Road	Urban - Major Collector	m	1400	2,543	3,560,200	3,560,200	3,570,000	
Tannum Sands	R-TNS-004	Coronation Drive / Cremorne Drive Intersection	Intersection upgrade (single lane roundabout)		Road	Urban - Major Collector	m	150	2,543	381,450	422,370	430,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			
Agnes Water													
Agnes Water													
Agnes Water	R-AGW-001	Seventeen Seventy Link Road (Round Hill Road - Captain Cook Drive)	New road (2 lane urban collector)	$6,648,000	Road	Urban - Major Collector	m	3000	2,453	7,359,000	7,359,000	7,360,000	
Agnes Water	R-AGW-002	Bicentennial Drive / Round Hill Road Intersection	Intersection upgrade (unsignalised t-intersection)		Road	Rural - Traffic Distributor	m	150	776	116,400	116,400	120,000	
Agnes Water	R-AGW-003	Round Hill Road (various rural sections)	Road upgrade (provision of sealed road shoulders in deficient areas to ensure a consistent formation width)	$3,000,000	Road	Rural - Arterial	m	3000	963	2,887,500	2,887,500	2,890,000	Half rate due to upgrade
Agnes Water	R-AGW-004	Round Hill Road / Captain Cook Drive Intersection	Intersection upgrade (roundabout)	$1,550,000	Road	Urban - Major Collector	m	225	2,453	551,925	725,175	730,000	
					Intersection	Urban - Traffic Distributor Roundabout	ea	1	173,250	173,250			
Agnes Water	R-AGW-005	Captain Cook Drive (GRC Depot - 1770 Marina)	Road upgrade (widening to and pavement strengthen to rural collector)	$670,000	Road	Rural - Traffic Distributor	m	5000	776	3,877,500	3,877,500	3,880,000	Half rate due to upgrade
Calliope													
Calliope East													
Calliope East	R-CPE-001	Drynan Drive East (Dawson Highway - Morris Avenue)	Road upgrade (provide 2 lane arterial road standard)	$561,000	Road	Urban - Major Collector	m	200	2,453	490,600	490,600	500,000	
Calliope East	R-CPE-002	Morris Avenue (Don Cameron Drive - Central Avenue)	Road upgrade (provide 2 lane arterial road standard)	$997,000	Road	Urban - Major Collector	m	650	1,227	797,225	797,225	800,000	Half rate due to upgrade
Calliope East	R-CPE-003	Don Cameron Drive (Walker Drive - Central/East Intersection)	Road upgrade (provide 2 lane collector road standard)		Road	Urban - Major Collector	m	650	2,453	1,594,450	1,594,450	1,600,000	
Calliope East	R-CPE-004	Lightning Street (Dawson Highway - Trudy Street)	Road upgrade (provide 2 lane collector road standard)	$434,000	Road	Urban - Major Collector	m	175	2,453	429,275	429,275	430,000	
Calliope East	R-CPE-005	Trudy Street (Lightning Street - Herbertson Road)	Road upgrade (provide 2 lane collector road standard), and new road	$317,000	Road	Urban - Major Collector	m	150	2,453	367,950	367,950	370,000	
Calliope East	R-CPE-006	Panorama Road 1 (Herbertson Road - Panorama Road 2)	New road (provide 2 lane collector road standard)	$1,264,000	Road	Urban - Major Collector	m	900	2,453	2,207,700	2,207,700	2,210,000	
Calliope East	R-CPE-007	Don Cameron Drive / Morris Avenue Intersection	Intersection upgrade (roundabout)	$107,000	Road	Urban - Major Collector	m	150	2,453	367,950	408,870	410,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			
Calliope East	R-CPE-008	Morris Avenue / Drynan Drive Intersection	Intersection upgrade (roundabout)	Not available	Road	Urban - Major Collector	m	200	2,453	490,600	531,520	540,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
Calliope East	R-CPE-009	Trudy Street / Herbertson Road / Panorama 1 Intersection	New intersection (priority control)	Not available	Road	Urban - Major Collector	m	200	2,453	490,600	543,750	550,000	
					Intersection	Rural - minor collector	ea	1	53,150	53,150			
Calliope East	R-CPE-010	Panorama 1 / Panorama 2 Intersection	New intersection (priority control)	Not available	Road	Urban - Major Collector	m	200	2,453	490,600	543,750	550,000	
					Intersection	Rural - minor collector	ea	1	53,150	53,150			
Calliope East	R-CPE-011	Don Cameron / Central / East Intersection	New intersection (priority control)	Not available	Road	Urban - Major Collector	m	200	2,453	490,600	543,750	550,000	
					Intersection	Rural - minor collector	ea	1	53,150	53,150			
Calliope East	R-CPE-012	Morris Avenue / Central Avenue Intersection	Intersection upgrade (roundabout)	Not available	Road	Urban - Major Collector	m	150	2,453	367,950	408,870	410,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			
Calliope South													
Calliope South	R-CPS-001	Sutherland Street (Dawson Highway - Pujolas Street)	Road upgrade (provide 2 lane collector road standard)	$527,000	Road	Urban - Major Collector	m	250	2,453	613,250	613,250	620,000	
Calliope South	R-CPS-002	Pujolas Street (Bloomfield Street - Sutherland Street)	Road upgrade (provide 2 lane collector road standard)	$220,000	Road	Urban - Major Collector	m	110	2,453	269,830	269,830	270,000	
Calliope South	R-CPS-003	Archer Street (Pujolas Street - Stowe Road)	Road upgrade (provide 2 lane collector road standard)	$890,000	Road	Urban - Major Collector	m	650	2,453	1,594,450	1,594,450	1,600,000	
Calliope South	R-CPS-004	Stowe Road (Archer Street - Ninganga Court)	Road upgrade (provide 2 lane collector road standard)	$1,293,000	Road	Urban - Major Collector	m	700	2,453	1,717,100	1,717,100	1,720,000	
Calliope South	R-CPS-005	Archer Street / Bloomfield Street / Pujolas Street Intersection	Intersection upgrade (roundabout)	Not available	Road	Urban - Major Collector	m	200	2,453	490,600	531,520	540,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			
Calliope West													
Calliope West	R-CPW-001	Drynan Drive West (Dawson Highway - Elliot Drive)	Road upgrade (provide 2 lane collector road standard)	$1,082,000	Road	Urban - Major Collector	m	550	2,453	1,349,150	1,349,150	1,350,000	
Calliope West	R-CPW-002	Major Collector (Drynan Drive - Dawson Highway)	Road upgrade (provide 2 lane collector road standard) and new road	$1,258,000	Road	Urban - Major Collector	m	450	2,453	1,103,850	1,103,850	1,110,000	
Calliope West	R-CPW-003	Liffey Way (Drynan Drive - end of existing formation)	Roads	$842,000	Road	Urban - Major Collector	m	300	2,453	735,900	735,900	740,000	
Calliope West	R-CPW-004	Drynan Drive / Liffey Way Intersection	Intersection upgrade (roundabout)	Not available	Road	Urban - Major Collector	m	150	2,453	367,950	408,870	410,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			
Calliope West	R-CPW-005	Drynan Drive / Capricornia Drive Intersection	Intersection upgrade (upgraded priority control)	Not available	Road	Urban - Major Collector	m	150	2,453	367,950	421,100	430,000	
					Intersection	Rural - minor collector	ea	1	53,150	53,150			
Calliope West	R-CPW-006	Drynan Drive / Major Collector Intersection	Intersection upgrade (roundabout)	Not available	Road	Urban - Major Collector	m	150	2,453	367,950	408,870	410,000	
					Intersection	Urban - Major Collector Roundabout	ea	1	40,920	40,920			

Gladstone Roads/Transport Strategic Infrastructure Plan - Cost Calculations

Corridor/ Location	New ID	Project description	Project type	Previous Cost	Item	Hierarchy (to determine unit cost)	Unit	Length/ Quantity	Unit Cost	Item Cost	Total Cost	Rounded Cost	Cost Commentary
Calliope Dawson Hwy													
Calliope Dawson Hwy	R-CPD-001	Dawson Highway / Drynan Drive Intersection	Intersection upgrade (signals)	Not available	Road	Urban - Traffic Distributor	m	150	2,970	445,500	980,111	990,000	
					Road	Urban - Major Collector	m	150	2,453	367,950			
					Intersection	Urban - Traffic Distributor Signals	ea	1	166,661	166,661			
Calliope Dawson Hwy	R-CPD-002	Dawson Highway / Don Cameron Drive / Herbertson Road Intersection	Intersection upgrade (signals)	Not available	Road	Urban - Traffic Distributor	m	150	2,970	445,500	980,111	990,000	
					Road	Urban - Major Collector	m	150	2,453	367,950			
					Intersection	Urban - Traffic Distributor Signals	ea	1	166,661	166,661			
Calliope Dawson Hwy	R-CPD-003	Dawson Highway / Lightning Drive Intersection	Intersection upgrade (signals)	Not available	Road	Urban - Traffic Distributor	m	150	2,970	445,500	980,111	990,000	
					Road	Urban - Major Collector	m	150	2,453	367,950			
					Intersection	Urban - Traffic Distributor Signals	ea	1	166,661	166,661			
Calliope Dawson Hwy	R-CPD-004	Dawson Highway / Bloomfield Street Intersection	Intersection downgrade (left-in/left-out)	Not available	Road	Urban - Traffic Distributor	m	50	2,970	148,500	148,500	150,000	
Calliope Dawson Hwy	R-CPD-005	Dawson Highway / Sutherland Street Intersection	Intersection upgrade (signals)	Not available	Road	Urban - Traffic Distributor	m	150	2,970	445,500	980,111	990,000	
					Road	Urban - Major Collector	m	150	2,453	367,950			
					Intersection	Urban - Traffic Distributor Signals	ea	1	166,661	166,661			

Appendix H Timings Assessment

Gladstone Road/Transport Strategic Infrastructure Plan - Timing Assessment

Corridor/ Location	SA2 Zone	TMR/ Council Road	Suburb	New ID	Project description	Project type	Timing Commentary	Trigger	Timing Band
Gladstone									
Blain Drive									
Blain Drive	West Gladstone	Council	West Gladstone	R-BLN-001	Blain Drive (Dawson Highway - Railway Crossing)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	90% v/c in 2026 and exceeds capacity by 2031. For the pavement, it would be linked to industrial development. With the major initial heavy vehicle route via Red Rover Road, timing should be defered until the Red Rover route is completed, say between 2026 and 2031. The previous PIP identified 2027.	Previous completion of pavement strengthening of the Red Rover Road route.	2026-2031
Blain Drive	West Gladstone	Council	West Gladstone	R-BLN-002	Blain Drive (Railway Crossing - Auckland Creek)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	90% v/c in 2026 and exceeds capacity by 2031. For the pavement, it would be linked to industrial development. With the major initial heavy vehicle route via Red Rover Road, timing should be defered until the Red Rover route is completed, say between 2026 and 2031. The previous PIP identified 2027.	Previous completion of pavement strengthening of the Red Rover Road route.	2026-2031
Blain Drive	West Gladstone	Council	Gladstone	R-BLN-003	Blain Drive / Palm Drive Intersection	Intersection upgrade (signals)	90% v/c in 2026 and exceeds capacity by 2031. The IPP identified 2014/15 for pavement upgrades only.	Traffic capacity	2026-2031
Blain Drive	West Gladstone	Council	West Gladstone	R-BLN-004	Blain Drive (Auckland Creek Bridge)	Bridge upgrade (provide foot/bike path)	90% v/c in 2026 and exceeds capacity by 2031. For the pavement, it would be linked to industrial development. With the major initial heavy vehicle route via Red Rover Road, timing should be defered until the Red Rover route is completed, say between 2026 and 2031. The previous PIP identified 2027.	Previous completion of pavement strengthening of the Red Rover Road route.	2026-2031
Blain Drive	Callemondah	Council	West Gladstone	R-BLN-005	Blain Drive (Auckland Creek - Hanson Road)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	90% v/c in 2026 and exceeds capacity by 2031. For the pavement, it would be linked to industrial development. With the major initial heavy vehicle route via Red Rover Road, timing should be defered until the Red Rover route is completed, say between 2026 and 2031. The previous PIP identified 2027.	Previous completion of pavement strengthening of the Red Rover Road route.	2026-2031
Callemondah									
Callemondah	Callemondah	Council	Callemondah	R-CAL-001	Callemondah Drive (Roseanna Street - Railyards)	Road upgrade (strengthen pavement to cater for heavy vehicle growth)	Industrial development driven. There isn't any forecast development in the area before 2031. The IPP doesn't identify any timing before 2025.	Industrial development	Post 2031
Callemondah	Callemondah	Council	Callemondah	R-CAL-002	Red Rover Road (Power Station Rail Bridge - Benstead Street South)	Road upgrade (pavement strengthening for heavy vehicles)	98% v/c in 2021 and exceeds capacity by 2026. In terms of pavements timing will be based on the use of the route as a temporary heavy vehicle route until the Mt Millar Road route is constructed. On this basis the timing should be between 2016 and 2021. The IPP doesn't identify any timing before 2025.	Strategic implementation of Red Rover Road as a heavy vehicle route.	2016-2021
Callemondah	Callemondah	Council	Callemondah	R-CAL-003	Red Rover Road (Benstead Street South - Benstead Street North)	Road upgrade (pavement strengthening for heavy vehicles)	98% v/c in 2021 and exceeds capacity by 2026. In terms of pavements timing will be based on the use of the route as a temporary heavy vehicle route until the Mt Millar Road route is constructed. On this basis the timing should be between 2016 and 2021. The IPP doesn't identify any timing before 2025.	Strategic implementation of Red Rover Road as a heavy vehicle route.	2016-2021
Callemondah	Callemondah	Council	Callemondah	R-CAL-004	Red Rover Road (Benstead Street North - Hanson Road)	Road upgrade (pavement strengthening for heavy vehicles)	98% v/c in 2021 and exceeds capacity by 2026. In terms of pavements timing will be based on the use of the route as a temporary heavy vehicle route until the Mt Millar Road route is constructed. On this basis the timing should be between 2016 and 2021. The IPP doesn't identify any timing before 2025.	Strategic implementation of Red Rover Road as a heavy vehicle route.	2016-2021
Callemondah	Callemondah	Council	Callemondah	R-CAL-005	Red Rover Road / Benstead Street South Intersection	Intersection upgrade (major unsignalised T-intersection)	Industrial development driven in adjacent area. Adjacent developments are forecast to develop between 2016 and 2021. The previous PIP identified 2019.	Industrial development	2016-2021
Callemondah	Callemondah	Council	Callemondah	R-CAL-006	Red Rover Road / Benstead Street North Intersection	Intersection upgrade (major unsignalised T-intersection)	Industrial development driven in adjacent area. Adjacent developments are forecast to develop between 2016 and 2021. The previous PIP identified 2020.	Industrial development	2016-2021

Gladstone Road/Transport Strategic Infrastructure Plan - Timing Assessment

Corridor/ Location	SA2 Zone	TMR/ Council Road	Suburb	New ID	Project description	Project type	Timing Commentary	Trigger	Timing Band
Clinton									
Clinton	Clinton-New Auckland	Council	Clinton	R-CLN-001	Don Young Drive / Col Brown Avenue Intersection	Intersection upgrade (signals)	80% DOS in 2016 and exceeds capacity by 2021. The previous PIP identified 2019.	Traffic capacity	2016-2021
Clinton	Clinton-New Auckland	TMR	Clinton	R-CLN-002	Dawson Highway / Kirkwood Road / Don Young Drive Intersection	Intersection upgrade (signals, with possible ultimate grade separation)	The Don Young leg exceeds capacity in 2014. The Kirkwood Road leg is at 90% DOS in 2016 and exceeds capacity by 2021. The previous PIP identified 2012.	Traffic capacity	2014-2016
Clinton	Clinton-New Auckland	Council	Clinton	R-CLN-003	Dawson Highway / Harvey Road / Chapman Drive Intersection	Upgrade Harvey Road approaches to roundabout	From a traffic capacity perspective not required during before 2031. The previous PIP identified 2020.	Previous PIP timing	2021-2016
Clinton	Clinton-New Auckland	Council	Clinton	R-CLN-004	J Hickey Avenue / Chapman Drive Intersection	Intersection upgrade (increase existing signal capacity)	Timing not driven by growth before 2031. Would need detailed analysis to determine. The IPP identifies 2015 for pavement upgrade only.	Outside PIP horizon	Post 2031
Clinton	Clinton-New Auckland	Council	Clinton	R-CLN-005	Col Brown Avenue / J Hickey Avenue Intersection East	Intersection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2020.	Development	2021-2026
Clinton	Clinton-New Auckland	Council	Clinton	R-CLN-006	Harvey Road / Carinya Drive Intersection	Intersection upgrade (single lane roundabout)	Insufficent data to assess. The previous PIP identified 2018.	Development	2021-2026
Gladstone CBD and Surrounds									
Gladstone	Gladstone	Council	Gladstone	R-CBD-001	Goondoon Street (Lord Street - Yarroon Street)	Traffic management to deal with densification	Insufficent data to assess. Will be development driven. The previous PIP identified 2014.	Development	2016-2021
Gladstone	Gladstone	Council	Gladstone	R-CBD-002	Goondoon Street / Yarroon Street Intersection	Intesection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2013.	Previous PIP timing related to traffic capacity	2016-2021
Gladstone	Gladstone	Council	Gladstone	R-CBD-003	Goondoon Street / Roseberry Street Intersection	Intersection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2011.	Previous PIP timing related to traffic capacity	2016-2021
Gladstone	Gladstone	Council	Gladstone	R-CBD-004	Goondoon Street / William Street Intersection	Intesection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2013.	Previous PIP timing related to traffic capacity	2016-2021
Gladstone	Gladstone	Council	Gladstone	R-CBD-005	Auckland Street / Herbert Street Intersection	Intersection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2012.	Previous PIP timing related to traffic capacity	2016-2021
Gladstone	Gladstone	TMR	Gladstone	R-GLD-001	Hanson Road / Palm Drive Intersection	Intersection upgrade (signals)	85% DOS in 2014 and exceeds capacity by 2016. The previous PIP identified 2015.	Traffic capacity	2014-2016
Gladstone	Gladstone	TMR	Gladstone	R-GLD-002	Hanson Road / Lord Street Intersection	Intersection upgrade (increase existing signal capacity)	Insufficent data to assess. Would be upgraded as part of Hanson Road. The previous PIP identified 2016.	Related to any upgrade of Hanson Road	2016-2021
Glen Eden									
Glen Eden	Telina-Toolooa	Council	Glen Eden	R-GED-001	John Dory Drive Extension (John Dory Drive - Glen Eden Drive)	New road (2 lane urban major corridor) and intersection with Glen Eden Drive	Insufficent data to assess but likely to be development driven. Developments in this area are forecast to develop after 2031.	Outside PIP horizon	Post 2031
Glen Eden	Telina-Toolooa	Council	Glen Eden	R-GED-002	Kirkwood Road / Glen Eden Drive Extension Intersection	New intersection (unsignalised T-intersection)	Insufficent data to assess but likely to be development driven. Developments in this area are forecast to develop after 2031.	Outside PIP horizon	Post 2031
Glen Eden	Telina-Toolooa	Council	Glen Eden	R-GED-003	John Dory Drive / Glen Eden Drive Intersection	New intersection (unsignalised T-intersection)	Insufficent data to assess but likely to be development driven. Developments in this area are forecast to develop after 2031.	Outside PIP horizon	Post 2031
Glenlyon Road									
Glenlyon Road	Gladstone	Council	Gladstone	R-GLY-001	Glenlyon Street (Bramston Street - Herbert Street)	Road upgrade (pavement strengthening)	Insufficent data to assess. Likely to be similar timing to Glenlyon Road (Herbert Street - Derby Street)	Timing of upgrade for Glenlyon Road (Bramston Street - Herbert Street)	2016-2021
Glenlyon Road	Gladstone	Council	South Gladstone	R-GLY-002	Glenlyon Road (Herbert Street - Derby Street)	Road upgrade (widen to 4 lanes, provide cycle facilities)	65% v/c in 2016 and exceeds capacity by 2021. The previous PIP identified 2013.	Traffic capacity	2016-2021
Glenlyon Road	Gladstone	Council	South Gladstone	R-GLY-003	Glenlyon Road (Derby Street - Philip Street)	Road upgrade (widen to 4 lanes & provide cycle facilities)	70% v/c in 2016 and exceeds capacity by 2021. The previous PIP identified 2016 and the IPP identified 2018.	Traffic capacity	2016-2021
Glenlyon Road	Gladstone	Council	Sun Valley	R-GLY-004	Glenlyon Road (Philip Street - Dixon Drive)	Road upgrade (widen to 4 lanes including rail bridge duplication, provide cycle facilities, & upgrade Derby Street Intersection)	95% v/c by 2031. The previous PIP identified 2019 and the IPP identified 2022.	Traffic capacity	2026-2031

Gladstone Road/Transport Strategic Infrastructure Plan - Timing Assessment

Corridor/ Location	SA2 Zone	TMR/ Council Road	Suburb	New ID	Project description	Project type	Timing Commentary	Trigger	Timing Band
Glenlyon Road	Telina-Toolooa	Council	Gladstone	R-GLY-005	Glenlyon Road (Dixon Drive - Victoria Avenue)	Road upgrade (widen to 4 lanes, provide cycle facilities, and upgrade Victoria Avenue Intersection to signals)	65% v/c by 2031. The previous PIP identified 2018 and the IPP identified 2023.	Outside PIP horizon	Post 2031
Glenlyon Road	Telina-Toolooa	Council	Gladstone	R-GLY-006	Glenlyon Road (Victoria Avenue - Kirkwood Road)	Road upgrade (widen to 4 lanes & provide cycle facilities)	50% v/c by 2031. The previous PIP identified 2018 and the IPP identified 2025.	Outside PIP horizon	Post 2031
Glenlyon Road	Telina-Toolooa	Council	O'Connell	R-GLY-007	Glenlyon Road Extension (Kirkwood Road to Mt Rollo)	Road upgrade to provide new alignment and sealed road	Development driven. There aren't any significant developments in the area before 2031.	Outside PIP horizon	Post 2031
Kin Kora									
Kin Kora	Kin Kora-Sun Valley	TMR	Kin Kora	R-KKA-001	Dawson Highway / Philip Street Intersection	Intersection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2015.	Previous PIP timing related to traffic capacity	2014-2016
Kin Kora	West Gladstone	TMR	Kin Kora	R-KKA-002	Philip Street (Waterson Drive - 144 Philip Street)	Road upgrade (widen to 4 lanes), including intersection upgrade at Waterson Street (signals)	100% v/c by 2031. The previous PIP identified 2014.	Traffic capacity	2026-2031
New Auckland									
New Auckland	Clinton-New Auckland	Council	New Auckland	R-NAK-001	Penda Avenue / Shaw Street Intersection	Intersection upgrade (signals)	Insufficent data to assess. Would need to tie into any scheme for the Dawson Hwy / Penda Ave Intersection. The previous PIP identified 2011.	Previous PIP timing related to traffic capacity	2016-2021
South Gladstone									
South Gladstone	Gladstone	Council	South Gladstone	R-SGL-001	Auckland Street / Short Street Intersection	Intersection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2020.	Previous PIP timing related to traffic capacity	2016-2021
South Gladstone	Gladstone	Council	South Gladstone	R-SGL-002	Coon Street / Toolooa Street Intersection	Intersection upgrade (increase existing signal capacity)	Insufficent data to assess. The IPP identified 2015 for pavement upgrade only.	Previous PIP timing related to traffic capacity	2021-2026
South Gladstone	Gladstone	Council	South Gladstone	R-SGL-003	Derby Street / Coon Street Intersection	Intersection upgrade (signals)	Insufficent data to assess. The IPP identified 2015 for pavement upgrade only.	Previous PIP timing related to traffic capacity	2016-2021
South Gladstone	Gladstone	Council	South Gladstone	R-SGL-004	Derby Street / Ann Street Intersection	Intersection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2014.	Previous PIP timing related to traffic capacity	2016-2021
South Gladstone	Gladstone	TMR	South Gladstone	R-SGL-005	Philip Street / Oxley Drive Intersection	Intersection upgrade (signals)	95% DOS by 2021 and exceeds capacity by 2026. The previous PIP identified 2024.	Traffic capacity	2021-2026
Telina									
Telina	Telina-Toolooa	Council	Telina	R-TEL-001	Dixon Drive / Witney Street Intersection	Intersection upgrade (signals)	Insufficent data to assess but likely to be development driven as an alternative route from the Kirkwood area. Developments in this area are forecast to develop between 2021 and 2026. The previous PIP identified 2015.	Development	2021-2026
Telina	Telina-Toolooa	Council	Telina	R-TEL-002	Dixon Drive / Mercury Street Intersection	Intersection upgrade (signals)	Insufficent data to assess but likely to be development driven as an alternative route from the Kirkwood area. Developments in this area are forecast to develop between 2021 and 2026. The previous PIP identified 2015.	Development	2021-2026
Toolooa									
Toolooa	Telina-Toolooa	Council	Toolooa	R-TOO-001	Dalrymple Drive / John Dory Drive Intersection	Intersection upgrade (roundabout)	Insufficent data to assess but likely to be development driven. Developments in this area are forecast to develop between 2021 and 2026. The previous PIP identified 2030.	Development	2021-2026
Toolooa	Telina-Toolooa	TMR	Toolooa	R-TOO-002	Gladstone-Benaraby Road / Dalrymple Road Intersection	Intersection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2014.	Previous PIP timing related to traffic capacity	2016-2021
West Gladstone									
West Gladstone	West Gladstone	TMR	West Gladstone	R-WGL-001	Dawson Highway / Scenery Street Intersection	Intersection upgrade (signals)	Insufficent data to assess. The previous PIP identified 2024.	Previous PIP timing related to traffic capacity	2021-2026
West Gladstone	West Gladstone	TMR	West Gladstone	R-WGL-002	Dawson Highway / Paterson Street / Cemetary Street Intersections	Intersection upgrade (coordinated signals for the two staggered-T intersections)	Insufficent data to assess. The previous PIP identified 2018.	Previous PIP timing related to traffic capacity	2021-2026

Gladstone Road/Transport Strategic Infrastructure Plan - Timing Assessment

Corridor/ Location	SA2 Zone	TMR/ Council Road	Suburb	New ID	Project description	Project type	Timing Commentary	Trigger	Timing Band
West Gladstone	West Gladstone	Council	West Gladstone	R-WGL-003	Breslin Street / Boles Street Intersection	Intersection upgrade (increase existing signal capacity)	Insufficent data to assess. The IPP identified 2015 for pavement upgrade only.	Outside PIP horizon	Post 2031
Yarwun									
Yarwun	Gladstone Hinterland	Council	Yarwun	R-YAR-001	Red Rover Road / Don Young Drive / Reid Road Extension Intersection	Intersection upgrade (single lane roundabout)	Maybe driven by Red Rover Road capacity, but timing is currently post-2031. The previous PIP identified 2035.	Outside PIP horizon	Post 2031
Yarwun	Gladstone Hinterland	TMR	Yarwun	R-YAR-002	Reid Road Extension (Red Rover Road - Calliope River)	New road (2 lane road)	Maybe driven by Red Rover Road capacity, but timing is currently post-2031. The previous PIP identified 2035.	Outside PIP horizon	Post 2031
Yarwun	Gladstone Hinterland	TMR	Yarwun	R-YAR-003	Reid Road Extension (Calliope River Bridge)	2 Lane (Heavy Vehicle)	Maybe driven by Red Rover Road capacity, but timing is currently post-2031. The previous PIP identified 2035.	Outside PIP horizon	Post 2031
Yarwun	Gladstone Hinterland	TMR	Yarwun	R-YAR-004	Reid Road Extension (Calliope River - Port Curtis Way)	New road (2 lane road along Mt Miller Road alignment)	Maybe driven by Red Rover Road capacity, but timing is currently post-2031. The previous PIP identified 2035.	Outside PIP horizon	Post 2031
Yarwun	Gladstone Hinterland	Council	Yarwun	R-YAR-005	Calliope River Road	Road upgrade (alignment improvements and strengthening)	Heavy vehicle bypass route. The IPP identified 2019 between Port Curtis Way and the existing upgrade.	Previous PIP timing related to industrial development	2016-2021
Boyne Island/Tannum Sands									
Boyne Island (excluding Malpas Street)									
Boyne Island	Boyne Island - Tannum Sands	TMR	Boyne Island	R-BIS-001	Boyne Island Road (undefined)	Road upgrade (not defined).	Driven by link capacity	Traffic capacity	2021-2026
Hampton Drive/Tannum Sands Road									
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-001	Hampton Drive / Booth Avenue West Intersection	Intersection upgrade (signals)	Driven by link capacity	Traffic capacity	2016-2021
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-002	Hampton Drive / Latrobe Street Intersection	Intersection upgrade (signals)	Driven by link capacity	Traffic capacity	2016-2021
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-003	Hampton Drive / Garnet Road Intersection	Intersection upgrade (signals)	Driven by link capacity	Traffic capacity	2016-2021
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-004	Hampton Drive / Booth Avenue East Intersection	Intersection upgrade (signals)	Driven by link capacity	Traffic capacity	2016-2021
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-005	Hampton Drive / Cremorne Drive Intersection	Intersection upgrade (signals)	Driven by link capacity	Traffic capacity	2016-2021
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-006	Hampton Drive / Tannum Sands Road Intersection	Intersection upgrade (signals)	Driven by link capacity	Traffic capacity	2016-2021
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-007	Hampton Drive (Malpas Street - Latrobe Street)	Road upgrade (undefined TMR project)	75% v/c by 2016 and exceeds capacity by 2021	Traffic capacity	2016-2021
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-008	Tannum Sands Road / Coronation Drive Intersection	Intersection upgrade (roundabout)	Develop as part of the upgrade of Tannum Sands Road (Hampton Driver - Silverton Drive)	Traffic capacity	2026-2031
Hampton/Tannum Sands	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-HTS-009	Tannum Sands Road (Hampton Drive - Silverton Drive)	Road upgrade (undefined TMR project)	100% v/c by 2031	Traffic capacity	2026-2031
Malpas Street									
Malpas Street	Boyne Island - Tannum Sands	TMR	Boyne Island	R-MAL-001	Malpas Street / Beltana Drive Intersection	Intersection upgrade	Driven by link capacity	Traffic capacity	2021-2026
Malpas Street	Boyne Island - Tannum Sands	TMR	Boyne Island	R-MAL-002	Malpas Street / Tarcoola Drive Intersection	Intersection upgrade	Driven by link capacity	Traffic capacity	2021-2026
Malpas Street	Boyne Island - Tannum Sands	TMR	Boyne Island	R-MAL-003	Malpas Street / Centenary Drive Intersection	Intersection upgrade	Driven by link capacity	Traffic capacity	2021-2026
Malpas Street	Boyne Island - Tannum Sands	TMR	Boyne Island	R-MAL-004	Malpas Street (Centenary Drive - Boyne Island Road)	Road upgrade (undefined TMR project)	90% v/c in 2021 and exceeds capacity by 2026	Traffic capacity	2021-2026
Pioneer Drive									
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-PNR-001	Pioneer Drive (Tannum STP Road)(Tannum Sands Road - Tannum STP)	Road upgrade (widen to arterial road 2 lane standard and pavement strengthening as part of Pioneer Drive Bypass)	Driven by capacity issues on Hampton Drive and Malpas Street, but the challenge is upgrading the existing route versus a new route. The IPP identifies 2025.	Traffic capacity	2021-2026
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Tannum Sands	R-PNR-002	Pioneer Drive Extension (Tannum STP - Boyne Island Road)	New road (2 lane major urban corridor)	Driven by capacity issues on Hampton Drive and Malpas Street, but the challenge is upgrading the existing route versus a new route. The IPP identifies 2025.	Traffic capacity	2021-2026

Gladstone Road/Transport Strategic Infrastructure Plan - Timing Assessment

Corridor/ Location	SA2 Zone	TMR/ Council Road	Suburb	New ID	Project description	Project type	Timing Commentary	Trigger	Timing Band
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Boyne Island	R-PNR-003	Pioneer Drive Extension (Boyne River)	New bridge across Boyne River	Driven by capacity issues on Hampton Drive and Malpas Street, but the challenge is upgrading the existing route versus a new route. The IPP identifies 2025.	Traffic capacity	2021-2026
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Boyne Island	R-PNR-004	Pioneer Drive Extension (Floodway)	New bridge across the Floodway	Driven by capacity issues on Hampton Drive and Malpas Street, but the challenge is upgrading the existing route versus a new route. The IPP identifies 2025.	Traffic capacity	2021-2026
Pioneer Drive	Boyne Island - Tannum Sands	TMR	Boyne Island	R-PNR-005	Pioneer Drive Extension (Cattle Creek)	New bridge across Cattle Creek	Driven by capacity issues on Hampton Drive and Malpas Street, but the challenge is upgrading the existing route versus a new route. The IPP identifies 2025.	Traffic capacity	2021-2026
Tannum Sands (excluding Hampton Drive and Tannum Sands Road)									
Tannum Sands	Boyne Island - Tannum Sands	Council	Tannum Sands	R-TNS-001	Coronation Drive Extension (Coronation Drive - Dahl Road)	New road (2 lane major urban corridor)	Development driven. Developments in the area are forecast to develop between 2021 and 2026.	Development	2021-2026
Tannum Sands	Boyne Island - Tannum Sands	Council	Tannum Sands	R-TNS-002	Coronation Drive Extension (Dahl Road - Pioneer Drive)	New road (2 lane major urban corridor)	Development driven. Without any direct developments facing this route, the trigger is likely to be development of the Pioneer Drive Intersection.	Outside PIP horizon	Post 2031
Tannum Sands	Boyne Island - Tannum Sands	Council	Tannum Sands	R-TNS-003	Dahl Road Extension (Dahl Road - Coronation Drive Extension)	New road (2 lane major urban corridor)	Development driven. Links to the Coronation Drive Extension (Coronation Drive - Dahl Road)	Development	2021-2026
Tannum Sands	Boyne Island - Tannum Sands	Council	Tannum Sands	R-TNS-004	Coronation Drive / Cremorne Drive Intersection	Intersection upgrade (single lane roundabout)	Development driven. Timing should be linked to the Coronation Drive Extension (Coronation Drive - Dahl Road)	Development	2021-2026
Agnes Water									
Agnes Water									
Agnes Water	Agnes Water - Miriam Vale	Council	Agnes Water	R-AGW-001	Seventeen Seventy Link Road (Round Hill Road - Captain Cook Drive)	New road (2 lane urban collector)	Development driven. Not required by 2031 based on the development sequencing.	Outside PIP horizon	Post 2031
Agnes Water	Agnes Water - Miriam Vale	Council	Agnes Water	R-AGW-002	Bicentennial Drive / Round Hill Road Intersection	Intersection upgrade (unsignalised t-intersection)	Development driven. Not required by 2031 based on the development sequencing.	Outside PIP horizon	Post 2031
Agnes Water	Agnes Water - Miriam Vale	Council	Agnes Water	R-AGW-003	Round Hill Road (various rural sections)	Road upgrade (provision of sealed road shoulders in deficient areas to ensure a consistent formation width)	Development and safety driven. Suggests this should be developed by 2021 to deal with increasing population. The IPP identified a sequence of upgrades between 2015 and 2025.	Development	2016-2026
Agnes Water	Agnes Water - Miriam Vale	Council	Agnes Water	R-AGW-004	Round Hill Road / Captain Cook Drive Intersection	Intersection upgrade (roundabout)	Insufficent data to assess. With a link v/c of 45% on Round Hill Road by 2031 this suggests a roundabout will be required by this time. The IPP identified 2022.	Presumed traffic capacity	2026-2031
Agnes Water	Agnes Water - Miriam Vale	Council	Seventeen Seventy	R-AGW-005	Captain Cook Drive (GRC Depot - 1770 Marina)	Road upgrade (widening to and pavement strengthen to rural collector standard)	Development driven. With many developments occuring in the area between 2021 and 2026 this is the likely trigger timing.	Development	2021-2026
Calliope									
Calliope East									
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-001	Drynan Drive East (Dawson Highway - Morris Avenue)	Road upgrade (provide 2 lane arterial road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-002	Morris Avenue (Don Cameron Drive - Central Avenue)	Road upgrade (provide 2 lane arterial road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-003	Don Cameron Drive (Walker Drive - Central/East Intersection)	Road upgrade (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-004	Lightning Street (Dawson Highway - Trudy Street)	Road upgrade (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2016 and 2021.	Development	2016-2021
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-005	Trudy Street (Lightning Street - Herbertson Road)	Road upgrade (provide 2 lane collector road standard), and new road	Development driven. Developments in the area are forecast to develop between 2016 and 2021.	Development	2016-2021
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-006	Panorama Road 1 (Herbertson Road - Panorama Road 2)	New road (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2021 and 2026.	Development	2021-2026

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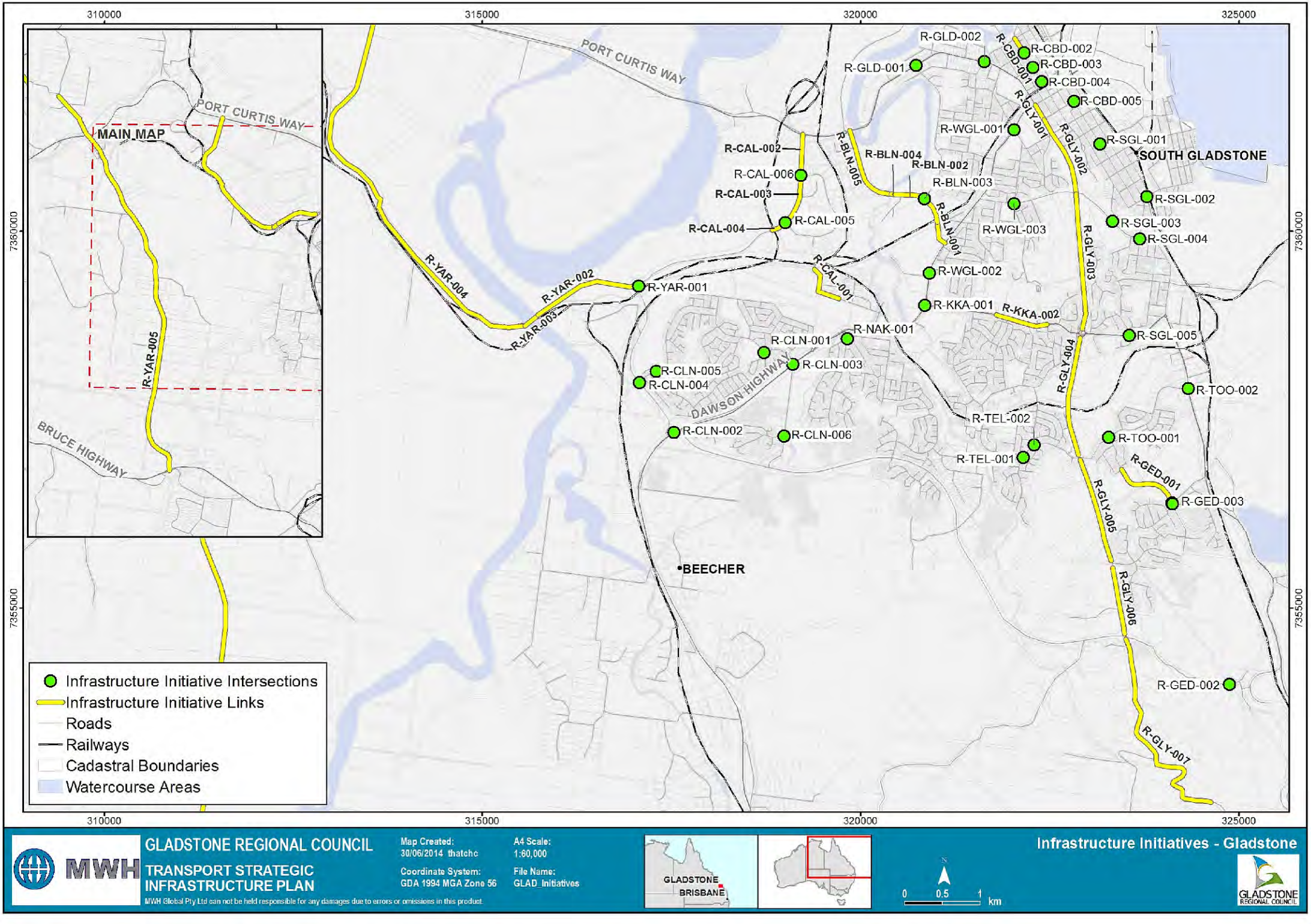
Corridor/ Location	SA2 Zone	TMR/ Council Road	Suburb	New ID	Project description	Project type	Timing Commentary	Trigger	Timing Band
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-007	Don Cameron Drive / Morris Avenue Intersection	Intersection upgrade (roundabout)	25% DOS by 2031 from Calliope Traffic Study	Outside PIP horizon	Post 2031
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-008	Morris Avenue / Drynan Drive Intersection	Intersection upgrade (roundabout)	40% DOS by 2031 from Calliope Traffic Study	Outside PIP horizon	Post 2031
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-009	Trudy Street / Herbertson Road / Panorama 1 Intersection	New intersection (priority control)	Development driven. Developments in the area are forecast to develop between 2016 and 2021.	Development	2016-2021
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-010	Panorama 1 / Panorama 2 Intersection	New intersection (priority control)	Development driven. Developments in the area are forecast to develop between 2021 and 2026.	Development	2021-2026
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-011	Don Cameron / Central / East Intersection	New intersection (priority control)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope East	Gladstone Hinterland	Council	Calliope	R-CPE-012	Morris Avenue / Central Avenue Intersection	Intersection upgrade (roundabout)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope South									
Calliope South	Gladstone Hinterland	Council	Calliope	R-CPS-001	Sutherland Street (Dawson Highway - Pujolas Street)	Road upgrade (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope South	Gladstone Hinterland	Council	Calliope	R-CPS-002	Pujolas Street (Bloomfield Street - Sutherland Street)	Road upgrade (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope South	Gladstone Hinterland	Council	Calliope	R-CPS-003	Archer Street (Pujolas Street - Stowe Road)	Road upgrade (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope South	Gladstone Hinterland	Council	Calliope	R-CPS-004	Stowe Road (Archer Street - Ninganga Court)	Road upgrade (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope South	Gladstone Hinterland	Council	Calliope	R-CPS-005	Archer Street / Bloomfield Street / Pujolas Street Intersection	Intersection upgrade (roundabout)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope West									
Calliope West	Gladstone Hinterland	Council	Calliope	R-CPW-001	Drynan Drive West (Dawson Highway - Elliot Drive)	Road upgrade (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope West	Gladstone Hinterland	Council	Calliope	R-CPW-002	Major Collector (Drynan Drive - Dawson Highway)	New road (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope West	Gladstone Hinterland	Council	Calliope	R-CPW-003	Liffey Way (Drynan Drive - end of existing formation)	Road upgrade (provide 2 lane collector road standard)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope West	Gladstone Hinterland	Council	Calliope	R-CPW-004	Drynan Drive / Liffey Way Intersection	Intersection upgrade (roundabout)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope West	Gladstone Hinterland	Council	Calliope	R-CPW-005	Drynan Drive / Capricornia Drive Intersection	Intersection upgrade (upgraded priority control)	Development driven. Developments in the area are forecast to develop between 2016 and 2021.	Development	2016-2021
Calliope West	Gladstone Hinterland	Council	Calliope	R-CPW-006	Drynan Drive / Major Collector Intersection	Intersection upgrade (roundabout)	Development driven. Developments in the area are forecast to develop between 2026 and 2031.	Development	2026-2031
Calliope Dawson Hwy									
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-001	Dawson Highway / Drynan Drive Intersection	Intersection upgrade (signals)	Required by 2031 from Calliope Traffic Study. Needs further assessment for timing, but likely to be linked to the development timeing which is generally between 2026 and 2031.	Traffic capacity	2026-2031
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-002	Dawson Highway / Don Cameron Drive / Herbertson Road Intersection	Intersection upgrade (signals)	Required by 2031 from Calliope Traffic Study. Needs further assessment for timing, but these are likely to be first signals in Calliope due to development between 2016 and 2026 and the right turn movements onto the Dawson Highway.	Development	2021-2026
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-003	Dawson Highway / Lightning Drive Intersection	Intersection upgrade (signals)	Insufficent data to assess. May not be required before 2031 if signals are installed at the Don Cameron Drive Intersection.	Outside PIP horizon	Post 2031
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-004	Dawson Highway / Bloomfield Street Intersection	Intersection downgrade (left-in/left-out)	60% DOS by 2031 from Calliope Traffic Study. Will be linked to the Sutherland Street signals.	Linked to the Dawson Highway / Sutherland Street Intersection	2026-2031

Gladstone Road/Transport Strategic Infrastructure Plan - Timing Assessment

Corridor/ Location	SA2 Zone	TMR/ Council Road	Suburb	New ID	Project description	Project type	Timing Commentary	Trigger	Timing Band
Calliope Dawson Hwy	Gladstone Hinterland	TMR	Calliope	R-CPD-005	Dawson Highway / Sutherland Street Intersection	Intersection upgrade (signals)	Required by 2031 from Calliope Traffic Study. Needs further assessment for timing, but likely to be linked to the development timeing which is generally between 2026 and 2031.	Traffic capacity	2026-2031

Appendix I Initiative Locations



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

Map Created: 30/06/2014 thatchc

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:60,000

File Name: GLAD_Initiatives

GLADSTONE BRISBANE

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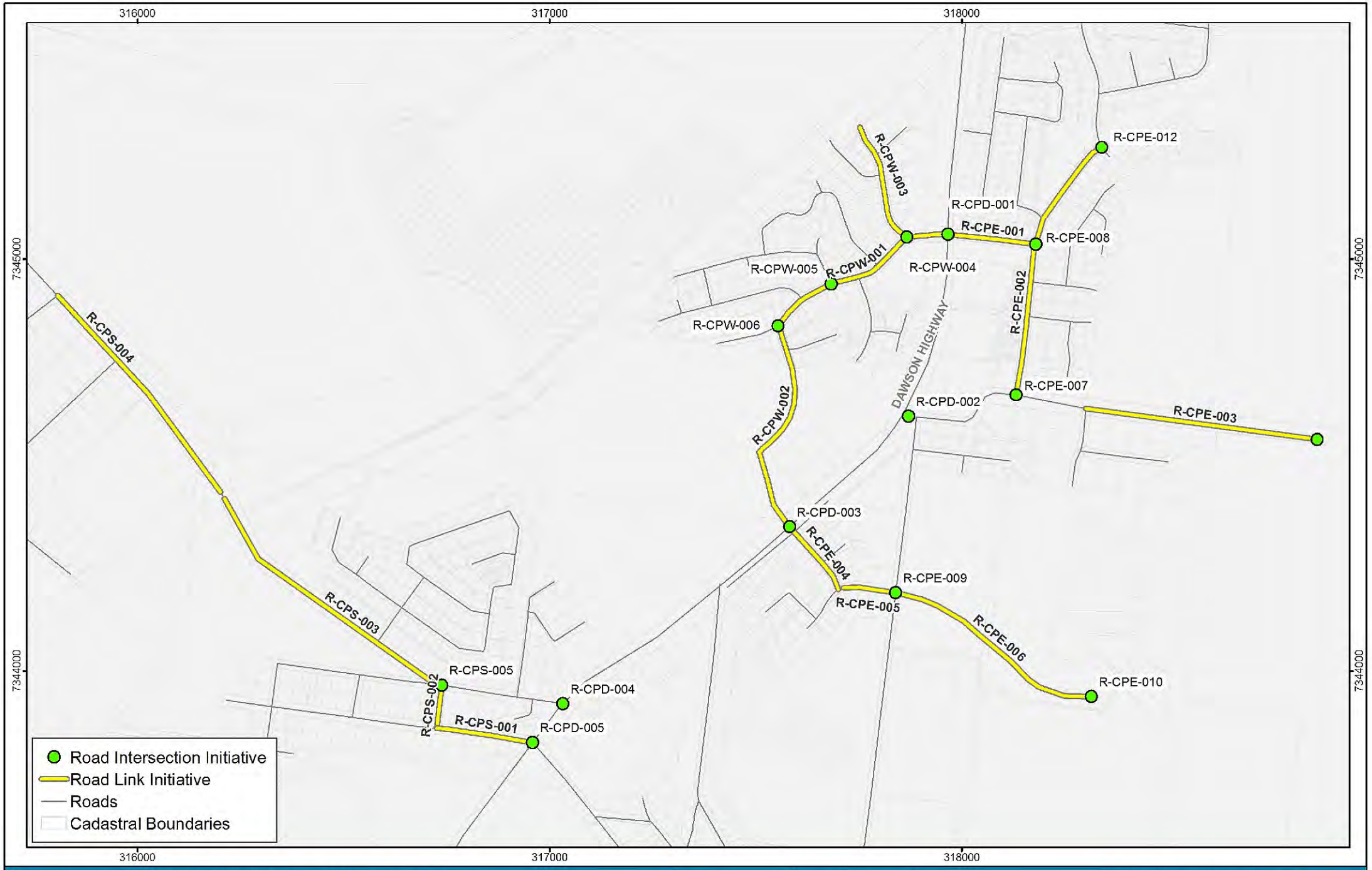
Infrastructure Initiatives - Gladstone



GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

MWH Global Pty Ltd can not be held responsible for any damages due to errors or omissions in this product.

Map Created: 4/06/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:11,500

File Name: CALI_Initiatives

GLADSTONE

BRISBANE

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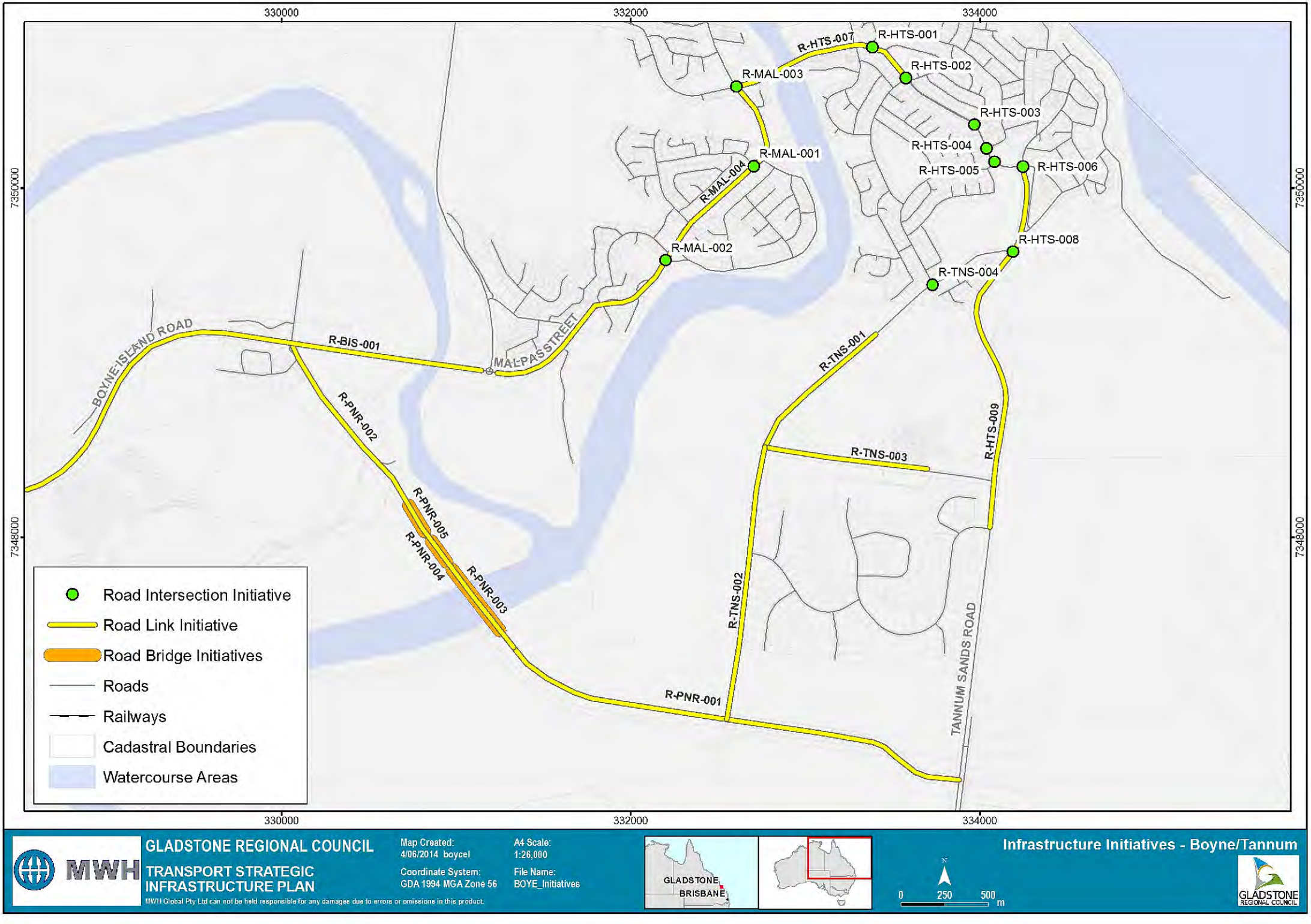
Infrastructure Initiatives - Calliope



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GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

Map Created: 4/06/2014 boycel

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:26,000

File Name: BOYE_Initiatives

Infrastructure Initiatives - Boyne/Tannum

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GLADSTONE REGIONAL COUNCIL

TRANSPORT STRATEGIC INFRASTRUCTURE PLAN

Map Created: 26/06/2014 thatchc

Coordinate System: GDA 1994 MGA Zone 56

A4 Scale: 1:160,000

File Name: AGNW_Initiatives

N

0 2 4 km

Infrastructure Initiatives - Agnes Water

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