



Local Government Infrastructure Plan Amendment 2026 Extrinsic Material Report: *Planning Assumptions*

Final July 2026

Townsville City Council

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1. Background

Townsville City Council has prepared an amendment to its Local Government Infrastructure Plan (LGIP) in accordance with the Planning Act 2016 and the Minister's Guidelines and Rules (MGR).

The LGIP provides the statutory framework for the planning and delivery of trunk infrastructure required to service projected growth within the Townsville local government area (LGA). The LGIP identifies the assumed type, scale, location and timing of development over the planning horizon and the trunk infrastructure required to support that development. The LGIP supports the implementation of the Townsville Planning Scheme by providing an integrated framework for coordinating land use planning with the timely provision of trunk infrastructure. In doing so, it assists Council in managing current and future development in a coordinated, efficient and financially sustainable manner.

The planning assumptions are developed using Council's Townsville Growth Model (TGM), which provides the spatial modelling framework for allocating future residential and non-residential growth across the local government area. The TGM utilises Growth Model Zones (GMZs) to model the location and sequencing of future development, with outputs aggregated and reported by Local Reference Areas (LRAs) for the purposes of the LGIP.

The LGIP amendment updates the planning assumptions and supporting technical analysis used to inform infrastructure planning and investment across the trunk infrastructure networks for:

- water supply
- sewerage
- transport
- public parks and land for community facilities.

The planning assumptions have been prepared using the established Townsville Growth Model (TGM) methodology originally developed to support the 2019 LGIP. The TGM has been progressively refined through successive updates to incorporate new demographic information, development activity, planning scheme changes and infrastructure planning information. The methodology adopted for this LGIP amendment remains consistent with previous LGIP reviews while incorporating updated data and technical analysis to reflect current growth patterns and development trends.

Planning assumptions identify the anticipated type, scale, location and timing of development within the LGA. These assumptions form the basis for projecting infrastructure demand and determining the trunk infrastructure required to service future development.

The planning assumptions are prepared for a defined projection period, consistent with the requirements of the MGR, and include an ultimate development scenario that represents the realistic extent of development anticipated when developable land within the LGA has been substantially developed.

The LGIP amendment, therefore, ensures that infrastructure planning continues to align with projected population growth, employment growth and development patterns across Townsville.

1.1 Role and status of this extrinsic material

This Extrinsic Material Report provides supporting information and technical context for the LGIP planning assumptions.

The report documents the key data sources, modelling inputs and methodological approach used in the preparation of the planning assumptions. It provides transparency into how assumptions have been developed, particularly where assumptions require interpreting multiple datasets or applying professional judgement to reflect local conditions.

This report **does not form part of the LGIP and does not have statutory effect**. It does not establish, amend or override the planning assumptions adopted in the LGIP.

Rather, the report provides explanatory material to assist:

- interpretation of the planning assumptions adopted in the LGIP
- State interest review of the LGIP amendment
- ongoing implementation and monitoring of the LGIP
- future LGIP amendments and infrastructure planning.

As non-statutory material, this report may be updated from time to time to reflect improved data availability, refined methodologies or updated background information without requiring amendment to the LGIP, provided the adopted planning assumptions remain unchanged.

1.2 Purpose of this report

The purpose of this Extrinsic Material Report is to:

- assist in the interpretation of the LGIP planning assumptions
- summarise the methodology used to prepare those assumptions
- identify the key data sources and background information informing the assumptions
- document the technical evidence base supporting the assumptions
- explain the application of professional judgement where required.

This report is intended to be read by a range of users involved in the preparation, review and implementation of the LGIP, including State agencies, Council officers, infrastructure planners, development industry representatives and the broader community. It provides a transparent explanation of the evidence base and methodology used to prepare the planning assumptions, including how growth projections have been informed by Council's Townsville Growth Model, development activity, planning scheme provisions and stakeholder feedback.

1.3 Planning assumptions context

Planning assumptions establish the foundation for trunk infrastructure planning under the LGIP by defining assumptions about:

- population growth and distribution
- dwelling growth and dwelling composition
- employment growth and non-residential development
- the type, scale, location and timing of development.

These assumptions enable projected development to be translated into demand for trunk infrastructure across the LGIP networks.

In preparing the planning assumptions, Council has first considered the strategic intent of the Townsville Planning Scheme to identify the expected distribution of future growth. Population and employment projections have then been spatially allocated having regard to the availability of developable land, planned development densities, physical and environmental constraints, infrastructure servicing capacity, market conditions and development feasibility.

The planning assumptions are not intended to represent aspirational or unconstrained growth scenarios. Rather, they reflect development outcomes considered realistic and achievable over the projection period, consistent with the MGR's intent and the LGIP's role as an infrastructure planning instrument.

1.4 Information sources, engagement and evidence base

The planning assumptions have been informed by a combination of quantitative data, technical analysis and stakeholder input.

Key information sources include:

- Australian Bureau of Statistics (ABS) Census data
- Queensland Government Statistician's Office (QGSO) population and employment projections
- Council development approvals and building approvals data, used to identify existing development and committed growth
- existing land use, zoning and overlay mapping under the Townsville Planning Scheme
- Townsville-specific economic and employment data
- infrastructure planning and servicing information.

These datasets provide the quantitative basis for projecting population growth, employment growth and development demand.

In addition to these data sources, Council has undertaken **extensive engagement with the development industry and relevant peak bodies** to test the realism and deliverability of the planning assumptions.

Engagement has included targeted briefings, workshops and discussions with:

- development industry representatives
- peak industry bodies
- infrastructure planning stakeholders.

Industry engagement has assisted the Council to:

- test assumptions relating to development feasibility and market conditions
- validate assumptions relating to dwelling yields and development sequencing
- identify practical constraints affecting development delivery
- refine planning assumptions to better reflect development patterns and market behaviour.

Stakeholder feedback has been considered alongside technical analysis and modelling outputs. Where appropriate, planning assumptions have been refined to reflect matters raised through engagement.

1.5 Application of professional judgement

Preparation of the LGIP planning assumptions requires interpreting multiple data sources and applying professional judgement to reconcile strategic planning objectives with realistic development outcomes.

Professional judgement has been applied where necessary to:

- interpret historic development trends and projected growth patterns;
- reconcile Queensland Government projections with Council's local knowledge, development activity and infrastructure planning information;
- determine realistic dwelling yields, development sequencing and the timing of future growth;
- account for physical, environmental and infrastructure servicing constraints that may influence development outcomes; and
- allocate projected growth spatially through the Townsville Growth Model (TGM) and Growth Model Zones (GMZs).

Professional judgement has been applied in a structured, evidence-based, and transparent manner to ensure that the planning assumptions reflect development outcomes that are realistic, achievable, and consistent with the purpose of the LGIP.

The application of professional judgement complements, rather than replaces, the underlying technical analysis and available data. It has been used where necessary to interpret information, resolve inconsistencies between datasets, and ensure the planning assumptions appropriately reflect local conditions and the anticipated pattern of future development.

2. Purpose of the planning assumptions

The planning assumptions provide a consistent basis for planning trunk infrastructure to support projected growth within the Townsville local government area (LGA).

In accordance with the Minister's Guidelines and Rules (MGR), the planning assumptions identify assumptions about:

- population growth and distribution;
- dwelling growth and composition;
- non-residential development and employment growth; and
- the type, scale, location and timing of development, including the demand for trunk infrastructure.

These assumptions translate expected land use and growth patterns into development projections used to plan and coordinate trunk infrastructure investment.

2.1 Relationship to trunk infrastructure planning

The planning assumptions are used to:

- estimate demand for each trunk infrastructure network;
- inform the location, scale and timing of trunk infrastructure; and
- support the identification of the Priority Infrastructure Area (PIA).

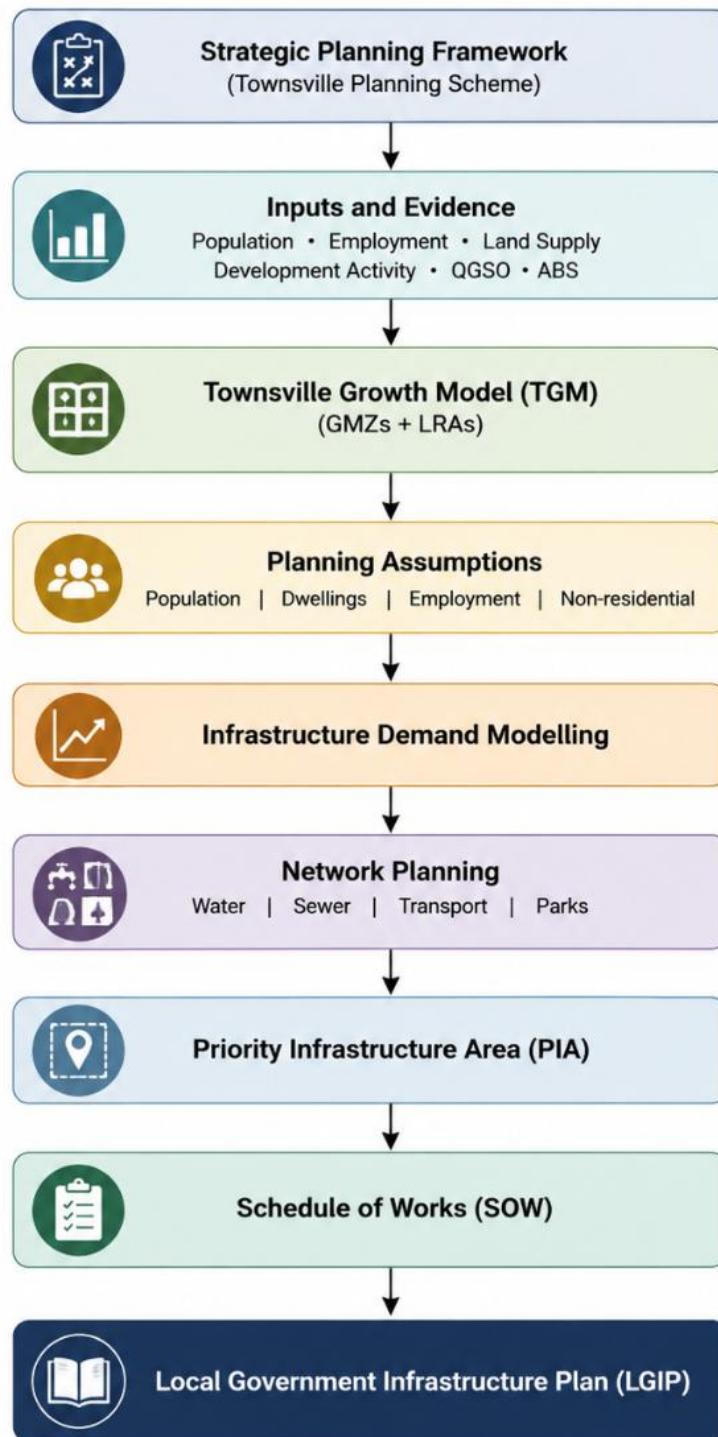


Figure 1. Relationship between Planning Assumptions and the LGIP

Figure 1 provides an overview of the relationship between the planning assumptions and the preparation of the LGIP. It demonstrates how strategic planning, growth modelling and technical analysis are translated into infrastructure demand, network planning, the Priority Infrastructure Area (PIA) and the Schedule of Works (SOW), forming the basis of the LGIP.

2.2 Relationship to the Priority Infrastructure Area

The planning assumptions inform the PIA by identifying where development is expected to occur and where trunk infrastructure is planned to support that growth.

Areas outside the Priority Infrastructure Area (PIA) may be identified for future urban development under the Townsville Planning Scheme and are therefore included within the Full Development Scenario (FDS). However, these areas are generally not assumed to be serviced by trunk infrastructure within the LGIP planning horizon and therefore do not form part of the Schedule of Works. Growth in these areas may be accommodated through future LGIP amendments as development progresses and trunk infrastructure planning is reviewed.

2.3 Realistic and achievable growth

The planning assumptions represent development outcomes considered realistic and achievable, having regard to the planning scheme's intent, development constraints, infrastructure capacity, market feasibility, and industry feedback.

2.4 Role in LGIP implementation

Once adopted, the planning assumptions provide the basis for infrastructure planning, charging, sequencing and ongoing monitoring of growth. They may be reviewed through future LGIP amendments to reflect updated information or changing circumstances.

For the purposes of this LGIP amendment, the planning assumptions have been prepared for the period 2021 to 2041, consistent with the minimum planning horizon required under the Minister's Guidelines and Rules (MGR). In addition to the 2041 planning horizon, the planning assumptions include a Full Development Scenario (FDS) representing the realistic long-term development potential of the Townsville local government area.

3. Planning assumption parameters

This section outlines the key parameters used in preparing the LGIP planning assumptions. These parameters establish a consistent framework for converting growth expectations and planning scheme intent into quantified development projections suitable for trunk infrastructure planning.

This section outlines the key parameters used in preparing the LGIP planning assumptions. These parameters establish a consistent framework for translating planning scheme intent, growth expectations and development characteristics into quantified development projections suitable for trunk infrastructure planning. The parameters recognise that development assumptions vary across urban and non-urban areas, reflecting differences in land use, development intensity and infrastructure demand.

The parameters have been applied uniformly across the LGIP to ensure internal consistency and alignment with the Minister's Guidelines and Rules (MGR).

3.1 Base date and projection period

A base date has been adopted to represent the existing level of development within the Townsville local government area (LGA). The base date provides the reference point from which future population, dwelling and employment growth is measured.

Where the most recent Census data does not align precisely with the base date, adjustments have been made using available data sources, including development approvals and building approvals, to ensure the base date reflects a realistic existing development position.

Development projections have been prepared for a series of five-year intervals aligned with Australian Bureau of Statistics (ABS) Census periods. The projection period extends for at least 15 years (2041), consistent with the MGR, and includes an estimate of ultimate development.

3.2 Full Development Scenario (FDS)

In addition to time-based projections, the planning assumptions include a Full Development Scenario (FDS).

The FDS represents the realistic extent of development anticipated when developable land within the Townsville local government area (LGA) has been substantially developed.

The FDS is informed by planning scheme intent, environmental and physical constraints, infrastructure servicing capacity and market delivery considerations. It reflects development outcomes considered reasonably achievable over the long term rather than theoretical development capacity.

Accordingly, the FDS may be lower than the maximum development potential permitted under the planning scheme where practical constraints or infrastructure servicing limitations are expected to influence development outcomes.

3.3 Development categories and land use types

For the purposes of the LGIP, development projections are categorised into residential and non-residential development types consistent with LGIP requirements.

Residential development is differentiated by dwelling type, including detached and attached dwellings. Non-residential development is differentiated by land use type to reflect differing infrastructure demand characteristics.

In some cases, specific assumptions have been applied where standard land use categories or zone-based assumptions do not adequately reflect the expected development outcome. This may include major development areas, approved or committed estates, preliminary approvals, master planned areas or other locations where development yield, staging or land use mix is better informed by site-specific information. These assumptions are incorporated for modelling purposes to ensure the planning assumptions reflect realistic development outcomes and do not alter the statutory planning controls applying to the land.

These development categories provide a framework for converting projected land-use outcomes into infrastructure demand and for applying consistent assumptions across the LGA. LGIP development types are defined in the Table 1 below

Table 1.

Column 1 LGIP development category	Column 2 LGIP development type	Column 3 Uses
Residential development	Single Dwelling (urban)	Dwelling house (urban)
	Single Dwelling	Dwelling house (rural residential)
	(rural residential)	Dwelling house (rural)
	Single Dwelling (rural)	Dual occupancy Multiple dwelling
	Other Dwelling	Caretaker's accommodation Community residence Dwelling unit
Non-residential development	Retail	Adult store Agricultural supplies store Bar Bulk landscape supplies Food and drink outlet Garden centre Hardware and trade supplies Market Outdoor sales Roadside stall Service station Shop Shopping centre Showroom Wholesale nursery
Column 1 LGIP development category	Column 2 LGIP development type	Column 3 Uses
	Services	Animal keeping

		Brothel Car wash Cemetery Childcare centre Club Community care centre Community use Crematorium Detention facility Educational establishment Environmental facility Function facility Funeral parlour Health care services Home based business Hospital Hotel Indoor sport and recreation Major sport, recreation and entertainment facility Motor sport facility Nature-based tourism Nightclub entertainment facility Outdoor sport and recreation Outstation Park Party house Place of worship Resort complex Rooming accommodation Rural workers' accommodation Service industry Short-term accommodation Theatre Tourist attraction Tourist park Workforce accommodation
	Professional	Emergency services Office Sales office Veterinary services
	Industry	Air services Battery storage facility High impact industry Landing Low impact industry Marine industry Medium impact industry Parking station Port services Research and technology industry Rural industry Special industry

		Telecommunications facility Transport depot Warehouse Winery
Column 1 LGIP development category	Column 2 LGIP development type	Column 3 Uses
	Other	Animal husbandry Aquaculture Cropping Extractive industry Intensive animal husbandry Intensive horticulture Major electricity infrastructure Permanent plantation Renewable energy facility Substation Utility installation

3.5 Population assumptions

Population projections have been prepared using a combination of top-down population forecasts and local growth modelling.

The projections are informed by:

- Queensland Government Statistician's Office (QGSO) population projections;
- Australian Bureau of Statistics (ABS) Census data and historic population trends;
- Council's Townsville Growth Model (TGM);
- existing development and committed growth identified through development approvals and building approvals;
- known major estates, master planned areas and other site-specific growth areas; and
- local knowledge of development sequencing, land supply and infrastructure servicing capacity.

QGSO projections provide the primary population benchmark for the local government area. These projections have been interpreted and spatially allocated through the TGM to reflect the expected distribution of growth across the LGA.

Where appropriate, population assumptions have been rationalised against observed development activity, approved development pipelines, planned densities, developable land capacity and known infrastructure servicing constraints. Major estates and other specific growth areas have been considered where they provide a more reliable indication of future population distribution than broader zone-based assumptions.

Population projections represent resident population only and exclude transient or non-resident populations unless otherwise stated.

3.6 Dwelling assumptions

Dwelling projections have been derived by converting projected resident population into dwelling demand using occupancy assumptions.

Occupancy assumptions have been informed by ABS Census data, observed household size trends and the dwelling typologies used in the Townsville Growth Model (TGM). The assumptions differentiate between single dwellings, multiple dwellings and other dwelling forms to reflect differences in household size and infrastructure demand characteristics.

Dwelling demand has been spatially allocated through the TGM having regard to planned densities, developable land capacity, approved development, committed estates and known development sequencing. This ensures dwelling projections reflect both the overall population forecast and the realistic distribution of housing growth across the LGA.

Dwelling projections are expressed as cumulative totals for each projection year and under the Full Development Scenario (FDS).

3.7 Employment and non-residential assumptions

Employment growth assumptions are informed by:

- observed historic employment trends within the Townsville LGA.

Employment projections are converted into non-residential development demand using appropriate employment-to-floor-space or land-use relationships.

Employment types that do not generate fixed floor-space demand (such as home-based or mobile employment) are excluded from floor-space conversion, where applicable.

4 Planned density and developable area

This section describes the approach used to determine planned density and developable area for the purposes of the LGIP planning assumptions. Together, these elements provide the basis for converting planning scheme intent into realistic development capacity suitable for growth modelling and trunk infrastructure planning.

4.1 Planned density methodology

Planned density assumptions have been derived by applying the provisions of the Townsville planning scheme in effect at the time the planning assumptions were prepared.

For LGIP modelling purposes, planned density has been determined having regard to:

- zones and precincts;

- building height and residential density provisions;
- minimum lot size and site coverage requirements;
- plot ratio and development intensity assumptions for non-residential uses;
- overlays or special provisions that may affect development outcomes; and
- site-specific or area-specific assumptions where standard zone-based assumptions do not adequately reflect likely development outcomes.

Planned density is expressed as:

- dwellings per developable hectare for residential development; and
- plot ratio or other appropriate development intensity measures for non-residential development.

These assumptions enable land use outcomes to be converted into population, dwelling and non-residential development projections. The planned density assumptions adopted for the LGIP are based on the residential and non-residential development categories defined in Table SC3.1.3a and Table SC3.1.3b of Schedule 3 of the Townsville Planning Scheme, which provide the standard density and development intensity assumptions used in the LGIP modelling framework.

Where specific circumstances affect likely development outcomes, adjustments may be applied to reflect realistic capacity. This may include major development areas, approved estates, preliminary approvals, master planned areas, heritage places, constrained land, or other locations where site-specific information provides a more reliable basis for determining likely yield than standard zone-based assumptions.

Planned density reflects the intended development outcome under the planning scheme and the LGIP modelling framework. It is not intended to represent theoretical maximum yield.

4.2 Developable area

Not all land within development zones is assumed to be fully developable for the purposes of the LGIP.

Developable area represents the portion of land within a zone or precinct that is realistically available for development after accounting for constraints.

The determination of developable area considers:

- environmental and natural hazard constraints;
- physical constraints such as steep land or water bodies;
- infrastructure servicing constraints; and
- other known limitations on development delivery.

4.3 Treatment of constraints

Constraints have been assessed using a combination of spatial data and planning scheme provisions.

Where constraints fully preclude development, land has been excluded from the developable area.

Where constraints do not entirely preclude development, a partial constraint approach has been applied. This approach recognises that some constrained land may still be capable of development at reduced yield or intensity.

The partial constraint approach supports a more realistic representation of development potential than the application of absolute exclusions alone.

4.4 Approved development and overrides

Approved development and known development commitments have been incorporated into the planning assumptions where they provide a more reliable indication of likely development outcomes than the underlying zone-based assumptions.

This may include:

- approved development applications;
- preliminary approvals;
- master planned communities or major estates;
- site-specific development commitments;
- areas subject to specific infrastructure or sequencing considerations; and
- other special cases where local information indicates that standard assumptions should be adjusted.

These overrides ensure that committed or likely development outcomes are reflected in the planning assumptions and that planned density assumptions align with known development patterns.

Approved development and overrides are incorporated for modelling purposes only. They do not alter the statutory status of the planning scheme or predetermine future development assessment outcomes.

4.5 Relationship between Growth Model Zones (GMZ) and Local Reference Areas (LRA)

Growth Model Zones (GMZs) and Local Reference Areas (LRAs) serve different but complementary roles in the preparation of the LGIP planning assumptions and associated infrastructure modelling.

GMZs are used as a modelling framework to represent areas of similar development characteristics and growth potential. GMZs assist in distributing projected population, dwelling and employment growth spatially across the Townsville local government area (LGA). They also provide a mechanism for representing the sequencing and staging of development, having regard to planning scheme intent, infrastructure servicing capacity and development feasibility considerations.

In contrast, LRAs represent the reporting geography used within the LGIP. LRAs group areas of development into logical geographic units that align with the structure of the LGIP

planning assumptions and infrastructure planning framework. They provide a consistent spatial basis for presenting population, dwelling and employment projections and for linking those projections to trunk infrastructure planning.

In practice, development projections are initially modelled at the GMZ level to capture the spatial distribution and sequencing of growth. These projections are then aggregated and reported at the LRA level for the purposes of presenting the planning assumptions and supporting LGIP documentation.

The relationship between GMZs and LRAs enables the LGIP to maintain a robust modelling framework while presenting planning assumptions in a simplified and consistent geographic structure suitable for infrastructure planning and reporting.

4.6 Relationship to growth projections

Planned density and developable area assumptions are combined to determine realistic development capacity within each GMZ.

This capacity forms the basis for:

- allocating population, dwelling and employment growth spatially; and
- informing the timing and sequencing of development assumed within the projection period and at ultimate development.

Where theoretical capacity exceeds realistic delivery potential, this is reflected through the assumptions applied.

4.7 Ongoing refinement

Planned density and developable area assumptions may be refined over time through LGIP amendment processes to reflect:

- updated planning scheme provisions;
- improved spatial data;
- changes in infrastructure servicing capacity; or
- revised understanding of development delivery constraints.

Any such refinements are undertaken to maintain alignment between the LGIP and realistic development outcomes.

5. Growth and development projections

This section describes how the planning assumption parameters outlined in Section 3 have been applied to generate projections of growth and development for the Townsville local government area (LGA).

The projections provide the quantitative basis for trunk infrastructure demand modelling and are prepared in a manner consistent with the Minister's Guidelines and Rules (MGR).

5.1 Projection approach

Growth and development projections have been prepared using a structured approach that:

- applies population, dwelling and employment assumptions consistently across the projection period;
- aligns projection years with ABS Census periods;
- distinguishes between existing development, projected development and ultimate development; and
- supports conversion of development outcomes into trunk infrastructure demand.

Projections are expressed as cumulative totals at each projection year and at ultimate development.

5.2 Base year development position

The LGIP planning assumptions adopt 2021 as the base year, representing the existing development position from which future population, dwelling and employment growth has been projected. The base year aligns with the availability of Australian Bureau of Statistics (ABS) Census data and provides a consistent benchmark for growth modelling across all trunk infrastructure networks.

Where necessary, adjustments have been made to align the adopted base year with development that occurred after the Census reference date. These adjustments have been informed by:

- development approvals;
- building approvals;
- Council development records; and
- other available development and infrastructure information.

The resulting base year provides a realistic representation of the existing development pattern and ensures that projected growth reflects both committed development and the current urban footprint at the commencement of the LGIP planning period.

5.3 Population projections

Population projections represent the resident population only.

Compared with the 2019 LGIP, the population projections have been reviewed and updated using current Queensland Government Statistician's Office (QGSO) projections, recent development activity, updated planning scheme information and the latest Townsville Growth Model (TGM). The review also considered changes in development trends, land supply and infrastructure planning to ensure the projections continue to represent realistic and achievable growth across the local government area.

Population growth has been projected across the LGA for each projection year and at ultimate development, informed by:

- QGSO population projections; and
- observed historic growth trends.

Population projections are spatially distributed, having regard to:

- planning scheme intent;
- planned density assumptions;
- developable area constraints; and
- The application of Growth Model Zones (GMZs) is used for the purposes of allocating growth spatially within the LGIP modelling framework.

The following table summarises the projected resident population by Locality Reporting Area (LRA) and dwelling type for each projection year and at the full development scenario (FDS). These projections form the basis for converting population growth into dwelling demand and subsequent infrastructure demand modelling.

The updated population projections represent Council's current view of the spatial distribution and timing of future growth and replace the assumptions adopted in the 2019 LGIP.

Projection Area		LGIP Development Type	Existing & Projected Population					
Location	LRA		2021	2026	2031	2036	2041	FDS
City to Pallarenda	1	Single dwelling	9,526	9,965	9,800	9,661	9,622	9,833
	1	Multiple dwelling	8,920	9,222	9,194	9,383	9,827	14,597
	1	Other dwelling	147	161	196	230	263	354
	1	Total	18,594	19,348	19,190	19,274	19,712	24,784
South Townsville	2	Single dwelling	6,119	6,312	6,201	6,115	6,095	6,297
	2	Multiple dwelling	2,773	2,872	2,856	2,898	3,015	5,178
	2	Other dwelling	30	31	31	30	30	24
	2	Total	8,922	9,216	9,088	9,044	9,140	11,499
Central Suburbs	3	Single dwelling	26,343	27,319	26,994	26,713	26,648	27,255

	3	Multiple dwelling	6,210	6,410	6,335	6,339	6,457	8,111
	3	Other dwelling	101	104	103	103	104	514
	3	Total	32,653	33,833	33,433	33,154	33,209	35,880
Bohle Mt Louisa	4	Single dwelling	10,063	10,983	11,731	12,608	13,647	18,161
	4	Multiple dwelling	361	378	390	426	484	921
	4	Other dwelling	104	112	122	136	153	329
	4	Total	10,528	11,473	12,242	13,169	14,284	19,410
Kirwan	5	Single dwelling	21,293	21,936	21,545	21,237	21,150	22,490
	5	Multiple dwelling	1,533	1,583	1,570	1,581	1,625	2,066
	5	Other dwelling	-	0	1	2	4	362
	5	Total	22,826	23,520	23,115	22,821	22,778	24,918
Bohle Plains	6	Single dwelling	4,329	6,302	8,614	10,720	12,499	14,446
	6	Multiple dwelling	50	51	50	50	49	730
	6	Other dwelling	16	17	17	16	16	14
	6	Total	4,395	6,370	8,681	10,786	12,565	15,190
Northern beaches	7	Single dwelling	20,528	23,196	27,233	33,430	39,227	57,009
	7	Multiple dwelling	435	451	501	713	1,027	3,151
	7	Other dwelling	0	4	23	47	71	220
	7	Total	20,962	23,650	27,756	34,190	40,326	60,381
North Rural	8	Single dwelling	-	-	-	-	-	-
	8	Multiple dwelling	-	-	-	-	-	-
	8	Other dwelling	-	-	-	-	-	-
	8	Total	-	-	-	-	-	-
South Rural	9	Single dwelling	-	247	243	240	238	-
	9	Multiple dwelling	-	-	-	-	-	5
	9	Other dwelling	0	7	6	6	6	6
	9	Total	0	253	249	246	245	11
Upper Ross	10	Single dwelling	17,577	18,420	18,611	18,951	19,584	26,376
	10	Multiple dwelling	889	929	975	1,107	1,327	4,824
	10	Other dwelling	-	0	0	0	0	2
	10	Total	18,466	19,349	19,586	20,058	20,911	31,202
Southern Suburbs	11	Single dwelling	29,365	30,590	30,389	30,345	30,636	33,176
	11	Multiple dwelling	2,041	2,114	2,105	2,141	2,240	6,852

	11	Other dwelling	147	153	165	182	202	4,971
	11	Total	31,554	32,857	32,659	32,669	33,078	44,999
Eastern Rural	12	Single dwelling	-	975	2,493	4,372	6,661	39,866
	12	Multiple dwelling	-	-	-	-	-	2,243
	12	Other dwelling	-	28	27	27	27	28
	12	Total	-	1,002	2,521	4,399	6,688	42,137
Magnetic Island	13	Single dwelling	1,992	2,057	2,020	1,991	1,984	3,235
	13	Multiple dwelling	298	308	303	298	297	1,424
	13	Other dwelling	33	34	33	33	32	24
	13	Total	2,323	2,398	2,356	2,322	2,313	4,682
Inside priority infrastructure area (total)		Single dwelling	147,135	158,301	165,873	176,384	187,992	258,144
		Multiple dwelling	23,510	24,319	24,279	24,936	26,349	50,102
		Other dwelling	579	649	724	813	909	6,847
		Total	171,223	183,269	190,876	202,133	215,249	315,094
Outside priority infrastructure area (total)		Single dwelling	23,740	26,324	27,536	28,252	29,240	36,385
		Multiple dwelling	106	113	126	148	203	726
		Other dwelling	-	-	-	-	-	-
		Total	23,847	26,436	27,662	28,400	29,443	37,111
Townsville City Council Local Government Area		Single dwelling	170,876	184,625	193,409	204,636	217,232	294,529
		Multiple dwelling	23,616	24,431	24,404	25,084	26,551	50,828
		Other dwelling	579	649	724	813	909	6,847
		Total	195,070	209,705	218,538	230,533	244,692	352,204

Table 2: Projected resident population by Locality Reporting Area (LRA)

5.4 Dwelling projections

Dwelling projections have been derived by converting population projections into dwelling demand using the occupancy assumptions described in Section 3. The projections distinguish between single dwellings, multiple dwellings and other dwelling forms, and are expressed as cumulative totals for each projection year and under the Full Development Scenario (FDS). They reflect both committed development identified through approvals and future development assumed to occur across each Local Reference Area (LRA) over the projection period.

Dwelling projections:

- distinguish between detached and attached dwellings where relevant;
- are expressed as cumulative totals at each projection year; and
- include an estimate of total dwellings at ultimate development.

Dwelling growth reflects both:

- committed development identified through approvals; and
- future development assumed to occur within relevant GMZs over the projection period.

The table below summarises the dwelling projections prepared for the LGIP across the Townsville local government area (LGA). Projections are presented by Local Reference Area (LRA) and LGIP development type, distinguishing between single dwellings, multiple dwellings and other dwelling forms. For each LRA, the table identifies the existing dwelling baseline and projected dwelling totals at each projection year, together with the Full Development Scenario (FDS) representing the realistic ultimate development outcome. The projections are expressed as cumulative dwelling totals and reflect both committed development and future development assumed to occur within each LRA over the projection period.

Projection Area		LGIP Development Type	Existing and projected dwellings					
Location	LRA		2021	2026	2031	2036	2041	FDS
City to Pallarenda	1	Single dwelling	3,841	3,905	3,912	3,912	3,912	3,911
	1	Multiple dwelling	5,678	5,705	5,793	5,997	6,307	9,095
	1	Other dwelling	85	90	110	133	153	209
	1	Total	9,604	9,700	9,815	10,042	10,371	13,215
South Townsville	2	Single dwelling	2,543	2,543	2,543	2,543	2,543	2,522
	2	Multiple dwelling	1,759	1,766	1,789	1,844	1,929	3,289
	2	Other dwelling	21	21	21	21	21	15
	2	Total	4,323	4,330	4,353	4,408	4,493	5,826
Central Suburbs	3	Single dwelling	10,344	10,413	10,477	10,520	10,542	10,554
	3	Multiple dwelling	3,916	3,923	3,947	4,002	4,085	4,931
	3	Other dwelling	52	52	52	53	54	270
	3	Total	14,312	14,388	14,477	14,575	14,682	15,755
Bohle Mt Louisa	4	Single dwelling	3,609	3,825	4,160	4,537	4,932	6,406
	4	Multiple dwelling	212	215	224	247	280	510
	4	Other dwelling	69	71	79	90	101	208
	4	Total	3,890	4,111	4,463	4,873	5,313	7,124
Kirwan	5	Single dwelling	7,717	7,719	7,720	7,721	7,723	8,016
	5	Multiple dwelling	920	923	930	948	975	1,192
	5	Other dwelling	-	0	1	1	2	197
	5	Total	8,637	8,642	8,651	8,671	8,700	9,405

Bohle Plains	6	Single dwelling	1,546	2,180	3,036	3,834	4,489	5,068
	6	Multiple dwelling	27	27	27	27	27	352
	6	Other dwelling	8	8	8	8	8	7
	6	Total	1,582	2,215	3,071	3,869	4,525	5,427
Northern beaches	7	Single dwelling	7,125	7,808	9,361	11,697	13,823	19,618
	7	Multiple dwelling	201	202	225	316	446	1,321
	7	Other dwelling	0	2	11	23	34	103
	7	Total	7,326	8,011	9,597	12,037	14,303	21,042
North Rural	8	Single dwelling	-	-	-	-	-	-
	8	Multiple dwelling	-	-	-	-	-	-
	8	Other dwelling	-	-	-	-	-	-
	8	Total	-	-	-	-	-	-
South Rural	9	Single dwelling	-	79	79	79	79	-
	9	Multiple dwelling	-	-	-	-	-	3
	9	Other dwelling	0	1	1	1	1	1
	9	Total	0	80	80	80	80	4
Upper Ross	10	Single dwelling	6,367	6,472	6,658	6,880	7,141	9,245
	10	Multiple dwelling	497	504	534	607	723	2,554
	10	Other dwelling	-	0	0	0	0	1
	10	Total	6,865	6,975	7,193	7,487	7,864	11,801
Southern Suburbs	11	Single dwelling	9,383	9,485	9,596	9,722	9,857	10,414
	11	Multiple dwelling	1,242	1,247	1,263	1,302	1,364	4,028
	11	Other dwelling	76	77	84	94	106	2,938
	11	Total	10,701	10,809	10,943	11,117	11,326	17,380
Eastern Rural	12	Single dwelling	-	353	907	1,600	2,441	14,200
	12	Multiple dwelling	-	-	-	-	-	1,353
	12	Other dwelling	-	16	16	16	16	16
	12	Total	-	369	923	1,616	2,457	15,569
Magnetic Island	13	Single dwelling	1,143	1,143	1,143	1,143	1,143	1,766
	13	Multiple dwelling	239	239	239	239	239	986

	13	Other dwelling	20	20	20	20	20	13
	13	Total	1,402	1,403	1,403	1,403	1,403	2,765
Inside priority infrastructure area (total)		Single dwelling	53,619	55,924	59,592	64,188	68,625	91,719
		Multiple dwelling	14,691	14,751	14,973	15,529	16,374	29,615
		Other dwelling	332	358	403	460	517	3,978
		Total	68,642	71,033	74,968	80,177	85,516	125,313
Outside priority infrastructure area (total)		Single dwelling	8,917	9,551	10,148	10,576	10,973	13,430
		Multiple dwelling	43	44	49	57	75	294
		Other dwelling	170	175	175	175	175	107
		Total	9,130	9,770	10,371	10,807	11,223	13,831
Townsville City Council Local Government Area		Single dwelling	62,536	65,475	69,740	74,763	79,598	105,149
		Multiple dwelling	14,734	14,795	15,022	15,586	16,449	29,910
		Other dwelling	502	533	578	635	692	4,085
		Total	77,772	80,803	85,339	90,984	96,739	139,144

Table 3: Dwelling projections by Locality Reporting Area (LRA)

5.5 Employment and non-residential development projections

Employment projections have been prepared for each projection year and for the Full Development Scenario (FDS) to reflect the anticipated distribution of employment across the Townsville local government area (LGA).

Projected employment has been converted into non-residential development demand using appropriate employment-to-floor-space and land-use relationships for each LGIP development category. Employment types that do not generate a defined floor space demand have been excluded from the conversion where appropriate.

Employment projections are presented by Local Reference Area (LRA) and LGIP development type, including retail, services, professional, industrial and other employment categories. The projections are expressed as cumulative employment totals at each projection year and at FDS.

The spatial distribution of employment growth reflects:

- planning scheme intent and zoning provisions;
- planned density assumptions applied within each area; and
- the application of **Growth Model Zones (GMZs)** to guide the spatial allocation and sequencing of development.

The table below summarises existing and projected employment across the Townsville LGA by LRA and LGIP development type.

Projection Area		LGIP Development Type	Existing & Projected Employment						Existing & Projected Employment
Location	LRA		2021	2026	2031	2036	2041	FDS	
City to Pallarenda	1	Retail	1,262	1,264	1,310	1,399	1,457	1,832	
	1	Services	5,689	6,424	7,154	7,710	8,025	9,320	
	1	Professional	7,358	7,518	8,302	9,198	9,815	11,459	
	1	Industrial	1,262	1,264	1,310	1,399	1,457	1,832	
	1	Other	396	397	397	397	397	571	
	1	Total	15,967	16,867	18,473	20,102	21,149	25,015	
South Townsville	2	Retail	540	547	547	547	547	715	
	2	Services	1,533	1,912	2,278	2,795	3,487	4,420	
	2	Professional	1,092	1,295	1,296	1,296	1,353	1,747	
	2	Industrial	1,210	1,245	1,367	1,564	1,819	2,337	
	2	Other	151	151	151	151	151	82	
	2	Total	4,525	5,149	5,638	6,352	7,357	9,302	
Central Suburbs	3	Retail	2,605	3,130	3,200	3,211	3,217	3,623	
	3	Services	9,308	9,311	9,321	9,337	9,361	8,663	
	3	Professional	2,660	2,660	2,660	2,660	2,660	2,656	
	3	Industrial	1,501	1,499	1,499	1,499	1,499	1,590	
	3	Other	43	43	43	43	43	53	
	3	Total	16,117	16,643	16,723	16,750	16,780	16,585	
Bohle Mt Louisa	4	Retail	2,818	2,808	2,875	3,067	3,308	3,625	
	4	Services	2,675	2,678	2,678	2,679	2,681	2,923	
	4	Professional	2,240	2,237	2,237	2,237	2,240	2,316	
	4	Industrial	5,822	6,437	7,039	7,484	7,676	8,278	
	4	Other	995	998	998	998	998	1,087	
	4	Total	14,549	15,157	15,827	16,466	16,902	18,229	
Kirwan	5	Retail	1,261	1,261	1,261	1,261	1,261	827	
	5	Services	3,777	3,780	3,789	3,803	3,823	3,001	

	5	Professional	1,060	1,332	1,784	1,964	1,964	2,314
	5	Industrial	433	433	433	433	433	289
	5	Other	-	-	-	-	-	-
	5	Total	6,532	6,807	7,268	7,462	7,482	6,431
Bohle Plains	6	Retail	-	-	0	1	4	716
	6	Services	251	255	255	255	255	709
	6	Professional	47	63	63	63	171	679
	6	Industrial	304	318	318	318	318	954
	6	Other	24	24	24	24	24	12
	6	Total	626	660	660	661	772	3,070
Northern beaches	7	Retail	598	593	594	595	598	1,158
	7	Services	1,462	1,473	1,473	1,473	1,473	1,943
	7	Professional	263	260	260	260	409	961
	7	Industrial	312	313	313	313	313	626
	7	Other	30	30	30	30	30	53
	7	Total	2,665	2,669	2,670	2,671	2,823	4,741
North Rural	8	Retail	-	-	-	-	-	-
	8	Services	-	-	-	-	-	-
	8	Professional	-	-	-	-	-	-
	8	Industrial	-	-	-	-	-	-
	8	Other	-	-	-	-	-	-
	8	Total	-	-	-	-	-	-
South Rural	9	Retail	-	-	-	-	-	-
	9	Services	4	4	4	4	4	3
	9	Professional	81	81	81	81	81	62
	9	Industrial	4	4	4	4	4	2
	9	Other	17	18	18	18	18	70
	9	Total	107	107	107	107	107	138
Upper Ross	10	Retail	254	252	252	252	252	506
	10	Services	1,587	1,590	1,590	1,590	1,590	1,877
	10	Professional	404	403	403	403	409	552
	10	Industrial	421	421	421	421	421	366
	10	Other	18	18	18	18	18	46
	10	Total	2,683	2,683	2,683	2,683	2,689	3,347
Southern Suburbs	11	Retail	901	1,050	1,529	1,889	1,930	2,184
	11	Services	9,748	10,996	12,065	13,078	14,036	18,850
	11	Professional	5,170	5,541	5,714	5,975	6,312	8,848
	11	Industrial	2,039	2,143	2,244	2,548	3,149	3,923
	11	Other	207	223	223	223	223	526

	11	Total	18,066	19,953	21,776	23,713	25,649	34,331
Eastern Rural	12	Retail	-	-	5	61	426	1,110
	12	Services	27	27	29	32	32	675
	12	Professional	9	9	12	12	12	-93
	12	Industrial	5	5	6	6	6	63
	12	Other	13	13	13	13	13	24
	12	Total	54	54	64	123	488	1,779
Magnetic Island	13	Retail	106	106	106	106	106	147
	13	Services	367	367	367	367	367	594
	13	Professional	144	143	143	143	153	319
	13	Industrial	84	84	84	84	84	92
	13	Other	11	11	11	11	11	7
	13	Total	712	712	712	712	722	1,159
Inside priority infrastructure area (total)		Retail	10,345	11,012	11,680	12,390	13,106	16,444
		Services	36,428	38,816	41,004	43,124	45,133	52,977
		Professional	20,527	21,542	22,955	24,292	25,579	31,823
		Industrial	13,397	14,166	15,037	16,071	17,177	20,351
		Other	1,904	1,925	1,925	1,925	1,925	2,531
		Total	82,602	87,460	92,601	97,801	102,920	124,127
Outside priority infrastructure area (total)		Retail	192	204	206	218	218	330
		Services	1,004	1,006	1,007	1,007	1,007	1,477
		Professional	282	283	284	284	286	422
		Industrial	842	870	950	1,082	1,267	3,159
		Other	475	886	1,336	1,843	2,369	4,527
		Total	2,794	3,248	3,783	4,435	5,148	9,914
Townsville City Council Local Government Area		Retail	10,537	11,216	11,886	12,608	13,325	16,774
		Services	37,433	39,822	42,011	44,131	46,140	54,454
		Professional	20,810	21,824	23,239	24,576	25,865	32,245
		Industrial	14,239	15,035	15,988	17,154	18,444	23,510
		Other	2,379	2,810	3,261	3,768	4,294	7,058
		Total	85,397	90,708	96,384	102,236	108,068	134,040

Table 4: Existing and projected employment across the Townsville LGA by LRA and LGIP development type

Non-residential floorspace projections

Employment projections have been further converted into non-residential floorspace demand using standard floor-space-per-employee assumptions appropriate to each development type.

These conversions enable employment growth to be translated into the development demand required to inform trunk infrastructure planning.

The following table summarises the existing and projected non-residential floorspace across the Townsville LGA by LRA and LGIP development type for each projection year and at FDS.

Projection Area		LGIP Development Type	Existing and projected non-residential floorspace					
Location	LR A		2021	2026	2031	2036	2041	FDS
City to Pallarenda	1	Retail	80,780	80,913	83,856	89,513	93,218	117,274
	1	Services	164,969	186,308	207,475	223,584	232,717	270,273
	1	Professional	161,872	165,394	182,636	202,364	215,920	252,101
	1	Industrial	145,152	145,390	150,678	160,844	167,502	210,726
	1	Other	10,290	10,310	10,310	10,310	10,310	14,849
	1	Total	563,062	588,314	634,954	686,615	719,666	865,223
South Townsville	2	Retail	34,540	35,031	35,032	35,032	35,032	45,761
	2	Services	44,451	55,435	66,067	81,063	101,133	128,177
	2	Professional	24,021	28,489	28,502	28,502	29,760	38,444
	2	Industrial	139,171	143,182	157,177	179,809	209,237	268,788
	2	Other	3,913	3,913	3,913	3,913	3,913	2,130
	2	Total	246,096	266,051	290,690	328,318	379,075	483,300
Central Suburbs	3	Retail	166,703	200,348	204,813	205,518	205,905	231,857
	3	Services	269,938	270,006	270,298	270,785	271,466	251,238
	3	Professional	58,524	58,524	58,524	58,524	58,524	58,425
	3	Industrial	172,646	172,355	172,355	172,355	172,355	182,877
	3	Other	1,116	1,116	1,116	1,116	1,116	1,381
	3	Total	668,927	702,350	707,106	708,298	709,366	725,778
Bohle Mt Louisa	4	Retail	180,353	179,692	183,991	196,306	211,731	232,013
	4	Services	77,572	77,654	77,670	77,698	77,741	84,760
	4	Professional	49,275	49,216	49,216	49,216	49,276	50,957
	4	Industrial	669,542	740,277	809,485	860,699	882,694	951,916
	4	Other	25,860	25,941	25,941	25,941	25,941	28,269
	4	Total	1,002,602	1,072,781	1,146,304	1,209,861	1,247,384	1,347,915
Kirwan	5	Retail	80,735	80,735	80,735	80,735	80,735	52,922
	5	Services	109,546	109,628	109,872	110,280	110,863	87,024

	5	Professional	23,323	29,295	39,257	43,218	43,218	50,915
	5	Industrial	49,839	49,839	49,839	49,839	49,839	33,237
	5	Other	-	-	-	-	-	-
	5	Total	263,443	269,496	279,703	284,071	284,655	224,098
Bohle Plains	6	Retail	-	-	16	54	253	45,837
	6	Services	7,289	7,403	7,403	7,403	7,403	20,558
	6	Professional	1,034	1,376	1,381	1,381	3,754	14,944
	6	Industrial	34,927	36,563	36,574	36,574	36,574	109,701
	6	Other	619	619	619	619	619	314
	6	Total	43,869	45,962	45,993	46,031	48,603	191,353
Northern beaches	7	Retail	38,288	37,935	38,005	38,068	38,244	74,139
	7	Services	42,396	42,715	42,715	42,715	42,715	56,341
	7	Professional	5,779	5,717	5,717	5,717	9,002	21,147
	7	Industrial	35,869	36,007	36,007	36,007	36,007	71,954
	7	Other	776	787	787	787	787	1,386
	7	Total	123,108	123,161	123,232	123,295	126,754	224,968
North Rural	8	Retail	-	-	-	-	-	-
	8	Services	-	-	-	-	-	-
	8	Professional	-	-	-	-	-	-
	8	Industrial	-	-	-	-	-	-
	8	Other	-	-	-	-	-	-
	8	Total	-	-	-	-	-	-
South Rural	9	Retail	-	-	-	-	-	-
	9	Services	121	121	121	121	121	85
	9	Professional	1,791	1,791	1,791	1,791	1,791	1,373
	9	Industrial	416	416	416	416	416	232
	9	Other	454	456	456	456	456	1,826
	9	Total	2,782	2,784	2,784	2,784	2,784	3,515
Upper Ross	10	Retail	16,232	16,136	16,136	16,136	16,136	32,379
	10	Services	46,021	46,104	46,104	46,104	46,104	54,443
	10	Professional	8,880	8,860	8,860	8,860	9,002	12,155
	10	Industrial	48,367	48,367	48,367	48,367	48,367	42,084
	10	Other	462	463	463	463	463	1,183
	10	Total	119,961	119,930	119,930	119,930	120,072	142,245
Southern Suburbs	11	Retail	57,682	67,211	97,885	120,883	123,531	139,800
	11	Services	282,700	318,873	349,883	379,271	407,035	546,641
	11	Professional	113,747	121,910	125,716	131,442	138,854	194,666
	11	Industrial	234,499	246,396	258,105	292,988	362,084	451,098
	11	Other	5,387	5,804	5,804	5,804	5,804	13,664

	11	Total	694,014	760,194	837,393	930,388	1,037,309	1,345,868
Eastern Rural	12	Retail	-	-	288	3,914	27,242	71,049
	12	Services	777	777	853	920	926	19,564
	12	Professional	194	194	255	255	255	-2,041
	12	Industrial	600	599	645	645	645	7,210
	12	Other	332	332	332	332	332	624
	12	Total	1,902	1,903	2,374	6,067	29,401	96,406
Magnetic Island	13	Retail	6,785	6,779	6,779	6,779	6,779	9,377
	13	Services	10,641	10,641	10,641	10,641	10,641	17,225
	13	Professional	3,163	3,154	3,154	3,154	3,373	7,028
	13	Industrial	9,649	9,650	9,650	9,650	9,650	10,581
	13	Other	297	297	297	297	297	182
	13	Total	30,536	30,521	30,521	30,521	30,740	44,393
Inside priority infrastructure area (total)		Retail	662,098	704,780	747,536	792,940	838,807	1,052,408
		Services	1,056,421	1,125,666	1,189,103	1,250,584	1,308,866	1,536,331
		Professional	451,604	473,920	505,010	534,424	562,729	700,113
		Industrial	1,540,675	1,629,041	1,729,296	1,848,193	1,975,369	2,340,404
		Other	49,505	50,038	50,038	50,038	50,038	65,807
		Total	3,760,303	3,983,444	4,220,984	4,476,179	4,735,808	5,695,064
Outside priority infrastructure area (total)		Retail	12,264	13,054	13,159	13,981	13,981	21,127
		Services	29,127	29,166	29,205	29,208	29,208	42,835
		Professional	6,208	6,216	6,249	6,249	6,294	9,274
		Industrial	96,780	100,002	109,269	124,481	145,695	363,240
		Other	12,339	23,030	34,741	47,926	61,604	117,690
		Total	156,717	171,468	192,622	221,844	256,782	554,166
Townsville City Council Local Government Area		Retail	674,362	717,834	760,694	806,921	852,788	1,073,535
		Services	1,085,547	1,154,832	1,218,308	1,279,792	1,338,074	1,579,166
		Professional	457,812	480,135	511,258	540,673	569,023	709,387
		Industrial	1,637,455	1,729,043	1,838,565	1,972,674	2,121,064	2,703,644
		Other	61,844	73,069	84,779	97,964	111,643	183,497
		Total	3,917,021	4,154,912	4,413,605	4,698,024	4,992,591	6,249,230

6. Development projections summary

The planning assumptions provide a consolidated view of the projected residential and non-residential growth across the Townsville local government area (LGA) over the LGIP projection period and under the Full Development Scenario (FDS). These projections represent the outcome of the population, dwelling and employment modelling described in the preceding sections and form the basis for estimating infrastructure demand across the trunk infrastructure networks.

The projections reflect the planning scheme's intent, planned density assumptions, developable land capacity, and the spatial allocation of growth through the LGIP modelling framework. The following sections summarise the key residential and non-residential growth trends identified in the planning assumptions.

6.1 Overview of residential growth projections

The planning assumptions project continued residential growth across the Townsville local government area (LGA) over the LGIP planning horizon, with the majority of growth occurring within the Priority Infrastructure Area and concentrated in the principal urban growth fronts. Resident population is projected to increase from 195,070 persons in 2021 to 244,692 persons by 2041, reaching 352,204 persons under the Full Development Scenario (FDS). This equates to growth of approximately 49,600 persons between 2021 and 2041, with substantial additional longer-term growth identified under the FDS.

Population growth is not distributed evenly across the LGA. The strongest projected residential growth to 2041 occurs in the Northern Beaches, increasing from 20,962 to 40,326 persons, followed by Bohle Plains, from 4,395 to 12,565 persons; Bohle Mt Louisa, from 10,528 to 14,284 persons; and Upper Ross, from 18,466 to 20,911 persons. The FDS indicates further long-term residential capacity in Northern Beaches, Eastern Rural, Southern Suburbs and Upper Ross, reflecting the role of these areas in accommodating future urban expansion. By 2041, around 88% of the projected resident population is projected to be located within the Priority Infrastructure Area, confirming that most growth is intended to be supported within the planned trunk infrastructure framework.

Dwelling growth follows a similar spatial pattern. Total dwellings are projected to increase from 77,772 in 2021 to 96,739 by 2041, and further to 139,144 under the FDS. Growth is primarily driven by single dwellings, which increase from 62,536 to 79,598 dwellings by 2041, while multiple dwellings increase from 14,734 to 16,449 dwellings over the same period. Longer-term growth under the FDS shows a stronger increase in multiple dwellings, particularly in areas with higher planned densities. The most significant dwelling growth is projected in Northern Beaches, Bohle Plains, Bohle Mt Louisa, Southern Suburbs and Upper Ross, while established areas such as Central Suburbs, Kirwan and South Townsville show comparatively limited change over the projection period.

Overall, the residential growth projections indicate a pattern of continued expansion within existing serviced urban areas, supported by planned greenfield and infill development opportunities, with longer-term residential growth extending into identified future development areas under the FDS.

6.2 Overview of non-residential growth projections

The planning assumptions also project substantial non-residential growth across the Townsville LGA over the LGIP planning horizon. Total employment is projected to increase from 85,397 jobs in 2021 to 108,068 jobs by 2041, reaching 134,040 jobs under the FDS. This represents growth of approximately 22,700 jobs over the 2021-2041 period, with further long-term growth identified under the full development scenario. Employment growth is concentrated predominantly within established urban areas and strategic employment precincts.

The largest employment concentrations and increases are projected in the Southern Suburbs, City to Pallarenda, Bohle Mt Louisa, and Central Suburbs, reflecting their continuing role as key service, industrial, commercial, and employment locations. By 2041, approximately 95% of total projected employment remains within the Priority Infrastructure Area, indicating a strong alignment between future employment growth and the planned urban and infrastructure-serviced footprint.

Projected non-residential floorspace also increases significantly over the planning horizon, from approximately 3.92 million m² in 2021 to 4.99 million m² by 2041, increasing further to 6.25 million m² under the FDS. The largest concentrations of non-residential floorspace are projected in Southern Suburbs, Bohle Mt Louisa, Central Suburbs and City to Pallarenda, which together accommodate a substantial share of the LGA's future employment and business activity.

The projections indicate that non-residential growth remains focused on established centres, industrial precincts and employment areas, while the FDS provides for additional longer-term business and industrial expansion in selected growth locations. This pattern supports efficient use of infrastructure, reinforces the role of major activity nodes, and aligns future employment development with the broader urban structure assumed in the LGIP.

7. Implementation, monitoring and review

This section outlines how the planning assumptions, development projections and infrastructure demand projections documented in this Extrinsic Material Report are intended to be applied, monitored and reviewed over time.

7.1 Role in LGIP implementation

The planning assumptions and associated projections provide the technical foundation for the implementation of the LGIP, including:

- planning and sequencing of trunk infrastructure delivery;
- refinement and application of the Priority Infrastructure Area (PIA);
- coordination of infrastructure planning across networks; and
- informing infrastructure charging, funding and delivery discussions.

This Extrinsic Material Report supports implementation by providing transparency around the assumptions and methodologies underpinning the LGIP.

7.2 Monitoring of growth and development

Council may monitor actual growth and development outcomes over time, including:

- population change;
- dwelling delivery;
- non-residential development; and
- spatial distribution of development relative to Growth Model Zones (GMZs).

Monitoring outcomes may be used to assess whether development is occurring broadly in line with the planning assumptions adopted in the LGIP.

7.3 Review and refinement

The planning assumptions and projections may be reviewed and refined through future LGIP amendment processes to reflect:

- updated Census or population projection data;
- changes to the planning scheme;
- changes in infrastructure servicing capacity;
- shifts in development delivery patterns; or
- improved technical information.

As non-statutory material, this Extrinsic Material Report may be updated to reflect refined data or methodologies without requiring amendment to the LGIP, provided the adopted planning assumptions remain unchanged.

7.4 Use of extrinsic material over time

This report is intended to:

- assist in the interpretation of the LGIP;
- support future infrastructure planning and coordination; and
- provide a consistent technical reference for future LGIP reviews and amendments.

The report does not have a statutory effect and should be read in conjunction with the LGIP planning assumptions and schedules.

8. Conclusion

This Extrinsic Material Report documents the evidence base, parameters and methodology used to prepare the LGIP planning assumptions for Townsville City Council.

The report provides transparency into how growth and development projections have been derived, how they have been spatially allocated through Growth Model Zones (GMZs), and how they are converted into demand for trunk infrastructure networks.

In preparing the planning assumptions, professional judgement has been applied where necessary to interpret data, reconcile differing information sources and reflect Townsville-specific conditions that cannot be fully captured through quantitative analysis alone. The application of professional judgement has been structured, conservative, and transparent, and has been used to support assumptions that are realistic, achievable, and implementable through the LGIP.

Professional judgement has not replaced evidence-based analysis, nor has it altered statutory planning controls. Rather, it has been used to contextualise technical inputs, particularly when theoretical development capacity exceeds realistic delivery potential, or when infrastructure servicing, market conditions, or sequencing considerations influence development outcomes.

By clearly separating non-statutory explanatory material from the statutory LGIP, this report supports:

- efficient State interest review;
- consistent interpretation of the planning assumptions;
- coordinated infrastructure planning and sequencing; and
- future monitoring and amendment of the LGIP.

This Extrinsic Material Report is non-statutory and may be updated from time to time to reflect improved data availability, refined methodologies or updated background information, without requiring amendment to the LGIP, provided the adopted planning assumptions remain unchanged.



Local Government Infrastructure Plan Amendment 2026 Extrinsic Material Report: *Trunk Infrastructure Desired Standards of Service (DSS) & Demand Rates*

Final - July 2026

Townsville City Council

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1. Background

Townsville City Council has reviewed and updated the infrastructure demand rates and Desired Standards of Service (DSS) as part of the Local Government Infrastructure Plan (LGIP) amendment.

The LGIP establishes the strategic framework for planning and delivering trunk infrastructure required to support existing communities and future growth across the Townsville local government area. The LGIP integrates planning assumptions, infrastructure demand, network performance standards, Plans for Trunk Infrastructure (PFTI) and the Schedule of Works to ensure that infrastructure planning remains aligned with projected development and population growth.

Infrastructure demand rates and DSS are key components of the LGIP framework. Demand rates are used to translate projected residential and non-residential development into infrastructure demand, while the DSS define the level of service that trunk infrastructure networks are intended to achieve when servicing that demand.

The LGIP amendment applies to the following trunk infrastructure networks:

- water supply
- sewerage
- transport (roads)
- pathways and cycleways (active transport)
- public parks.

The review and update of the demand rates and DSS have been undertaken to ensure alignment with the amended planning assumptions, current planning scheme provisions, contemporary infrastructure planning practices and Townsville-specific development and servicing characteristics.

Infrastructure planning has been undertaken having regard to the existing trunk infrastructure networks, declared water and sewer service areas, planned growth locations and the anticipated sequencing of development identified within the planning assumptions. Together, these inputs provide the basis for determining future infrastructure requirements and identifying infrastructure necessary to service projected growth.

While stormwater infrastructure remains an important component of Council's broader infrastructure planning framework, it is not identified as a trunk infrastructure network within the LGIP and is therefore outside the scope of this report.

The amendments seek to provide a contemporary and transparent framework for infrastructure planning that supports growth, informs infrastructure investment decisions and assists in maintaining the long-term financial sustainability of infrastructure delivery across the local government area.

1.1 Background technical documents

The review and preparation of the LGIP amendment has been informed by Council's existing strategic infrastructure planning, network modelling and area-specific infrastructure strategy reports.

For the water supply network, this includes the Regional Water Infrastructure Planning Report, which identifies the staged trunk water infrastructure required to service Townsville to 2026 and 2051, including bulk water mains, reservoirs, pump stations and trunk delivery mains. The report confirms that the adopted strategy and associated works are intended to inform Council's LGIP and capital works program.

The review has also been informed by Council's Water Reservoir Strategy Report, which identifies future reservoir storage requirements and highlights existing and future storage deficits across key service areas.

For the sewerage network, the review has been informed by Council's strategic sewerage infrastructure planning reports and development application infrastructure reports, including reports for the Northern Areas, East-West Suburbs, Southern Suburbs, Upper Ross Suburbs, Louisa Suburbs and Magnetic Island. These reports provide background on existing network constraints, proposed servicing strategies, pump station catchments, treatment plant catchments and infrastructure responses required to support growth.

These technical documents have informed the review of demand rates, DSS, network servicing assumptions and the identification of trunk infrastructure requirements. They also provide important background to the preparation of the Plans for Trunk Infrastructure and Schedule of Works.

A list of the key technical documents considered is provided in

1.2 Role and status of this extrinsic material

This Extrinsic Material Report provides supporting information for the infrastructure demand rates and DSS adopted in the LGIP.

The report documents the approach used to review and update the demand rates, outlines the structure of the DSS, and explains how these components are applied within the LGIP framework.

This report does not form part of the LGIP and does not have statutory effect. It does not establish, amend or override the demand rates or DSS adopted in the LGIP.

Rather, it provides explanatory material to support interpretation, State interest review, the implementation of the LGIP, and the future refinement of infrastructure planning.

As non-statutory material, this report may be updated over time to reflect improved data, modelling techniques, planning assumptions, or infrastructure planning methodologies, without requiring amendment to the LGIP, provided that the adopted LGIP components remain unchanged.

1.3 Purpose of this report

The purpose of this report is to:

- support interpretation of the infrastructure demand rates and DSS
- explain the role of demand rates and DSS within the LGIP framework
- document the key changes incorporated through the LGIP amendment

- describe the methodology used to establish demand rates
- provide context for the identification and planning of trunk infrastructure
- explain how demand rates are applied across infrastructure networks
- support future implementation, review and refinement of the LGIP.

This report complements the LGIP by providing context and explanation, rather than restating the provisions of the planning scheme.

1.4 Context within the LGIP framework

The LGIP establishes an integrated approach to infrastructure planning by linking projected growth to infrastructure demand, network performance standards and infrastructure delivery.

Planning assumptions define the scale, location and timing of future development. Infrastructure demand rates are then applied to convert this development into measurable demand across each trunk infrastructure network. The DSS establish the performance standards that networks are intended to achieve when servicing that demand.

These inputs inform network modelling, infrastructure planning and the identification of trunk infrastructure projects required to service growth. The resulting infrastructure requirements are reflected within the Plans for Trunk Infrastructure, Schedule of Works and associated LGIP financial model.

Accordingly, the demand rates and DSS form a critical link between projected growth and the infrastructure required to support that growth in a coordinated, efficient and financially sustainable manner.

2. Purpose of Infrastructure Demand Rates and Desired Standards of Service

Infrastructure demand rates and Desired Standards of Service (DSS) provide the basis for converting projected development into infrastructure requirements and defining the performance outcomes that trunk infrastructure networks are intended to achieve.

Demand rates enable development to be expressed in infrastructure terms by translating dwellings, employment and land use into measurable demand across each network. This allows infrastructure requirements to be quantified in a consistent manner across the local government area.

The DSS establish the performance standards that infrastructure networks are required to achieve in servicing that demand. They define acceptable levels of network performance, capacity and service outcomes, and provide a basis for assessing whether infrastructure is adequate to support development.

Together, these components ensure that infrastructure planning is aligned with both the scale of growth and the level of service expected across the network.

2.1 Relationship to trunk infrastructure planning

Infrastructure demand rates are applied to the planning assumptions to estimate demand generated by future development across the local government area. The planning assumptions identify the location, timing and scale of growth, allowing demand to be spatially allocated to relevant planning catchments, service areas and infrastructure networks.

This spatial allocation forms a key input into network modelling, which assesses existing and future demand against available network capacity and the adopted Desired Standards of Service. This process identifies where existing infrastructure has capacity, where constraints exist, and where upgrades or new trunk infrastructure are required.

The outputs inform the Plans for Trunk Infrastructure and Schedule of Works.

2.2 Relationship to other LGIP components

Demand rates and DSS are applied within the broader LGIP framework alongside planning assumptions, the Priority Infrastructure Area, the Plans for Trunk Infrastructure (PFTI) and the Schedule of Works (SOW).

Planning assumptions define the scale and distribution of growth. Demand rates convert this growth into infrastructure demand, and the DSS define how that demand is to be serviced. The outputs of this process inform the identification, sequencing and costing of trunk infrastructure.

2.3 Realistic and achievable infrastructure outcomes

The demand rates and DSS have been developed to reflect development patterns and service outcomes that are achievable within the Townsville local government area.

This includes consideration of local land-use characteristics, infrastructure network constraints, and servicing conditions. It also reflects the practical realities of infrastructure delivery, including the need to balance service outcomes with the cost and feasibility of infrastructure provision.

2.4 Role in LGIP implementation

Infrastructure demand rates and DSS provide a consistent basis for implementing the LGIP and assessing infrastructure requirements over time.

They support ongoing infrastructure planning, inform decision-making on infrastructure delivery, and provide a reference point for monitoring development patterns and network performance. Where required, they may be reviewed and refined as part of future LGIP amendments.

3. Infrastructure Demand Rate Framework

3.1 Overview

The infrastructure demand rate framework provides the basis for quantifying the demand generated by development across trunk infrastructure networks.

Demand rates have been developed to align with the planning scheme and are applied at the zone, precinct, and sub-precinct levels. This ensures that the demand generated by development reflects the intended land use outcomes and development intensity across the Townsville local government area.

Demand is expressed in units appropriate to each infrastructure network. For water supply and sewerage, demand is expressed in equivalent person (EP) per day. For transport and active transport networks, demand is expressed in trip ends per day, reflecting movement patterns. For public parks and community facilities, demand is expressed as the Equivalent Residential Population (ERP), which reflects population-based service requirements.

This approach enables demand to be consistently quantified across all infrastructure networks and provides a common basis for infrastructure modelling and planning.

3.2 Spatial variation

Infrastructure demand varies across the local government area due to differences in urban form, size of urban development, development density and servicing conditions. The demand framework, therefore, incorporates spatial variation to ensure that demand rates are responsive to local characteristics.

In established urban areas, higher densities and more efficient infrastructure networks typically result in different demand profiles compared to lower-density or rural areas. Similarly, areas with unique servicing conditions, such as Magnetic Island, exhibit distinct infrastructure demand characteristics due to network constraints and operational considerations.

By incorporating spatial variation, the demand framework avoids reliance on averaged demand rates and provides a more accurate representation of infrastructure demand across the local government area.

3.3 Development typology

The demand framework distinguishes between infill development and broadhectare development to reflect differences in how infrastructure networks are utilised and expanded.

Infill development occurs within established areas where infrastructure networks are already in place. In these areas, development typically utilises existing infrastructure capacity, and demand is accommodated through incremental upgrades or the optimisation of existing networks.

Broadhectare development occurs in greenfield or expansion areas where new infrastructure networks are required. In these areas, infrastructure must be planned and delivered to service future development, often requiring significant upfront investment.

Recognising this distinction allows the demand framework to better reflect the differing infrastructure implications of development across the local government area.

3.4 Demand units and application

Demand rates are applied to the planning assumptions to quantify infrastructure demand across trunk infrastructure networks.

For residential development, demand is derived from the number of dwellings and the associated population. For non-residential development, demand is derived from land-use intensity, typically measured by gross floor area or employment.

These inputs are converted into network-specific demand using the adopted demand rates. The resulting demand is then aggregated at the planning catchment level and used as an input into infrastructure modelling.

This process ensures that infrastructure demand is directly linked to the scale and distribution of development and can be consistently applied across the LGIP.

3.5 Relationship to detailed demand rate tables

The demand framework is supported by detailed demand generation tables that define demand rates by zone, precinct, and sub-precinct across the local government area.

These tables differentiate demand by:

- land use type
- development intensity
- geographic location
- development typology

The detailed tables form the primary input into infrastructure modelling and should be read in conjunction with this report to understand how demand is derived and applied.

4. Infrastructure Demand Rates

4.1 Overview

Infrastructure demand rates adopted in the LGIP are defined in detailed demand generation tables that apply across zones, precincts and sub-precincts within the Townsville local government area. The demand rates have been developed using a combination of standard infrastructure planning methodologies and Townsville-specific calibration. For the water supply and sewerage networks, projected water demand (L/day) and wastewater generation were converted to Equivalent Persons (EP) using the assumptions adopted by the Council for infrastructure planning and network modelling. This provides a consistent demand unit for assessing network capacity and identifying future requirements for trunk infrastructure.

These tables distinguish between development below and above defined thresholds, reflecting differences between infill and broadhectare development contexts. The demand rates are expressed in units appropriate to each infrastructure network and provide the basis for quantifying demand for infrastructure modelling.

4.2 Structure of demand generation rates

The demand generation rates are set out in:

- Table 4.3.1 - Planned density and demand generation rate for a trunk infrastructure network Greater than threshold
- Table 4.3.2 - Planned density and demand generation rate for a trunk infrastructure network (Less than threshold)

The tables define demand rates by reference to planning scheme zones, precincts and development intensity, and incorporate variation across geographic areas are presented in Table SC3.1.3a & b - Planned density and demand generation rate for a trunk infrastructure network in Part 4 of the Planning Scheme.

The use of thresholds enables differentiation between development within established areas and development within growth areas, where infrastructure requirements and servicing approaches differ.

4.3 Summary demand rates

Representative demand rates for key land uses are summarised below to assist interpretation. These values are derived from the detailed LGIP tables and reflect typical demand characteristics.

Table 4.3.1 - Planned density and demand generation rate for a trunk infrastructure network Greater than threshold

Note: Greater than threshold refers to 'broadhectare' densities, typically expected in large 'greenfield' conditions.

Column 1 - Area Classification	Column 3 - Planned Density			Column 4 - Demand generation rate for a trunk infrastructure network (per net developable Ha)				
	Plot ratio res.	Plot ratio non-res.	Total dwellings (no. HA)	Water (EP)	Sewerage (EP)	Roads (TE/d)	Pathways (TE/d)	Parks (ERP)
Community Facilities	-	-	-	-	-	-	-	-
Environmental Management	-	-	-	-	-	-	-	-
Character Residential	0.26	0.18	9.3	26	19	77	3	25
District Centre	-	0.23	-	25	25	235	8	-
Emerging Communities	0.24	0.16	12.7	37	27	108	4	34
High Density Residential	4.03	3.08	201.3	593	512	3,202	118	342
High Impact Industry	-	-	-	-	-	-	-	-
Local Centre	0.46	0.22	1.9	26	26	225	8	3
Low Density Residential	0.24	-	12.2	35	25	98	4	33
Low Impact Industry	-	0.19	-	24	19	167	6	-
Major Centre	-	0.32	-	38	39	367	12	-
Medium Density Residential	0.67	-	36.5	78	56	218	9	72
Medium Impact Industry	-	0.21	-	26	21	183	6	-
Mixed Use	0.30	0.20	4.1	31	29	246	9	7
Neighbourhood Centre	0.37	0.18	1.6	23	23	207	7	3
Open Space	-	-	-	-	-	-	-	-
Principal Centre	2.40	2.16	48.1	432	376	3,521	122	82
Rural Residential	-	0.06	2.0	7	6	21	1	6
Rural	-	0.00	0.1	0	0	4	0	0
Specialised Centre	-	-	-	-	-	-	-	-
Special Purpose	-	-	-	-	-	-	-	-
Sport and Recreation	-	-	-	-	-	-	-	-
Arcadia Central	0.83	0.22	20.7	66	58	386	14	35
Aitkenvale Medium Density	0.68	0.65	44.2	112	91	502	19	79
Aitkenvale Village	0.83	0.78	55.4	138	111	631	24	94
Balgol Beach Golf Course	-	-	-	-	-	-	-	-
Burdell	-	-	-	-	-	-	-	-
Bayswater Road Medical	-	0.31	-	60	68	617	21	-
Cungulla	-	-	9.3	36	22	77	3	21
Civic Administration	-	2.64	-	589	537	5,736	197	-
Sturt Street Gateway	0.37	0.28	3.7	49	44	447	15	6
Charters Towers Road Business	0.38	0.29	1.9	48	49	451	15	3
Domain Central	-	0.22	-	23	24	227	8	-
Fulham Road Medical	-	0.30	-	57	65	585	20	-
Flinders Street Retail	-	2.94	-	341	352	3,496	118	-
Grazing	-	0.00	0.0	0	0	0	0	0
Horticulture	-	0.00	0.0	0	0	2	0	0
Hyde Park Major Centre	0.87	0.83	48.8	128	102	630	23	83
Hyde Park Medium Density	0.87	0.83	65.6	134	99	457	18	111
Jensen	-	0.00	0.1	0	0	3	0	0
Kings Road	0.86	0.82	48.3	133	114	692	26	82

Kirwan Traders	-	0.18	-	29	32	288	10	-
Mixed Farming	-	0.00	0.0	0	0	1	0	0
Nelly Bay Gateway	-	0.30	-	51	58	516	18	-
Nelly Bay Tourist	-	0.78	-	141	161	1,437	49	-
North Ward Villages	2.17	1.95	144.6	344	276	1,496	57	246
Picnic Bay	0.37	0.28	15.5	55	50	342	12	26
Picnic Bay Community Facilities	-	0.36	-	67	80	697	24	-
Palmer Street	3.56	2.72	59.3	520	538	4,457	155	101
Riverway	-	0.22	-	45	47	454	16	-
Ross River Road Corridor	0.30	0.23	15.4	41	32	184	7	28
The Strand	0.69	0.66	38.7	111	95	593	22	66
Stables	0.30	-	8.3	24	17	67	3	22
South Townsville Railyards and Dean Park	-	-	-	-	-	-	-	-
Workers Cottages	-	-	-	-	-	-	-	-
Wotton Street	0.30	0.20	19.0	48	36	164	6	41
Aitkenvale Centre Core	0.83	0.78	27.3	118	109	795	28	46
Aitkenvale Centre Frame	0.39	0.30	19.7	67	56	401	15	33
Thuringowa Centre Support	-	0.18	-	36	36	358	12	-
Thuringowa Drive	0.37	0.18	7.4	42	37	317	11	12
TSDA Buffer	-	-	-	-	-	-	-	-
TSDA Environmental Conservation	-	-	-	-	-	-	-	-
TSDA Ecological Corridor & Offsets	-	-	-	-	-	-	-	-
TSDA High Impact Industry	-	0.22	-	25	17	141	5	-
TSDA Low Impact Industry	-	0.22	-	27	20	177	6	-
TSDA Low Medium Impact Industry	-	0.22	-	28	24	209	7	-
Major Centre Castletown	-	-	-	-	-	-	-	-
Major Centre Fringe 1	0.87	0.83	58.6	146	115	681	26	100
Major Centre Fringe 2	-	0.22	-	29	30	305	10	-
Major Centre Fringe 3	0.38	0.18	18.9	48	39	223	8	32
Major Centre North Shore	-	0.22	-	24	26	239	8	-
Mater Hospital	-	-	-	-	-	-	-	-
Mater Hospital Frame 1	-	0.18	-	34	40	352	12	-
Mater Hospital Frame 2	-	0.25	-	45	53	482	17	-
TSDA Medium High Impact Industry	-	0.21	-	25	18	180	6	-
TSDA Medium High Impact Port Related Industry	-	0.21	-	23	15	150	5	-
TSDA Medium Impact Port Related Industry	-	0.21	-	26	21	183	6	-
TSDA Materials Transport	-	-	-	-	-	-	-	-
Rural Residential Ross River Dam Catchment	-	0.01	0.2	2	1	8	0	1
Rural Ross River Dam Catchment	-	0.00	0.0	0	0	0	0	0
TSDA Transition Precinct	-	-	-	-	-	-	-	-
TSDA Transport and Support Services	-	0.22	-	27	21	189	6	-
TSDA Transport and Support Services Sub-precinct	-	0.22	-	27	21	189	6	-

Table 4.3.2- Planned density and demand generation rate for a trunk infrastructure network
Less than threshold

Note: Less than threshold refers to 'street-block' densities, typically expected in smaller 'infill' conditions.

Column 1 - Area Classification	Column 3 - Planned Density			Column 4 - Demand generation rate for a trunk infrastructure network (per net developable Ha)				
	Plot ratio res.	Plot ratio non-res.	Total dwellings (no. HA)	Water (EP)	Sewerage (EP)	Roads (TE/d)	Pathways (TE/d)	Parks (ERP)
Community Facilities	-	-	-	-	-	-	-	-
Environmental Management	-	-	-	-	-	-	-	-
Character Residential	0.38	0.25	13.3	38	27.5	109	4	36
District Centre	-	0.25	-	27	27.5	255	9	-
Emerging Communities	0.38	0.25	20.2	58	42.7	171	7	55
High Density Residential	5.23	4.00	261.4	770	664.4	4,159	153	444
High Impact Industry	-	-	-	-	-	-	-	-
Local Centre	0.53	0.25	2.2	29	29.6	259	9	4
Low Density Residential	0.38	-	18.7	53	38.8	151	6	51
Low Impact Industry	-	0.25	-	31	24.4	217	7	-
Major Centre	-	0.40	-	48	49.5	464	16	-
Medium Density Residential	0.95	-	52.1	111	79.5	312	13	102
Medium Impact Industry	-	0.25	-	32	24.8	221	7	-
Mixed Use	0.38	0.25	5.2	39	36.7	311	11	9
Neighbourhood Centre	0.53	0.25	2.2	33	32.8	292	10	4
Open Space	-	-	-	-	-	-	-	-
Principal Centre	3.34	3.00	66.8	600	522.2	4,890	170	113
Rural Residential	-	0.07	2.4	8	6.7	24	1	7
Rural	-	0.00	0.1	0	0.2	4	0	0
Specialised Centre	-	-	-	-	-	-	-	-
Special Purpose	-	-	-	-	-	-	-	-
Sport and Recreation	-	-	-	-	-	-	-	-
Arcadia Central	0.95	0.25	23.8	76	66.2	444	16	40
Aitkenvale Medium Density	0.95	0.90	61.4	155	126.9	697	26	109
Aitkenvale Village	0.95	0.90	63.7	159	127.3	725	27	108
Balgall Beach Golf Course	-	-	-	-	-	-	-	-
Burdell	-	-	-	-	-	-	-	-
Bayswater Road Medical	-	0.40	-	77	87.3	790	27	-
Cungulla	-	-	12.5	49	30.2	104	4	28
Civic Administration	-	3.00	-	670	610.7	6,518	224	-
Sturt Street Gateway	0.53	0.40	5.3	70	63.6	639	22	9
Charters Towers Road Business	0.53	0.40	2.6	66	66.9	618	21	4
Domain Central	-	0.25	-	27	28.1	261	9	-
Fulham Road Medical	-	0.40	-	77	87.3	790	27	-
Flinders Street Retail	-	3.00	-	348	359.7	3,567	121	-
Grazing	-	0.00	0.0	0	0.0	0	0	0
Horticulture	-	0.00	0.0	0	0.1	2	0	0

Hyde Park Major Centre	0.95	0.90	53.0	139	110.6	685	26	90
Hyde Park Medium Density	0.95	0.90	71.3	146	107.2	497	20	121
Jensen	-	0.00	0.1	0	0.3	4	0	0
Kings Road	0.95	0.90	53.0	147	125.5	760	28	90
Kirwan Traders	-	0.25	-	40	44.8	405	14	-
Mixed Farming	-	0.00	0.0	0	0.1	2	0	0
Nelly Bay Gateway	-	0.40	-	69	78.9	697	24	-
Nelly Bay Tourist	-	0.90	-	162	185.4	1,651	57	-
North Ward Villages	3.34	3.00	222.5	529	424.5	2,301	88	378
Picnic Bay	0.53	0.40	21.9	77	70.4	482	17	37
Picnic Bay Community Facilities	-	0.40	-	74	88.4	775	27	-
Palmer Street	5.23	4.00	87.1	765	791.4	6,554	228	148
Riverway	-	0.25	-	52	54.2	522	18	-
Ross River Road Corridor	0.53	0.40	27.0	71	56.3	323	12	48
The Strand	0.95	0.90	53.0	152	130.6	812	30	90
Stables	0.38	-	10.5	30	21.7	85	3	28
South Townsville Railyards and Dean Park	-	-	-	-	-	-	-	-
Workers Cottages	-	-	-	-	-	-	-	-
Wotton Street	0.38	0.25	24.1	61	45.9	207	8	52
Aitkenvale Centre Core	0.95	0.90	31.4	136	125.5	913	32	53
Aitkenvale Centre Frame	0.53	0.40	26.3	90	74.5	535	19	45
Thuringowa Centre Support	-	0.25	-	50	49.3	497	17	-
Thuringowa Drive	0.53	0.25	10.5	60	53.5	453	16	18
TSDA Buffer	-	-	-	-	-	-	-	-
TSDA Environmental Conservation	-	-	-	-	-	-	-	-
TSDA Ecological Corridor & Offsets	-	-	-	-	-	-	-	-
TSDA High Impact Industry	-	0.25	-	29	19.1	162	5	-
TSDA Low Impact Industry	-	0.25	-	31	22.9	204	7	-
TSDA Low Medium Impact Industry	-	0.25	-	33	27.1	240	8	-
Major Centre Castletown	-	-	-	-	-	-	-	-
Major Centre Fringe 1	0.95	0.90	63.7	159	124.8	741	28	108
Major Centre Fringe 2	-	0.25	-	33	33.5	342	12	-
Major Centre Fringe 3	0.53	0.25	26.3	67	54.4	310	12	45
Major Centre North Shore	-	0.25	-	27	29.3	268	9	-
Mater Hospital	-	-	-	-	-	-	-	-
Mater Hospital Frame 1	-	0.25	-	48	57.2	502	17	-
Mater Hospital Frame 2	-	0.40	-	72	84.8	764	26	-
TSDA Medium High Impact Industry	-	0.25	-	30	22.0	217	7	-
TSDA Medium High Impact Port Related Industry	-	0.25	-	27	18.3	181	6	-
TSDA Medium Impact Port Related Industry	-	0.25	-	32	24.8	221	7	-
TSDA Materials Transport	-	-	-	-	-	-	-	-
Rural Residential Ross River Dam Catchment	-	0.01	0.3	2	1.3	8	0	1
Rural Ross River Dam Catchment	-	0.00	0.0	0	0.0	0	0	0
TSDA Transition Precinct	-	-	-	-	-	-	-	-
TSDA Transport and Support Services	-	0.25	-	31	24.4	217	7	-
TSDA Transport and Support Services Sub-precinct	-	0.25	-	31	24.4	217	7	-

4.4 Interpretation of demand rates

The demand rates demonstrate clear variation across land uses and development contexts.

Higher density residential and centre-based land uses generate significantly greater demand per hectare across all infrastructure networks, particularly for transport and water supply. In contrast, lower-intensity and industrial land uses generate comparatively lower demand for water and sewerage services, while still contributing to transport demand.

The distinction between infill and broadhectare development is also evident. Infill development generally reflects higher demand per hectare due to greater development intensity and higher utilisation of existing infrastructure networks. Broadhectare development exhibits lower demand per hectare, reflecting lower densities and different development patterns, but typically requires the provision of new infrastructure to support growth.

These differences are reflected in the adopted demand rates to ensure that infrastructure demand is appropriately matched to the location and intensity of development. This supports more accurate network modelling and the identification of trunk infrastructure required to service future growth.

4.5 Role in infrastructure planning

Demand rates establish the scale of demand that infrastructure networks are required to service and provide a key input to infrastructure modelling.

When applied in conjunction with the Desired Standards of Service, the demand rates inform the identification and sizing of infrastructure required to support development. The resulting infrastructure requirements are reflected in the Plans for Trunk Infrastructure and the Schedule of Works.

5. Desired Standards of Service

Trunk infrastructure is the higher-order infrastructure network identified by Council to service existing and future development across the Townsville local government area. For the purpose of the LGIP, trunk infrastructure is identified for the water supply, sewerage, roads, pathways and cycleways, and public parks networks.

The Desired Standards of Service (DSS) define the performance standards that trunk infrastructure networks are intended to achieve in servicing existing and future development. They provide the benchmark for assessing network performance and determining when infrastructure augmentation, expansion or new trunk infrastructure is required.

The DSS establish the benchmark against which infrastructure network performance is assessed and provide a consistent basis for determining when infrastructure augmentation or expansion is required. In this way, they play a central role in translating growth into infrastructure requirements and ensuring that infrastructure networks continue to operate effectively as development occurs.

The DSS are incorporated within the planning scheme and reflect a combination of legislative requirements, adopted planning scheme policies and recognised industry standards. They are intended to provide a practical and measurable framework for infrastructure planning, balancing service outcomes with the cost and feasibility of infrastructure delivery.

The DSS should be read in conjunction with Council's Development Manual and other adopted technical standards. The DSS define the intended level of service for strategic infrastructure planning purposes, while the Development Manual and associated design standards specify the detailed engineering, design and construction requirements for delivering that infrastructure.

This distinction ensures that the LGIP remains focused on strategic infrastructure planning outcomes, while detailed technical standards can be maintained and updated through Council's engineering policies, planning scheme policies and regional design standards without unnecessarily requiring amendment to the LGIP.

The DSS apply to the following trunk infrastructure networks:

- water supply
- sewerage
- roads
- pathways and cycleways (active transport)
- public parks and land for community facilities

Stormwater networks are not included within the LGIP.

5.1 Water supply network

As part of the LGIP amendment, the Desired Standards of Service (DSS) for the water supply network have been reviewed and updated to better distinguish between strategic infrastructure planning outcomes and detailed engineering design requirements. The revised DSS remove detailed design parameters that were previously embedded within the LGIP and instead rely on Council's Development Manual and the Cairns Townsville Mackay Water Alliance Design and Construction Code for detailed engineering standards. This approach reduces duplication, aligns with current engineering practice and allows technical standards to be updated independently of the LGIP.

The desired standards of service for the water supply network are to provide a safe, reliable and efficient potable water supply system that meets both regulatory requirements and community expectations.

Water quality is required to comply with the National Health and Medical Research Council (NHMRC) Australian Drinking Water Guidelines. This ensures that water supplied to the community meets established health standards and is suitable for consumption.

The water supply network must operate in accordance with the Water Act 2000 and the Water Supply (Safety and Reliability) Act 2008. These legislative frameworks establish requirements for system reliability, safety, and operational performance.

Infrastructure is to be designed and delivered in accordance with Council's planning scheme policies, including Schedule 6 - Development Manual, and relevant regional standards such as the Cairns Townsville Mackay Water Alliance Design and Construction Code. This ensures consistency in infrastructure design and facilitates integration with the broader network.

In addition to meeting performance requirements, the DSS emphasise the importance of operational efficiency. This includes minimising non-revenue water losses and ensuring that infrastructure is planned and delivered in a manner that supports long-term asset sustainability.

5.2 Sewerage network

As part of the LGIP amendment, the Desired Standards of Service for the sewerage network have been reviewed and updated to better distinguish between strategic infrastructure planning outcomes and detailed engineering design requirements. The revised DSS remove detailed design parameters that were previously embedded within the LGIP and instead rely on Council's Development Manual and the Cairns Townsville Mackay Water Alliance Design and Construction Code for detailed engineering standards. This reduces duplication, improves consistency with current engineering practice and allows technical standards to be updated independently of the LGIP.

The desired standards of service for the sewerage network are to provide a reliable and efficient system for the collection, transport, treatment and disposal of wastewater.

The sewerage network must operate in accordance with the Water Act 2000 and the Water Supply (Safety and Reliability) Act 2008, as well as all relevant environmental approvals and regulatory requirements. These requirements ensure that wastewater is managed in a manner that protects public health and minimises environmental impacts.

Infrastructure design and delivery must be consistent with Council's planning scheme policies and relevant regional standards. This ensures that sewerage infrastructure is fit for purpose and capable of accommodating projected growth.

Reliability is a key consideration for the sewerage network. System failures can result in significant environmental and public health risks, and the DSS therefore emphasise the need for infrastructure that is robust, well-maintained and capable of operating under a range of conditions.

5.3 Road network

As part of the LGIP amendment, the Desired Standards of Service (DSS) for the road network have been reviewed to better reflect contemporary transport planning practice and improve the relationship between strategic infrastructure planning and detailed engineering design. The revised DSS simplify the strategic performance measures included within the LGIP by

relying on Council's Development Manual and relevant Austroads guidance for detailed design requirements.

The amendments also include revisions to the adopted network performance criteria. These include increasing the maximum volume-to-capacity (V/C) ratio for residential roads and updating the maximum degree of saturation adopted for intersections. These changes recognise the different operating characteristics and performance expectations of residential and non-residential road networks, while ensuring that infrastructure planning continues to provide an appropriate balance between network efficiency, safety and infrastructure investment.

The desired standards of service for the road network are to provide a safe, efficient and functional transport system that supports the movement of people and goods.

The road network is structured as a hierarchy that distributes traffic across the local government area and supports both local access and regional movement. The DSS define acceptable levels of network performance through measurable indicators, including volume to capacity ratios and intersection performance.

Table 5.3.1 - Maximum Volume to Capacity Ratios

Infrastructure Item	Residential	Non-residential
Arterial	0.9 (LoS D)	0.7 (LoS C)
Sub-arterial	0.9 (LoS D)	0.7 (LoS C)
Major collector	0.9 (LoS D)	0.7 (LoS C)
State-controlled arterial	0.95 (LoS E)	0.95 (LoS E)

Table 5.3.2 - Intersection Performance

Infrastructure Item	Maximum Degree of Saturation
Traffic signals	0.9 (55 sec delay)
Roundabout	0.85 (35 sec delay)
Priority-controlled	0.8 (35 sec delay)
State-controlled signals	55 sec delay

These standards provide a clear and measurable basis for assessing network performance and identifying when upgrades or additional infrastructure are required. They also ensure that infrastructure planning balances efficiency, safety and cost considerations.

5.4 Pathways and cycleways network (active transport)

As part of the LGIP amendment, the Desired Standards of Service for the pathways and cycleways network have been reviewed to align with Council's current active transport framework and the Townsville City Plan, Schedule 6 - Development Manual. The revised approach relies on the Development Manual for detailed design standards, while the LGIP DSS focuses on the strategic level of service required for trunk pathways and cycleways.

The desired standards of service for the pathways and cycleways network are to provide a safe, connected and efficient active transport network that supports walking and cycling as viable transport modes.

The DSS establish level of service requirements for pathway and cycleway infrastructure, including pathway configuration, cycleway characteristics and network function. This provides a measurable basis for identifying trunk active transport infrastructure and assessing whether proposed infrastructure achieves the intended network role.

Active transport infrastructure plays an important role in supporting accessibility, reducing reliance on private vehicles and improving community health outcomes. The network is intended to connect residential areas with key destinations, including education facilities, activity centres, public transport nodes and recreational areas.

5.4.1 Trunk infrastructure definition

Pathways and cycleways infrastructure is identified as trunk infrastructure where it performs a strategic connectivity function within the network.

A pathway is considered trunk infrastructure where it forms part of a connected route servicing key destinations, including:

- education facilities such as schools, TAFE or tertiary institutions
- district and regional parks and sporting facilities
- major community and cultural facilities

Pathways are also considered trunk where they:

- are located within major centre or intensification areas
- form part of the Principal Cycle Network
- are located on defined recreational routes

This definition ensures that trunk infrastructure is focused on delivering strategic connectivity and provides clarity for infrastructure planning and the application of offsets.

5.4.2 Desired Standards of Service - Pathways

The Desired Standards of Service for pathway facilities are defined using Level of Service classifications that describe the type and quality of infrastructure provided.

The applicable standards vary depending on development context:

- new trunk roads - LoS C
- new non-trunk roads - LoS D
- existing roads - LoS E

Table 5.4.1 - Pathway Level of Service

LoS	Description
A	Shared use pathway $\geq$ 2.5m wide with no crossings
B	Shared use pathway $\geq$ 2.5m wide on both sides of road
C	Shared use pathway $\geq$ 2.5m on one side and pedestrian pathway $\geq$ 1.5m on the other
D	Shared use pathway $\geq$ 2.5m on one side, or pedestrian pathways $\geq$ 1.5m on both sides
E	Pedestrian pathway $\geq$ 1.5m on one side only
F	Demand exists but no pathway provided

These standards provide a measurable and consistent basis for assessing pathway provision and ensure that infrastructure is delivered in accordance with its function within the network.

5.4.3 Desired Standards of Service - Cycleways

Cycleway infrastructure is defined using Level of Service classifications based on facility type, width and level of separation from traffic.

The applicable standards are:

- Principal Cycle Network - LoS A or B
- other cycleways - LoS C

Table 5.4.2 - Cycleway Level of Service

LoS	Description
-----	-------------

A	Off-road cycleway $\geq 3.0\text{m}$ or on-road $\geq 2.5\text{m}$ with separator
B	On-road cycleway 1.8m-2.2m with separator
C	On-road cycleway 1.2m-1.5m
D	Narrow cycleway $< 1.2\text{m}$
E	No marked cycleway
F	Demand exists but no cycleway provided

These standards ensure that cycleway infrastructure is designed to provide an appropriate level of safety and functionality, particularly on strategic routes.

5.4.4 Pathway configuration and demand

Pathway width requirements are based on demand and function, ensuring that infrastructure is appropriately scaled to usage.

Table 5.4.3 - Pathway Width by Demand

Movements per day	Pathway width
0-50	1.5m
50-250	2.5m shared path
250-500	3.0m shared path
500-1000	4.0m shared path
1000-1750	Separate pedestrian and cycle facilities
>1750	Separate pedestrian and cycle facilities

This approach aligns infrastructure provision with demand and supports efficient use of resources.

5.4.5 Network integration and delivery

The pathways and cycleways network is to be integrated with the broader transport network and urban structure.

On major roads, pathways are generally required on both sides, with one side designed as a shared use pathway and the other as a pedestrian pathway. Where pathways are located outside the road corridor and form part of the trunk network, shared use pathways are to be provided.

Cycleways may be provided either on-road or off-road depending on context, with design requirements varying accordingly. This ensures that infrastructure is delivered in a manner that is both functional and responsive to local conditions.

5.5 Public parks and community facilities network

The desired standards of service for public parks and community facilities are to provide an accessible, appropriately distributed network of recreational and sporting spaces that meet community needs.

Provision is based on Equivalent Residential Population and is supported by accessibility standards that ensure reasonable access to different types of facilities.

Table 5.5.1 - Park Provision Rates

Infrastructure	Provision (m ² /ERP)
Recreation parks	4 (district) / 6 (regional)
Sports parks	8 (district) / 4 (regional)

Table 5.5.2 - Accessibility Standards

Infrastructure	Accessibility (km)
Recreation parks	2 (district) / 25 (regional)
Sports parks	5 (district) / 25 (regional)

The DSS also define land characteristics such as size, configuration and functionality to ensure that parks are capable of accommodating intended uses and providing appropriate levels of service.

5.6 Financial implications of DSS

The Desired Standards of Service have direct implications for the scale, timing and cost of trunk infrastructure delivery.

A key purpose of the DSS review has been to ensure that the adopted service standards support infrastructure outcomes that are both fit for purpose and financially sustainable. Several of the changes made through the LGIP amendment are intended to reduce unnecessary duplication, better align the DSS with Council's Development Manual and technical standards, and avoid embedding detailed design requirements within the LGIP.

This approach assists in improving financial sustainability by ensuring that the LGIP focuses on strategic service outcomes rather than over-specifying infrastructure requirements. It also provides Council with greater flexibility to update technical standards over time without requiring unnecessary LGIP amendments.

The DSS therefore represent a balance between network performance, legislative requirements, affordability and deliverability. The adopted standards influence the extent, configuration and sequencing of infrastructure identified in the Plans for Trunk Infrastructure and Schedule of Works, and are reflected in the LGIP financial model and infrastructure charging framework.

6. Assumptions and Limitations

The infrastructure demand rates and Desired Standards of Service (DSS) are based on the best available information at the time of preparation and reflect current planning assumptions, infrastructure planning practices and local conditions within the Townsville local government area.

The demand rates are derived from the adopted planning assumptions and are intended to represent typical development outcomes across zones, precincts and development contexts. Similarly, the DSS reflect the intended level of service based on current policy settings, legislative requirements and infrastructure planning objectives.

These components are intended for strategic infrastructure planning purposes and should not be interpreted as detailed design standards or as definitive requirements for individual development proposals. Detailed design and site-specific considerations are to be addressed through the development assessment process and relevant planning scheme policies.

The demand rates and DSS are subject to inherent uncertainty associated with long-term growth planning. This includes variability in population growth, land-use outcomes, development sequencing, and infrastructure usage patterns. Changes in any of these factors may influence infrastructure demand and network performance over time.

Accordingly, the LGIP should be regarded as a point-in-time representation of infrastructure planning, based on the information available at the time of preparation.

7. Implementation, Monitoring and Review

Council will monitor development activity, infrastructure demand and network performance to ensure that the LGIP remains responsive to changing conditions and continues to support coordinated infrastructure delivery.

Monitoring will include:

- tracking development outcomes against planning assumptions
- assessing infrastructure utilisation and network performance
- reviewing infrastructure delivery against the Schedule of Works

This process enables Council to identify where actual development differs from planned outcomes, or where infrastructure networks operate outside the intended DSS.

Where discrepancies arise, Council may investigate the underlying causes, including changes in development patterns, infrastructure constraints, or shifts in demand characteristics. This may inform adjustments to infrastructure planning, delivery priorities or future LGIP amendments.

Periodic review of the LGIP will be undertaken to ensure that it remains aligned with:

- updated planning assumptions
- changes to the planning scheme
- infrastructure network performance
- emerging infrastructure constraints or opportunities

Future LGIP amendments may include refinements to demand rates, DSS, and infrastructure planning approaches to reflect updated information and ensure continued alignment between growth and infrastructure provision.

8. Conclusion

Infrastructure demand rates and Desired Standards of Service provide a consistent and transparent framework for aligning growth with infrastructure planning and delivery.

Demand rates establish the scale of infrastructure required by translating projected development into measurable demand across trunk infrastructure networks. The DSS define the level of service that those networks are required to achieve, ensuring that infrastructure is planned and delivered to meet community expectations and operational requirements.

Together, these components underpin the identification, sizing and sequencing of trunk infrastructure and provide the basis for the Plans for Trunk Infrastructure and the Schedule of Works.

By establishing a clear and coordinated framework, the LGIP supports informed decision-making by Council, the State and the development industry, and facilitates the efficient and sustainable delivery of infrastructure across the Townsville local government area.

Appendix 1 - Background Technical Documents

The following strategic infrastructure planning, network modelling, and technical investigations were considered during the review and preparation of the Townsville City Council Local Government Infrastructure Plan (LGIP) Amendment. These documents provide the technical foundation for the review of the Desired Standards of Service (DSS), infrastructure demand rates, infrastructure modelling, servicing strategies, Plans for Trunk Infrastructure (PTI), and the Schedule of Works (SOW).

Document	Year	Purpose / Relevance to LGIP Amendment
Northern Common Pressure System Planning Report	2014	Established the long-term water and wastewater servicing strategy for the Mt St John Wastewater Treatment Plant catchment, including the Northern Areas, Louisa and Upper Ross growth areas.
Eastern and Western Suburbs Sewerage Infrastructure Planning Report	2017	Strategic sewerage servicing strategy for the eastern and western suburbs. Forms the basis for reviewing sewer infrastructure requirements and servicing assumptions.
Eastern and Western Suburbs Sewerage Infrastructure Planning Report (Draft)	2022	Updated review of servicing strategies incorporating revised modelling, updated growth assumptions and network investigations.
Southern Suburbs Sewerage Infrastructure Planning Report	2017	Strategic sewerage planning for southern growth areas including future servicing requirements and network upgrades.
Southern Suburbs Sewerage Infrastructure Planning Report (Draft)	2022	Updated servicing strategy incorporating revised growth forecasts, network modelling and infrastructure requirements.
Northern Townsville Sewerage Infrastructure Planning Report	2020	Strategic planning for sewer infrastructure servicing North Shore and surrounding northern growth areas.
Northern Townsville Sewerage Infrastructure Planning Report (Draft)	2022	Updated sewer servicing strategies reflecting revised growth patterns and alternative infrastructure solutions.
Upper Ross Area Sewerage Infrastructure Planning Report	2021	Strategic sewer servicing strategy for the Upper Ross catchment.

PS C6B (Vickers Road) Diversion Whole of Life Option Assessment	2025	Assessment of alternative long-term servicing options for Pump Station C6B and associated diversion strategy adopted for infrastructure planning.
Louisa Sewer Infrastructure Planning Report	2016	Strategic sewer servicing strategy for the Louisa catchment.
Louisa Suburbs Sewerage Infrastructure Planning Report (Draft)	2023	Updated sewer servicing strategy reflecting revised development patterns and servicing requirements.
Magnetic Island Sewerage Strategy Report	2011	Existing servicing strategy for Magnetic Island, including treatment and disposal considerations. Used as background pending future review.
Regional Water Infrastructure Planning Report	Various	Long-term water supply planning including bulk water mains, reservoirs, pump stations and trunk infrastructure required to support projected growth.
Water Reservoir Strategy Report	Various	Assessment of existing and future reservoir storage requirements, storage deficits and augmentation priorities.
Townsville Growth Model (Updated)	Current LGIP Amendment	Primary source of population, dwelling and employment projections used to establish planning assumptions and infrastructure demand.
Planning Assumptions Report	Current LGIP Amendment	Establishes the adopted growth assumptions underpinning the LGIP and infrastructure demand modelling.
Network Hydraulic and Transport Models	Current	Water, sewer and transport network models used to assess existing capacity, future demand and infrastructure requirements.
Development Application Infrastructure Assessments	Ongoing	Numerous infrastructure assessments prepared for major development applications, providing detailed local servicing information and informing network planning.

Major Development Investigations Considered

The following major developments and precinct investigations have also informed the review of servicing strategies and future infrastructure requirements where relevant:

Eastern & Western Suburbs

- Casino redevelopment
- Port of Townsville expansion
- North Rail Yards redevelopment

Southern Suburbs

- Townsville University Hospital expansion
- Lavarack Barracks expansion
- Department of Defence accommodation redevelopment (Leopold Street)
- James Cook University expansion

- Elliot Springs Emerging Community
- Stuart State Development Area
- Stuart Correctional Centre expansion

Northern Areas

- North Shore Community
- Sanctum Estate (East and West)
- Mt Low developments (including Ridge Paddock and Commercial Centre)
- Greater Ascot
- Harris Crossing
- MacKinnon's Reach

Upper Ross

- Riverside residential development
- Somers & Hervey residential development
- Ingenia land lease community

Louisa

- Cosgrove residential development
- Webb Industrial Estate
- Townsville Airport Terminal Redevelopment
- RAAF Base, Garbutt

Application to the LGIP Amendment

Collectively, these documents were used to:

- review existing network capacity and operational performance;
- validate and refine infrastructure demand rates;
- review and confirm the Desired Standards of Service (DSS);
- identify existing and future trunk infrastructure requirements;
- develop servicing strategies for water supply and sewerage networks;
- inform the preparation of the Plans for Trunk Infrastructure (PFTI);
- support preparation of the Schedule of Works (SOW);
- provide technical justification for the LGIP Amendment and associated infrastructure planning assumptions.

This appendix demonstrates that the LGIP Amendment has been prepared having regard to both Council's extensive historical strategic infrastructure planning work and the latest available technical investigations, ensuring continuity of planning while incorporating updated growth assumptions, network modelling and servicing strategies.



Local Government Infrastructure Plan Amendment 2026 Extrinsic Material Report: *Priority Infrastructure Area (PIA)*

Final – July 2026

Townsville City Council

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1. Background and role of the Priority Infrastructure Area

Under Schedule 2 of the *Planning Act 2016*, a Priority Infrastructure Area (PIA) is defined as the area within which trunk infrastructure is planned to service development over the Local Government Infrastructure Plan (LGIP) planning horizon. The Minister's Guidelines and Rules require the PIA to accommodate **at least 10 years and no more than 15 years of growth for urban purposes**. The PIA therefore identifies the area where development infrastructure networks are intended to support urban development within this planning timeframe.

The PIA has a particularly important role in Townsville due to the city's extensive urban area, diverse development patterns and significant long-term supply of land identified for future urban development. The PIA assists Council in distinguishing between land that may ultimately accommodate urban development and land where trunk infrastructure planning is prioritised within the LGIP planning horizon. In doing so, it supports the orderly sequencing of growth by aligning the planning of trunk infrastructure with anticipated development, infrastructure network capacity, existing development commitments and the strategic planning assumptions that underpin the LGIP. This approach provides a transparent and coordinated framework for infrastructure planning while ensuring that the PIA remains focused on land expected to accommodate urban development over the next 10 to 15 years.

In preparing the LGIP, Council has determined the extent of the PIA having regard to a range of factors, including:

- the planning assumptions for population, dwelling and employment growth
- the capacity and configuration of existing and planned trunk infrastructure networks
- the timing and sequencing of anticipated development
- the ability to coordinate infrastructure planning across infrastructure networks.

While the planning scheme may identify a broader supply of land that could potentially accommodate urban development over the longer term, the PIA focuses on those areas where infrastructure planning is prioritised within the LGIP planning horizon.

The PIA therefore provides the spatial framework that links the planning assumptions for growth with the planning of trunk infrastructure networks. By identifying where infrastructure planning is intended to occur within the LGIP timeframe, the PIA assists Council in coordinating infrastructure planning in a strategic and orderly manner.

The PIA should not be interpreted as representing the full extent of land that may ultimately be developed for urban purposes. Rather, it reflects those areas where development is expected to occur within the LGIP planning horizon and where trunk infrastructure networks can reasonably be planned to support that development.

This Extrinsic Material Report provides explanatory context regarding the basis on which the Priority Infrastructure Area has been determined and amended as part of the LGIP amendment.

2. Purpose, status and relationship to the LGIP

The purpose of this Extrinsic Material Report is to provide explanatory context regarding the determination of the Priority Infrastructure Area and the approach adopted by Council in preparing and amending the PIA as part of the Local Government Infrastructure Plan (LGIP).

Specifically, this report:

- explains the role and function of the PIA within the LGIP framework
- outlines the considerations applied in determining the PIA boundary
- describes the planning principles used to guide PIA inclusion and exclusion
- documents the approach adopted by Council in aligning infrastructure planning with assumed development patterns.

This report is intended to assist a broad range of stakeholders, including Council officers, the State Government, infrastructure providers, the development industry, landowners and the community, by providing additional context to support interpretation of the PIA and the infrastructure planning principles that underpin the LGIP.

This report should be read in conjunction with the LGIP and the associated suite of extrinsic material reports prepared to support the 2026 LGIP Amendment, including the Planning Assumptions, Desired Standards of Service, Plans for Trunk Infrastructure, Schedule of Works and Demand Generation Rates reports. Together, these reports provide the technical background and rationale supporting the preparation of the amended LGIP.

This report is **non-statutory** and does not form part of the LGIP. It does not amend or override the PIA identified in the LGIP mapping. Instead, the report provides a supporting explanation to assist with interpreting the LGIP and to document the planning considerations that informed the PIA determination.

The statutory components of the LGIP include the LGIP mapping, the planning assumptions and the Plans for Trunk Infrastructure (PFTI). These components establish the formal infrastructure planning framework and should be read together.

As non-statutory material, this report may be updated from time to time to reflect improved information or refined understanding without requiring amendment to the LGIP.

3. Approach to Determining the Priority Infrastructure Area

3.1 Strategic planning context

The Priority Infrastructure Area has been determined, having regard to the planning assumptions prepared for the LGIP and the broader strategic planning framework for the Townsville local government area.

The planning assumptions establish the projected distribution of population growth, dwelling demand and employment generation across the local government area. These projections are based on a combination of demographic forecasts, development trends and planning scheme intent.

The PIA translates these growth assumptions into a spatial framework for infrastructure planning. In doing so, it identifies areas where trunk infrastructure networks are expected to support development within the LGIP planning horizon.

The PIA, therefore, represents the spatial interface between land-use planning and infrastructure planning.

Existing serviced urban areas and established trunk infrastructure networks formed the starting point for reviewing the PIA. These areas generally represent locations where urban development has already occurred or is expected to continue within the LGIP planning horizon, with infrastructure planning progressively extending into identified growth areas as required.

While the planning scheme may identify a larger supply of land that could potentially accommodate future development, the PIA focuses on those areas where development is expected to occur within the LGIP timeframe and where infrastructure planning can reasonably be undertaken.

3.2 Alignment with assumed growth and development timing

The Priority Infrastructure Area has been informed by the updated LGIP planning assumptions, including projected population growth, dwelling demand and employment generation. The amended PIA has been developed by reviewing the Priority Infrastructure Area established under the 2019 LGIP against the updated planning assumptions prepared for the 2026 LGIP Amendment. Since adoption of the 2019 LGIP, Council has reviewed projected growth, development activity, demographic trends and the spatial distribution of anticipated urban development. These updated planning assumptions provide a more contemporary understanding of where growth is expected to occur during the LGIP planning horizon and have informed the refinement of the PIA where appropriate.

In translating the planning assumptions into the PIA boundary, Council has considered:

- the location and extent of existing urban development
- areas of committed or approved development
- the realistic timing and sequencing of development
- the spatial distribution of growth identified through the LGIP growth modelling process, and
- changes in projected development patterns since adoption of the 2019 LGIP.

Existing urban areas and locations where development is already occurring form the foundation of the PIA. These areas represent locations where infrastructure networks are already established and where future growth can generally be accommodated through network augmentation or expansion.

The PIA also includes areas where development is committed or clearly anticipated within the LGIP projection period. These areas are typically supported by development approvals, established development trends or planning scheme intent that aligns with the planning assumptions.

Conversely, land that may ultimately develop for urban purposes but is unlikely to develop within the LGIP projection period has generally not been included within the PIA.

This approach ensures that the PIA remains aligned with realistic development outcomes rather than theoretical development capacity.

3.3 Infrastructure servicing capacity and sequencing considerations

Infrastructure servicing considerations have been a key factor in determining the extent of the PIA.

Council has considered the capacity of existing trunk infrastructure networks and the infrastructure upgrades identified through the Plans for Trunk Infrastructure (PFTI).

This has included consideration of key constraining networks where capacity, timing or sequencing issues may affect the ability to support anticipated development within the LGIP planning horizon, including water supply, sewerage, transport and public parks and land for community facilities.

In some locations, the extent of PIA inclusion has been influenced by the timing and sequencing of major trunk infrastructure upgrades. This is particularly relevant where development relies on significant network augmentation, downstream infrastructure capacity, or external infrastructure connections before additional growth can be serviced in an orderly manner.

Existing or planned trunk infrastructure capacity has informed the prioritisation of land within the PIA. Conversely, where significant infrastructure upgrades or network augmentations are required, the timing and sequencing of those works has been considered to ensure that the PIA reflects a realistic and coordinated approach to infrastructure planning.

This approach is also relevant where approved development is subject to conditions or infrastructure agreements requiring the developer to deliver infrastructure necessary to service the development, including where Plan of Development approvals rely on developer-delivered infrastructure before broader trunk infrastructure solutions are implemented.

This approach assists in maintaining the integrity of the LGIP and avoids establishing PIA areas that may be constrained by unresolved infrastructure servicing issues. It also ensures that the PIA continues to function as a practical and credible infrastructure planning tool.

3.4 Interaction with development approvals and infrastructure agreements

Development approvals and infrastructure agreements have also been considered in determining the PIA boundary.

In some circumstances, development approvals impose obligations to deliver infrastructure necessary to support development, independent of the LGIP framework. These arrangements may require developers to provide infrastructure to service development until broader trunk infrastructure solutions are implemented, or where the proposed development is not assumed to be serviced within the LGIP planning horizon.

Infrastructure agreements may also establish mechanisms for the delivery or coordination of trunk infrastructure in advance of broader network upgrades.

The existence of such approvals and agreements has been taken into account when determining whether land should be included within the PIA or whether infrastructure delivery can continue to be managed through approval conditions and infrastructure agreements.

This approach recognises that development may proceed through established approval mechanisms while infrastructure planning continues to evolve through the LGIP process. It also assists Council in identifying circumstances where development may be inconsistent with the planning assumptions or may require infrastructure servicing arrangements outside the standard LGIP framework.

3.5 Staged inclusion of large development areas

For large development areas and master-planned estates, Council has adopted a staged approach to the inclusion of PIA.

This approach is particularly relevant to major approved or emerging growth areas, including Sanctum West and Riverstone, where development is expected to occur progressively and where infrastructure servicing arrangements are likely to evolve over time.

Large development areas are typically developed progressively over extended periods, and infrastructure servicing arrangements may evolve as development proceeds. In these circumstances, it may not be appropriate to include the entirety of such areas within the PIA where infrastructure servicing arrangements for later stages remain uncertain.

A staged approach allows the PIA to align with those portions of development areas that are:

- supported by committed or approved development
- capable of being serviced by existing or planned infrastructure
- expected to develop within the LGIP projection period.

By adopting a staged approach, Council can ensure that the PIA remains aligned with infrastructure servicing readiness while retaining flexibility to expand the PIA as development progresses and infrastructure planning evolves.

Future LGIP amendments may therefore consider expanding the PIA as development progresses and infrastructure servicing arrangements become clearer.

3.6 Minor and administrative amendments

In addition to strategic amendments to the Priority Infrastructure Area, this LGIP amendment includes a number of minor and administrative changes intended to improve the accuracy, consistency and readability of the LGIP.

These amendments do not alter the strategic intent of the PIA or the planned servicing outcomes. They generally relate to matters such as:

- alignment of PIA boundaries with updated cadastral boundaries;
- correction of mapping anomalies or drafting inconsistencies;

- improved alignment between the PIA, PFTI and supporting LGIP mapping;
- updated references, terminology and administrative corrections.

A summary of these amendments is provided below:

Amendment	Category	Reason
Boundary refinement	Administrative	Align with the cadastral boundary
Mapping correction	Administrative	Correct drafting anomaly
PIA inclusion	Strategic	Reflect updated planning assumptions
PIA exclusion	Strategic	Reflect revised servicing strategy

4. Application, monitoring and future refinement

4.1 Role of the PIA in LGIP implementation

The Priority Infrastructure Area provides an important framework for implementing the LGIP and coordinating infrastructure planning across the local government area.

Within the LGIP framework, the PIA identifies those areas where trunk infrastructure networks are intended to support development within the LGIP planning horizon. By defining this spatial extent, the PIA assists the Council in aligning infrastructure planning with the anticipated distribution and sequencing of urban growth.

In practice, the PIA supports implementation of the LGIP by providing a spatial reference for:

- the coordination and sequencing of trunk infrastructure planning across infrastructure networks
- the preparation and refinement of Plans for Trunk Infrastructure (PFTI)
- the assessment of development applications in relation to LGIP planning assumptions
- the identification of areas where trunk infrastructure upgrades or extensions may be required.

The PIA also assists Council in ensuring that infrastructure planning is undertaken in a coordinated manner across transport, water supply, sewerage, stormwater and public parks and land for community facilities networks.

By clearly identifying the areas where infrastructure planning is prioritised, the PIA supports a structured approach to infrastructure network planning and assists Council in managing the relationship between development growth and infrastructure servicing capacity.

The PIA also provides an important input into the Council's longer-term infrastructure planning and investment processes. By identifying the areas where trunk infrastructure is expected to support growth within the LGIP planning horizon, the PIA assists Council in prioritising infrastructure investigations, network planning and capital works programming. It also provides an important strategic input to long-term financial planning by informing the anticipated timing and sequencing of infrastructure investment identified through the Schedule of Works and associated asset planning processes.

4.2 Relationship with development assessment

The PIA also plays an important role in the application of the LGIP during the development assessment process.

In particular, the PIA provides a spatial framework that assists the Council in considering the relationship between development proposals and the infrastructure planning assumptions established in the LGIP.

During development assessment, the PIA is considered alongside the Planning Assumptions, Plans for Trunk Infrastructure (PFTI), Schedule of Works and Desired Standards of Service to ensure that proposed development aligns with the broader infrastructure planning framework.

Development proposals located within the PIA are generally consistent with the LGIP assumption that trunk infrastructure networks will be planned to support development within the LGIP planning horizon. Assessment of these proposals also considers the capacity of existing infrastructure networks, the timing and sequencing of planned infrastructure upgrades, and the relevant PFTI for each infrastructure network.

Where development proposals are located outside the PIA, or where development is not consistent with the adopted planning assumptions, further consideration may be required regarding infrastructure servicing arrangements. In these circumstances, infrastructure delivery may be addressed through development conditions, infrastructure agreements or other mechanisms available under the Planning Act 2016, where appropriate.

By integrating the PIA with the Planning Assumptions, PFTI and other LGIP components, Council is able to ensure that development assessment supports the orderly planning of infrastructure while maintaining consistency with the strategic intent of the LGIP.

4.3 Monitoring development patterns

Council will continue to monitor development patterns across the local government area to ensure that the LGIP remains aligned with emerging development trends.

Monitoring may include consideration of:

- the location and scale of development occurring within the PIA
- the pace and sequencing of development across different growth areas
- the extent to which development patterns align with the planning assumptions
- development occurring outside the PIA.

Monitoring development patterns allows the Council to identify whether development is occurring broadly in line with the assumptions used to prepare the LGIP.

Where development patterns differ significantly from the planning assumptions, this information may inform future reviews of the LGIP and potential refinement of the PIA.

4.4 Monitoring infrastructure servicing and network performance

Council may also monitor infrastructure network performance and servicing conditions over time.

Monitoring may include:

- capacity utilisation within trunk infrastructure networks
- infrastructure servicing constraints that may emerge as development occurs
- the performance of infrastructure networks in accommodating development growth
- the need for refinement of infrastructure planning or network augmentation strategies.

Monitoring infrastructure servicing conditions assists Council in ensuring that infrastructure planning remains aligned with development patterns and infrastructure network performance.

This process supports ongoing refinement of the LGIP and helps ensure that infrastructure planning remains responsive to changing circumstances.

4.5 Role of future LGIP amendments

The LGIP, including the PIA, is intended to be reviewed periodically to ensure that it continues to reflect current development trends and infrastructure planning considerations.

Future LGIP amendments may consider refinements to the PIA where:

- development patterns differ from those assumed in the LGIP
- new development areas become committed
- infrastructure planning is refined or expanded
- additional information regarding infrastructure capacity becomes available
- strategic planning directions change.

Through periodic review and amendment, Council can ensure that the PIA continues to reflect realistic development patterns and infrastructure planning priorities.

4.6 Maintaining the integrity of the PIA

Maintaining the integrity of the Priority Infrastructure Area is an important aspect of the LGIP framework.

By ensuring that the PIA remains aligned with realistic development patterns and infrastructure servicing considerations, Council can maintain a clear and defensible infrastructure planning framework.

This approach supports transparency in infrastructure planning and helps Council ensure that the LGIP continues to function as an effective strategic infrastructure planning tool.

As development patterns, infrastructure servicing arrangements and strategic planning priorities evolve, the PIA may be reviewed and refined. Any changes to the PIA will be undertaken through a formal amendment to the LGIP in accordance with the Planning Act 2016 and the Minister's Guidelines and Rules. This ensures that amendments are supported by appropriate technical analysis, stakeholder engagement and statutory review processes, maintaining the integrity and transparency of the LGIP framework.

5. Conclusion

The Priority Infrastructure Area is a key component of the Local Government Infrastructure Plan, providing the spatial framework for coordinating infrastructure planning with anticipated development growth.

In determining the PIA, Council has had regard to the LGIP planning assumptions, the capacity and configuration of trunk infrastructure networks, and the likely timing and sequencing of development.

The PIA supports transparent LGIP management by clearly identifying the area where infrastructure planning is prioritised within the LGIP planning horizon. It also provides a clear basis for monitoring growth, reviewing infrastructure servicing assumptions and informing future LGIP amendments.

Through ongoing monitoring of development trends and infrastructure network performance, and periodic review of the LGIP, the PIA can be refined over time to ensure the LGIP remains an effective infrastructure planning framework for the Townsville local government area.



ROAD NETWORK PLANNING REPORT

August 2025 Update

Planning Report

ECM ID

**ENGINEERING ASSETS & INFRASTRUCTURE PLANNING
STRATEGIC INFRASTRUCTURE PLANNING**

Quality Information

Prepared by:

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ECM ID:

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Update	20 April 2023	Updated Traffic Growth Analysis – 2022 / 2023 Calibration
Update	07 May 2024	Updated Traffic Growth Analysis – 2023 / 2024 Calibration
Update	18 August 2025	Updated Traffic Growth Analysis – 2024 / 2025 Calibration

Approval

Position	Name	Signature	Date
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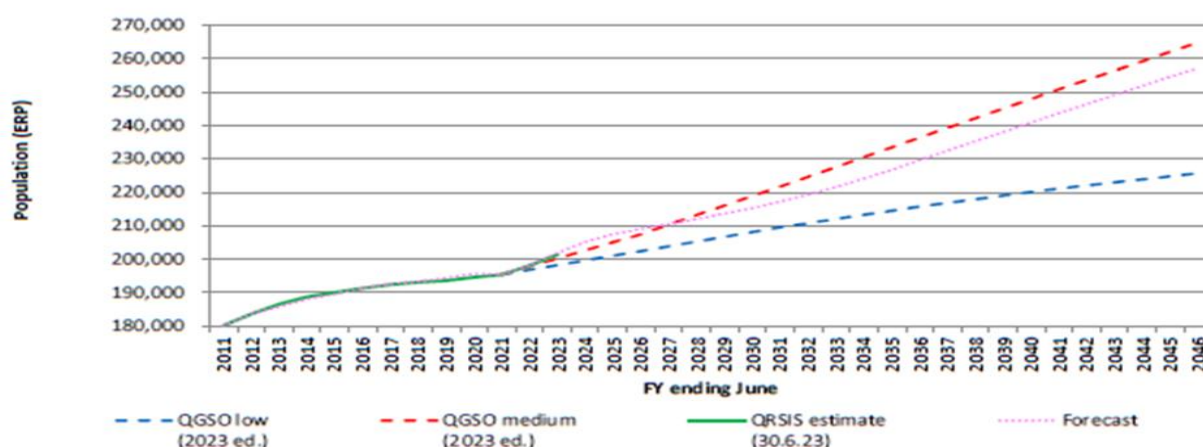
1. TOWNSVILLE TRAFFIC >>

1.1. CITY GROWTH FORECAST

1.1.1. This report analyses the findings of a study that examines the impact of growth upon the city's road network in 2025 / 2026 FY and future projections out to 2046.

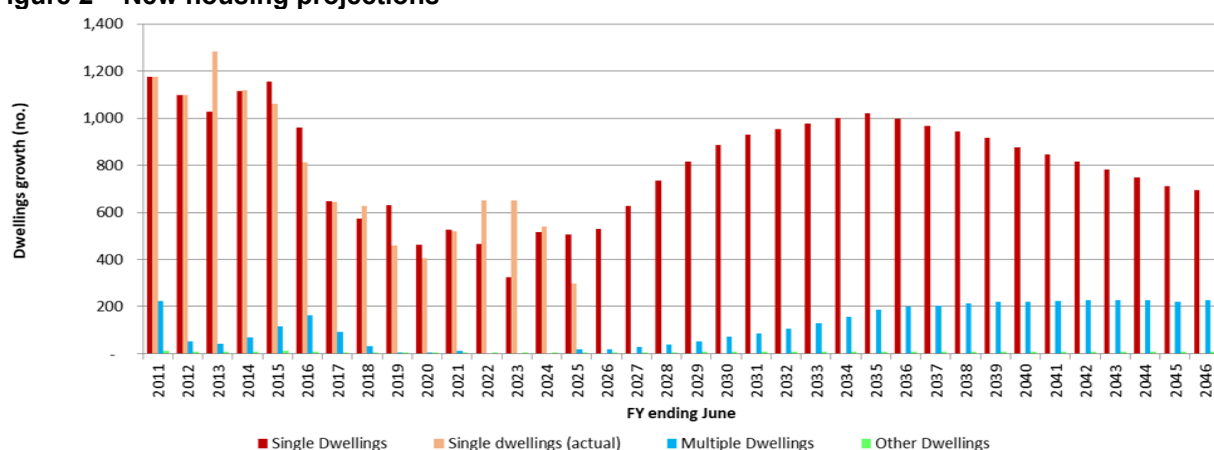
1.1.2. Growth in the city is currently assumed to be slightly above the Queensland Government Statistician's Office (QGSO) medium series projections before dropping between the low and medium series from about 2028 (Figure 1).

Figure 1 – Relativity of growth forecast to other projections



1.1.3. Housing development over the next 20 years, (July '26 – June '46) indicates housing growth will increase from about 500 new lots / year to about 750 new lots / year in 2028. This upward trend will continue through to 2036 with about 1000 new lots / year before easing back to 750 lots / year by 2046. (Figure 2)

Figure 2 – New housing projections



1.2. TOWNSVILLE AIMSUN INTEGRATED MODEL

- 1.2.1. Townsville City Council has invested in the development of the Townsville Aimsun Integrated Model (TAIM) as a planning tool for the analysis of proposed improvement options, upgrades, and interventions on the road network to support growth identified in the TGM.
- 1.2.2. The TAIM Base Model is a representation of the current state of the road network in 2025.
- 1.2.3. To have confidence in the model outputs, the Base Model is calibrated annually against current traffic flow information collected across the entire network. DTMR supplies the traffic flow information recorded by vehicle detection equipment at about 150 signalised intersections comprising approximately 2175 detection counts and approximately 150 traffic counter sites located across the city. Council uses this information to calibrate the model such that it can replicate vehicle numbers travelling anywhere on the network measured as Average Annual Daily Traffic (AADT).
- 1.2.4. The TAIM models future year traffic scenarios in 2026, 2031, 2036, 2041, 2046.
- 1.2.5. Future year models project traffic flows forward to a future time period using assumptions on growth and demographic information unique to 413 Growth Model Zones or (GMZs) distributed across the city. These GMZs are subsequently refined and split into a finer zone system comprising 800 Traffic Model Zones (TMZs) to be consistent with the DTMR Model for State Controlled Roads.
- 1.2.6. Aimsun software calculates the travel demand between TMZs across the network by distributing traffic flows to various road links based on the Origin & Destination (OD) of each trip on the network. These trips are arranged mathematically into structures called OD Matrices describing the split of cars, medium sized trucks and heavy vehicles for each trip.
- 1.2.7. Each trip or OD Matrix has multiple route options. The process that Aimsun uses to determine which route option is the best is called Dynamic User Equilibrium (DUE). DUE is a complex iterative process that compares travel time for each unique trip competing with 1000s of other trips to get to their destination within the shortest time possible. Each run of the model determines a balance or equilibrium in traffic flows across the network for all trips based on the network structure and intersection controls applied to the run scenario, e.g. A scenario with a new link in 2031 such as Lionel Turner Drive extended to join North Shore Boulevard.
- 1.2.8. The background traffic growth in the TAIM is summarised in Table 1, these growth figures are in respect to traffic volume increases from the 2025 calibrated base volumes for each of the forecast years:

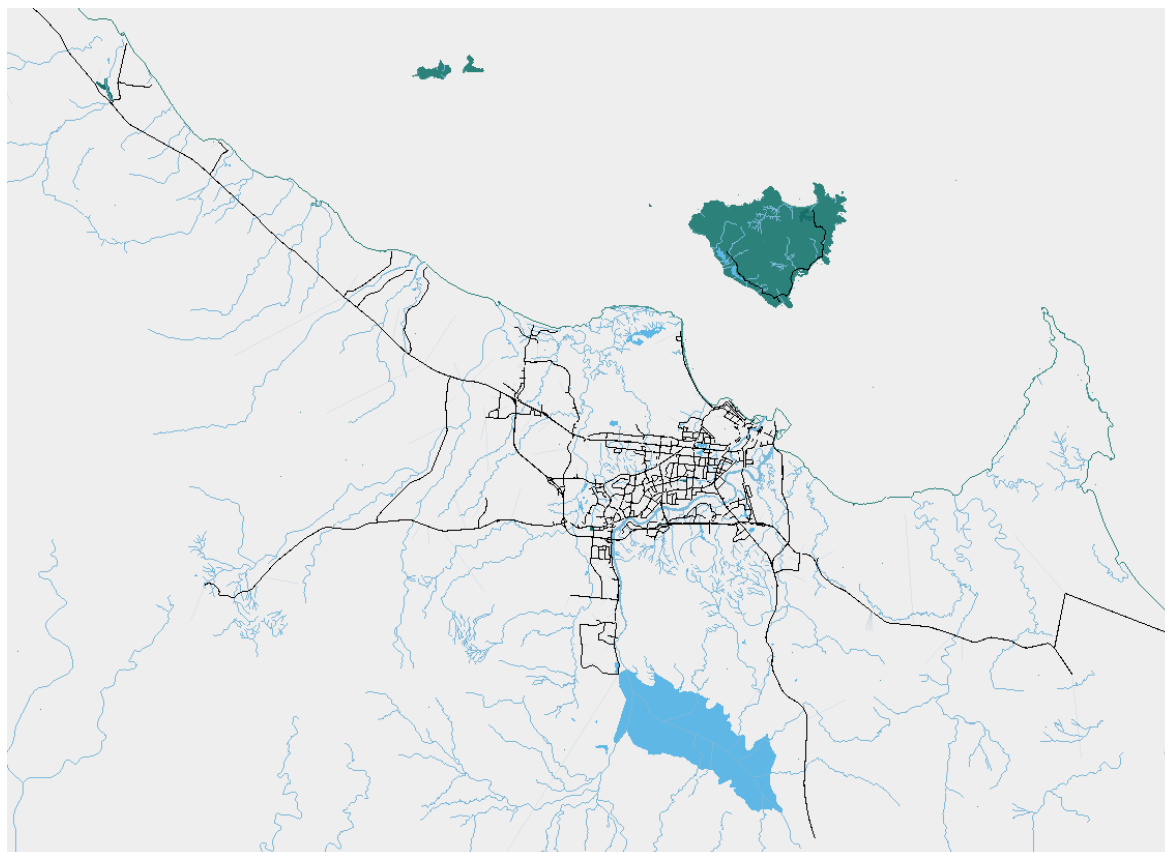
Table 1: TAIM - Traffic Growth Analysis

Year	Total Network ^(a) AADT	Growth Rate from 2025 Base	5 Year Trend Annual Growth Rate
2025	14090979	0.00%	
2026	14530088	3.12%	3.12%
2031	16269807	15.46%	2.39%
2036	17619901	25.04%	1.66%
2041	18918458	34.26%	1.47%
2046	20414583	44.88%	1.58%

^(a) Network AADT based on approximate network length of 1200km

1.2.9. The extents of the TAIM are shown in Figure 3 and the links to the model outputs follow:

Figure 3 – Extents of the Townsville Traffic Model



Model Outputs

<https://data-tsvcitycouncil.opendata.arcgis.com/search?tags=traffic>

2. NETWORK PERFORMANCE >>

2.1. VOLUME CAPACITY RATIOS

- 2.1.1. Performance of the Townsville City Council network has been assessed on a network wide level using performance criteria based on Volume / Capacity (V/C) ratios refer Table 2.
- 2.1.2. V/C ratios have also been used to describe the Measure of Effectiveness (MoE) of the roads in terms of a Level of Service (LoS).
- 2.1.3. The analysis considers the length of the network operating at each LoS category in terms of traffic lane length measured in meters (lane meters). E.g., 1 km length of 4 lane road has 4000 lane meters.

Table 2 – Volume / Capacity Criteria

Metric	Level of service					
	A	B	C	D	E	F
Volume / Capacity	< 0.32	0.32 - 0.50	0.50 - 0.72	0.72 - 0.92	0.92 to 1.0	>1.0

2.2. LEVEL OF SERVICE CLASSIFICATIONS

LoS A This is a condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream.

LoS B This level is stable flow, and drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream.

LoS C Most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream.

LoS D This level is close to the limit of stable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream.

LoS E This occurs when traffic volumes are at or close to capacity and there is virtually no freedom to select desired speeds or to manoeuvre within the traffic stream. Flow is unstable and minor disturbances within the traffic stream may lead to a traffic jam.

LoS F This service level is in the zone of forced flow. Flow breakdowns occur and queuing and delays result.

2.3. ROAD CLASSIFICATIONS

2.3.1. The Road Hierarchy in the City Plan has four classifications as follows:

- | | |
|--|--|
| (a) Arterial Roads (Trunk Infrastructure) | Typical Traffic > 25000 vpd |
| (b) Sub – Arterial Roads (Trunk Infrastructure) | Typical Traffic 12000 vpd – 25000 vpd |
| (c) Major Collector Roads (Trunk Infrastructure) | Typical Traffic 6000 vpd – 12000 vpd |
| (d) Local Streets (Non-Trunk) | Typical Traffic < 3000 vpd directionally |

2.3.2. Road classifications (Arterial, Sub-arterial and Major Collector) are typically considered as trunk infrastructure carrying more than 3,000 vehicles per day in any one direction, generally streets that carry less than 3,000 vehicles per day directionally are not considered as trunk infrastructure and are not included in the network performance analysis.

2.4. ROAD NETWORK – DESIRED STANDARDS OF SERVICE

2.4.1. The Desired Standards of Service (DSS) for the road network are defined in the City Plan, refer tables 3 & 4 below.

Table 3 — Maximum volume to capacity ratios for the road network

Infrastructure item	Maximum volume to capacity ratio by land use	
	Residential (Urban)	Non-residential (Rural)
Arterial	0.9 (Upper limit LoS D)	0.7 (Upper Limit LoS C)
Sub-arterial	0.9 (Upper limit LoS D)	0.7 (Upper Limit LoS C)
Major collector	0.9 (Upper limit LoS D)	0.7 (Upper Limit LoS C)
Arterial (state-controlled)	0.95 (Mid LoS E)	0.95 (Mid LoS E)

Table 4 — Maximum degree of saturation for road intersections

Road network item	Maximum degree of saturation
Traffic signals	0.9 (55 second average delay)
Roundabout	0.85 (35 seconds average delay)
Priority controlled	0.8 (35 seconds average delay)
Traffic signals (state-controlled)	0.9 (55 seconds average delay)

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2.5. LGIP ROAD UPGRADE THRESHOLD

2.5.1. For the purposes of reviewing the LGIP the threshold for considering a road for a capacity upgrade is roughly equivalent to low-range LoS D (2-lanes) and high-range LoS D (4-lanes), refer Table 5. (Note, these are directional volumes not two-way volumes)

Table 5 - LGIP Road Upgrade Threshold Table

LGIP Codes	MRS Code	Min. Road Reserve Width	TCC Standard Drawing	Road configuration	Direction Flow	
					MRS Maximum (AADT)	Upgrade Threshold (AADT)
Minor Rural	4	15m	Gravel Road	Minor formed and unsealed rural road	2000	1400
	5	15m	SD-010 Local Street	Minor Rural Road (Non-Trunk)	4400	3000
Local Urban Streets	7	15m	SD-001 Access Place	2 Lane – Access Street / Lane	2200	1600
	10	20m	SD-001 Access Street	2 Lane – Local Street	3500	2600
	15	30m	SD-001 Minor Collector	2 Lane – Main Entry Street	4800	3600
R2MTN	12	30m	SD-010 Major Collector	2 Lane – Rural Residential	9400	6800
R2STN	12	50m	SD-010 Sub Arterial	2 Lane – Table Drains (60 Speed Zone)	9400	6800
R2STM	12	50m	SD-010 Sub Arterial	2 Lane – Central Median Drain	9400	6800
R2STN	13	50m	SD-010 Sub Arterial	2 Lane – Table Drains (80 Speed Zone)	10700	6800
R2ATN	13	50m	SD-004	2 Lane – Table Drains (100 Speed Zone)	10700	6800
U2MKM	15	30m	SD-002 Type B	2 Lane – Median Turning Lane + Parking	4800	3600
U2SKM	15	40m	SD-003 Type B	2 Lane – Median Turning Lane + Parking	4800	3600
U2MKN	16	25m	SD-002 Type A	2 Lane – No central median + No Parking	5000	3600
U2SKN	16	30m	SD-003 Type A	2 Lane – No central median + No Parking	5000	3600
U2MKM	16	25m	SD-002 Type A	2 Lane – Painted Median + No Parking	5000	3600
U2SKM	16	30m	SD-003 Type A	2 Lane – Painted Median + No Parking	5000	3600
U2AKN	16	40m	SD-004	2 Lane – No central median + Parking	5000	3600
U2AKM	16	40m	SD-004	2 Lane – Median Turning Lane + Parking	5000	3600
U3MKN	16	30m	SD-002 Type B	3 Through lanes + Median Turning Lane	9000	7800
U3SKN	16	30m	SD-003 Type B	3 Through lanes + Median Turning Lane	9000	7800
R4STM	17	40m	SD-003 Type B	4 Lane – Central Median Drain	30000	22000
R4MTM	17	30m	SD-002 Type B	4 Lane – Central Median Drain	30000	22000
R4STN	17	40m	SD-003 Type B	4 Lane – Table Drains (80 Speed Zone)	30000	19000
R4ATM	17	40m	SD-004	4 Lane – Central Median Drain	30000	22000
R4ATN	17	40m	SD-004	4 Lane – Table Drains (100 Speed Zone)	30000	19000
U4SKM	18	30m	SD-003 Type A	4 Lane – Painted Median + No Parking	13000	12000
U4SKN	18	30m	SD-003 Type A	4 Lane – No central median + No Parking	13000	12000
U4MKM	18	25m	SD-002 Type A	4 Lane – Painted Median + No Parking	13000	12000
U4MKN	18	25m	SD-002 Type A	4 Lane – No central median + No Parking	13000	10000
U4AKN	18	40m	SD-004	4 Lane – No central median + Parking	15000	11000
U4AKM	19	40m	SD-004	4 Lane – Median Turning Lane + Parking	15000	14000
U6AKM	20	40m	SD-004	6 Lane – Median Turning Lane + Parking	22500	20000
R6ATM	20	40m	SD-004	6 Lane – Central Median Drain	41000	30000

Table 6 - LGIP Codes

LGIP Codes	
1st = Type of road Rural or Urban	R = Rural, U = Urban
2nd = Number of Lanes	Number of Lanes
3rd = Hierarchy classification	M,S,A Major Collector Sub-arterial or Arterial
4th = Kerb or Table Drain	K, T, Kerb or Table Drain
5th = Median or No Median	M,N, Median or No median

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2.5.2. The MRS maximum directional flows in table 5 are adapted from the Model Road State (MRS) capacities detailed in Austroads – Economic Evaluation of Road Investment Proposals 2005, page 22, refer Table 7.

Table 7 – Austroads - Model Road State (MRS) Capacities

Model Road State (MRS)	Description	MRS Peak Lane Capacity (vph)	Peak Hour Volume Ratio
	Tracks		
1	1 – Lane Unsealed Natural Surface (Bush track)	10	17%
2	1 – Lane Unsealed Formed Road (Bladed Track)	25	17%
	Gravel Roads		
3	1 – Lane Unsealed Paved < 4.5m (Gravel Road)	50	16%
4	1 – Lane Unsealed Paved ≥ 4.5m (Gravel Road)	100	16%
	Narrow Sealed Roads		
5	1 – Lane Seal ≤ 4.5m	700	16%
6	1 – Lane Seal 4.5m – 5.2m	900	16%
	2 – Lane Roads (Urban Access Roads)		
7	2 – Lane 5.3m - 5.8m	350	16%
8	2 – Lane 5.9m - 6.4m	375	15%
9	2 – Lane 6.5m - 7.0m	400	13%
10	2 – Lane 7.1m – 7.6m	425	12%
11	2 – Lane 11.0m	450	10%
	2 – Lane Roads (High Speed Rural Roads)		
12	2 – Lane 8.3m – 9.0m	1500	16%
13	2 – Lane 9.1m – 10.0m	1600	15%
	2 – Lane Roads (Collector Roads)		
14	2 – Lane (+ Median + Bike + Parking)	450	10%
15	2 – Lane (+ Bike + Clearway)	475	10%
16	2 – Lane (+ Median + Bike + Clearway)	500	10%
	Major Roads (Sub Arterial)		
17	4 – Lane (Rural with central table drain)	1800	12%
18	4 – Lane (+ Median + Bike + Clearway)	650	10%
	Arterial Roads		
19	4 – Lane divided (+ Median + Bike + Bus Route)	750	10%
20	6 – Lane divided (+ Median + Bike + Bus Route)	750	10%
	Motorway		
21	4 – Lane limited access (Urban)	2000	8%
22	6 – Lane limited access (Urban)	2000	8%
23	8 – Lane limited access (Urban)	2000	8%

2.5.3. The MRS peak lane capacities for the model road states assume the following:

- (a) Terrain is Level
- (b) 60/40 Direction Split of road traffic flow during peak hour
- (c) 20% of road length does not allow suitable sight distance for passing
- (d) 14% Heavy vehicle component in flow

3. NETWORK ASSESSMENT BY LANE LENGTH >>

3.1. LEVEL OF SERVICE ASSESSMENT (LANE METERS)

The performance of the network based on lane meters for each LoS category has been carried out using the 2025 TAIM calibration model, refer Table 8.

[TAIM_plus_LGIP2026_2046v1A4M_TCC_Next24_v4.ang](#)

3.1.1. The analysis has been undertaken using the following network scenarios:

2025 Base Case – Base model calibrated against DTMR 2025 STREAMS data.

2026 Base Case – 2026 Projection model using background growth only without upgrades

2031 Base Case – 2031 Projection model using background growth only without upgrades

2036 Base Case – 2036 Projection model using background growth only without upgrades

2041 Base Case – 2041 Projection model using background growth only without upgrades

2046 Base Case – 2046 Projection model using background growth only without upgrades

2026 LGIP Case – 2026 Projection model with proposed LGIP changes and planned upgrades.

2031 LGIP Case – 2031 Projection model with proposed LGIP changes and planned upgrades.

2036 LGIP Case – 2036 Projection model with proposed LGIP changes and planned upgrades.

2041 LGIP Case – 2041 Projection model with proposed LGIP changes and planned upgrades.

2046 LGIP Case – 2046 Projection model with proposed LGIP changes and planned upgrades.

3.2. ANNUAL CHANGE IN LANE LENGTH

3.2.1. The calibration models for 2024 and 2025 show the total lane metres on the network as follows:

2024 Calibration = 1,203,269m

2025 Calibration = 1,210,768m
7,499m

3.2.2. This shows that the trunk road network measured in lane meters has increased by 7,499m in the last year. Note actual new road construction could be more on the basis that not all roads, especially local roads are included in the model.

3.2.3. The relative low increase in lane length meters is indicative of no LGIP capital road works projects being built by council and only a small amount of trunk road infrastructure being constructed by developers in the past year.

INFRASTRUCTURE & OPERATIONS

ENGINEERING, ASSETS & INFRASTRUCTURE PLANNING
STRATEGIC INFRASTRUCTURE PLANNING



ROAD NETWORK PLANNING REPORT - AUGUST 2025

Table 8 - Level of Service Assessment (Lane Meters) of TCC Road Network (excluding DTMR)

	LOS	2026 Base Case			2031 Base Case			2036 Base Case			2041 Base Case			2046 Base Case		
		Arterial	Sub-Arterial	Major Collector	Arterial	Sub-Arterial	Major Collector	Arterial	Sub-Arterial	Major Collector	Arterial	Sub-Arterial	Major Collector	Arterial	Sub-Arterial	Major Collector
Base Case Scenarios (Without LGIP)	A	37190	162581	269717	35338	160204	264114	35170	157315	262119	34138	155094	257593	34086	154707	250424
	B	13207	27215	44433	11954	23364	41643	10084	23458	36517	7905	23996	36773	4047	22171	40004
	C	12412	32553	24255	11813	33137	28643	10649	28494	32196	12461	24376	30840	13008	26145	31616
	D	13780	15401	7568	13210	19368	9922	15982	20351	12174	7783	16098	15203	8023	13656	14794
	E	759	2760	901	2410	3070	1187	2064	6056	1207	8257	5960	1895	1781	4854	3624
	F	16879	39014	3255	19501	40381	4618	20276	43850	5914	23683	54002	7823	33282	57993	9665
	Total	94226	279525	350126	94226	279525	350126	94226	279525	350126	94226	279525	350126	94226	279525	350126
	A-C	62809	222350	338404	59106	216706	334400	55904	209268	330831	54504	203466	325205	51141	203022	322044
	D-F	31417	57175	11723	35120	62819	15727	38322	70257	19295	39722	76059	24921	43085	76503	28083
Units : Lane Metres																
	LOS	2026 Augmented			2031 with LGIP augmentation			2036 with LGIP augmentation			2041 with LGIP augmentation			2046 with LGIP augmentation		
		Arterial	Sub-Arterial	Major Collector	Arterial	Sub-Arterial	Major Collector	Arterial	Sub-Arterial	Major Collector	Arterial	Sub-Arterial	Major Collector	Arterial	Sub-Arterial	Major Collector
Augmented Case Scenarios (With LGIP)	A	43119	167429	297055	44631	160636	288854	44238	157589	284886	41859	154850	280275	41006	154353	270223
	B	10266	30496	48468	10656	28087	44230	10257	24643	38414	9290	23819	39941	7858	20241	42214
	C	11250	32902	23470	13831	41116	31041	13103	39558	36858	13149	35140	32562	12054	31909	33293
	D	6172	15195	8861	7859	20529	12217	7618	20502	13247	8690	19817	16126	9688	21559	21847
	E	648	2219	1319	305	2328	1602	1423	5211	2479	2029	4354	5014	2230	4325	4646
	F	22680	37083	5951	19251	40504	7339	19895	45696	9399	21768	56185	10191	23950	61777	11887
	Total	94135	285323	385125	96534	293200	385282	96534	293200	385282	96786	294164	384110	96786	294164	384110
	A-C	64635	230826	368994	69119	229839	364125	67598	221791	360158	64299	213809	352779	60918	206502	345730
	D-F	29500	54497	16131	27415	63361	21157	28936	71409	25124	32488	80355	31331	35868	87662	38380
Units : Lane Metres																
Change With LGIP	ABC (m)	-91	5798	34999	2308	13675	35156	2308	13675	35156	2560	14639	33984	2560	14639	33983
	ABC (%)	2.9%	3.8%	9.0%	16.9%	6.1%	8.9%	20.9%	6.0%	8.9%	18.0%	5.1%	8.5%	19.1%	1.7%	7.4%
	DEF (m)	-1917	-2679	4408	-7705	542	5431	-9386	1152	5829	-7235	4296	6410	-7217	11159	10297
	DEF (%)	-6.1%	-4.7%	37.6%	-21.9%	0.9%	34.5%	-24.5%	1.6%	30.2%	-18.2%	5.6%	25.7%	-16.7%	14.6%	36.7%

3.3. TCC ROAD NETWORK PERFORMANCE ANALYSIS

3.3.1. Table 9A below details the effects on lane performance on TCC roads with no LGIP improvements implemented.

Table 9A - Lane Length (m) without LGIP improvements				
Projection Year	Good Performance Roads		Poor Performance Roads	
	LoS A, B, C		LoS D, E, F	
	Lane Length (m)	Lane Length (%)	Lane Length (m)	Lane Length (%)
2025	632658	87.40%	91220	12.60%
2026	623562	86.14%	100315	13.86%
2031	610211	84.30%	113666	15.70%
2036	596003	82.33%	127874	17.67%
2041	583175	80.56%	140703	19.44%
2046	576208	79.60%	147670	20.40%

3.3.2. Table 9A shows that without implementing any LGIP projects the length of roads under stress increases by about 4,000m each year.

3.3.3. Table 9B below details the effects on lane performance on TCC roads if the proposed LGIP improvements are fully implementing in accordance with the stated timeframes.

Table 9B - Lane Length (m) with LGIP improvements				
Projection Year	Good Performance Roads		Poor Performance Roads	
	LoS A, B, C		LoS D, E, F	
	Lane Length (m)	Lane Length (%)	Lane Length (m)	Lane Length (%)
2025	632658	87.40%	91220	12.60%
2026	664456	86.90%	100128	13.10%
2031	663082	85.56%	111934	14.44%
2036	649547	83.81%	125469	16.19%
2041	630887	81.40%	144174	18.60%
2046	613151	79.11%	161910	20.89%

3.3.4. Table 9B shows that by implementing the LGIP there will be a general shift of roads under stress to good performing roads across the network every year up to 2046. The transition of stressed roads to good performing roads due to LGIP is approximately 4120m per year.

3.3.5. Overall, by comparing tables 9A & 9B it shows that our LGIP program is effectively meeting the demands of growth with a slight net improvement of level of service overall of about 1500m each year across the network.

4. LEVEL OF SERVICE MAPPING >>

4.1. NETWORK DEVELOPMENT

The level of service mapping is included in Appendix A. The mapping has been undertaken using the following two TAIM networks:

- 2025 Base Model – Current Network
- LGIP Models – Network with DTMR improvements and LGIP improvements.

4.2. BASE NETWORK MODEL

The base network utilised the 2025 base year network which was modelled and calibrated against TMR signals data.

4.3. LGIP NETWORK MODELS

The LGIP network utilised the 2026, 2031, 2036, 2041, 2046 LGIP networks which were modelled using growth assumptions taken from the Townsville Growth Model and planned network changes / augmentations proposed by Developers, Council & TMR. Following is the table of network changes incorporated into the LGIP modelling:

Table 10 – Planned Network Changes

Year	Network Change	Proponent
2026	Svensson Road (Bonnett Rd to North Shore Blvd Ext) – Sanctum RAF	TCC / RAF
2026	Bayswater Road Extension – Cosgrove RAF	TCC / RAF
2026	Lionel Turner Drive Extension	TCC
2027	Svensson Road (Bruce Highway to Bonnett Rd) - Sanctum RAF	TCC / RAF
2027	North Shore Blvd Extension – Sanctum RAF	TCC / RAF
2027	Liberty Drive Extension – Cosgrove RAF	TCC / RAF
2027	Weston Street / Woolcock Street all movements signals upgrade	TMR
2027	2 nd Bridge over Ross River (Stuart Dr / Bowen Rd)	TMR
2027	Stuart Drive upgrade 4-lanes (University Drive – Ross River Bridge)	TMR
2027	Riverway Drive upgrade 4-lanes (Allambie Lane – Dunlop St)	TMR
2027	Lakeside Drive / Darcy Drive Signals Upgrade	TMR
2027	Angus Smith Drive / Townsville Hospital Access signalisation	TUH / TMR
2028	Garland Rd / Bohlevale School Rd Signals and road realignment	TCC
2028	Lakeside Drive (Abbott St – Riveredge Blvd)	EDQ / TMR
2031	Kings St / The Strand / Wickam St / Sir Leslie Thiess Dr – 2 way	TCC
2041	Synnove Dr / Pasco Dr extension to Garland Rd	TCC
2041	Overpass connection from North Shore Blvd to Shaw Road	TMR

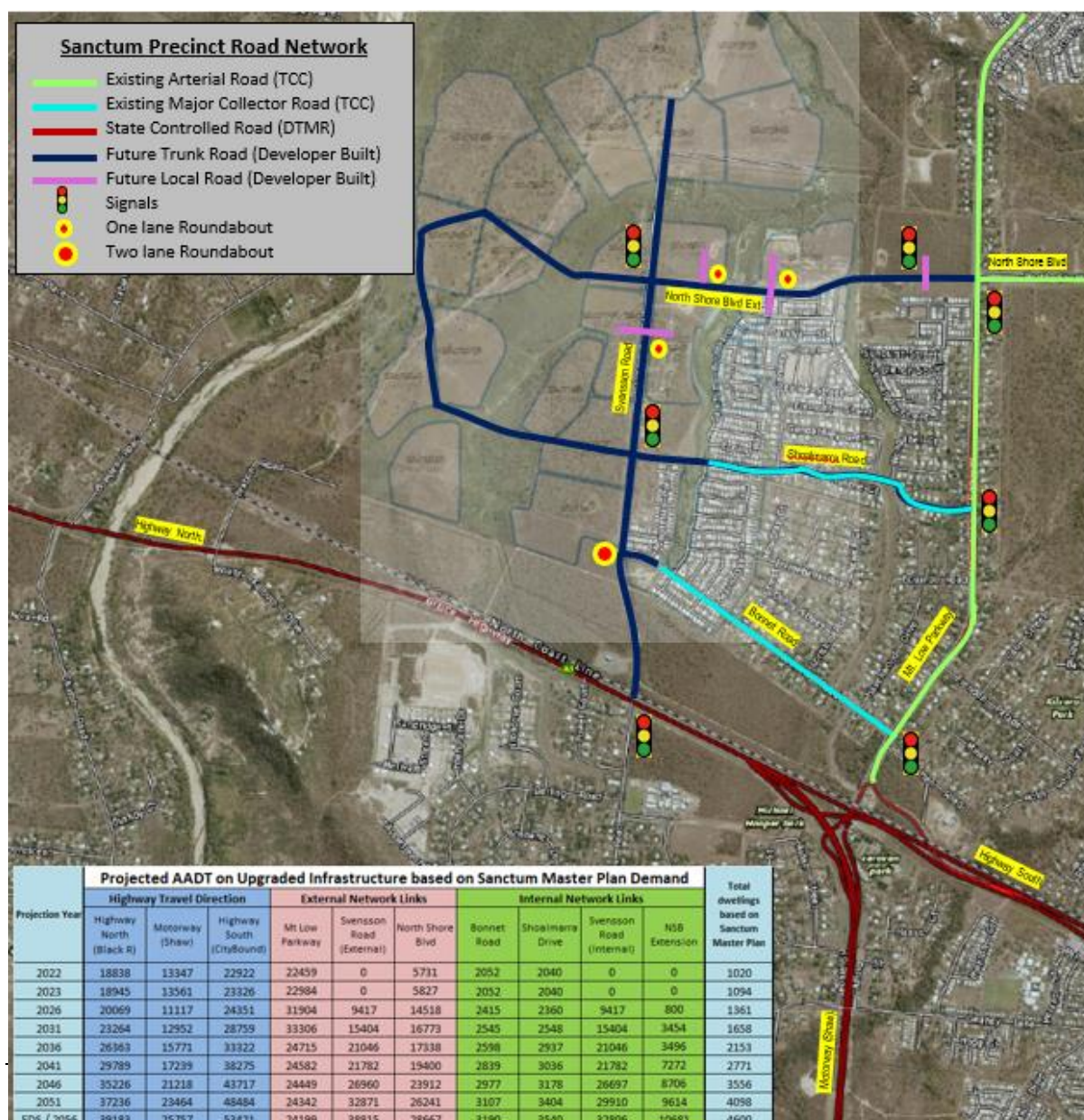
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4.4. NEW HOUSING – RESIDENTIAL ACTIVATION FUND (RAF) PROJECTS

The following large residential subdivision projects have influenced modelling of traffic distribution across the network.

4.4.1. Northern Beaches Trunk Road Infrastructure Package – Successful

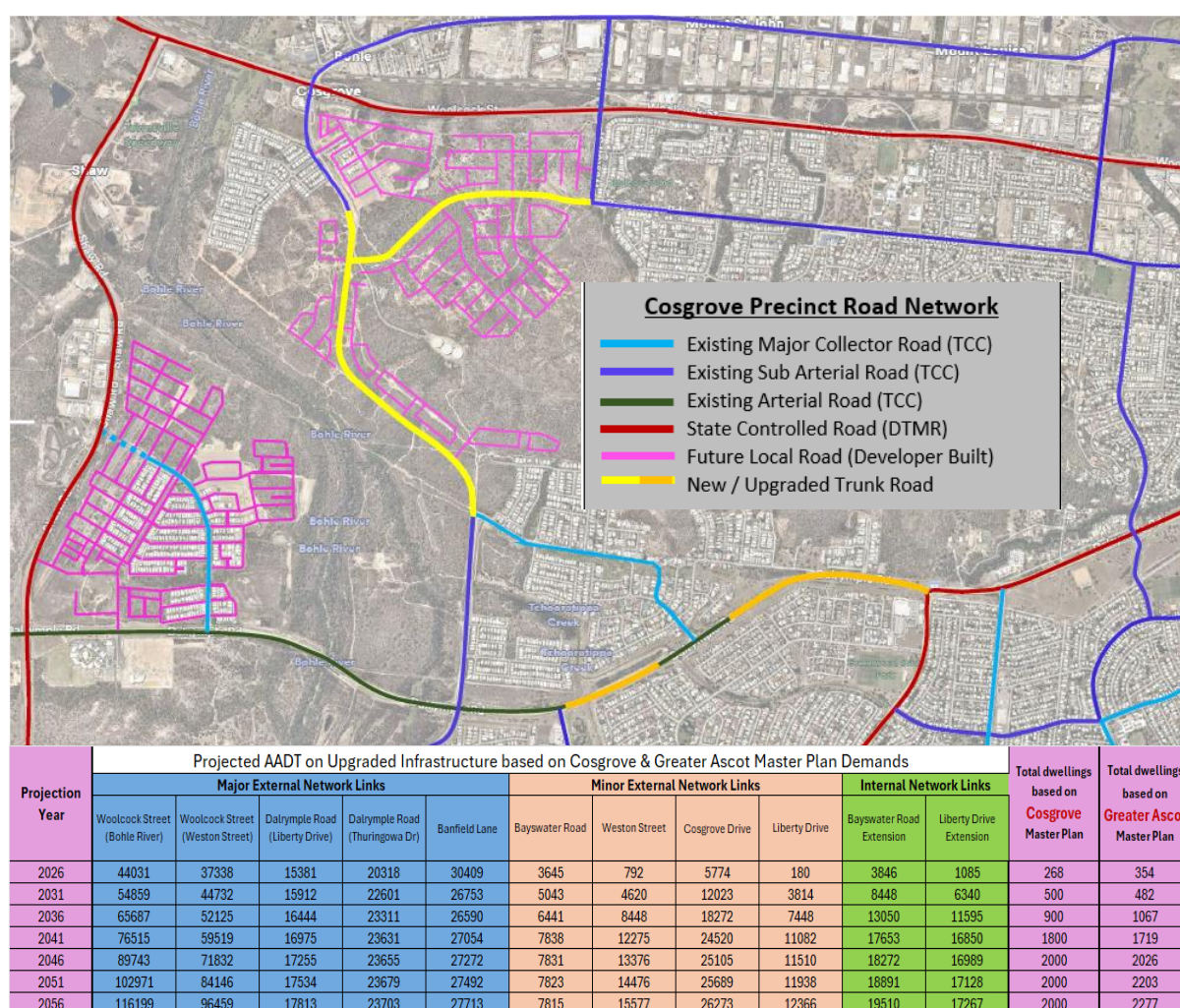
TCC has recently been successful in being awarded a funding grant for the Northern Beaches Trunk Road Infrastructure Package. Works involve construction of Svensson Road and the Extension of North Shore Boulevard to support residential housing development in the Northern Beaches area at the Sanctum West housing estate. Below is the general layout of the new network links and associated traffic.



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4.4.2. Cosgrove Housing Estate Trunk Road Infrastructure Package – Future Submission

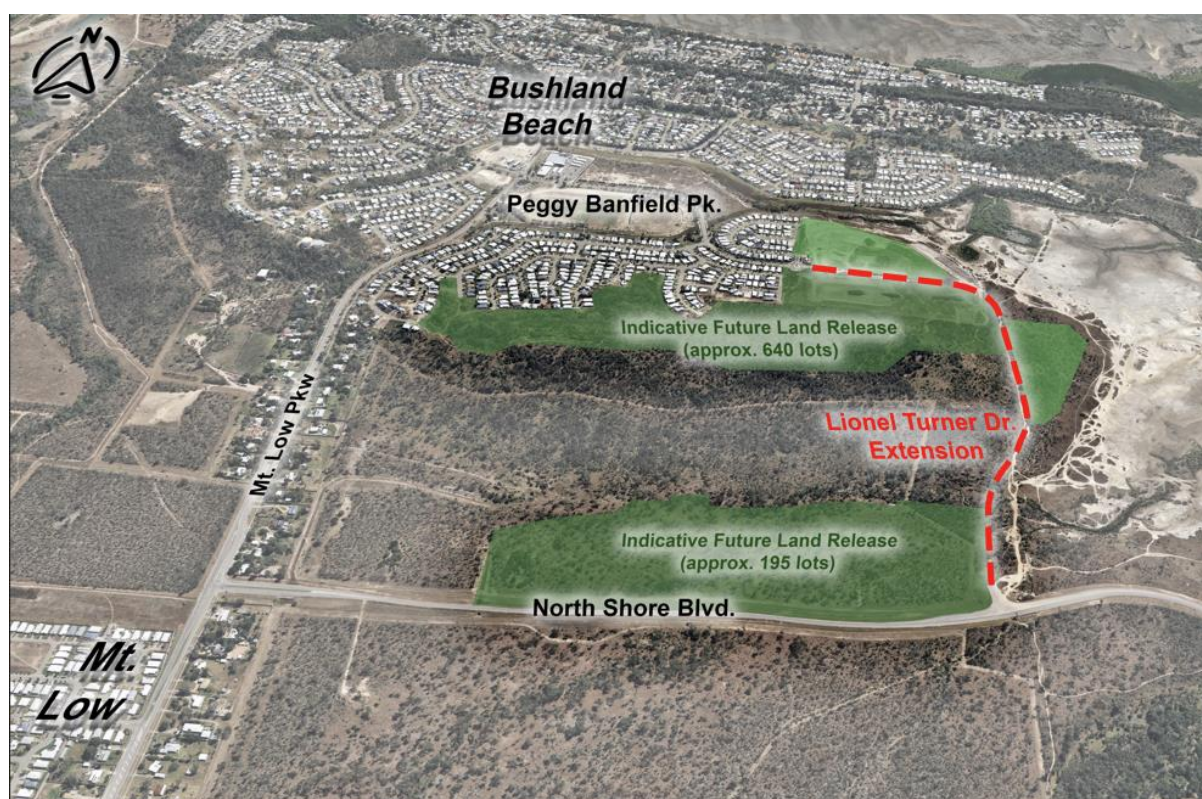
The Cosgrove Housing Estate Trunk Road Infrastructure Package is a possible candidate project for funding under the RAF. The work involves construction of Bayswater Road Extension and Liberty Drive Extension and the missing links to 4-lane Dalrymple Road. These works will support residential housing development in the estates of Cosgrove and Greater Ascot. Below is the general layout of the new network links and associated traffic.



The traffic volumes in the above table include the additional traffic generation of the Northern Beaches Trunk Road Infrastructure Package associated with the Sanctum West Development.

4.4.3. Lionel Turner Drive Extension – Listed in CAPEX as subject to funding in 2026.

The Lionel Turner Drive Extension project aims to extend Lionel Turner Drive to North Shore Boulevard providing a second access road for residents of Bushland Beach and an alternative option to using Mt Low Parkway. The construction of this road will also be a catalyst for further housing development (approximately 835 lots) in the Bayside Estate located south and east of Peggy Banfield Park. Below is an overlay plan showing the new road link.



5. 2025 LGIP REVIEW >>

5.1. LGIP PROJECTS

- 5.1.1. The current LGIP interim amendment 2019 dated 12/11/2019 is under review and will be replaced by a new 2026 LGIP.
- 5.1.2. As part of the LGIP review more recent modelling using the TAIM was undertaken in response to housing development projects particularly major estates that maybe candidates for Residential Activation Fund (RAF) grants.
- 5.1.3. The upcoming new 2026 LGIP will be informed by the latest TAIM modelling. It is expected there will be some new projects, and some projects originally identified in the 2019 LGIP that may be removed or the timing of these projects changed.
- 5.1.4. The 2025 recalibration of the TAIM has resulted in adjustment in the previous projected traffic volumes in 2026, 2031, 2036, 2041 and 2046. Generally, the updated future year projections indicate slightly higher volumes than previous forecasts, this is because of the national push for more affordable housing and the opportunity for grant funding to provide enabling infrastructure for housing such as trunk roads.
- 5.1.5. In considering candidate projects for the new 2026 LGIP the latest TAIM will be used to assess the performance of the network against both capacity and safety criteria as described below.

5.2. CAPACITY UPGRADE CRITERIA

- 5.2.1. The daily traffic volume (AADT) thresholds adopted for considering a road for a capacity upgrade are based on its LoS and are roughly equivalent to:

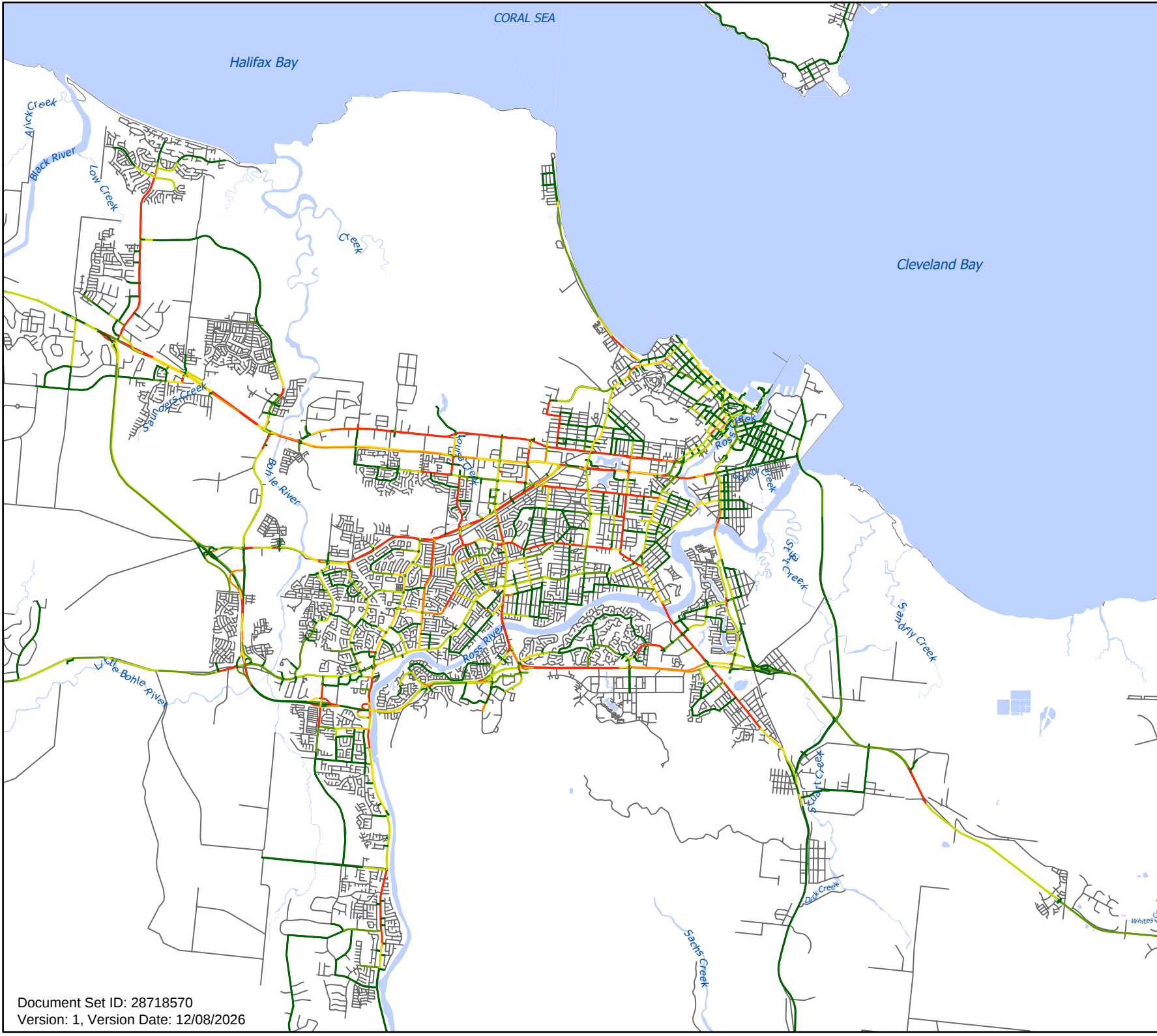
2 Lane Rural	LoS D – Low range (6800 AADT in each direction)
2 Lane Urban	LoS D – Low range (3600 AADT in each direction)
4 Lane Rural	LoS D – High range (22000 AADT in each direction)
4 Lane Urban	LoS D – High range (12000 AADT in each direction)

- 5.2.2. It is also important to note that even if a road has capacity deficiencies it doesn't automatically become a candidate LGIP project, it is often acceptable to allow congestion to occur to encourage a change in driver behaviour such as choose to travel at a different time of the day or take an alternative route

5.3. SAFETY UPGRADE CRITERIA

- 5.3.1. Roads that exhibit LoS F performance are generally considered unsafe and are operating beyond their maximum capacity, these roads will be reviewed individually to determine if safety problems warrant LGIP works.
- 5.3.2. Safety review of LoS F roads includes reviewing the DTMR Crash Analytics Reporting System (CARS) to determine if the road is exhibiting any specific accident trend related to capacity such as delay and congestion that could be corrected via a LGIP project.
- 5.3.3. In lieu of identifying a safety project as LGIP some safety projects maybe candidates for Blackspot funding instead.

APPENDIX A - LEVEL OF SERVICE MAPPING



TOWNSVILLE CITY COUNCIL

Level of Service

Legend

2025 LOS

- A
- B
- C
- D
- E
- F
- Road Centre Line



3 1.5 0 3

Kilometers

SCALE: 1:130,000 @ A3

Infrastructure & Operations

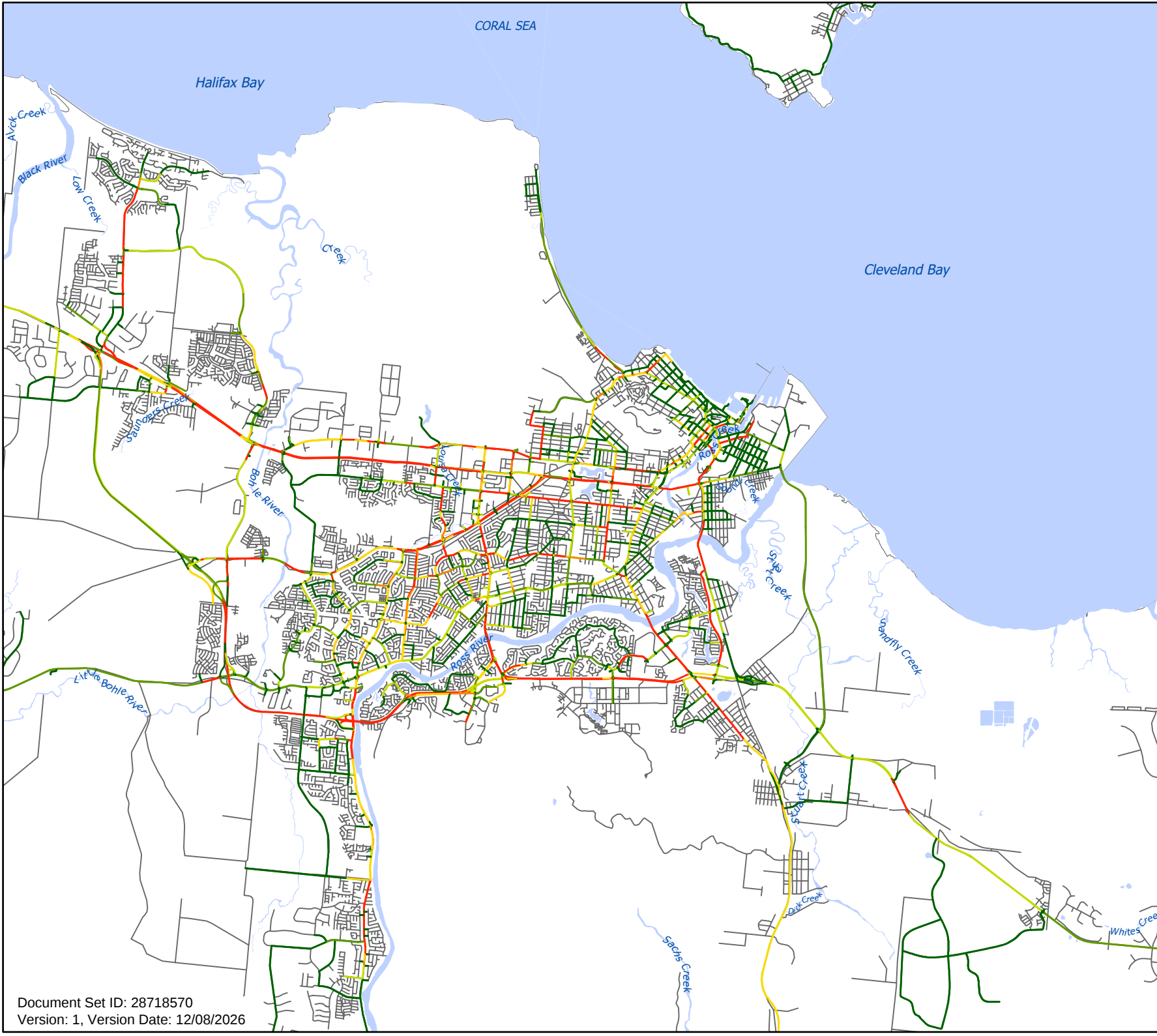
Strategic Infrastructure Planning

Date: 19/09/2025

Drawn By: MK

Digital File: LOS

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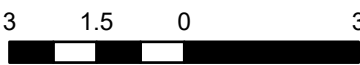


Legend

LOS 2026 With LGIP Works

- A
- B
- C
- D
- E
- F
- Road Centre Line





Kilometers

SCALE: 1:130,000 @ A3

Infrastructure & Operations

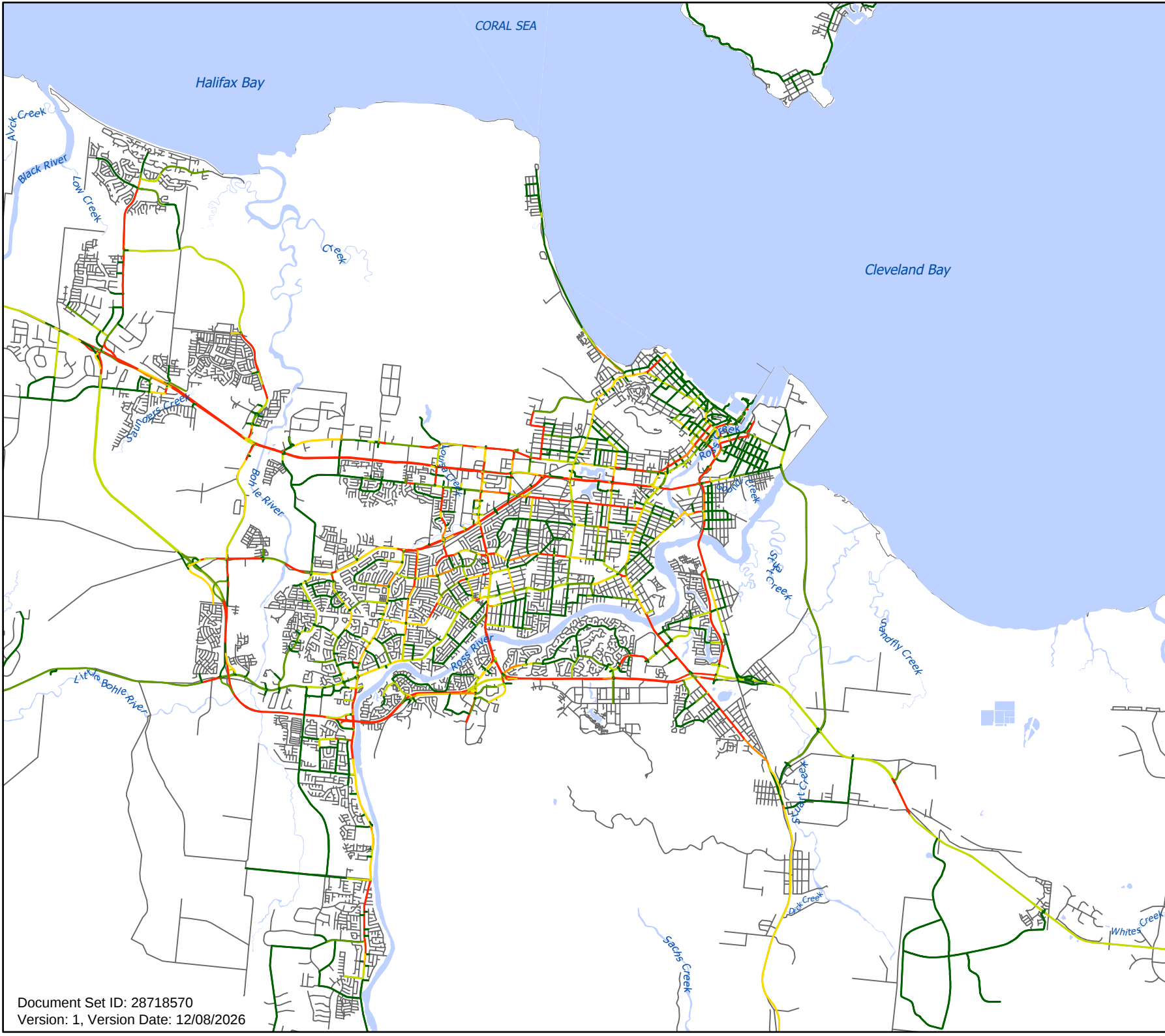
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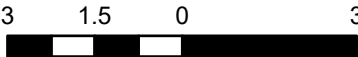


Level of Service

Legend

LOS 2031 With LGIP Works

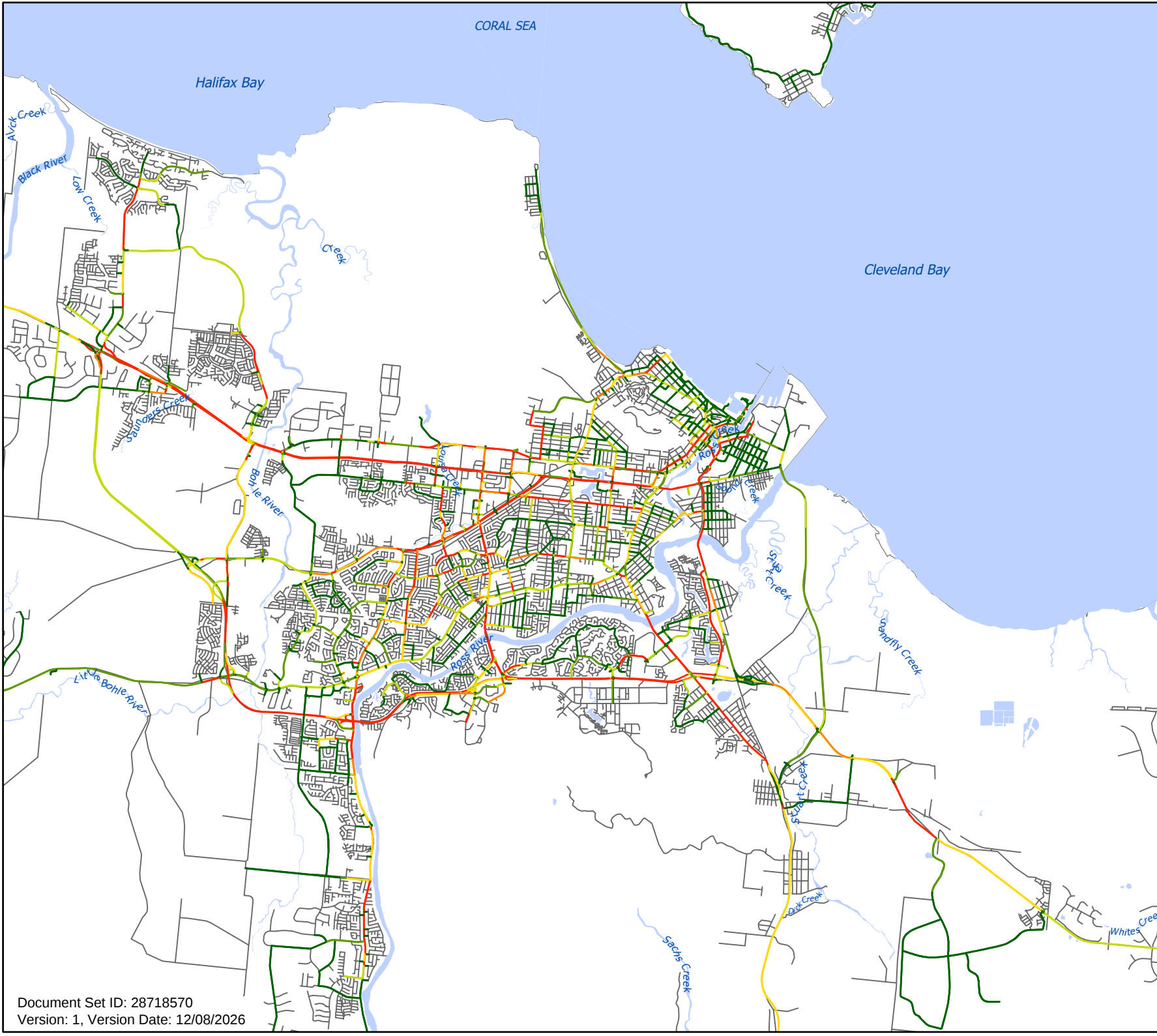
- A
- B
- C
- D
- E
- F
- Road Centre Line



Kilometers
SCALE: 1:130,000 @ A3

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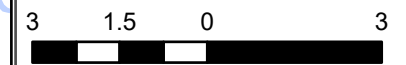


Level of Service

Legend

LOS 2036 With LGIP Works

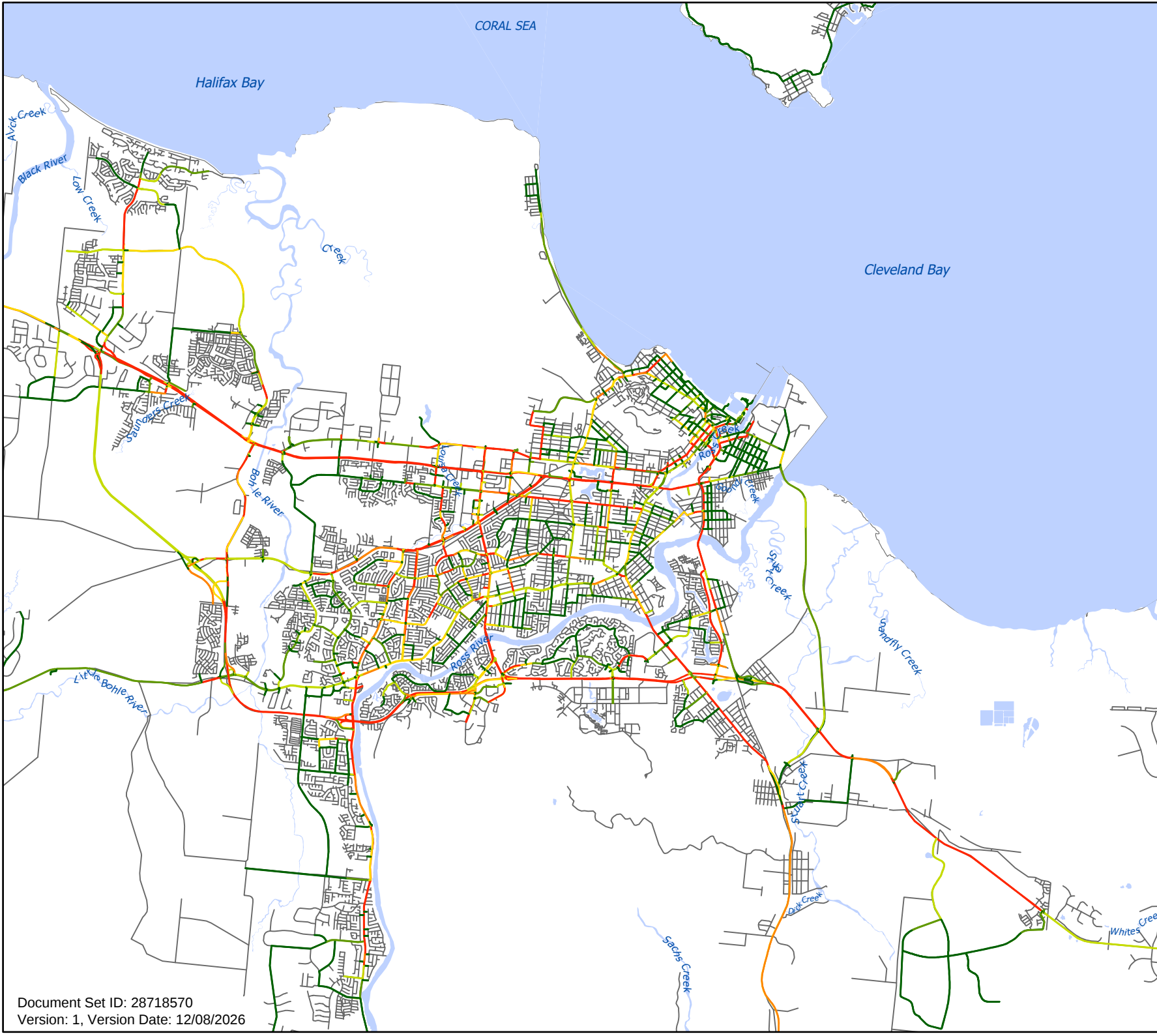
- A
- B
- C
- D
- E
- F
- Road Centre Line



Kilometers
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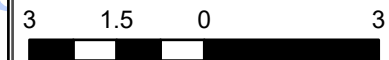
TOWNSVILLE CITY COUNCIL

Level of Service

Legend

LOS 2041 With LGIP Works

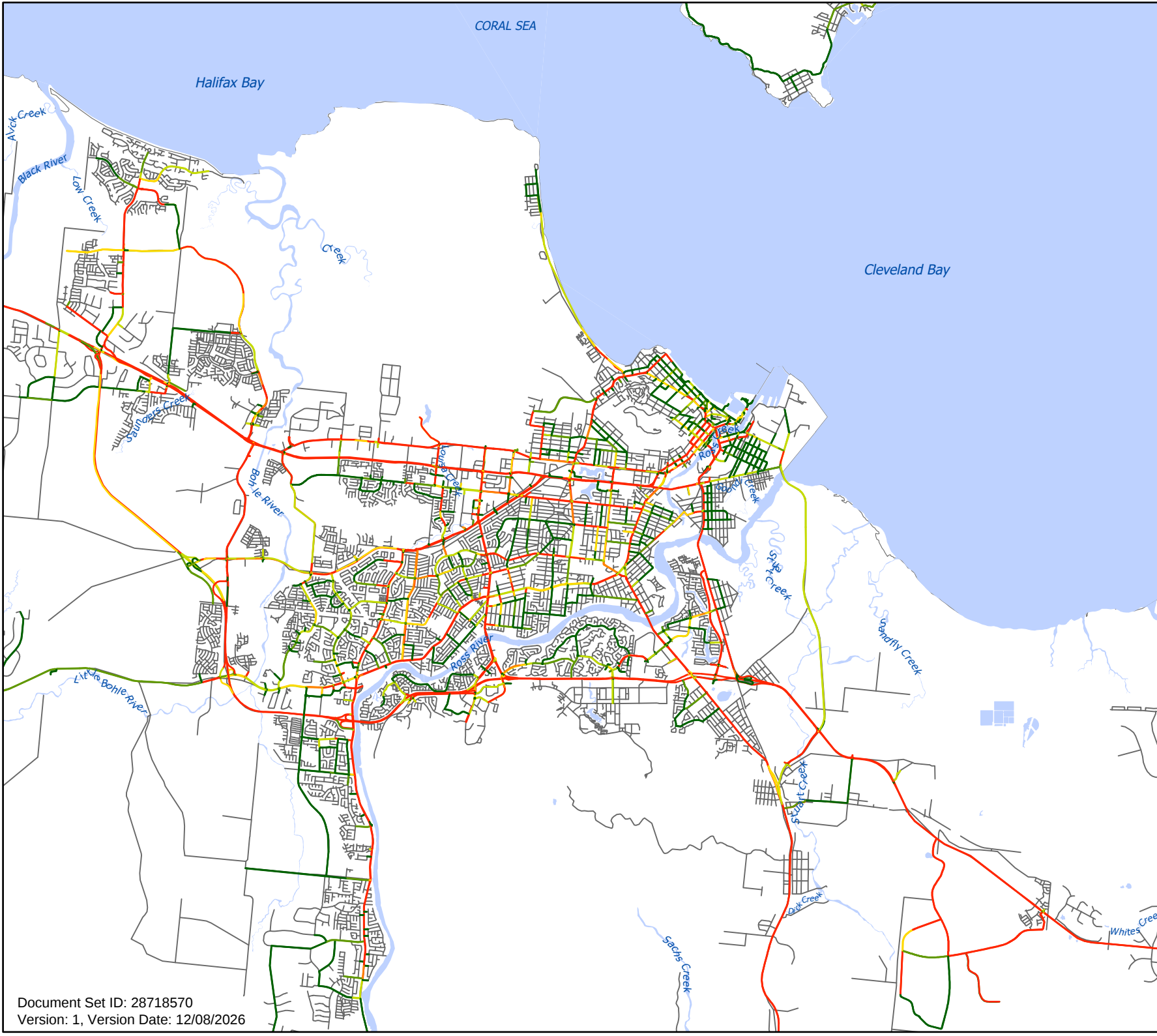
- A
- B
- C
- D
- E
- F
- Road Centre Line



Kilometers

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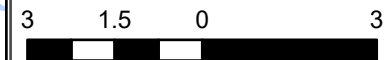
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Legend

LOS 2046 With LGIP Work

- A
- B
- C
- D
- E
- F
- Road Centre Line



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Local Government Infrastructure Plan Amendment 2026 Extrinsic Material Report: *Financial Methodologies*

Final - July 2026

Townsville City Council

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1. Introduction and Strategic Regional Context

This extrinsic material report has been prepared to support the interpretation and application of Townsville City Council's Local Government Infrastructure Plan (LGIP). The report outlines the financial methodologies used to prepare the LGIP Schedule of Works (SOW) model and explains the financial assumptions used to assess the Council's long-term infrastructure funding position.

The LGIP has been prepared in accordance with the *Planning Act 2016* and the *Minister's Guidelines and Rules for Local Government Infrastructure Plans*. The LGIP establishes the framework for coordinating infrastructure planning with anticipated development growth within the Townsville local government area.

The financial modelling supporting the LGIP translates projected population, dwelling and employment growth into infrastructure demand, infrastructure investment requirements and projected infrastructure charges revenue over the LGIP planning horizon.

This report provides transparency regarding the financial methodologies used to determine:

- the establishment cost of trunk infrastructure is included in the LGIP Schedule of Works
- the timing and sequencing of infrastructure delivery
- the infrastructure charges revenue expected to be generated from future development
- the overall financial sustainability of the LGIP over the planning horizon.

1.1 Role of the LGIP Financial Model

The LGIP financial model provides a strategic framework for understanding the relationship between projected development growth, infrastructure demand and infrastructure funding capacity.

The model integrates the LGIP planning assumptions with the Schedule of Works to estimate:

- the timing and cost of trunk infrastructure delivery
- the infrastructure required to support projected development
- the infrastructure charges revenue expected to be generated by development.

The model also allows Council to assess the long-term financial sustainability of the LGIP by comparing projected revenue from infrastructure charges against the cost of trunk infrastructure required to service development growth.

The financial modelling, therefore, plays an important role in informing infrastructure planning, investment prioritisation and long-term financial planning.

1.2 Regional Role of Townsville

Townsville performs a significant role within Queensland's settlement hierarchy as the largest regional centre outside Southeast Queensland.

The city functions as a major economic and service hub for North Queensland, supporting a large regional catchment extending beyond the Townsville local government area. Townsville hosts major regional infrastructure and services, including defence facilities, tertiary education institutions, regional hospitals, port infrastructure and logistics operations.

As a result of this regional service role, infrastructure networks within Townsville support both the resident population and a broader regional population that relies on the city for employment, health, education and commercial services.

This broader regional service function contributes to increased demand on infrastructure networks and influences the scale of infrastructure investment required to support growth.

1.3 Infrastructure Funding Context

Over recent decades, infrastructure delivery within many regional centres has been influenced by funding constraints and the need to prioritise infrastructure investment across large geographic areas.

In addition, infrastructure delivery in North Queensland is often associated with higher construction costs than in metropolitan areas in Southeast Queensland. These higher costs can arise from factors including:

- distance from major construction supply chains
- increased freight and logistics costs
- labour availability constraints within regional construction markets
- seasonal construction limitations associated with the wet season.

These factors influence the cost of delivering trunk infrastructure required to support development growth within the Townsville local government area.

1.4 Infrastructure Charges Framework

Infrastructure charges within Queensland are subject to State-imposed caps which apply consistently across all local government areas.

While the capped infrastructure charges framework provides certainty for the development industry, it also limits the extent to which local governments can recover the full cost of trunk infrastructure required to service development growth.

For regional centres such as Townsville, where infrastructure delivery costs may be comparatively higher, the interaction between infrastructure charges caps and

infrastructure investment requirements can result in a greater reliance on alternative funding sources to support trunk infrastructure delivery.

1.5 Purpose of this Report

This report provides an overview of the financial methodologies used to support the LGIP and explains how these methodologies have been applied within the Schedule of Works model.

The report should be read in conjunction with the LGIP extrinsic material reports for the individual infrastructure networks.

Together, these documents provide a transparent explanation of the assumptions and methodologies used to prepare the LGIP and to assess the long-term infrastructure funding position for Townsville City Council.

2. Infrastructure Cost Structure and Establishment Costs

This section outlines the methodology used to determine the establishment costs of trunk infrastructure included in the Local Government Infrastructure Plan (LGIP) Schedule of Works.

Establishment costs represent the capital cost of trunk infrastructure required to service forecast development within the Priority Infrastructure Area (PIA). These costs form a key input into the LGIP financial model and are used to determine the cost of providing trunk infrastructure to support future growth.

The establishment costs included in the Schedule of Works reflect the cost of delivering the trunk infrastructure networks required to support projected development over the LGIP planning horizon.

2.1 Infrastructure Networks

The LGIP identifies trunk infrastructure across a number of infrastructure networks required to service urban development within the Townsville local government area.

Establishment costs have been determined for trunk infrastructure associated with the following networks:

- water supply infrastructure
- sewerage infrastructure
- transport infrastructure (including road networks)
- parks and land for community purposes
- active transport infrastructure.

These networks collectively form the core infrastructure systems required to support population growth, employment development and the functioning of urban areas within the Townsville local government area.

The identification of trunk infrastructure for each network has been undertaken through the Council's infrastructure planning processes and is documented within the respective network extrinsic material reports.

2.2 Future Trunk Infrastructure

Future trunk infrastructure included in the LGIP Schedule of Works has been identified through Council's strategic infrastructure planning and network planning processes.

The infrastructure projects included in the Schedule of Works represent the trunk infrastructure required to support forecast development within the Priority Infrastructure Area over the LGIP planning horizon.

The cost of future trunk infrastructure has been determined using a combination of the following methodologies:

- detailed cost estimates derived from infrastructure planning studies
- infrastructure unit rates based on recent infrastructure delivery projects
- benchmark infrastructure planning rates.

Where detailed design information is available, cost estimates reflect project-level cost information, including allowances for construction costs, design and project management.

Where infrastructure projects are identified at a strategic planning level, costs represent high-level planning estimates suitable for long-term infrastructure planning and financial modelling.

These estimates include allowances for:

- construction costs
- design and project management
- contingency
- land acquisition, where applicable.

This approach ensures that infrastructure costs are estimated at a level appropriate to the strategic planning nature of the LGIP.

2.3 Existing Trunk Infrastructure

Existing trunk infrastructure within the Townsville local government area has been identified using the Council's infrastructure asset registers and asset management systems.

The establishment cost of existing trunk infrastructure has been determined using available asset valuation data and infrastructure replacement cost information.

Where necessary, asset information has been supplemented with spatial analysis and infrastructure unit-rate benchmarks to ensure consistency between the cost of existing infrastructure and that of future infrastructure included in the LGIP Schedule of Works.

This approach ensures that the valuation of existing trunk infrastructure is consistent with the methodology used to estimate the cost of future infrastructure.

2.4 Land Acquisition Costs

Land required for the delivery of trunk infrastructure corridors and facilities has been incorporated into the establishment cost calculations.

Land acquisition costs have been estimated using either:

- site-specific land valuation information where available, or
- benchmark land values based on comparable land transactions within the local government area.

Land acquisition costs have been included where trunk infrastructure requires the acquisition of land for infrastructure corridors, parks or infrastructure facilities.

Where land is already owned by Council or reserved for infrastructure purposes, land acquisition costs have not been included within the establishment cost calculations.

2.5 Infrastructure Cost Components

The establishment cost of trunk infrastructure included in the Schedule of Works typically comprises several cost components.

These may include:

- construction costs associated with infrastructure delivery
- design and project management costs
- contingency allowances
- land acquisition costs, where applicable.

These cost components reflect the typical costs associated with delivering trunk infrastructure projects and ensure that the infrastructure cost estimates included in the LGIP financial model are representative of the full cost of infrastructure delivery.

2.6 Infrastructure Cost Estimation Considerations

Infrastructure cost estimation in regional areas such as Townsville can be influenced by several regional delivery factors.

Infrastructure delivery within North Queensland has historically been associated with higher construction costs when compared with metropolitan areas due to factors such as:

- distance from major construction supply chains
- freight and logistics costs associated with material transport
- labour availability within regional construction markets
- seasonal construction limitations associated with the wet season.

These factors can influence the cost of delivering trunk infrastructure projects and have been taken into account when applying infrastructure unit rates in the LGIP financial model.

2.7 Relationship to Network Planning

The identification and costing of trunk infrastructure within the LGIP Schedule of Works is informed by the infrastructure planning undertaken for each network.

The detailed methodologies used to determine the scope and cost of trunk infrastructure for each network are documented in the relevant network extrinsic material reports.

This report should therefore be read in conjunction with the network reports to obtain a complete understanding of the infrastructure planning and cost-estimation methodology used to support the LGIP.

3. Financial Inputs to the Schedule of Works (SOW) Financial Model

The Schedule of Works (SOW) model incorporates a range of financial inputs that influence the timing and valuation of infrastructure costs and infrastructure charges revenue over the LGIP planning horizon.

These financial inputs are required to enable the LGIP financial model to estimate the relationship between infrastructure investment and infrastructure funding capacity over time.

The SOW model integrates the infrastructure projects identified in the LGIP with the planning assumptions for population, dwelling and employment growth to determine:

- the timing of infrastructure delivery
- the capital cost of trunk infrastructure
- the infrastructure charges revenue generated by development
- the overall infrastructure funding position over the LGIP planning horizon.

The key financial inputs incorporated into the SOW model are described below.

3.1 Model Timeframe

The LGIP financial model adopts a base year of **2026** and extends to **2041**, consistent with the LGIP planning horizon.

The planning horizon reflects the period over which projected population and employment growth is expected to occur within the Townsville local government area.

All financial values in the SOW model are expressed in base-year dollars to enable consistent comparison of infrastructure costs and revenues over time.

The use of constant-dollar values ensures that the financial modelling reflects real infrastructure costs and revenue streams without the distortion caused by inflation.

Infrastructure costs and infrastructure charges revenue are escalated within the model in accordance with the relevant indexation assumptions.

3.2 Infrastructure Charges Escalation

Infrastructure charges revenue within the SOW model has been escalated in accordance with the escalation provisions under the *Planning Act 2016*.

Infrastructure charges are indexed annually based on movements in the **Producer Price Index (PPI)** as published by the Australian Bureau of Statistics.

The application of indexation reflects the long-term movement in infrastructure delivery costs and ensures that infrastructure charges maintain their relative value over time.

Infrastructure charges revenue within the LGIP financial model, therefore increasing over the planning horizon as a result of both:

- growth in development activity
- annual indexation of infrastructure charges.

3.3 Construction Cost Escalation

Construction cost escalation has been applied to the establishment cost of trunk infrastructure included within the Schedule of Works.

Construction escalation reflects long-term increases in the cost of delivering infrastructure and is necessary to ensure that infrastructure cost estimates remain consistent with expected construction market trends.

Escalation assumptions have been informed by:

- historic construction cost index movements
- infrastructure construction cost benchmarks
- long-term infrastructure delivery trends.

Applying construction cost escalation ensures that the model's infrastructure delivery timing reflects realistic future infrastructure delivery costs.

3.4 Land Value Escalation

Land acquisition costs for trunk infrastructure corridors and facilities have been escalated in the financial model to reflect changes in land values over time.

Land value escalation has been based on historic land valuation trends within the Townsville local government area.

This approach ensures that land acquisition costs associated with future infrastructure delivery remain consistent with expected long-term market conditions.

3.5 Discount Rates

Discount rates have been applied within the SOW model to account for the time value of money when calculating the cost of servicing development.

Discounting is required to enable the financial model to compare infrastructure costs and infrastructure charges revenue that occur at different points in time across the planning horizon.

Network-specific discount rates have been applied in accordance with the methodology prescribed in the *Minister's Guidelines and Rules for Local Government Infrastructure Plans*.

These discount rates are used to convert infrastructure establishment costs into present-value equivalents, which are then used to determine the servicing costs associated with each infrastructure network.

In addition, a model-wide discount rate is applied within the overall cashflow analysis to enable comparison between infrastructure expenditure and infrastructure charges revenue over time.

3.6 Infrastructure Delivery Timing

The timing of infrastructure delivery within the Schedule of Works is an important input into the financial modelling process.

Infrastructure delivery timing is influenced by a range of factors, including:

- projected development growth
- infrastructure network capacity
- the sequencing of development areas
- infrastructure servicing requirements.

Infrastructure projects included in the Schedule of Works are therefore assigned delivery years based on the anticipated timing of when infrastructure will be required to support development.

This approach ensures that infrastructure expenditure within the financial model reflects the anticipated staging and sequencing of development across the local government area.

3.7 Relationship to the LGIP Financial Model

The financial inputs described above collectively influence the outputs of the LGIP financial model.

By integrating infrastructure cost estimates, infrastructure charges revenue and escalation assumptions, the SOW model provides a long-term view of infrastructure investment and infrastructure funding capacity.

This modelling enables the Council to assess:

- the relationship between infrastructure investment and infrastructure charges revenue
- the timing of infrastructure funding requirements
- the overall financial sustainability of the LGIP.

The results of this financial modelling are discussed further in **Section 5 - Financial Sustainability Assessment**.

4. Service Cost Calculation and Infrastructure Charges Revenue Assumptions

Service costs for trunk infrastructure networks have been calculated in accordance with the methodology prescribed in the *Minister's Guidelines and Rules for Local Government Infrastructure Plans*.

Service cost calculations translate the establishment cost of trunk infrastructure into an average cost of servicing development. These costs provide the basis for determining infrastructure charges and for assessing the financial sustainability of the LGIP.

The service cost methodology ensures that the cost of trunk infrastructure required to support development growth is apportioned across the development expected to occur within the Priority Infrastructure Area (PIA).

This section outlines the demand assumptions used in the service cost calculations and the methodology used to estimate infrastructure charges revenue within the LGIP financial model.

4.1 Demand Inputs

Demand inputs used in the service cost calculations are derived from the LGIP planning assumptions.

These planning assumptions establish the projected development pattern within the Townsville local government area and provide the basis for estimating infrastructure demand.

Key demand inputs include:

- projected population growth
- projected dwelling growth
- projected employment growth
- spatial distribution of development across the local government area.

Population and dwelling projections represent the expected growth in residential development over the LGIP planning horizon, while employment projections inform the infrastructure required to support non-residential development.

The spatial distribution of growth has been informed by:

- the planning scheme intent
- development capacity assessments
- physical and environmental constraints
- anticipated development sequencing.

These inputs allow the financial model to estimate the amount of development expected to occur within each infrastructure catchment and, therefore, the demand placed on trunk infrastructure networks.

4.2 Infrastructure Demand and Servicing

The demand inputs described above are translated into infrastructure demand using network-specific infrastructure planning standards.

These standards define the infrastructure required to service projected population and employment growth.

For example:

- water and sewer networks are planned based on population and dwelling growth
- transport infrastructure is influenced by both population and employment growth
- parks infrastructure is generally linked to population growth and accessibility standards.

The resulting infrastructure demand informs the scope of trunk infrastructure projects included in the LGIP Schedule of Works.

The service cost calculation then converts the total establishment cost of trunk infrastructure into a per-unit cost based on development demand.

4.3 Infrastructure Charges Framework

Infrastructure charges represent a key funding mechanism for trunk infrastructure required to service development.

Under the *Planning Act 2016*, local governments may levy infrastructure charges on development to recover a portion of the cost of trunk infrastructure required to support that development.

Infrastructure charges may be levied on development for a range of land uses, including:

- residential development
- commercial development
- industrial development
- community and institutional uses.

The infrastructure charges levied on development contribute toward funding the trunk infrastructure required to support growth within the Priority Infrastructure Area.

4.4 Infrastructure Charges Cap

Infrastructure charges within Queensland are subject to State-imposed maximum adopted charge caps.

These capped charges apply across all local government areas and establish the maximum infrastructure charge that may be levied for different development types.

While the capped infrastructure charges framework provides certainty and consistency for the development industry, it also limits the extent to which local governments can recover the full cost of trunk infrastructure required to service development growth.

For many local governments, particularly regional councils with relatively high infrastructure delivery costs, infrastructure charges can only recover a portion of the total infrastructure investment required to support development.

This constraint is reflected in the financial modelling undertaken as part of the LGIP.

4.5 Infrastructure Charges Revenue Projections

Infrastructure charges revenue has been estimated within the LGIP financial model using a conservative approach informed by historical development activity and projected growth trends.

Revenue projections take into account:

- historic infrastructure charges revenue collected by Council
- projected population and dwelling growth
- projected employment growth
- anticipated development activity within the local government area.

Infrastructure charges revenue is projected to remain stable over the 15-year planning horizon, supported by continued strong development activity across the city. Total infrastructure charges revenue is estimated to reach approximately **\$404.2 million** during this period. These projections are based on anticipated development growth and the ongoing indexation of infrastructure charges over time.

Financial year	Gross charges revenue
2026	\$ 16,645,672
2027	\$ 26,242,484
2028	\$ 25,502,828
2029	\$ 24,784,019
2030	\$ 24,085,471
2031	\$ 23,406,611
2032	\$ 29,774,198
2033	\$ 28,934,999
2034	\$ 28,119,453

2035	\$ 27,326,893
2036	\$ 26,556,673
2037	\$ 27,632,777
2038	\$ 24,826,807
2039	\$ 24,127,052
2040	\$ 23,447,020
2041	\$ 22,786,156
Total	\$ 404,199,112

4.6 Revenue and Infrastructure Delivery Relationship

The timing of infrastructure charges revenue does not always align with the timing of infrastructure investment required to support development.

In many cases, trunk infrastructure must be delivered ahead of development to enable it.

As a result, infrastructure investment often occurs before revenue is generated from infrastructure charges.

This timing mismatch between infrastructure expenditure and infrastructure charges revenue is reflected in the LGIP cashflow model and contributes to the infrastructure funding gap identified in the financial sustainability assessment.

The interaction between infrastructure investment timing and infrastructure charges revenue is therefore an important consideration when assessing the long-term infrastructure funding position of the LGIP.

4.7 Role of Infrastructure Charges in Infrastructure Funding

Infrastructure charges are an important funding source for the delivery of trunk infrastructure.

However, infrastructure charges alone are not intended to entirely fund the total cost of trunk infrastructure required to support development.

Local governments typically fund trunk infrastructure through a combination of sources, including:

- infrastructure charges revenue
- Council capital works funding
- State and Commonwealth infrastructure funding programs
- infrastructure agreements with the development industry.

The LGIP financial model, therefore, provides an important framework for understanding the contribution that infrastructure charges make toward infrastructure funding and the extent to which additional funding sources may be required.

5. Financial Sustainability Assessment and Conclusion

The financial sustainability assessment considers the relationship between the cost of trunk infrastructure required to service forecast development and the revenue expected to be generated through infrastructure charges over the LGIP planning horizon.

The LGIP financial model provides a long-term view of infrastructure investment requirements, infrastructure charges revenue and the resulting funding position over time. This modelling assists Council in understanding how infrastructure delivery aligns with development growth and the extent to which infrastructure charges contribute towards funding the infrastructure required to support that growth.

The analysis also provides an indication of the potential funding gap between infrastructure investment requirements and the revenue generated from infrastructure charges.

5.1 Infrastructure Investment Requirements

The LGIP identifies a substantial program of trunk infrastructure investment required to support projected population and employment growth across the Townsville local government area.

The total gross investment in trunk infrastructure identified within the LGIP Schedule of Works is approximately **\$2.62 billion**.

After accounting for infrastructure subsidies and development offsets, the net capital expenditure attributable to Council is estimated to be approximately **\$2.40 billion**.

This investment reflects the infrastructure required to service projected development within the Priority Infrastructure Area over the LGIP planning horizon.

Table 5.1 - Trunk Infrastructure Investment by Network

Infrastructure Network	Estimated Investment
Water Supply	\$1.353 billion
Sewerage	\$542.98 million
Transport (Roads)	\$240.35 million
Parks	\$195.26 million
Active Transport Paths	\$292.03 million
Total Gross Investment	~\$2.62 billion

The largest component of infrastructure investment relates to the **water supply and sewerage networks**, which together represent a significant proportion of the total infrastructure program. These investments are required to support both the expansion of development areas and the upgrading of existing infrastructure networks.

Investment in the **transport network** also accounts for a substantial portion of the infrastructure program, underscoring the importance of maintaining efficient transport connectivity as the city grows.

Parks and active transport infrastructure investments contribute towards maintaining accessibility to public open space and supporting broader liveability outcomes within urban areas.

5.2 Infrastructure Charges Revenue

Infrastructure charges represent an important funding source for trunk infrastructure required to service development. Infrastructure charges revenue has been projected within the LGIP financial model based on anticipated development activity and the adopted infrastructure charges framework.

Infrastructure charges revenue is expected to remain consistent over the planning horizon as development activity progress and infrastructure charges continue to be indexed in accordance with the relevant statutory framework.

Over the LGIP planning horizon, total revenue from infrastructure charges is estimated to reach approximately **\$404.2 million**.

The projected growth in infrastructure charges revenue reflects both:

- increased development activity over time
- indexation of infrastructure charges.

While this represents a significant contribution to infrastructure funding, infrastructure charges revenue is insufficient to fully fund the infrastructure investment required to support development growth.

5.3 Infrastructure Funding Gap

The comparison between infrastructure investment requirements and projected infrastructure charges revenue indicates that infrastructure charges alone will not fully fund the trunk infrastructure required to service development.

Table 5.3 - LGIP Infrastructure Funding Position

Item	Value
Total Infrastructure Charges Revenue	\$404.2 million
Total Net Trunk Infrastructure Expenditure	\$2.40 billion
Funding Gap	\$1.99 billion
Infrastructure Cost Recovery	~ 16.8%

Infrastructure charges are therefore expected to recover approximately **16.8 percent of the cost of trunk infrastructure required to support development growth**.

The remaining infrastructure investment must therefore be funded through alternative funding sources.

This funding gap is not uncommon in LGIP financial modelling, as infrastructure charges are generally intended to contribute toward the cost of trunk infrastructure rather than fully fund all infrastructure investment required by local governments.

5.4 Infrastructure Delivery Trajectory

Infrastructure investment within the LGIP occurs in several major phases across the planning horizon.

These phases reflect the timing of significant trunk infrastructure upgrades and expansions required to support development growth and maintain the operational capacity of infrastructure networks.

Table 5.4 - Major Infrastructure Delivery Periods

Year	Infrastructure Expenditure
2027	\$418 million
2028	\$200.3 million
2029	\$284.7 million
2030	\$310.2 million
2031	\$280.5 million
2032	\$119.6 million
2033	\$73.4 million
2034	\$179.6 million
2035	\$12.2 million
2036	\$136.2 million
2037	\$25 million
2038	\$27 million
2039	\$156 million
2040	\$150 million
2041	\$141 million

These major investment periods reflect the timing of significant infrastructure projects required to enable development in key growth areas.

Infrastructure investment is typically required before development to provide the capacity needed for it to proceed. As a result, infrastructure expenditure can occur before the corresponding infrastructure charges revenue is generated.

This sequencing of infrastructure investment and development activity is a common feature of infrastructure planning and contributes to the funding gap identified within the LGIP financial modelling.

5.5 Cashflow Trajectory

The LGIP financial model illustrates the cumulative relationship between infrastructure expenditure and infrastructure charges revenue over the planning horizon.

Table 5.5 - Cumulative LGIP Funding Position

Year	Cumulative Position
2027	-396.6 million
2028	-642.0 million
2029	-964.5 million
2030	-1.24 billion
2031	-1.50 billion
2032	-1.58 billion
2033	-1.62 billion
2034	-1.77 billion
2035	-1.86 billion
2036	-1.97 billion
2037	-1.96 billion
2038	-1.96 billion
2039	-2.09 billion
2040	-2.22 billion
2041	-2.33 billion

The financial model begins with a modest surplus in the early years of the planning horizon.

However, as major infrastructure projects are delivered to support development growth, infrastructure expenditure exceeds infrastructure charges revenue, resulting in a cumulative funding deficit.

During the middle period of the planning horizon, increased development activity generates higher revenue from infrastructure charges, which partially offsets infrastructure expenditure.

Despite this, the cumulative funding position remains negative due to the scale of infrastructure investment required to support development growth.

The final infrastructure delivery phase, occurring toward the end of the planning horizon, further increases the cumulative funding gap.

5.6 Funding Implications

The financial modelling undertaken as part of the LGIP demonstrates that infrastructure charges alone cannot fully fund the trunk infrastructure required to support development growth.

Council will therefore need to fund a portion of the infrastructure investment program through alternative funding sources.

Table 5.6 - Potential Infrastructure Funding Sources

Funding Source	Description
Council Capital Works Program	Direct funding of infrastructure projects through the Council's capital works budget

State Commonwealth Funding	and	Infrastructure grants and funding programs
Infrastructure Agreements		Agreements with developers to deliver or contribute to trunk infrastructure
Long-term Planning	Financial	Borrowing and other long-term infrastructure financing mechanisms

The LGIP Schedule of Works, therefore, provides a strategic framework for identifying infrastructure investment priorities and understanding the long-term infrastructure funding requirements associated with projected development growth.

Infrastructure delivery will continue to be coordinated through the Council's capital works program and long-term financial planning processes.

6 Conclusion

This report outlines the financial methodologies used to support the preparation of Townsville City Council's Local Government Infrastructure Plan (LGIP) and the associated Schedule of Works financial model.

The LGIP financial model integrates the planning assumptions for population, dwelling and employment growth with the infrastructure planning undertaken for each trunk infrastructure network. This modelling enables Council to estimate the infrastructure investment required to support development growth and assess the relationship between infrastructure delivery and infrastructure funding capacity over the LGIP planning horizon.

The LGIP identifies approximately **\$2.62 billion** in gross trunk infrastructure investment across the trunk infrastructure networks. After accounting for infrastructure subsidies and development offsets, the net capital expenditure attributable to Council is estimated to be approximately **\$2.40 billion**.

Infrastructure charges are projected to generate approximately **\$404.2 million** over the planning horizon. While infrastructure charges provide an important contribution toward infrastructure funding, they are expected to recover approximately **16.8 percent** of Council's net capital expenditure on trunk infrastructure required to support development growth.

The financial modelling also identifies a cumulative net cashflow deficit of approximately **\$2.33 billion**, reflecting both the scale of infrastructure investment required and the timing mismatch between infrastructure delivery and the collection of infrastructure charges revenue.

The LGIP Schedule of Works provides a strategic framework for identifying the trunk infrastructure required to support development over time. The prioritisation and delivery of infrastructure will continue to be informed through Council's capital works program, long-term financial planning processes and ongoing monitoring of development activity.