

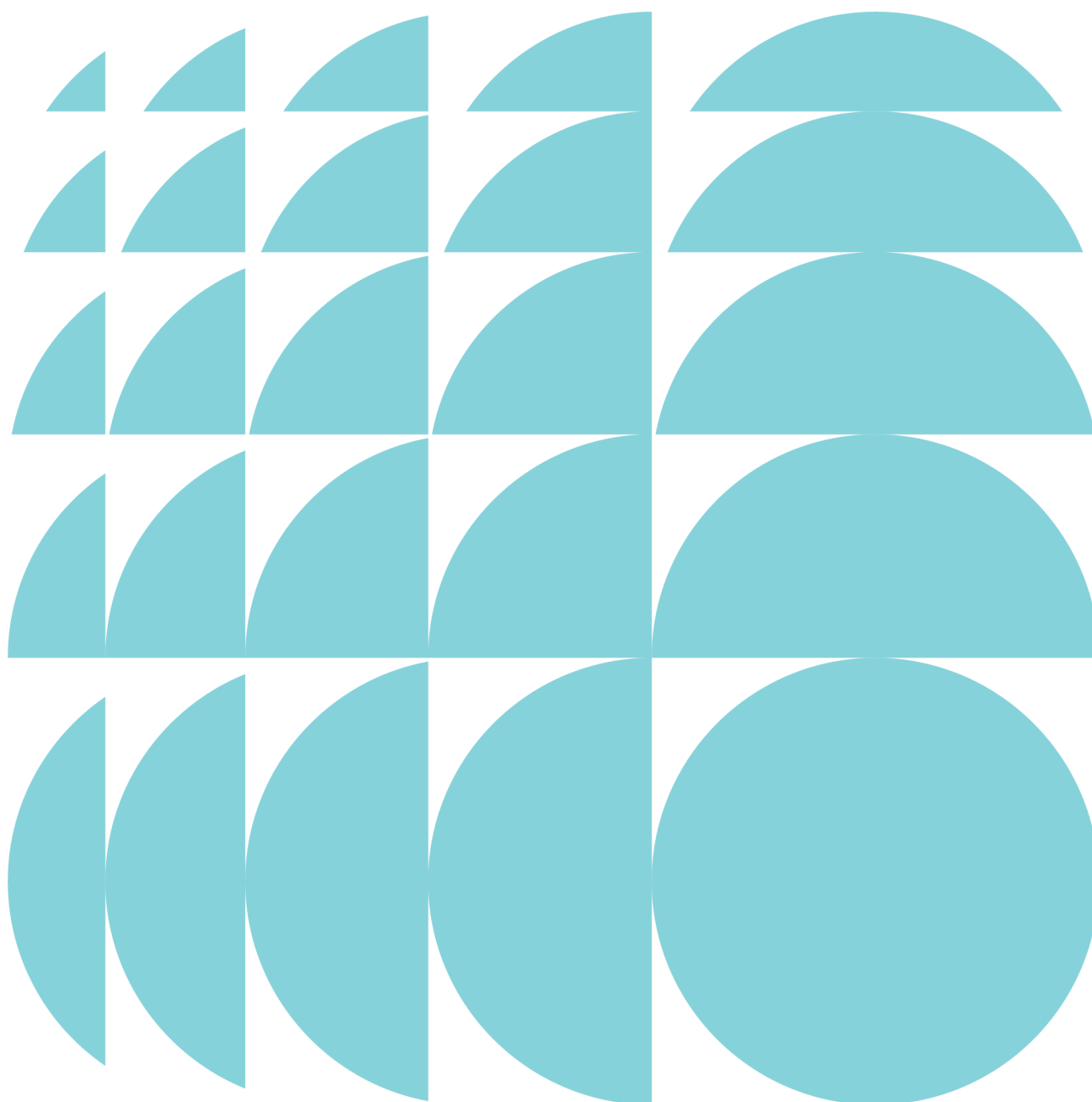
**ETHOS  
URBAN**

**Townsville City Plan  
Performance Indicators  
Project**

Technical Report

Submitted to Townsville City Council

February 2021 |



*The Townsville City Council acknowledges the Guramblbarra Wulgurukaba, Bindal, Nywalgi and Gagu Badhun peoples as the Traditional Owners of the Townsville region. We value the cultures, traditions and aspirations of Traditional Owners and hold in great significance the valuable contribution that Traditional Owners have made and continue to make within the Townsville community.*

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Ethos Urban Pty Ltd  
ABN 13 615 087 931.  
[www.ethosurban.com](http://www.ethosurban.com)  
1/356 St Pauls Terrace, Fortitude Valley  
QLD 4006 t 61 7 3852 1822

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## 1.0 Introduction

The Townsville City Plan sets out the vision for how Townsville should grow to meet the social, environmental, and economic challenges of the future. It articulates Council's vision for where and how development occurs, what infrastructure and spaces are provided for new or changing communities, what environmental and built form features are protected or enhanced, and what land use activities are undertaken in different parts of the municipality. It strikes a balance between encouraging Townsville's continued growth while protecting our unique lifestyle. It is the legal document that guides and regulates the development of land within the municipality.

The Townsville City Plan Performance Indicators are a set of measures that provide the basis for measuring the effectiveness of the planning scheme in meeting its stated long-term vision for the City, as expressed in the strategic framework (Part 3). The strategic framework outlines the Townsville City Plan's broad policy outcomes and provides the overarching policy direction for future development throughout Townsville. It presents the vision for the City across four policy themes and outcomes:

1. Shaping Townsville
2. A strong and connected community
3. An environmentally sustainable future
4. Sustainable economic growth.

### 1.1 The indicator framework

The Townsville Planning Scheme indicator framework comprises 12 indicators categorised under the four (4) overarching themes contained within the strategic framework of the Townsville City Plan. The indicators will be measured annually by Townsville City Council (TCC) and incorporate data prepared and managed by Council, as well as external sources.

Regular monitoring and measurement of the Townsville City Plan outcomes can help Council to make better decisions by:

- Gauging whether policy directions are being achieved
- Adjusting or refining the Townsville City Plan directions
- Identifying new projects
- Lodging stronger grant applications to State and federal government, using a robust evidence base
- Providing a tool for community and industry engagement
- Improving governance by mobilising teams across Council towards common goals.

This project presents an approach that can be implemented more broadly across other Queensland local Councils to monitor and evaluate the effectiveness of their own planning schemes.

### 1.2 Purpose of this report

This technical report forms part of a suite of documents for the Townsville City Plan Performance Indicators. It provides a detailed account of the data, analytical approach, including any limitations and key assumptions, and key findings for each indicator.

Other Townsville City Plan Performance Indicators project documents include:

- Townsville City Plan Performance Report – Presents a summary of the key findings from the assessment of each indicator.
- Townsville City Plan Performance Indicators Methodology Report – Outlines the approach to collate and analyse the data for each indicator.

- Townsville City Plan Performance Indicators Spreadsheet – Provides a central storage location of the summary data inputs for each indicator that can be updated over time. The file includes the formulas and graphic representations to support the reporting of each indicator.

## 2.0 How was the indicator framework developed?

Ethos Urban was commissioned by Townsville City Council to prepare Townsville Planning Scheme Indicators. The project was undertaken over three broad phases as summarised at Figure 1 below. The majority of the project was completed between July 2019 and June 2020, with minor updates made between July 2020 and January 2021. This included:

### 1. Development of the indicator framework

Review of the strategic framework and consultation with key internal and external stakeholders to scope the topics and availability of data for the indicators.

### 2. Developing the measurement, reporting and presentation framework

Development of an agreed methodology and analytical approach for each indicator based on input with Council officers.

### 3. Undertaking a “baseline” measurement and reporting of the indicators

Undertake a baseline assessment of the indicators, using the agreed data and methodology, and preparation of all project reports.

## 2.1 Stakeholder engagement

The Townsville Planning Scheme Indicators project has sought to engage a broad range of internal and external stakeholders. This has included business support, governance, and other internal teams who play roles as ‘data owners’ as well as industry representatives and other organisations.

### 2.1.1 Internal engagement

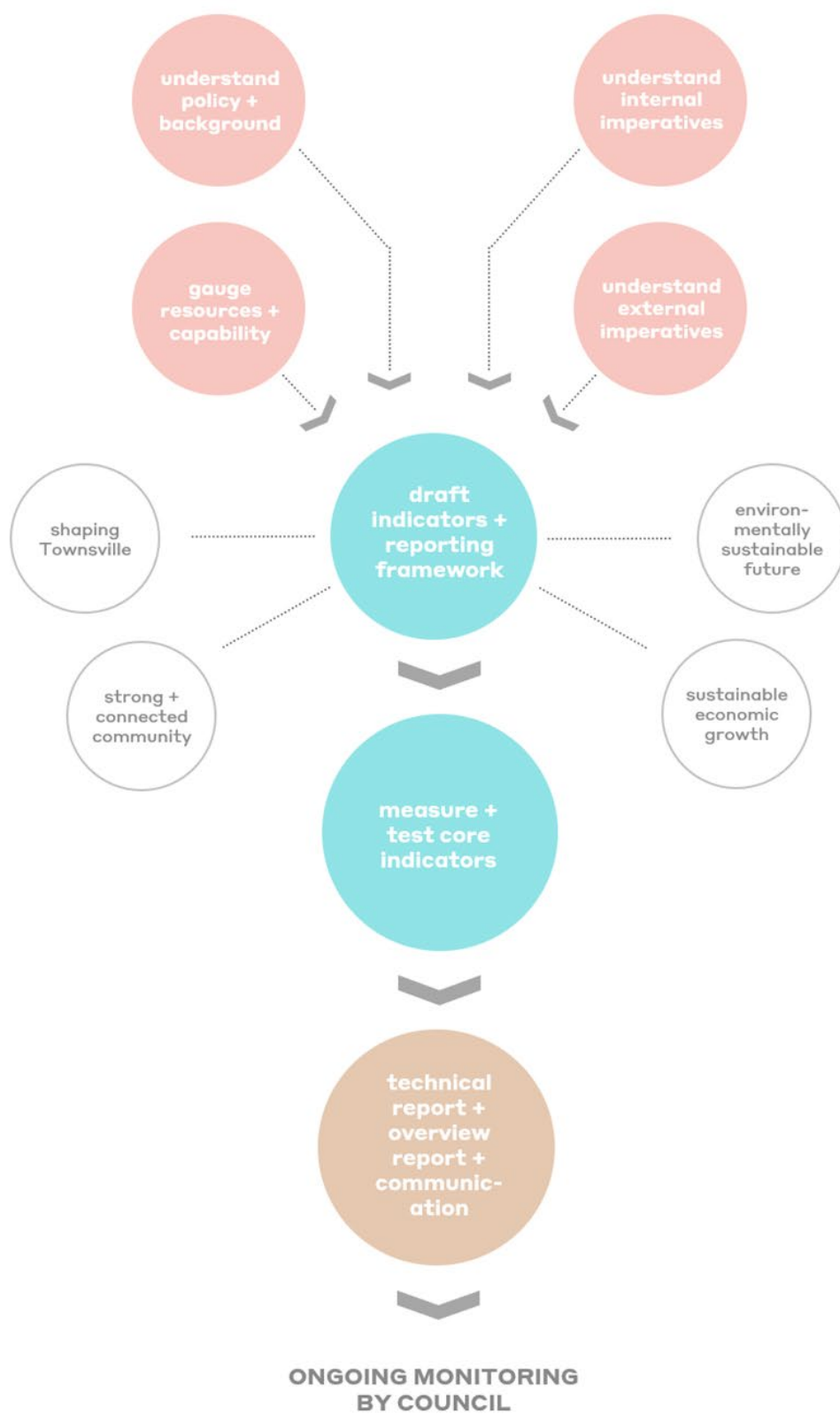
Townsville City Council officers have been engaged throughout the project. They have provided input into the development of the indicator framework and assessment approach, supplied data and reviewed the project reports. The following Council departments and units have been involved in the Townsville Planning Scheme Indicators project:

- Development Assessment Unit
- Infrastructure Planning Unit
- Business Support Unit
- Future Cities Department
- Environmental Services Department
- Land Use and Urban Design Unit

### 2.1.2 External engagement

Engagement has also been undertaken with a range of external stakeholders to develop and test the indicator framework, and in some instances these groups have provided data. The external stakeholders engaged include:

- Department of State Development, Infrastructure, Local Government and Planning (formerly the Department of State Development, Manufacturing, Infrastructure and Planning)
- Queensland Treasury
- Townsville Enterprise Limited
- Department of Transport and Main Roads, TransLink division
- Planning Institute of Australia
- Property Council of Australia
- Engineers Australia.



conceptual project map

**Figure 1 - Project methodology**



### 3.0 Shaping Townsville

The Shaping Townsville theme sets out the vision and a consistent plan for how Townsville should grow over the next 25 years. It strikes a balance between encouraging Townsville's continued growth and supporting the characteristics that make it liveable and unique.

The Townsville City Plan aims to grow the community in a smarter way, encouraging development in areas that already have the necessary infrastructure in place to avoid unnecessary and excessive costs to the community and ratepayers. It supports Townsville's major centres (including Aitkenvale, Central Business District, Hyde Park, North Ward and Thuringowa Central) to evolve into activity centres with vibrant, active and dynamic community, residential, retail and business facilities connected by a strong public transport network. It also encourages housing choice and affordability for residents.

The Shaping Townsville theme comprises five indicators:

- Indicator 1 – Housing growth and land supply
- Indicator 2 – Housing location and type
- Indicator 3 – Non-residential gross floor area in key activity centres
- Indicator 4 – Modes of transport
- Indicator 5 – Footpath provision

### 3.1 Indicator 1 – Housing growth and land supply

This indicator monitors the number of new dwellings developed, and total area and number of years of greenfield residential land supply.

The Townsville City Plan is Council's primary tool for managing growth and development. It targets 45,000 new dwellings by 2039 and the State Planning Policy's guiding principles require that planning schemes support a 15-year supply of land. This is reflected in the guidance material for the land supply state interest and in the Minister's Guidelines and Rules for Local Government Infrastructure Plans (LGIPs).

This indicator monitors how much housing development is occurring across the municipality, and the adequacy of residential land supply to meet future housing needs. It will annually report:

- The number of new dwellings built across the City
- Total hectares supply of urban and rural residential land
- Total number of years of greenfield residential land supply

#### 3.1.1 Method of analysis

To monitor the number of new dwellings built across the municipality this indicator uses data from Council's building permit database. It also draws on information from the Townsville Residential Land Supply Monitoring Program (the monitoring program) to monitor land supply. This program undertakes an annual assessment of housing land supply and a housing demand and needs assessment based upon future growth projections. Refer to the *Residential Land Supply Monitoring Report* (2015 and 2018) for a detailed explanation of the program's objectives and methodology.

This indicator incorporates residential and rural residential land across the municipality. Data is captured on an annual basis at the end of each financial year (from 2016/17 to 2018/19).

#### Number of new dwellings

The number of new dwellings was calculated by filtering Council's building permit data to show approvals for each financial year (FY2015-19). The number of new dwellings was determined by summing the number of water meters for building classes 1a, 1b, 2, 3, 4 and 9c. Building approval data was sourced from Profile id.

#### Residential land supply

Residential land supply was calculated by using data from Council's Land supply data spreadsheet. This provided information about the total number of hectares for land supply by greenfield and infill areas as well as rural residential land.

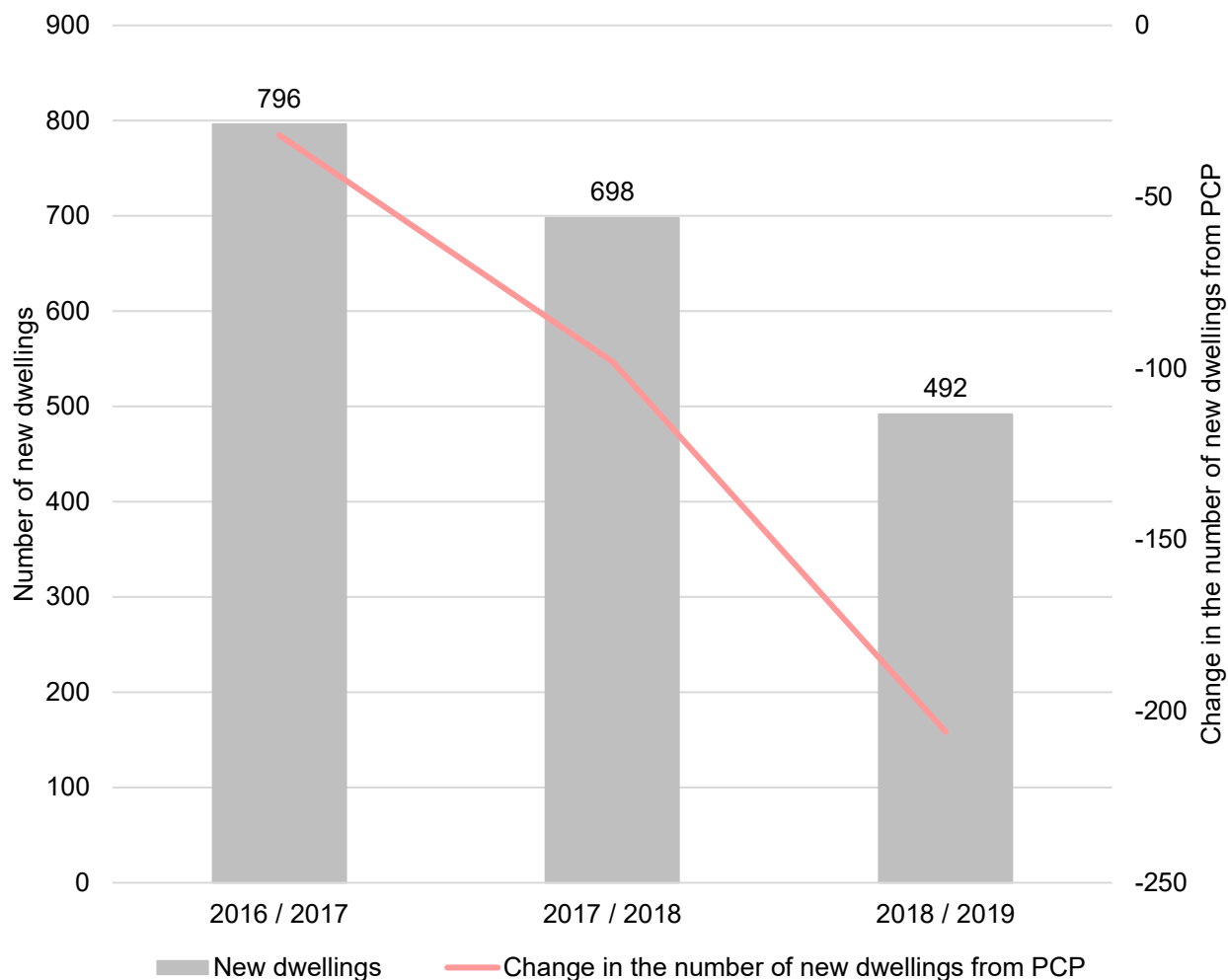
The number of years of land supply by years was determined by calculating the rate of consumption of greenfield residential land, being the average rate of land consumed based on the 2016/2017 to 2018/2019 financial years. This will be a live variable that will be updated throughout the life of the Townsville Planning Scheme Indicator program.

Council's monitoring program is focussed on greenfield land supply and does not consider brownfield development potential in urban areas.

#### 3.1.2 Key findings

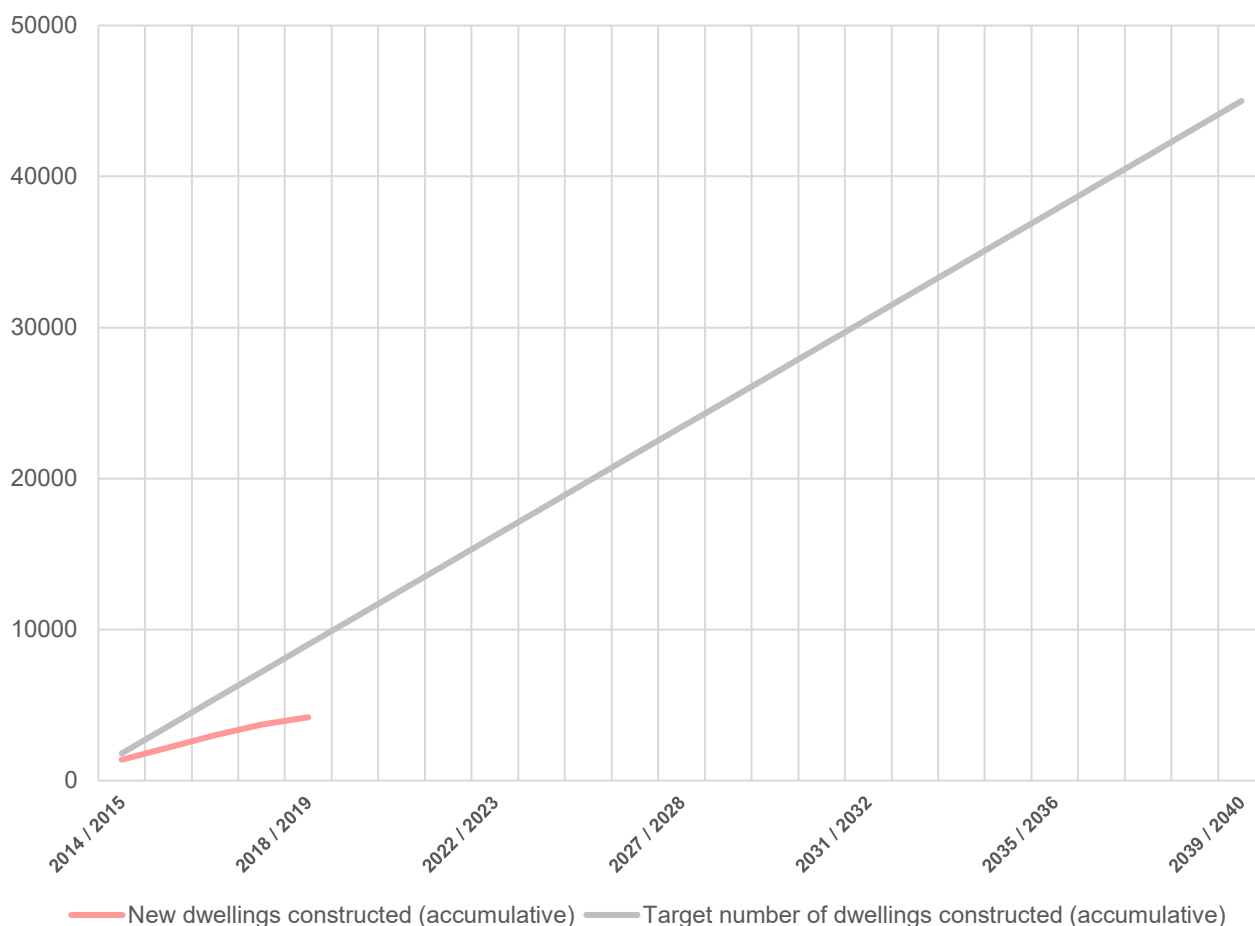
#### Number of new dwellings

There were 492 new dwellings constructed in the 2018/2019 financial year. The number of new dwellings has seen a steady decline since FY2016/15, decreasing by an average of 152 dwellings each year to FY2018/19 (Figure 2). However, this trend is consistent with other Queensland regional cities that have experienced a decrease in building approvals during this time. This includes Rockhampton (39 dwellings per year), Gladstone (32 dwellings per year) and Cairns (22 dwellings per year).



**Figure 2: Graph of the number of new dwellings constructed between 2016/2017 and 2018/2019 financial years as well as the change in the number of new dwellings constructed from the prior corresponding year (PCP)**

The Townsville City Plan targets 45,000 new dwellings to be constructed by 2039. Figure 3 illustrates that the number of new dwellings being constructed across the city is well below the average number of new houses that would need to be supplied to meet the Townsville City Plan aspiration. As of the 2018/2019 financial year, the number of new dwellings constructed across the municipality is 4,806 off Council's strategic target.

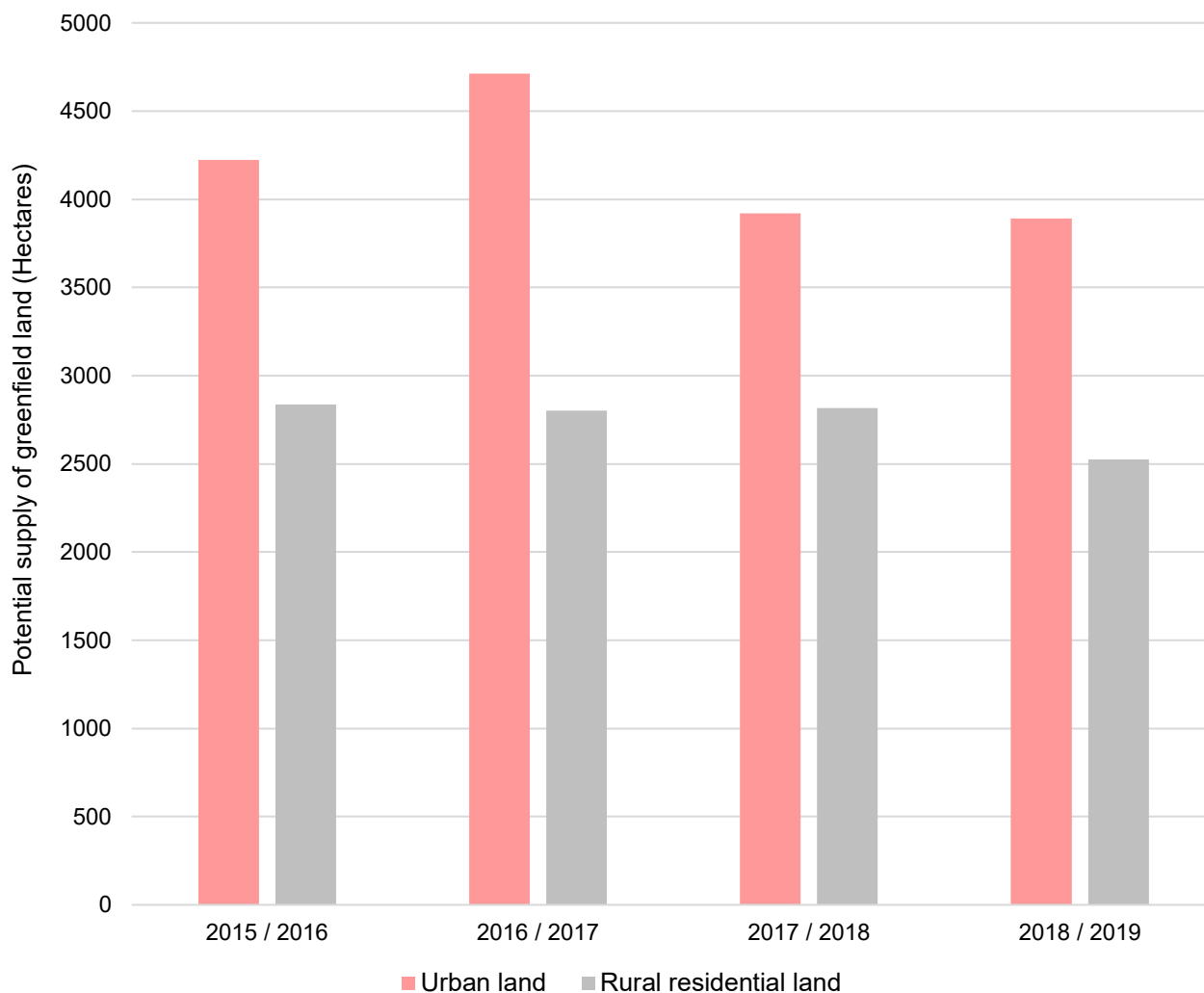


**Figure 3: Graph of the number of new dwellings constructed since the commencement of the Townsville City Plan (October 2014) against the average number of dwellings to be constructed to meet the 25 year dwelling target of 45,000 dwellings**

### Supply of urban and rural residential land supply (Hectares)

There are 6,419 hectares of greenfield land available for residential development across the city. This includes 3,893 hectares of urban land (60%) and 2,526 hectares of rural residential land (40%).

Both urban and rural residential land categories have experienced a small decline between FY2014/2015 and FY2018/2019, however in FY2016 / 2017 there was an increase to urban land supply.



**Figure 4: Graph of potential supply of greenfield land by urban and rural residential land categories**

### Supply of greenfield residential land supply (Years)

As of FY2018/2019 there is a total of 20 years of greenfield residential land supply for the municipality. This exceeds the minimum 15-year supply mandated by the *State Planning Policy* (July 2017). Urban greenfield land supply has an estimated supply of 16.8 years, whilst rural residential greenfield has an estimated supply of 50 years. This difference, when also considering the total hectares of available greenfield land, demonstrates a historically higher demand for urban greenfield land across Townsville.

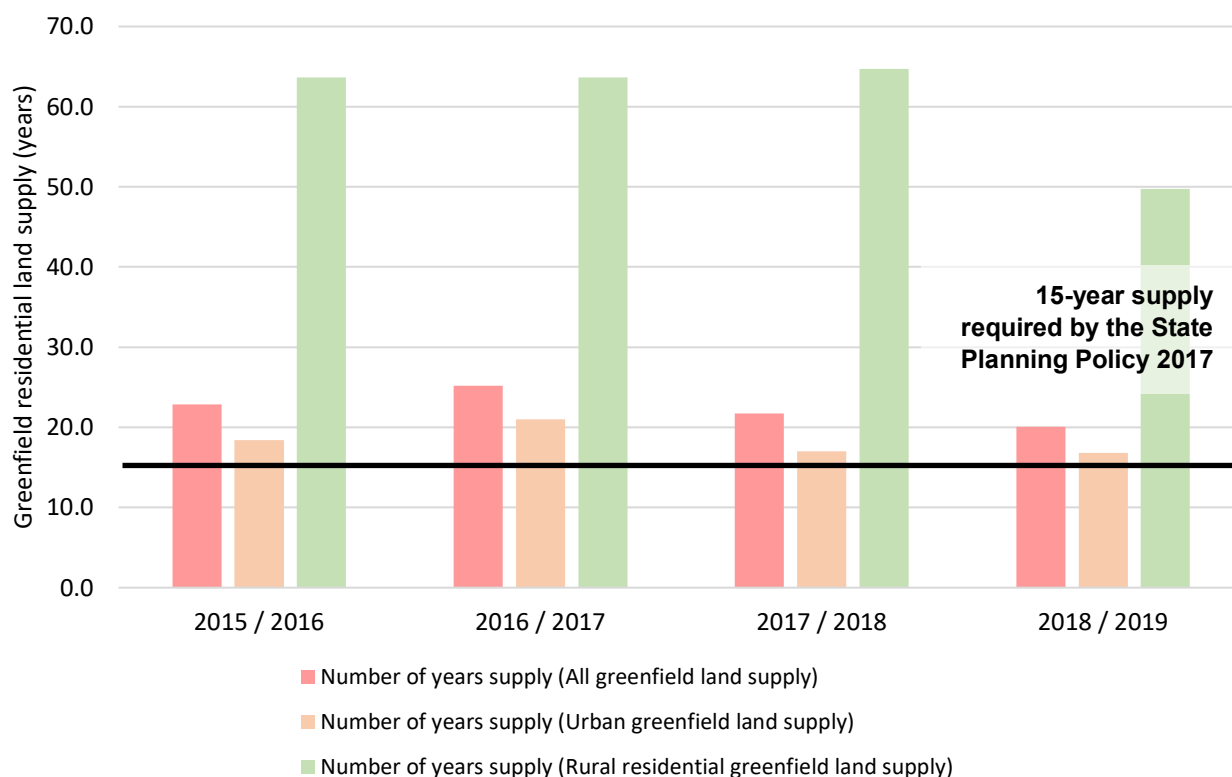


Figure 5: Graph of potential supply of greenfield land by years

### 3.1.3 Conclusion

There have been 1,986 new dwellings constructed across Townsville over the last three financial years. The number of new dwellings constructed across the city has declined during this time; reducing by an annual average of 152 dwellings. The Townsville City Plan aims for 45,000 new dwellings by the 2039/2040 financial year. The current rate of development is tracking below the trendline which would achieve this target, demonstrating the slowing of residential development across the municipality in recent years. The purpose of the strategic framework is to articulate Council's long-term vision for the region. The continued monitoring of this indicator will allow Council to determine whether the housing target should be re-calculated in line with market trends and local demand. This would also influence Council's LGIP growth assumptions, Long Term Financial Forecast or any other reporting which considers the anticipated trend of dwelling construction over the 25-year period.

There are 6,419 hectares of greenfield land available for residential development across the city. This includes 3,893 hectares of urban land (60%) and 2,526 hectares of rural residential land (40%). The analysis also indicates that urban land is being consumed at a faster rate than rural residential land.

Overall, the city currently has a 20-year supply of greenfield residential land, exceeding the minimum 15-year supply mandated by the *State Planning Policy* (July 2017). Urban greenfield land supply has an estimated supply of 16.8 years, whilst rural residential greenfield has an estimated supply of 50 years. The rate of land consumption used to inform this calculation has been informed by a period of relatively low growth and should therefore continue to be closely monitored over time to ensure the Townsville City Plan supports a sustainable and healthy supply of residential land.

The Townsville Residential Land Supply Monitoring Program provides Council with valuable insights into housing growth and land supply across the municipality and this indicator relies on the continued resourcing of this activity. There is potential for this program, and indicator, to be expanded in the future to monitor opportunities for urban renewal across the city by identifying strategic brownfield locations and their potential residential yield.

## 3.2 Indicator 2 – Housing location and type

This indicator monitors the number of new dwellings by housing type and location across the city.

The Townsville City Plan promotes dwelling diversity across the municipality to provide housing choice to current and future residents. It sets a target for one third of new houses to be multiple dwellings typologies, such as townhouses and apartments, and the balance to be delivered as detached houses. The Townsville City Plan also identifies the areas where residential growth should occur.

This indicator allows us to understand what kind of housing is being delivered and whether it is occurring where it is strategically directed. It annually reports:

- The number of new detached dwellings and multiple dwellings developed
- The number of new dwellings developed in strategically identified growth locations.

### 3.2.1 Method of analysis

This indicator uses data building permit data, that has been analysed through different GIS polygons (LGIP; strategic growth areas and emerging centres).

The Townsville City Plan directs future housing growth to a number of existing and future activity centres; residential development trends in these locations have been analysed:

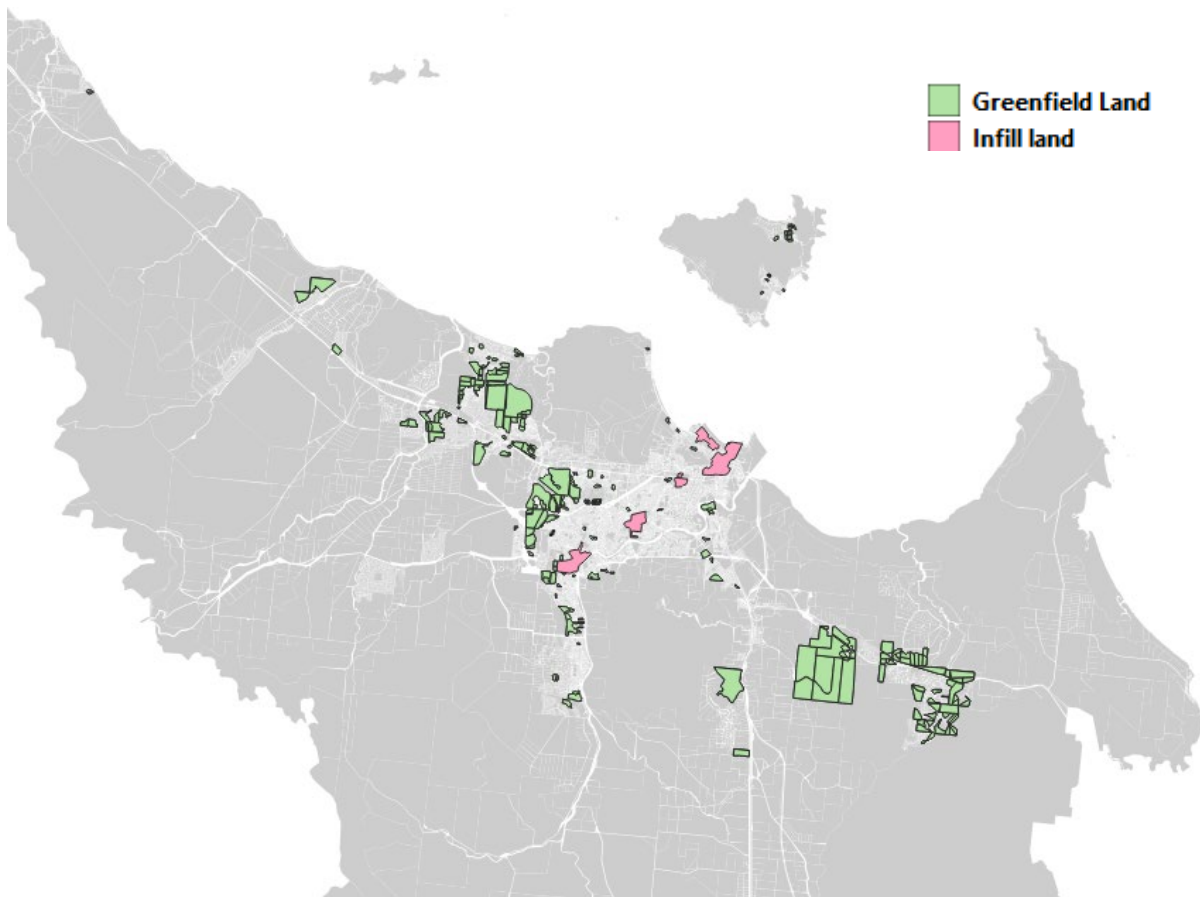
- CBD
- North Ward
- Existing Centres (Aitkenvale, Thuringowa Central and Hyde Park)
- Future Centres (Burdell and Julago)

New dwellings within the Emerging community (ECZ2) or residential zones (RZ) were also measured.

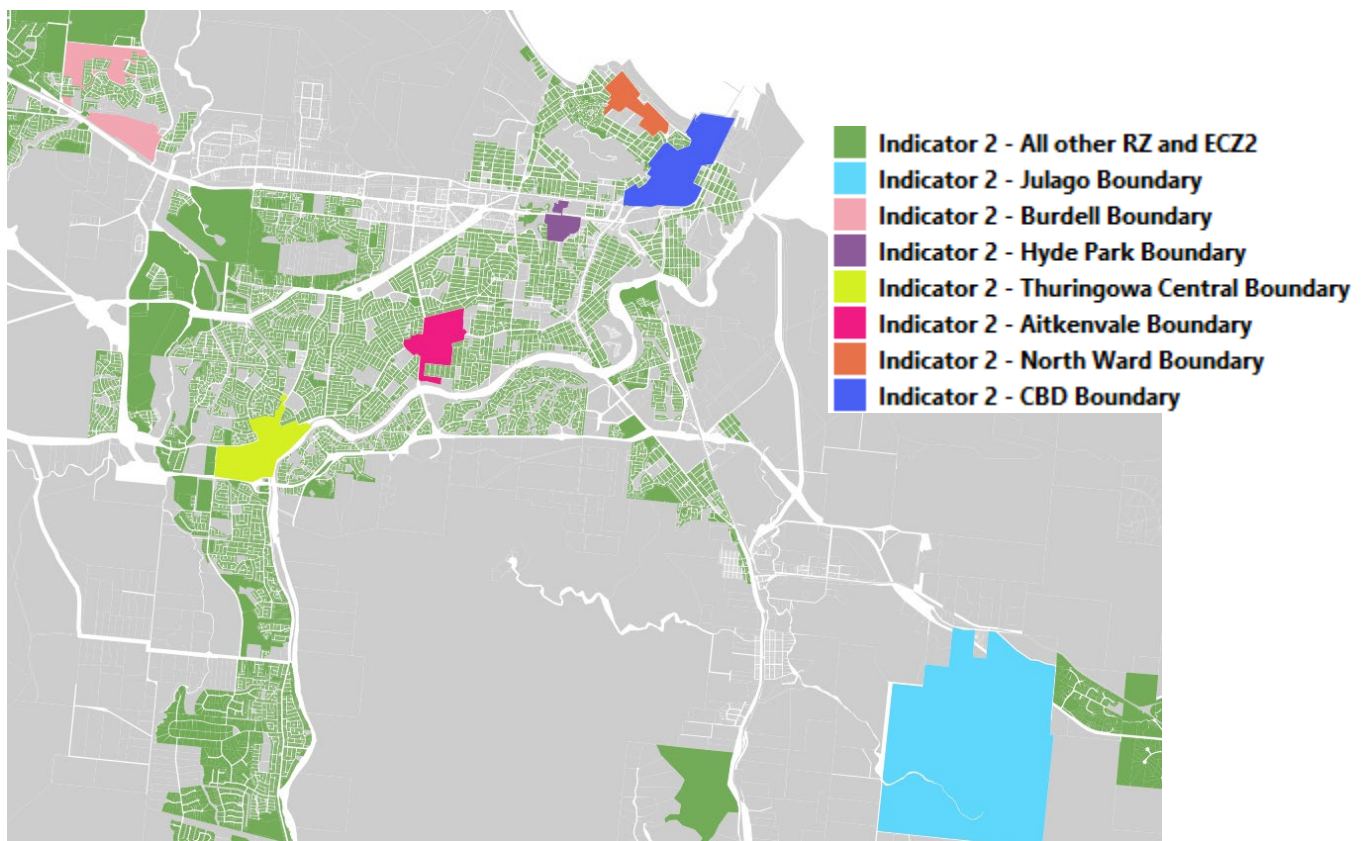
The below figures below illustrate the spatial area for the above strategically identified growth areas. Note that the boundaries created for the above geographies have been informed by definitions and figures contained in Part 3.3.2 Element – City shape and housing of the Townsville City Plan (version 2020/01). If these boundaries are amended, it will affect the ability to compare measures between past and future years.

Data has been captured at the end of each financial year between 2016/17 and 2018/19.





**Figure 6: Map of Infill and Greenfield areas**



**Figure 7: Map of Centres and Emerging Centres**

*Note that the boundaries created for the above geographies have been informed by definitions and figures contained in Part 3.3.2 Element – City shape and housing of the Townsville City Plan (version 2020/01). If these boundaries are amended, it will affect the ability to compare measures between past and future years.*

The number of new detached and multiple dwellings across Townsville's urban areas is calculated using Council's Building permit data, in GIS format, filtered to include the Centres and Emerging Centres as well as the ECZ and RZ areas.

A spreadsheet was prepared that allowed analysis of the approval year, centre type, building class and sum of water meter boxes (equivalent of new dwellings). The number of dwellings by detached and attached dwellings were then summed, and also by geography.

For the purposes of this analysis detached dwellings include Class 1a buildings, and multiple dwellings include Class 2 buildings.

### 3.2.2 Key findings

#### Number of new detached and multiple dwellings

The Townsville City Plan sets a target for one third of new houses to be a form of multiple dwelling, such as townhouses and apartments, and the balance to be delivered as detached homes. Between FY2016/17 and FY2016/18 there have been a total of 1,764 new dwellings constructed in urban residential areas across the municipality.

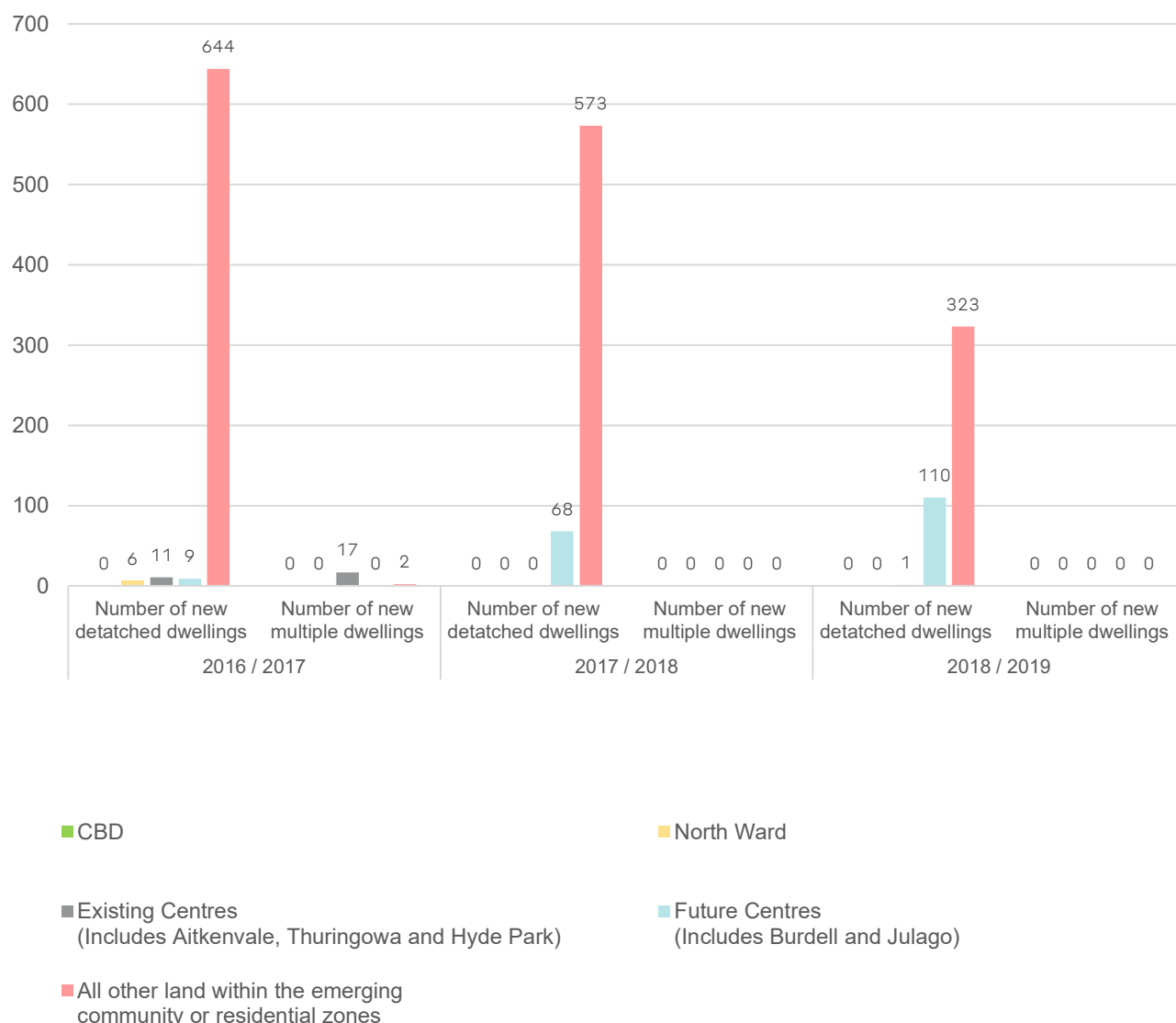
99% (1,745) of all dwellings were detached dwellings and 1% (19) were multiple dwellings. Over these two financial years there have been no multiple dwellings constructed across the city. The findings from this analysis indicate that separate houses are overwhelmingly the predominant dwelling type constructed across the Townsville LGA and that Council's aspiration to provide a third of all new dwellings as smaller housing types, and thereby diversify the city's housing stock, is not being achieved.

#### Location of housing growth

Figure 8 illustrates the location of new housing developed between FY2016/17 and FY2016/18. It illustrates that the majority of all housing growth has occurred in the ECZ and RZs outside the identified activity centres. However, the proportion of new dwellings constructed between the activity centres and all other urban residential areas has been narrowing. As of FY2016/2017 the respective split between these two areas was 4% / 96%. As of FY2018/2019 the respective split between was 25.5% / 74.5%.

Of the activity centres, Burdell and Julago have experienced the greatest housing development. Between FY2017/18 and FY2018/2019 there have been new 110 detached dwellings constructed in Burdell and 50 new detached dwellings constructed in Julago. There have been no new multiple dwellings (e.g. duplexes, townhouses, apartments) built between FY2017/2018 and FY2018/2019 across all residential areas.

There have been no new dwellings constructed in the CBD or North Ward between FY2017/2018 and FY2018/2019.



**Figure 8: Graph of new detached and multiple dwellings across Council's existing and emerging centres (2016/2017 – 2018/2019)**

### 3.2.3 Conclusion

The Townsville City Plan sets a target for one third of new houses to be multiple dwelling typologies, such as townhouses and apartments, and the balance to be delivered as detached homes. Between FY2016/17 and FY2016/18 there have been a total of 1,764 new dwellings constructed in urban residential areas across the municipality. The vast majority (99%) of these have been detached houses, with only 1% being multiple dwelling types. This suggests that the strategic aspirations of the Townsville City Plan are not being achieved. It will be important to understand and explore the basis for these trends and determine the extent to which the reported findings are influenced by the planning scheme.

The majority of all new housing growth in recent years has consistently occurred in land within the ECZ and RZs, however this trend is changing. This indicator has also shown that the city's identified Future Centres have been growing. Of the strategic areas identified in the Townsville City Plan, Burdell and Julago have experienced the greatest housing growth over the last two financial years. There has been no housing development within the CBD and North Ward and more limited growth in the Existing Centres. Again, it will be important to determine the extent to which these findings are influenced by the Townsville City Plan.

### 3.3 Indicator 3 – Non-residential gross floor area in key activity centres

This indicator measures the amount of non-residential building area approved within key activity centres.

Activity centres are important 'hubs' where people gain access to employment, shopping, personal services, entertainment and socially interact. The Townsville City Plan aims for Townsville to become a more compact city, structured around a network of activity centres, each with a different role, function, and catchment. This indicator seeks to understand the extent, type and location of non-residential development occurring across the activity centre network. It will annually report:

- The quantum of approved non-residential building area within key activity centres
- The quantum and type of approved non-residential building area outside of key activity centres

#### 3.3.1 Method of analysis

Planning and building approvals for all non-residential floor space where the use has commenced, was used to measure this indicator. The information for the financial year included the application identifier, development type, existing gross floor area (GFA), proposed GFA, total change in GFA, the lot number, and the site street address was also provided for each approval.

This data was then mapped using GIS software against a database of addresses for the state, sourced from the Queensland state government. The planning zone of each application was applied to each entry through use of GIS software, as well as confirming whether the application was located within the boundaries of designated key activity centres, as identified by Townsville City Council. The key activity centres were:

- Aitkenvale
- CBD
- Hyde Park
- North Ward
- Thuringowa Central

The Townsville City Plan also identifies specialised activity centres and district centres as locations for future economic growth and development; these areas were also analysed.

A database of mapped applications of non-residential floorspace by financial year was compiled; with use, zone, and activity centre data attached. This data was then analysed to determine the total non-residential floorspace developed in each activity centre by financial year from 2016/17 to 2019/20, as well as total floorspace developed outside of these activity centres during this period.

A limitation of this measurement approach is that it may not capture occurrences where a change of use has occurred within an existing building, as the data provided primarily captures new floorspace. The data also does not capture situations where a planning or development application has not been required.

Furthermore, the data can be skewed by outlier developments applications with a significant floorspace. An example of this was a renewable energy use which had to be excluded from the dataset due to the significant floorspace (i.e. 2 million square metres in GFA) which was developed outside of the key activity centres. Had this application been included, the overall results would have been significantly skewed.

#### 3.3.2 Key findings

The majority of new non-residential floorspace between FY2016/17 and FY2019/20 was in located in either the CBD or in Thuringowa Central activity centres, where over 10,000m<sup>2</sup> and 8,000m<sup>2</sup> of new gross floor area have been developed respectively. There was no non-residential development in the Hyde Park activity centre during this period.

The Fairfield district centre and specialised centre-zoned areas, comprising the James Cook University – Townsville Hospital Precinct, and development at Domain Central, have also experienced growth in non-residential floorspace. Over 12,000m<sup>2</sup> of shopping centre floorspace and over 9,500m<sup>2</sup> of largely health-related developments have occurred at these locations, respectively.

The vast majority of all non-residential floorspace developed in the municipality has been located outside of the identified key activity centres, as shown in Table 1.

**Table 1 - Quantum of Non-Residential Floorspace (GFA) in Key Activity Centre by Financial Year (2016/17 to 2019/20)**

	2016-17	2017-18	2018-19	2019-20	TOTAL
	GFA m <sup>2</sup>	GFA m <sup>2</sup>	GFA m <sup>2</sup>	GFA m <sup>2</sup>	GFA m <sup>2</sup>
Aitkenvale	4,846	1,205	1	0	6,052
CBD	2,448	-1,185	1,893	7,328	10,484
Hyde Park	0	0	0	0	0
North Ward	4,595	45	0	2,026	6,666
Thuringowa Central	8,670	246	0	0	8,916
District Centre	0	0	6,539	5,619	12,158
Specialised Centre	0	1,966	510	7,175	9,651
Outside Activity Centres	42,418	21,042	34,833	25,201	123,494
<b>TOTAL</b>	<b>62,977</b>	<b>23,319</b>	<b>43,776</b>	<b>47,349</b>	<b>177,421</b>

Source: Ethos Urban; Townsville City Council

Non-residential floorspace developed in key activity centres has been further analysed by category. Table 2 illustrates that much of the development in these centres are either community or retail related. The community use category includes a number of educational establishments, and various shopping centres and complexes fall under the retail type. Note the majority of floorspace developed under the other type was a parking station.

**Table 2 - Quantum of Non-Residential Floorspace (GFA) in Key Activity Centre by Type, 2016/17 to 2019/20**

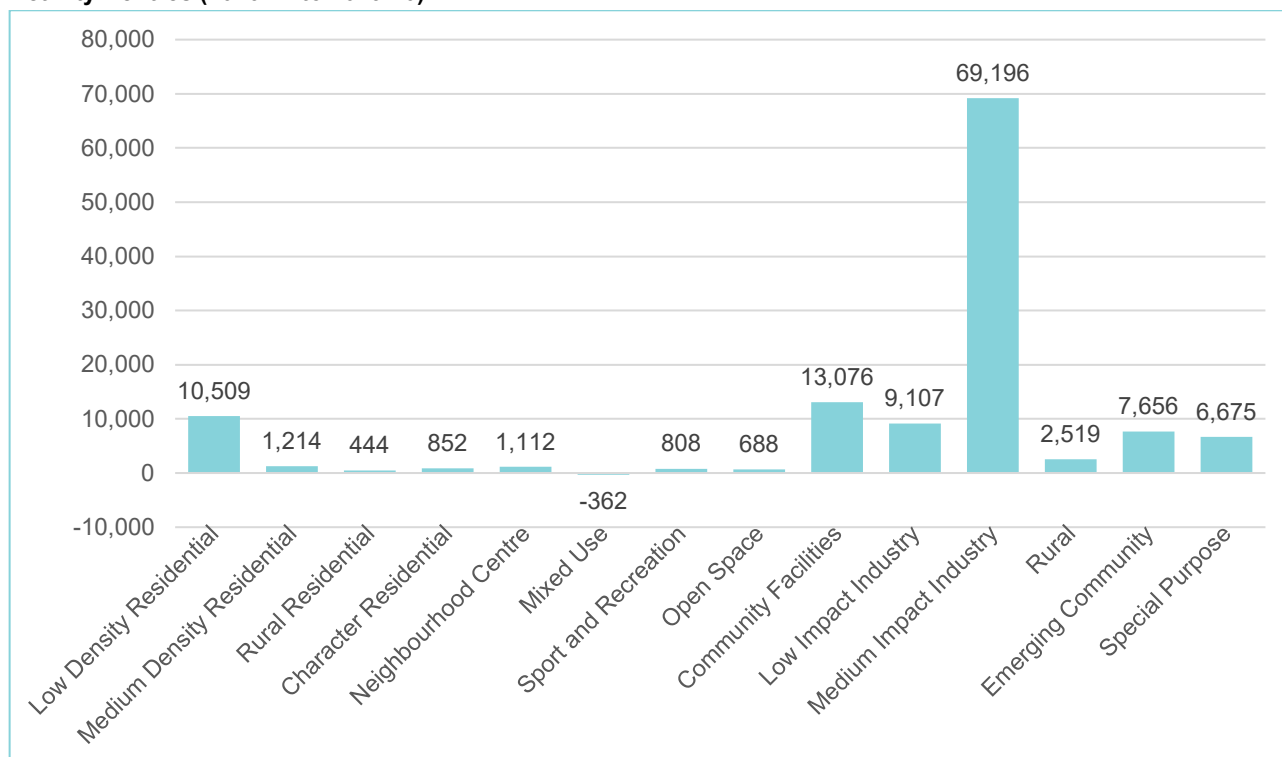
	Retail	Commercial	Health	Community	Other
	GFA m <sup>2</sup>	GFA m <sup>2</sup>	GFA m <sup>2</sup>	GFA m <sup>2</sup>	GFA m <sup>2</sup>
Aitkenvale	78	5,496	477	0	1
CBD	-708	489	0	8,545	2,158
Hyde Park	0	0	0	0	0
North Ward	2,105	2,335	-423	2,649	0
Thuringowa Central	8,182	100	633	0	1
<b>TOTAL</b>	<b>9,657</b>	<b>8,420</b>	<b>687</b>	<b>11,194</b>	<b>2,160</b>

Source: Ethos Urban; Townsville City Council

The significant non-residential floorspace developed outside of activity centres between 2016/17 to 2019/20 has been further analysed to provide some insight as to where new businesses are locating across the municipality. The majority of new non-residential development has occurred in the Medium impact industry zone, which comprised almost 70,000m<sup>2</sup> of new floorspace as shown in Figure 9. It is likely that the uses in this zone are not compatible with activity centres, being industrial uses requiring significant floor plates, appropriate buffers, specific transport access etc.

Other zones where significant non-residential floorspace has been approved includes the Low density residential zone and the Emerging community zone. Interestingly, the Mixed use zone recorded a decrease in floorspace over the FY2016/17 to FY2019/20 period.

**Figure 9 - Quantum and Zone of Non-Residential Floorspace development (GFA m<sup>2</sup>) located outside of Key Activity Centres (2016/17 to 2019/20)**



Source: Ethos Urban; Townsville City Council

### 3.3.3 Conclusion

Over the 2016/17 to 2019/20 period, the majority of non-residential floorspace has been developed in either the CBD or in Thuringowa Central activity centres. The Fairfield district centre and James Cook University – Townsville Hospital precinct and Domain Central have also grown. There was no non-residential development in the Hyde Park activity centre during this period.

The vast majority of all new non-residential floorspace developed in the municipality has occurred outside of the identified key activity centres comprising 123,500m<sup>2</sup> out of a total of 177,000m<sup>2</sup>. The most non-residential floorspace development has been within the Medium impact industry zone. It is likely that the uses in this zone are not compatible with activity centres, being industrial uses requiring significant floor plates, appropriate buffers, specific transport access etc.

A limitation of the measurement approach used for this indicator is that it may not capture occurrences where a change of use has occurred within an existing building, as the data provided primarily captures new floorspace. The data also does not capture situations where a planning or development application has not been required.

The measurement of this indicator could be refined over time by undertaking data cleaning, for example by removing the inclusion of industrial uses in the data, which are highly likely to locate outside of activity centres. It would also be interesting to further interrogate those non-residential developments occurring in less preferred zones (for example in residential zones) to determine what uses are being developed outside of activity centres which would be better placed within them.

Council could also consider developing an alternative measure to monitor land use mix in key activity centres. This could include the regular collection of GFA and lot size information for non-residential development (e.g. via floorspace survey) to provide a more comprehensive measure of development and land use change in activity

centres. This information would also provide a useful input into Council's Growth Model to underpin LGIP growth assumptions and the long-term financial forecast.



### 3.4 Indicator 4 – Modes of transport

This indicator monitors the proportion of people who drive, take public transport, walk and cycle to work. It also examines trends in bicycle riding across the city, as well as bus ticket sales and bicycle riding along the Ross River Parkway.

The Townsville City Plan seeks to improve active and public transport usage and reduce car dependence to help create a more sustainable, accessible and inclusive city. Ross River Parkway is identified as a priority transport corridor for all transport modes, connecting the CBD with surrounding activity centres and the James Cook University - Townsville Hospital precinct.

This indicator will track over time whether the intended shift to more sustainable modes is occurring, across the municipality and along this priority corridor. It will annually report:

- Method of travel to work by transport mode. This measure uses data from the ABS Census which is collected every five years. Therefore, it can only be updated in line with each Census release until a reliable alternative data source is developed.
- Trends in bicycle riding in the City
- Trends in bicycle riding along Ross River Parkway
- Bus patronage along the Ross River Road corridor

#### 3.4.1 Method of analysis

A combination of qualitative data sources has been used to examine the use of sustainable transport modes by city residents.

#### Mode of travel

Data for this measure has been sourced from the Australian Bureau of Statistics Census of Population and Housing 2016 (ABS Census 2016). The Census is conducted by the ABS every five years and is considered the most accurate and expansive source of data for the Australian population. The last census was undertaken in 2016, with the next census to occur in 2021.

Census data was extracted using ABS Table Builder, namely the Method of Travel to Work category. Data was then then combined to create more precise categories to allow for the separation of active and non-active modes of travel, and also allow for a closer examination of active modes of travel used by residents (refer Table 2).

The key limitation of this data is that it is only available at five-year periods. A more regularly updated data source is required to track the mode share indicator and its trends accurately and to determine take up of active transport options.

**Table 3 - Transport Mode Categories**

Indicator Category	ABS Census Category	
Bus	Bus	
Private vehicle	Car, as driver Car, as passenger	Truck Motorbike/scooter
Bicycle	Bicycle	
Walking	Walked only	
Taxi	Taxi	
Other	Train Tram	Ferry Other

Source: Ethos Urban; ABS Census of Population and Housing 2016

Method of Travel to Work data was extracted at the Statistical Area Level 2 (SA2) for the entire Local Government Area (LGA). Extracting the data at this level allows for examination of commuter habits at a smaller level (SA2) and can highlight specific locations of high or low active transport use within the LGA.



## Bicycle participation

Data has been sourced from the Bicycle Network's Super Tuesday Counts to understand bicycle participation trends across the municipality and along the Ross River Parkway. The Super Tuesday Count is the world's longest running visual bike count and is conducted once a year across various municipalities, including the Townsville LGA. The counts measure bicycle commuter flows in the morning peak and are a reliable indicator as to the cycle 'health' and participation of a city or area.

The Super Tuesday Counts are contained in the *Super Tuesday North Commuter Bike Count Report* (2016, 2017, 2018 and 2019) are created and released by the Bicycle Network. These reports provide various breakdowns of the data collected, and provides raw data counts in table format, which were copied into excel for analysis. Although Super Tuesday counts are collected across the LGA, the primary focus of the indicator 4 – mode share analysis was on counts along the key Ross River Parkway corridor.

Super Tuesday reports were available for the years 2016 to 2019, resulting in data for the years 2015 to 2019 (due to reports providing the previous years' data for comparative purposes).

A limitation of this data source is the inconsistency in data collection locations for Super Tuesday Counts data, with some variation between collection locations across the survey years. The weather on the day of collection may also influence results, with individuals less likely to ride on days on extreme or hot weather, which could lead to lower counts.

## Annual bus ticket sales

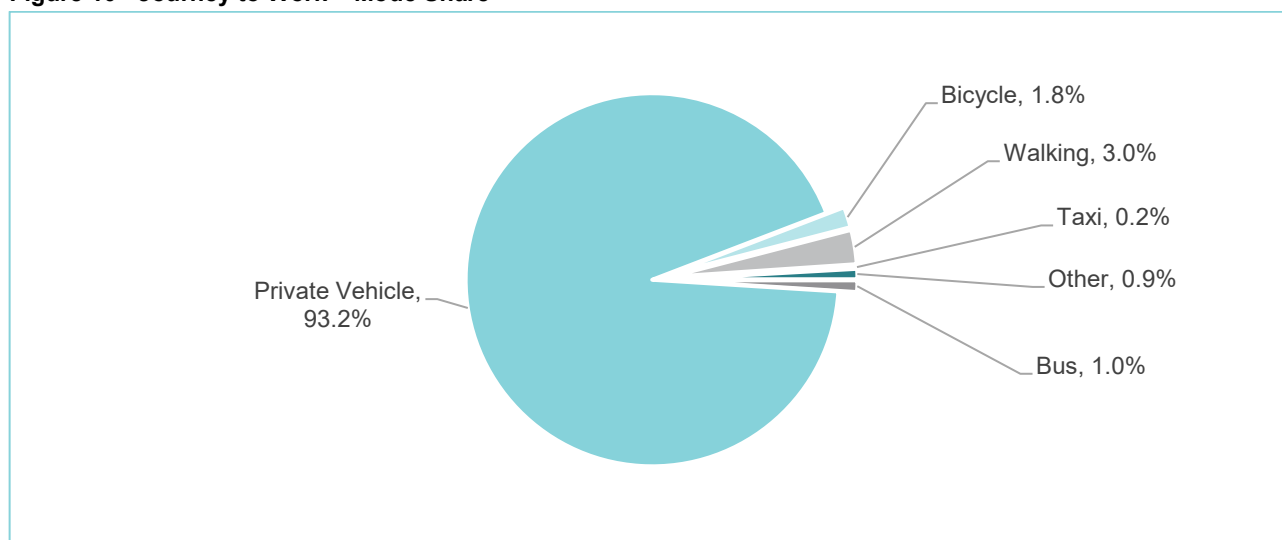
Data for this measure has been sourced from the Department of Transport and Main Roads (DTMR), TransLink division. Bus ticket sales are measured through go card transactions on Townsville's TransLink bus network. For the purposes of the planning scheme indicators data is presented by each financial year between 2014-2015 to 2018/2019. The data is shown for Route 200 which extends along Ross River Road. This is identified in the planning scheme as a key transport corridor. This indicator measures the total annual bus ticket sales along this bus route.

### 3.4.2 Key findings

In 2016 approximately 93% of the population who travel for work (i.e. not including those not working or working at home) commute via private vehicle, as highlighted in Figure 10. This includes by car (as either driver or passenger), by motorbike, by scooter, or by truck. Active transport options, walking or cycling, comprised approximately 5% of all work journeys, with public transport options (bus, other) making up the remaining 2% of trips. This data suggests that there is still a significant way to go in reducing car dependence across the municipality to achieve this strategic aspiration of the Townsville City Plan.

Further analysis of mode share at the SA2 level found that:

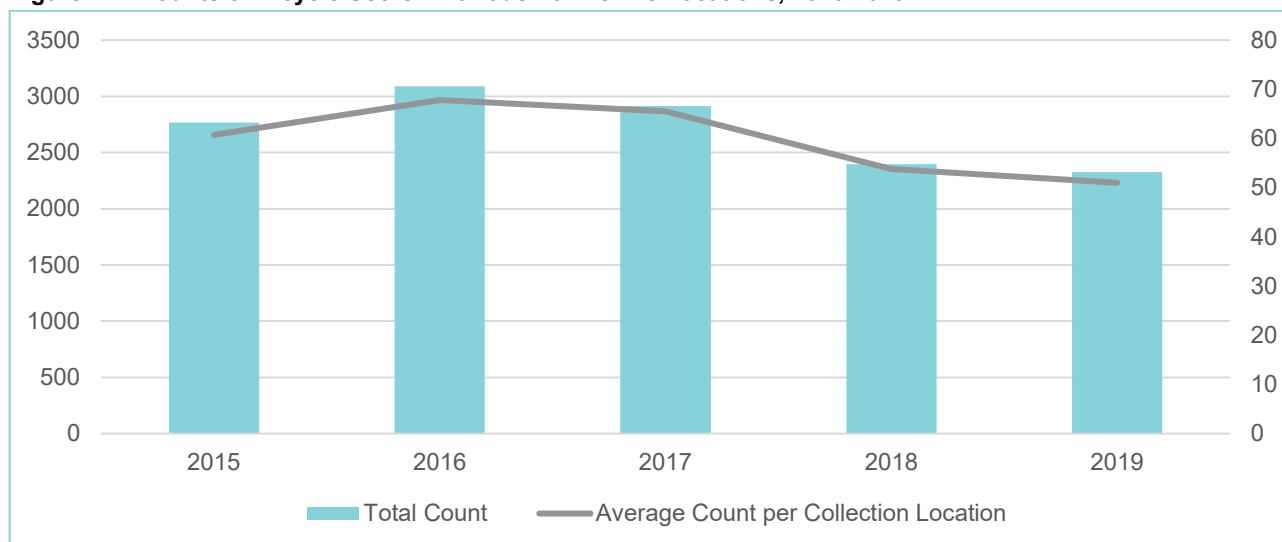
- The lowest private vehicle use for journey to work was for residents of the Magnetic Island SA2, with only 70% of this population travelling via private vehicle and 15% walking to work. However, this is seen as an outlier, due to the nature of the area, being an island, which provides greater opportunities for active transport.
- The highest level of private vehicle use was observed in the SA2's of Bohle Plains and Deeragun, with these areas recording 98% and 97% of their populations travelling to work via private vehicle, respectively. This is likely due to the outer suburban location of these areas, with distance and lack of facilitating infrastructure limiting active and public transport use.

**Figure 10 - Journey to Work – Mode Share**


Source: ABS, Census of Population and Housing, 2016

### Bicycle participation

Bicycle participation as a mode of transport has decreased across the Townsville LGA in recent years, based on data from Bicycle Network's Super Tuesday reports. In order to compare this data across years and to allow for varying numbers of data collection locations, the average count per collection location has been analysed. The average count per collection location in 2019 was 53 users, well below the high of 71 users per collection location recorded in 2016. This trend data is shown in Figure 11.

**Figure 11 - Counts of Bicycle Users – Various Townsville Locations, 2016-2019**


Source: Bicycle Network, Super Tuesday North Commuter Bike Count: Townsville City Council, 2016 to 2019

The Ross River Parkway is identified as a strategic corridor for active travel, particularly by bicycle, in the Townsville City Plan.

An examination of Super Tuesday Counts data for these two corridors found that the share of total LGA cyclists travelling via the Ross River Parkway, although high, has decreased in recent years, with only 24% of total cyclist counts in 2019 being along this corridor compared to 36% in 2016.

Conversely, the share of total LGA cyclists travelling via Ross River Parkway has remained consistent at around 15% between 2016-2019, as shown in Table 3.

**Table 4 - Count of Bicycle Users on Ross River Parkway and Ross River Road (Key Corridors)**

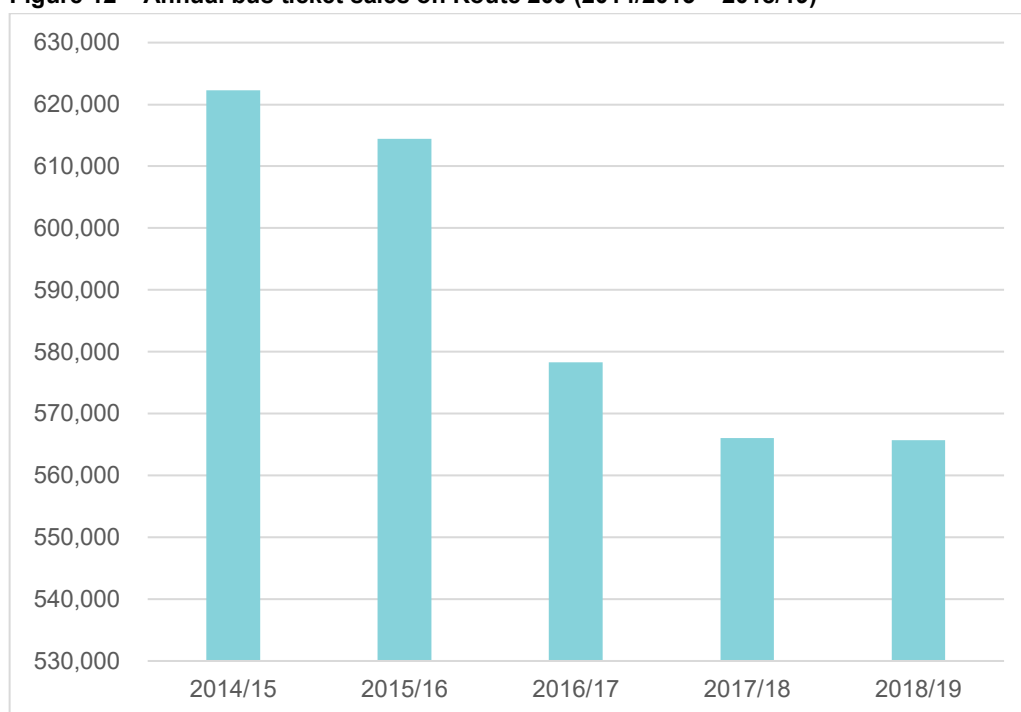
	2015	2016	2017	2018	2019
<b>Ross River Parkway</b>					
Count	801	1057	812	774	533
Percent of Total Count	30%	36%	28%	33%	24%
<b>Ross River Road</b>					
Count	338	433	389	352	336
Percent of Total Count	13%	15%	14%	15%	15%
<b>Total Townsville Count</b>	<b>2,657</b>	<b>2,967</b>	<b>2,864</b>	<b>2,356</b>	<b>2,231</b>

Source: Bicycle Network, Super Tuesday North Commuter Bike Count: Townsville City Council, 2016 to 2019

### Annual bus ticket sales

The 200 bus route services the Ross River Road corridor. Between 2014/15 to 2018/19 there has been a decline in annual bus ticket sales from 622,265 to 565,697 along this route. This represents an overall decrease by 10% in bus ticket sales. Figure 13 illustrates the annual total of bus trips along route 200 between FY14/15 and FY18/19.

This data only shows the number of tickets purchased across the entire route – it does not allow for analysis of whether there are particular parts of the corridor where there may have been increases in patronage.

**Figure 12 – Annual bus ticket sales on Route 200 (2014/2015 – 2018/19)**

### 3.4.3 Conclusion

This indicator demonstrates that the preferred mode of transport in the Townsville LGA is overwhelmingly via private vehicle with approximately 93% of the population who travel for work, commuting via private vehicle (by car as either driver or passenger, motorbike, scooter, or truck). Active transport, walking or cycling, comprised approximately 5% of all work journeys, with semi-active transport options (bus, other) making up the remaining 2% of trips.

The data also suggests that bicycle use as a transport mode has been decreasing over time. Importantly, journeys along the Ross River Pathway have significantly dropped over recent years and now only account for 24% of total LGA bicycle trips.

The number of bus trips along the Ross River Road corridor has also decreased over time. The number of tickets sold on the Route 200 bus has dropped from 622,265 to 565,697 between 2014/15 and 2018/19.

There are several opportunities for further development of this indicator over time. The greatest opportunity lies in finding or creating an alternative data source to the ABS Census, which is only undertaken every five years. Utilising a data source which is updated annually will allow for a much greater awareness of mode share change in the Townsville LGA, enabling Council to track the effectiveness of improvements and interventions.

There is also opportunity to further breakdown the data on private vehicle use, with this refined information separated into various modes, including car travel as driver and car travel as passenger, which may provide further insights into the travel choices of the population. An example would be if there is a significant level of car travel as passenger, this may indicate a greater level of carpooling, over individual car use.

Another opportunity to expand this indicator is by examining travel mode as a smaller geographic level, including at SA2 or smaller (if possible), to determine which geographic areas may not have the appropriate infrastructure or services to support/encourage active transport modes. This could include assessing journey to work data based on place of residence, or journey to work data based on place of employment, with both providing insights as to the travel choices of the Townsville population.

In obtaining future bus ticket sales data from the DTMR it would be beneficial to have an ongoing agreement that enables a timely response from the Department.

### 3.5 Indicator 5 – Footpath provision

This indicator monitors the kilometres and expenditure of new or upgraded footpaths constructed across the urban areas of the city each year.

The Townsville City Plan encourages the creation of a walkable environment to support the community to lead healthy and active lives and to help create a more sustainable municipality. The availability of footpaths is a key influencing factor to achieve this outcome.

This indicator monitors the length and expenditure of new footpath's constructed in urban areas to understand whether appropriate opportunities for walking are being provided to the community. It will annually report:

- Kilometres and expenditure of new or upgraded footpaths across urban areas.

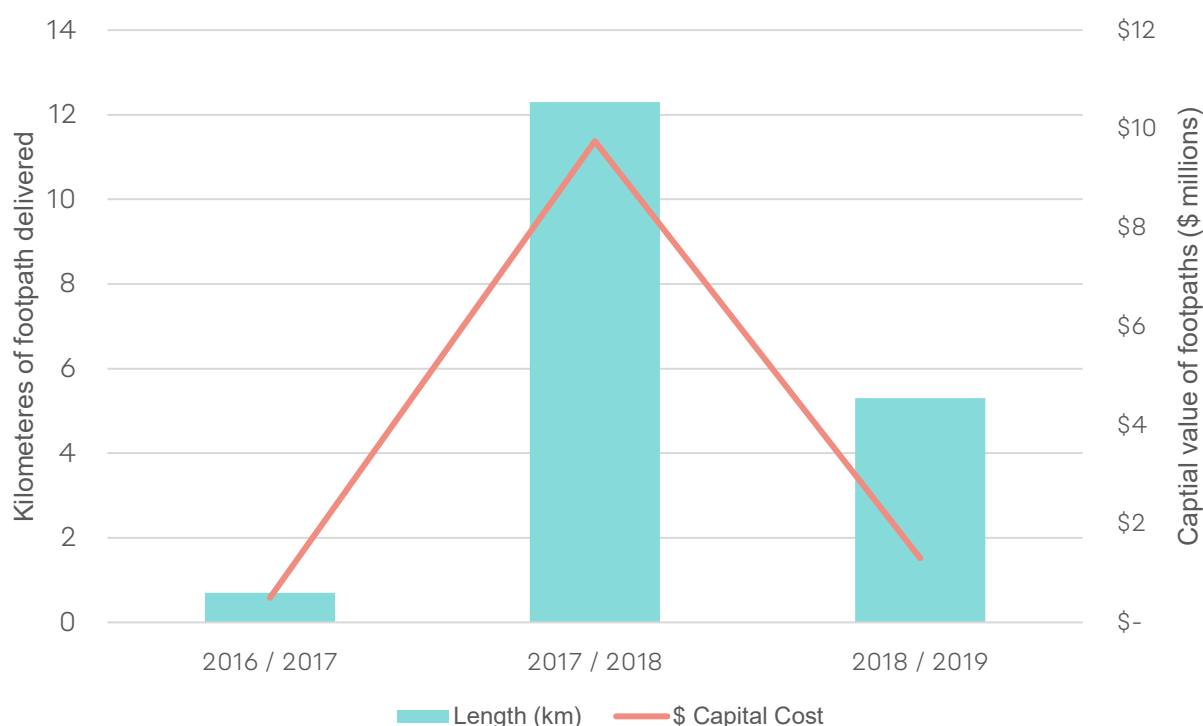
#### 3.5.1 Method of analysis

The measurement of footpath provision is based on Council's schedule of capital works for each financial year. The register refers to footpaths as 'Transport\Footpath'.

#### 3.5.2 Key findings

Council has continued to invest in the upgrade or provision of new footpaths across the LGA. The below figure provides an overview of the total expenditure and kilometres of footpath provided over the past three financial years.

**Figure 13 – Kilometres and expenditure of new or upgraded footpaths –Townsville Urban Area, 2016-2019**



Between the 2016/2017 and 2017/2018 financial years there was a 1,700% and 1,600% increase in expenditure and kilometres of footpath respectively across the City's urban areas. This increase is primarily due to significant investment as a result of the Queensland Government's Works for Queensland program. Whilst there was a decrease in the expenditure and kilometres of footpath in the 2018/2019 financial year, it is above the spend and provision during 2016/2017 financial year. This is the only other year within the available data that provides a benchmark for typical conditions within the LGA.

#### 3.5.3 Conclusion

The expenditure and kilometres of footpath provided over recent years has varied – this has largely been influenced by the availability of grant funding.

It is acknowledged that the data used for this indicator is a very basic measure in relation to footpath provision. This is somewhat a result of the fact that the data does not provide a holistic understanding of the quality or accessibility of walking infrastructure. A possible alternative future measure is to calculate the proportion of footpath infrastructure that meets Council's desired standards of service – for example footpath width and whether footpaths are required on either one or both sides of the road.

## 4.0 Strong and connected community

The strong and connected theme recognises that some of the most appealing aspects of Townsville are its history, North Queensland character and suburban lifestyle. The Townsville City Plan encourages new growth and diverse development to better cater for the lifestyle aspirations of the community. Townsville's population is changing with the emergence of a range of family structures and sizes and the general aging of the population.

This theme also aspires to ensure that the ongoing and efficient provision of infrastructure and community facilities is economically, socially, and environmentally sustainable.

There is one indicator included under the strong and connected community theme:

- Indicator 6 – Provision of regional and district open space

#### 4.1 Indicator 6 – Provision of regional and district open space

This indicator monitors the supply of regional and district open space against Council's adopted Desired Standards of Service.

The Townsville City Plan aims to deliver a diverse, high-quality and accessible network of open space across the municipality. This supports community health and wellbeing, as well as broader environmental outcomes.

The Local Government Infrastructure Plan (LGIP) is an important tool that supports the delivery of the Townsville City Plan. It identifies the infrastructure, including parks and open space, necessary to service the urban development pattern planned for the municipality. The LGIP sets population and accessibility-based benchmarks called desired standards of service (DSS) which help ensure open space provision keeps up with population growth.

This indicator measures whether the amount of open space provided across the municipality is consistent with the desired standards of service contained in the LGIP. It will annually report:

- Area of open space type provided per residents
- DSS requirement for type of open space per resident.

The results from Council's *Liveability Strategy* (2020), associated with open space, will also be reported as part of this publication of the Townsville Planning Scheme Indicators.

##### 4.1.1 Method of analysis

This indicator uses data collected by Council's Infrastructure Planning Unit as part of the planning of public open space for the Townsville City Council LGIP. It is based on the data and analysis contained in the *Townsville City Council Parks Planning Report* (2017).

The LGIP establishes the following hierarchy and desired standards of service for open space in the city. Local scale open space does not fall within the LGIP definition of trunk infrastructure and therefore has not been considered as part of this analysis, although it plays an important role in supporting community health, wellbeing, and sense of place. Future versions of the Townsville Planning Scheme Indicators annual reporting should incorporate this component of the open space network.

The desired standards of service consider the amount and type of space provided per resident, as well as its accessibility to local residents.

Category	Description	Provision rates (m <sup>2</sup> /ERP)	Access (km)
District Recreation Park	Larger sized parks (generally 5ha-10ha) providing a range of facilities and activity spaces for recreation. These parks have facilities to cater for large groups and are appealing to a range of users. They can service several suburbs depending on population density and are fairly well-known destinations for those people living within their catchment.	4	2
Regional recreation park	Offer a wide variety of opportunities to a broad cross-section of the LGA's population and visitors. These parks are generally large in size, heavily embellished for recreation and/or sport, well known amongst residents and are major destinations.	6	10
District sports parks	Facilities that are suitable for local fixtures but may not have the quality of playing surface or amenities of a Regional facility. These sporting areas are often lit, with a moderate level of player and spectator facilities, including clubhouse, toilets, change rooms, off-road car parking and so on (not all of which is trunk infrastructure).	12	5
Regional sports parks	Facilities that could comfortably host regional (or potentially State) competitions. Factors such as quality of playing surface,	5	25



Category	Description	Provision rates (m <sup>2</sup> /ERP)	Access (km)
	amenities and canteen availability and lighting standards (where lights are provided) are considered in their planning and maintenance.		

The broad approach for determining the adequacy of current open space supply and planning for future provision as outlined in the *Townsville City Council Parks Planning Report (2017)* includes:

1. Establish the park hierarchies;
2. Establish the standards of service for parks planning;
3. Establish demand profiles for each growth model zone (GMZ);
4. Identify the 'existing' parks;
5. Identify parks expected at 'ultimate'
6. Define the park service areas by GMZs;
7. Split the GMZ demand for parks where service areas overlap;
8. Compare the supply and demand;
9. Evaluate provision rates and access performance;
10. Adjust park provisioning to balance supply and demand and achieve provision and access performance.

The Townsville Planning Scheme Indicators is not focussed on reporting projected requirements for open space (as what might occur during stages 9 and 10), but rather it provides an insight as to whether the current supply is consistent with planning scheme requirements.

Over time it may be appropriate to expand the range of measures reported, this could include:

- Expenditure on open space improvements
- Supply of local open space
- Open space that is provided by a private entity but is publicly accessible (e.g. plazas etc.)
- Community perceptions and values regarding open space.

The *Townsville City Council Parks Planning Report (2017)* presents analysis based on the FY2016/17 and utilises population data from ABS 2011 Census.

### Liveability Study results

The results from Council's *Liveability Strategy (2020)* will also be reported as part of this publication of the Townsville Planning Scheme Indicators. In 2020 Council undertook comprehensive community engagement across the municipality to understand community values and the perceptions of their local area. Two surveys were completed, highlighting what people value in their ideal neighbourhood (Care Factor Survey) and how the community rates five neighbourhoods across Townsville (PX Assessment).

"General condition of public open space" was one of the aspects of liveability that was measured as part of this survey. The results from the Care Factor Survey are presented as part of analysis of this indicator.

#### 4.1.2 Key findings

When the *Townsville City Council Parks Planning Report (2017)* was prepared, the municipality had a population of 180,114 people and 540ha of open space across the municipality. Table 4 illustrates the application of Council's DSS against its current supply and distribution of open space by typology, and relative to the number of residents living across the municipality.

The findings indicate that overall, the municipality is well provided with district and regional open space. The amount of district recreation parks, district sports parks and regional recreation parks is consistent with the planning scheme requirements. The supply of regional sports park provision is slightly below the DSS requirements.

**Table 5 - Open space results**

Category	DSS requirement (m <sup>2</sup> /ERP) <i>The amount of open space we should have under the planning scheme per resident</i>	Actual (m <sup>2</sup> /ERP) <i>The actual supply of open space across the municipality per resident</i>
District recreation park	4	3.9
District sports parks	12	13.1
Regional recreation park	6	7.8
Regional sports parks	5	2.8

### Liveability Study

1,966 people completed surveys as part of the *Liveability Study* (2019).

The study found that the condition and quality of public spaces is a highly valued liveability attribute for the Townsville community. It includes open spaces like parks as well as assets such as streets, street trees, landscaping and public footpaths. 64% of survey participants identified the “general condition of public open space” as an important aspect of their “ideal neighbourhood” and was ranked as the second most important aspect of place by Townsville residents.

#### 4.1.3 Conclusion

The findings indicate that overall, the municipality is well provided with district and regional open space, with a small shortfall in regional sports park space. The results of the *Liveability Study* indicate that open space is highly valued amongst local residents, the “general condition of public open space” is the second most important aspect of liveability in Townsville.

The results from the *Liveability Study* (2019) were able to be drawn upon for this version of the Townsville Planning Scheme Indicators. This provides important insight into community values and aspirations and demonstrates that the condition and quality of public spaces is highly valued by the Townsville community.

Some aspects of open space provision that would provide more meaningful insight into the effectiveness of the Townsville City Plan over time would be to:

- Provide analysis of the distribution of open space across, to ensure that open space is equitably dispersed across the municipality
- Monitor expenditure on open space improvements, to demonstrate that the quality and functionality is being addressed
- Consider monitoring the supply of local scale open space as well as the provision open space that is provided by a private entity but is publicly accessible (e.g. plazas etc.).

It would also be beneficial to undertake regular survey of residents to understand community values and perceptions of open space.

## 5.0 Environmentally sustainable future

The Environmentally Sustainable Future theme of the strategic framework acknowledges that Townsville's unique topography, rainfall regimes, soils and geological features underpin its diversity in ecosystems, habitats and flora and fauna. The Townsville City Plan is focused on protecting Townsville's diverse environment, protecting areas of environmental significance and ensuring coastal development balances environmental values and the desire of people to live near the ocean.

There are three indicators included under the environmentally sustainable theme:

- Indicator 7 – Street trees planted as part of major projects
- Indicator 8 – Biodiversity in waterways and wetlands
- Indicator 9 – Quality of waterways and wetlands

## 5.1 Indicator 7 – Street trees planted as part of major projects

This indicator monitors the number of street trees planted as part of major projects in the City.

Tree planting helps to support a range of objectives contained in the Townsville City Plan. This includes improving biodiversity, providing habitat, and reducing urban heat effects. Tree planting also helps to create safe, attractive and comfortable spaces for pedestrians, while contributing to the character of our streets, centres and towns.

This indicator measures the number of trees planted as part of major projects in the City, as the municipality grows and climate changes.

The approach presented in this version of the Townsville Planning Scheme Indicators adopts a measurement approach that should be updated as part of future releases. Council currently keeps limited information related to tree planting, undertaken both by themselves and others (e.g. developers, volunteer groups). It is recommended that a new, reliable and repeatable process is developed to capture information associated with this topic over the long term.

### 5.1.1 Method of analysis

Information relating to the number of trees planted across the municipality was originally collected in response to a Councillor request. The request asked for the number of new trees associated with the Townsville CBD and Stadium precinct, however the information collected included data from across the Townsville urban area.

Council's Senior Landscape Architect contacted planning and development proponents that had recently gained approval or undertaken works in the subject area to confirm the number of trees planted as part of their project. This generally included streetscape projects undertaken by a third party, usually through a 'trunk' infrastructure project, as trees are 'new assets' and part of the development requirement and/or State Government funded such as 'Works 4 Qld'. Council's planning officers also provided input into this task. The overall number of trees planted was collated by Council's Senior Landscape Architect. The tree planting numbers reported are associated with FY2019/20.

The primary limitation of this analysis approach is that it relies on data, and a response, from a third party – it is possible that there are individuals or organisations who were not contacted or who did not respond to the information request and therefore the data presented is likely to be incomplete.

The data also does not include any planting that may have occurred in parks and open spaces as well as shrubs and ground cover plantings.

### 5.1.2 Key findings

The following table summarises the number of trees planted by location and key project across major projects in Townsville. In total 553 trees were planted as part of major projects in the municipality.

Location / Major project	No. Trees	Information Source
CBD street trees	114	JMAC
Bus Hub	16	RPS
Stadium Precinct	97 (RPS)	RPS
SQ	102 (RPS)	RPS
Palmer St stage 1	37	Townsville City Council
Palmer St stage 2	20	RPS
McIlwraith St	approx. 20 Council	Townsville City Council
Nathan Street	147	JMAC
<b>Total</b>	<b>553 trees</b>	

### 5.1.3 Conclusion

Over FY2019/20 there were approximately 553 new street trees planted across the Townsville urban area as part of major projects. There are limitations associated with the data collection approach used for this indicator, it is recommended that a new and more robust approach is used in the future.

There is currently no tree planting program under Council's capital works program, nor is it included in the asset planning program. Tree planting occurs as a range of activities undertaken by different sections of Council; however, data is not readily available regarding the quantum and location of planting. This includes:

- Revegetation (mass planted in parks and/or open space corridors, in tubestock size with unknown survival rate)
- Customer requests
- Open space provision or improvements.

Street tree planting is also undertaken by developers and volunteer groups as part of other development works and environmental programs. There is currently no system or process to capture and collate these tree planting activities.

It is recommended that in the future an indicator associated with tree canopy cover across Townsville's urban area is developed to better measure this aspect of the Townsville City Plan. Although this would alter the fundamental question being asked currently by the current version of this indicator, it would provide better insight into the effectiveness and changes to tree planting across the municipality over time. It would also be advantageous to analyse and compare canopy cover across public land, public streetscapes and private land, as well as by suburb to understand the effectiveness of the Townsville City Plan in encouraging landscaping and planting.

## 5.2 Indicator 8 – Biodiversity in waterways and wetlands

This indicator monitors the index flora and fauna score in key waterway and wetland areas from the *Townsville Dry Tropics Healthy Waters Pilot Report Card (2019)*.

Wetlands and waterways provide a range of functions and benefits to the community, economy and community. This includes providing food and habitat for marine and terrestrial life. When these habitats are in poor condition, it directly impacts the survival, growth, and ability to breed of many species that live and migrate in the coastal zone, and the Great Barrier Reef.

The Townsville City Plan seeks to protect waterways and wetlands from urban development and other processes that threaten their ecological health and functions. This indicator reports data collected annually by the Dry Tropics Partnership for Health Waters (Dry Tropics) which monitors the condition of flora and fauna in wetlands and waterways across the region. This is one way to understand the effectiveness of planning policy, however over time it will be important to develop leading indicators which provide a better link between land use, development and biodiversity outcomes.

### 5.2.1 Method of analysis

This indicator uses data prepared by the Dry Tropics, as contained within the *Townsville Dry Tropics 2017-18 Pilot Report Card* and its supporting *Results Report (2019)*.

The Townsville Planning Scheme Indicators report presents the biodiversity scores of (4) catchments of the Dry Tropics, namely:

- Ross Basin Freshwater
- Black Basin Freshwater
- Cleveland Bay Coast / Estuary
- Halifax Bay Coast / Estuary.

There three (3) other catchments that are also measured and reported on by Dry Tropics, however these are not relevant to the evaluation of the Townsville City Plan due to their focus on marine areas which are within the jurisdiction of the State government or the Port of Townsville. They have therefore been excluded from the indicator framework.

As per the methodology presented in the *Results Report (2019)* the indicators are scored using five ordinal values: 'A' (Very Good), 'B' (Good), 'C' (Moderate), 'D' (Poor), and 'E' (Very Poor).

The *Townsville Dry Tropics 2017-18 Pilot Report Card* is the pilot for this ongoing program. The score for Biodiversity will ultimately be based on indicators that are grouped into the following indicator categories:

- Flora and fauna, artificial barriers and gross pollutants for the two freshwater basins (Ross and Black Basin) and two estuarine/coastal zones (Ross and Black estuarine/coastal zone)
- Flora and fauna and gross pollutants for Cleveland Bay and Halifax Bay inshore marine zones and one marine offshore zone.

A limitation of the Pilot Report Card is that only one or two indicator categories of the flora and fauna index could be scored for each area, as detailed in Table 5 below. There are also a range of other factors beyond urban development that affect these indicators. Over time the intention is for Dry Tropics to develop a more comprehensive set of measures, and therefore provide a more holistic understanding of biodiversity in waterways and wetlands.

**Table 6 - Flora and Fauna Indicator Categories**

Zone	Index	Indicator category
Freshwater	Flora & fauna	Riparian vegetation
		Wetlands
Estuary / coast	Flora & fauna	Saltmarsh
		Mangroves
Inshore marine	Flora & fauna	Coral
		Seagrass
Offshore marine	Flora & fauna	Coral

Refer to the *Results Report* (2019) for the detailed description of the data collection and analysis process to determine the flora and fauna index scores.

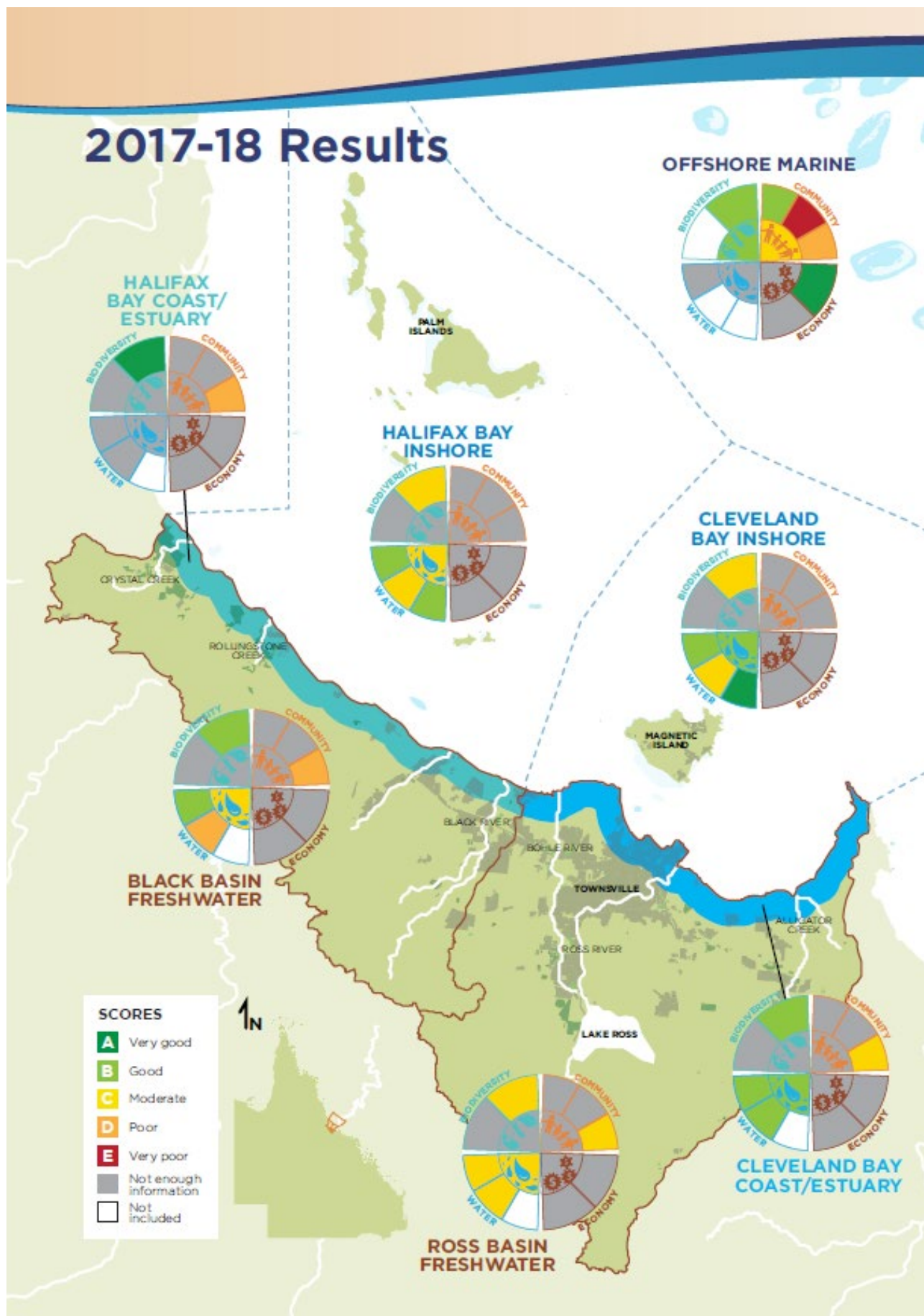
### 5.2.2 Key findings

The following results are presented in the *Townsville Dry Tropics 2017-18 Pilot Report Card* and its supporting *Results Report* (2019). It found that in the 2017/18 period:

- Townsville's primary urban catchment is the Ross Basin. Flora and fauna in this area were in a moderate state overall. Riparian vegetation received a very poor score, which was unsurprising given the high level of urban development along waterways in this area. The wetlands received a good score.
- Flora and fauna in the Black Basin, which has experienced lower levels of urban development, was in a good state overall. Riparian extent received a very good score and the wetlands received a moderate score.
- The Cleveland Bay Coast / Estuary received a good flora and fauna score overall. Mangrove and saltmarsh extent were scored good and very good respectively.
- The Halifax Bay Coast / Estuary received a very good flora and fauna score overall. Mangrove and saltmarsh extent were scored very good and good respectively.

For a detailed consideration of the above scoring, refer to the *Townsville Dry Tropics 2017-18 Pilot Report Card* and its Results Report, available from <https://drytropicshealthywaters.org>.





Source: Townsville Dry Tropics 2017-18 Pilot Report Card



### 5.2.3 Conclusion

This indicator has illustrated that overall condition of flora and fauna along key waterway and wetland areas across the municipality ranges from moderate to very good.

Waterways and wetland flora and fauna in the more urbanised parts of the municipality, namely within the Ross Basin, were in worse condition than other areas monitored. The flora and fauna in the Black Basin, which, by contrast has experienced lower levels of urban development, was in better (good) condition. Flora and fauna in the coastal and estuary areas were in a good or very good state.

Although the *Townsville Dry Tropics Report Card* provides useful insights into biodiversity values across the municipality's waterways and wetlands, it is ultimately not the most suitable approach for monitoring the environmental outcomes of the Townsville City Plan over the long-term. The biodiversity results reported by Dry Tropics are influenced by a broad range of factors and have a limited link to land use and development policy. Although the municipality's wetlands and waterways perform important environmental functions, it would be more valuable to understand biodiversity values across the entire municipality.

It is recommended that Council's Planning and Environment Services teams collaborate to develop more meaningful measures of environmental outcomes. This could include indicators which monitor community resilience and adaptation to climate change over time.

### 5.3 Indicator 9 – Quality of waterways and wetlands

This indicator monitors the water quality scores achieved in key waterway and wetland areas using information from the *Townsville Dry Tropics Healthy Waters Pilot Report Card (2019)*.

The Townsville City Plan seeks to protect the quality of surface and ground waters from pollutants associated with urban development and land use. It encourages water sensitive urban design (WSUD) approaches that respond to our local environment.

This indicator seeks to explore the effectiveness of land management policies on water quality. It reports data collected annually by the Dry Tropics. This program monitors different factors that influence water quality in wetlands and waterways across the region, but there are a range of factors which influence water quality, beyond urban development. Therefore, over time it will be important to develop leading indicators which provide a better link between land use, development and water quality outcomes.

#### 5.3.1 Method of analysis

This indicator uses data prepared by the Dry Tropics, as contained within the *Townsville Dry Tropics 2017-18 Pilot Report Card* and its supporting *Results Report (2019)*.

The Townsville Planning Scheme Indicators report presents the water scores of (4) catchments of the Dry Tropics, namely:

- Ross Basin Freshwater
- Black Basin Freshwater
- Cleveland Bay Coast / Estuary
- Halifax Bay Coast / Estuary.

Three (3) other catchments are also measured and reported on by Dry Tropics, however these are not relevant to the evaluation of the Townsville City Plan due to their focus on marine areas which are in the jurisdiction of State government or the Port of Townsville. They have therefore been excluded from the indicator framework.

The *Townsville Dry Tropics 2017-18 Pilot Report Card* is the pilot for this ongoing program. The score for water will ultimately be based on indicators that are grouped into the following categories:

- Hydrology, nutrients, physical and chemical parameters (phys-chem) and contaminants for the two freshwater and two estuarine/coastal zones (Black and Ross)
- Nutrients, phys-chem, chlorophyll a and contaminants for Cleveland Bay and Halifax Bay
- Phys-chem properties and chlorophyll a for the one offshore marine zone.

A limitation of the Pilot Report Card is that only one or two indicator categories of the water index could be scored for each area, as detailed in Table 6 below. There are also a range of other factors beyond urban development that affect these indicators. Over time the intention is for Dry Topics to develop a more comprehensive set of measures, and therefore provide a more holistic understanding of water in waterways and wetlands.

**Table 7 - Water Indicator Categories**

Zone	Index	Indicator category
Freshwater and estuary / coastal	Nutrients	Phosphorus (P)
		Dissolved inorganic nitrogen (DIN)
	Phys-chem	Dissolved Oxygen (DO)
		Turbidity

Refer to the *Results Report (2019)* for the detailed description of the data collection and analysis process to determine the water index scores.

### 5.3.2 Key findings

The following results are presented in the *Townsville Dry Tropics 2017-18 Pilot Report Card* and its supporting *Results Report* (2019). It found that in the 2017/18 period water quality in the selected areas ranges from moderate in the inland areas to good in the coastal areas. In particular:

- The Ross Basin had a moderate score for the physical-chemical indices, as well as nutrient levels.
- The Black Basin had a good score for the physical-chemical indices and moderate nutrient levels.
- The Cleveland Bay Coast / Estuary received good scores for both physical-chemical indices and nutrient levels.
- There was insufficient information available to score the Halifax Bay Coast / Estuary.

For a detailed consideration of the above scoring and results refer to the *Townsville Dry Tropics 2017-18 Pilot Report Card* and its Results Report, available from <https://drytropicshealthywaters.org>.

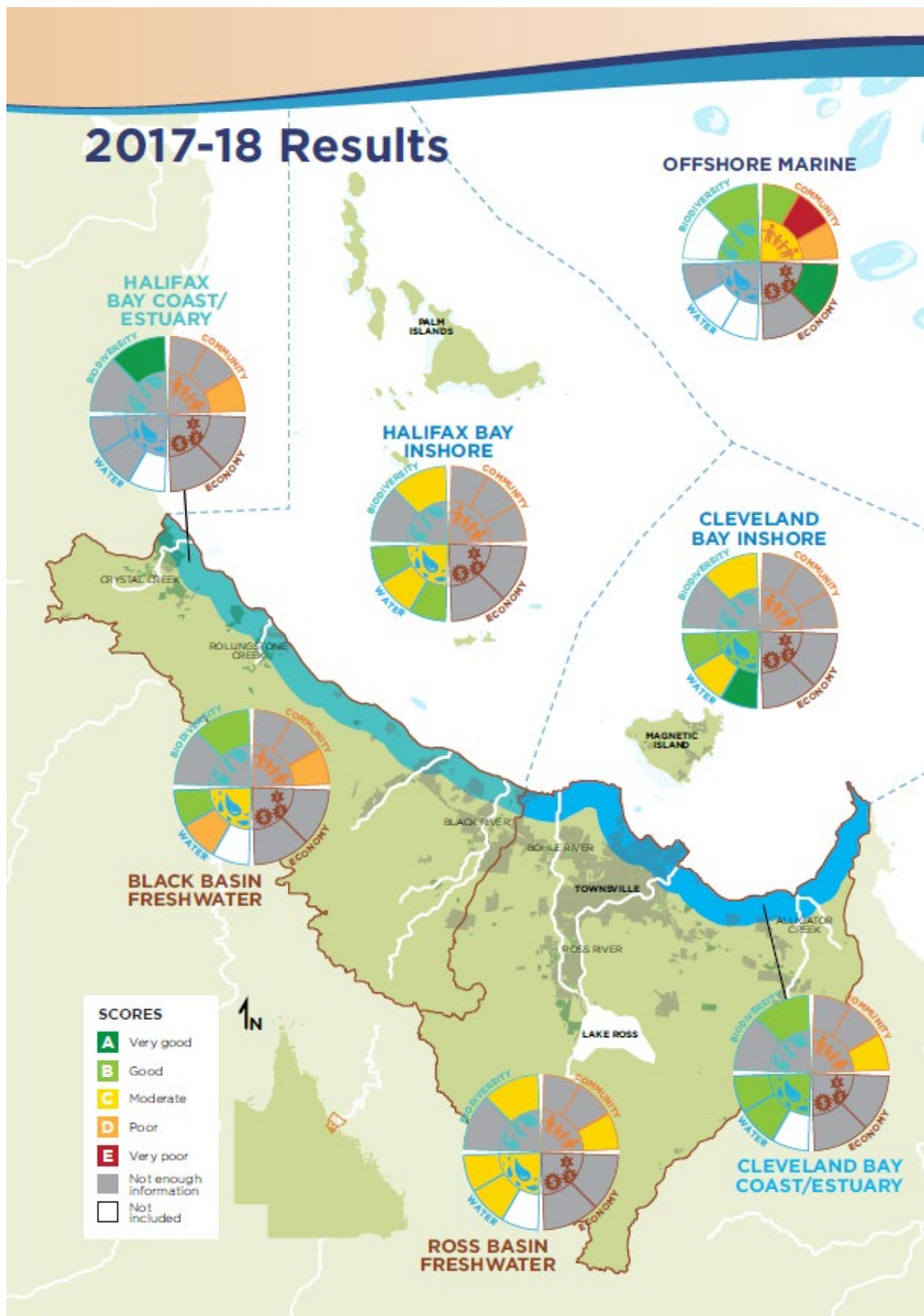
### 5.3.3 Conclusion

The *Townsville Dry Tropics 2017-18 Pilot Report Card* and its supporting *Results Report* (2019) have developed a comprehensive methodology to assess water quality across the catchment. There are some gaps across the indicator framework which will be addressed over time.

It found that in the 2017-18 period water quality in the selected areas ranges from moderate in the inland areas to good condition in the coastal areas.

Although the *Townsville Dry Tropics Report Card* provides useful insights into water quality across the municipality, it is ultimately not the most suitable approach for monitoring the outcomes of the Townsville City Plan. The results reported by Dry Tropics are attributed to a broad range of factors and are not solely attributable to the planning scheme strategic directions and provisions.

It is recommended that Council's Planning and Environment Services teams collaborate to develop more meaningful measures of environmental values and resilience. For example, this could include monitoring the integration of water sensitive urban design features into new development. There is also an opportunity to develop indicators which monitor community resilience and adaptation to climate change over time.



Source: Townsville Dry Tropics 2017-18 Pilot Report Card

## 6.0 Sustainable economic growth

The sustainable economic growth theme acknowledges that Townsville is the largest city and community in northern Australia. The Townsville City Plan seeks to build Townsville's economic strength by supporting growth, new industry, services and job creation. It aims to reinforce Townsville's position as one of the most diverse economies in regional Australia and its emerging status as Queensland's second capital.

There are three indicators included under the sustainable economic growth theme:

- Indicator 10 – Changes in employment by industry
- Indicator 11 – Value of industry sectors
- Indicator 12 – Type and value of major economic development projects

## 6.1 Indicator 10 – Changes in employment by industry

This indicator monitors the number of jobs by key employment sector.

The Townsville City Plan seeks 50,000 new jobs by 2039 and identifies a range of industries where growth is anticipated. It encourages the region to keep playing to its existing strengths in industry, defence, air and seaports, natural resources and tourism. It also supports the growth of new and emerging sectors, such as knowledge-based industries, and health and professional services.

This indicator measures changes in the number of jobs within the key sectors identified in the Townsville City Plan. The indicator will be updated annually and allow for trend analysis. Specifically, the indicator will monitor employment in the following key sectors:

- Mining
- Manufacturing
- Construction
- Retail Trade
- Accommodation and Food Services
- Transport, Postal and Warehousing
- Professional, Scientific and Technical Services
- Public Administration and Safety
- Education and Training
- Health Care and Social Assistance.

### 6.1.1 Method of analysis

Measurement of this indicator draws on data from the economy.id dataset produced by the National Institute of Industry Research in conjunction with id Consulting. Council currently subscribes to economy.id on an annual basis.

Employment by key industry sector is measured at an LGA level which enables Council to monitor job growth and decline in jobs for the entire municipality. The key sectors to be included in the analysis were agreed with Council officers. The total number of jobs and total percentage of jobs by key industry has been analysed and compared with the Queensland average. Data has been analysed for FY2017/2018 and FY2018/2019.

There is limited scope for the Townsville City Plan to influence employment growth and change across the city. In the future analysis of employment growth or decline by employment precinct would provide better insights into planning scheme performance. This data was not available for this publication of the Townsville Planning Scheme Indicators.

A limitation of the data used for this indicator is that the results differ from ABS Census data (Place of Work), due to economy.id adjusting the Census data to allow for 'undercount' associated with Census results (e.g. respondents not working on Census week, respondents not answering the question). In effect this makes the economy.id more accurate but can cause some confusion if cross-referenced directly with ABS Place of Work data. Furthermore, Council must keep subscribing to the economy.id product to access full results which could be subject to Council's budgetary decisions in the future.

### 6.1.2 Key findings

In 2018/19 approximately 73,380 jobs out of 97,830 jobs based in the Townsville LGA were in the identified key sectors. This represents a share of 81.2% of total jobs for these key sectors, compared to 78.4% for Queensland, indicating a higher reliance on Townsville's key sectors for employment. This is especially the case for public administration and safety, education and training and health care and social assistance. These key sectors provided 38.5% of all Townsville LGA jobs in 2018/19 compared to an average job provision share of 29.7% across Queensland (refer to Table 7).

Over the latest 12-month period, 2017/18 to 2018/19 there has been minimal jobs growth in Townsville LGA (just +135 jobs) with employment in the key industry sectors declining by -160 jobs over the period.

As Figure 12 highlights, the biggest contraction in employment was over the 12-month period was in construction (-753 jobs), followed by accommodation and food services. In contrast, there was an expansion in manufacturing employment (+430 jobs) and public administration and safety (+397 jobs).

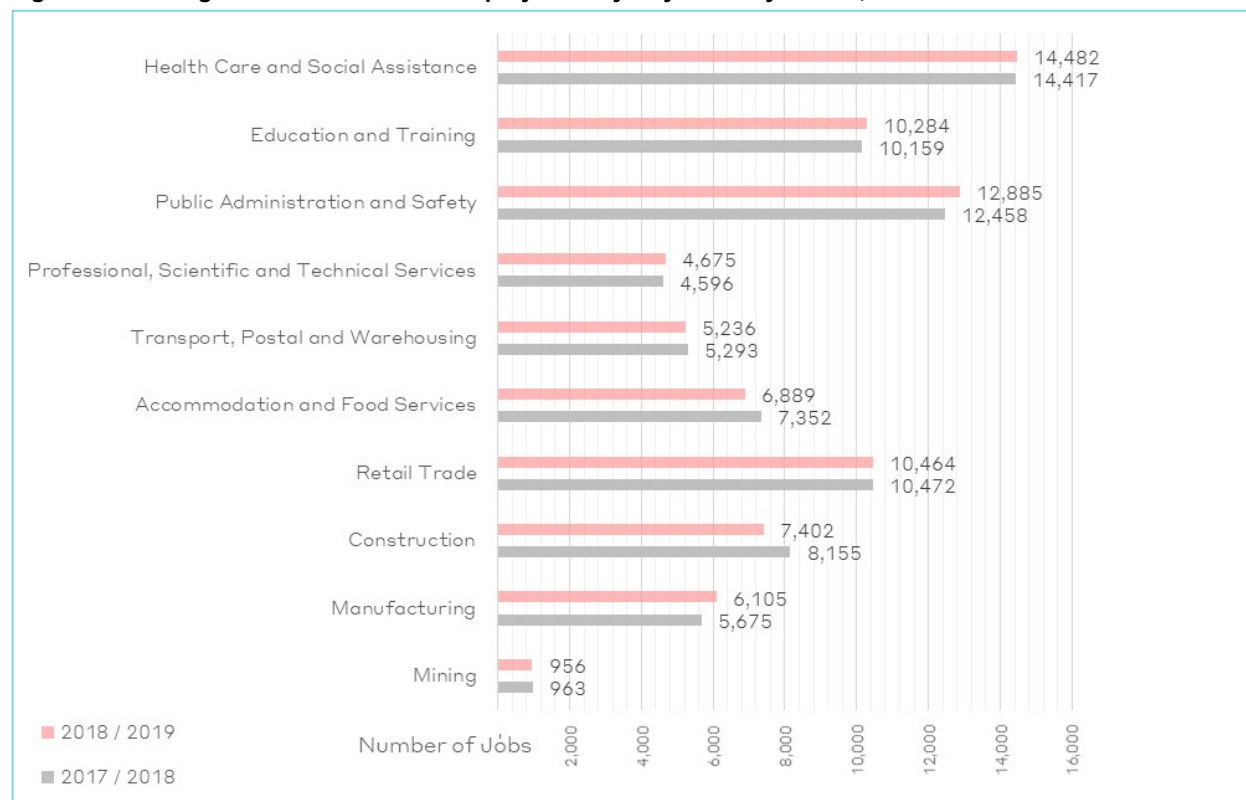
**Table 8 - Local Employment by Key Industry Sector, 2017/2018 and 2018/2019**

FOCUS INDUSTRIES	2017 / 2018			2018 / 2019		
	Number of jobs	Percentage of Jobs (%)	QLD Percentage of Jobs (%)	Number of jobs	Percentage of Jobs (%)	QLD Percentage of Jobs (%)
Mining	963	1.0%	2.5%	956	1.0%	2.4%
Manufacturing	5,675	5.8%	7.0%	6,105	6.2%	6.9%
Construction	8,155	8.3%	9.7%	7,402	7.6%	9.6%
Retail Trade	10,472	10.7%	10.3%	10,464	10.7%	10.5%
Accommodation and Food Services	7,352	7.5%	7.6%	6,889	7.0%	7.6%
Transport, Postal and Warehousing	5,293	5.4%	5.3%	5,236	5.4%	5.3%
Professional, Scientific and Technical Services	4,596	4.7%	6.4%	4,675	4.8%	6.4%
Public Administration and Safety	12,458	12.8%	6.9%	12,885	13.2%	7.0%
Education and Training	10,159	10.4%	9.2%	10,284	10.5%	9.2%
Health Care and Social Assistance	14,417	14.8%	13.4%	14,482	14.8%	13.5%
<b>Total Focus Industries</b>	<b>79,540</b>	<b>81.4%</b>	<b>78.3%</b>	<b>79,378</b>	<b>81.2%</b>	<b>78.4%</b>
<b>Total Townsville LGA</b>	<b>97,697</b>	<b>100.0%</b>	<b>N/A</b>	<b>97,832</b>	<b>100.0%</b>	<b>N/A</b>



Source: *Economy.id; Townsville LGA 2017/18 and 2018/19*

**Figure 14 - Change in Townsville LGA Employment by Key Industry Sector, 2017/2018 and 2018/2019**



Source: *Economy.id; Townsville LGA 2017/18 and 2018/19*

### 6.1.3 Conclusion

Townsville LGA's key industry sectors are the backbone of the local economy providing over eight in ten jobs in the municipality, which include a balanced mix of traditional employment (manufacturing, construction etc.) and white collar jobs including in sectors such as health and education.

The Townsville City Plan aims to deliver 50,00 new jobs across the municipality by 2031. Over 2018/19 employment growth has been modest across the municipal economy and declined slightly across Townsville's key industry sectors as a whole. However, movement in economic indicators across a single year needs to be treated with some caution.

This indicator provides the ability to track movement in employment numbers on an annual and trend basis, which can feed into planning and economic development initiatives as well as monitoring progress of the Townsville City Plan objectives. There are a number of specific opportunities for future development of this indicator, including:

- Analysing employment growth by location, in order to monitor the growth and development of key productive precincts identified in the Townsville City Plan.
- Analysing employment growth by industry sub-sector (noting economy.id provides data for approximately 90 sub-sectors) to form a more nuanced view as to whether employment is increasing/declining. This will better assist in identifying emerging sectors including knowledge-based and innovative activities.
- Exploring employment provision and trends for specific Townsville locations, through assessment of Destination Zone data available in economy.id. This will help planners better understand the relationship between the planning approval process and actual 'on the ground' development outcomes (and associated employment generation).



## 6.2 Indicator 11 – Value of industry sectors

This indicator monitors the total value of key industry sectors to the Townsville economy.

The Townsville City Plan supports sustainable long-term growth and diversification of the Townsville economy. Understanding the value of different industry sectors to the Townsville economy provides an insight into how productive industry sectors are. This can help Council to understand how to adjust land use policies or implement other development incentives to support business in Townsville.

This indicator measures the value that key industry sectors have added to the Townsville economy. It reports:

- The value added (\$) in the following key industry sectors:
  - Mining
  - Manufacturing
  - Construction
  - Retail Trade
  - Accommodation and Food Services
  - Transport, Postal and Warehousing
  - Professional, Scientific and Technical Services
  - Public Administration and Safety
  - Education and Training
  - Health Care and Social Assistance.

### 6.2.1 Method of analysis

This indicator uses data from the economy.id dataset which is produced by the National Institute of Industry Research in conjunction with id Consulting. Townsville City Council subscribes to economy.id on an annual basis.

Value by key industry sector is measured at an LGA level which enables Council to monitor industry growth across the city. The key sectors to be included in the analysis were agreed with Council officers. The total dollar value and percentage of value has been collated by key sector and compared to the Queensland average. Data has been analysed for FY2017/2018 and FY2018/2019.

There is limited scope for the Townsville City Plan to influence the productivity of key industries, however its results can feed into planning and investment attraction initiatives for different business and industries. This analysis could be supported by more localised analysis of employment-zoned land demand and supply, which could provide a stronger connection between the Townsville City Plan objectives and outcomes. This data was not available for this publication of the Townsville Planning Scheme Indicators. An additional limitation of this data is that Council must keep subscribing to the economy.id product to access full results which could be subject to Council's budgetary decisions in the future.

### 6.2.2 Key findings

In 2018/19 Townsville's key industry sectors generated approximately \$7.3 billion in value. This represents a value-added share of 71.8% for these key sectors, compared to 70.1% for Queensland. This indicates a slightly higher reliance on Townsville's key sectors in terms of value-added output. This is especially the case with regard to public administration and safety, education and training and health care and social assistance; these key sectors generated 32.8% of all Townsville LGA's value added output in 2018/19 compared to an average share of 20.7% for these sectors across Queensland.

Transport, postal and warehousing also generates a significantly higher share of value added in Townsville LGA (7.0%) compared to Queensland (5.9%) as illustrated in Table 7.

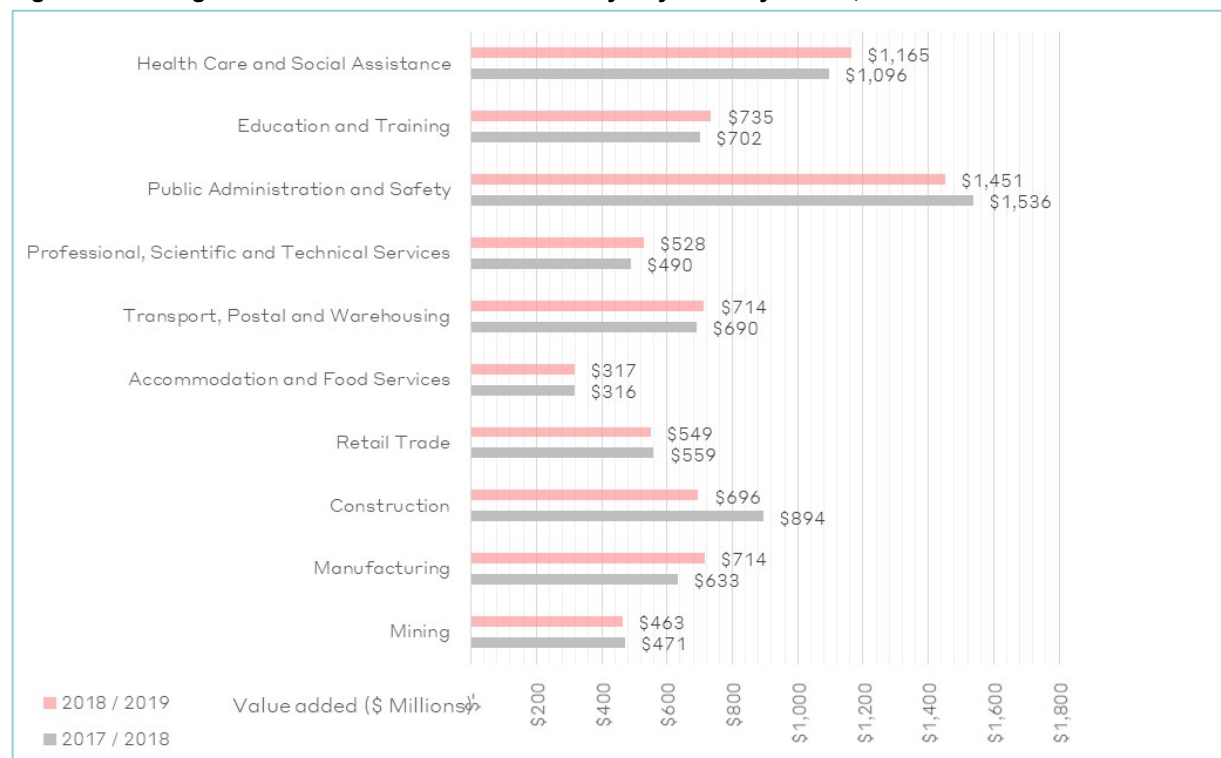
Over the latest 12-month period, 2017/18 to 2018/19 there has been a small decline in value added for the key industry sectors (-\$55 million) and more broadly for Townsville LGA (-\$83 million). The biggest contraction in value added over the 12-month period was in construction (-\$198 million), followed by public administration and safety (-\$86 million). In contrast, there was an expansion in value added in the manufacturing sector (+\$81 million) and health care and social assistance (+\$70 million).

**Table 9 - Value Added by Key Industry Sector, 2017/2018 and 2018/2019**

FOCUS INDUSTRIES	2017 / 2018			2018/2019		
	Dollar Value (\$ millions)	Percentage of Value (%)	QLD Percentage of Value (%)	Dollar Value (\$ millions)	Percentage of Value (%)	QLD Percentage of Value (%)
Mining	\$471.4	4.6%	12.9%	\$463.2	4.5%	13.1%
Manufacturing	\$633.1	6.1%	7.0%	\$714.0	7.0%	6.9%
Construction	\$894.0	8.7%	9.7%	\$695.9	6.8%	8.8%
Retail Trade	\$559.4	5.4%	5.0%	\$549.4	5.4%	5.0%
Accommodation and Food Services	\$315.7	3.1%	3.0%	\$316.9	3.1%	3.1%
Transport, Postal and Warehousing	\$689.7	6.7%	5.9%	\$713.7	7.0%	5.9%
Professional, Scientific and Technical Services	\$489.8	4.7%	6.6%	\$527.5	5.2%	6.6%
Public Administration and Safety	\$1,536.2	14.9%	6.0%	\$1,450.5	14.2%	6.1%
Education and Training	\$701.5	6.8%	5.5%	\$735.2	7.2%	5.6%
Health Care and Social Assistance	\$1,095.5	10.6%	8.5%	\$1,165.0	11.4%	9.0%
<b>Total Focus Industries</b>	<b>\$7,386.3</b>	<b>71.6%</b>	<b>70.1%</b>	<b>\$7,331.3</b>	<b>71.8%</b>	<b>70.1%</b>
<b>Total Townsville LGA</b>	<b>\$10,325.7</b>	<b>100.0%</b>	<b>N/A</b>	<b>\$10,243.2</b>	<b>100.0%</b>	<b>N/A</b>

Source: *Economy.id; Townsville LGA 2017/18 and 2018/19*

**Figure 15- Change in Townsville LGA Value Added by Key Industry Sector, 2017/2018 and 2018/2019**



Source: *Economy.id; Townsville LGA 2017/18 and 2018/19*

### 6.2.3 Conclusion

Townsville's key industry sectors underpin the local economy, generating over 70% of value-added output annually. Over 2018/19, value added has declined marginally across Townsville's key industry sectors (as a whole) and the LGA; but monitoring of movement in economic indicators across a single year need to be treated with some caution. The most productive sectors are public administration and safety, education and training and health care and social assistance; that collectively generated 32.8% of all Townsville LGA's value added output in 2018/19.

This indicator provides the ability to track movement in industry productivity an annual and trend basis, which can feed into planning and investment attraction initiatives. There are specific opportunities for future development of this indicator, including:

- Analysing value added by industry sub-sector (noting economy.id provides data for approximately 90 sub-sectors) to form a more detailed assessment of where industry productivity is increasing/declining. This will better assist in identifying emerging and valuable sectors within the economy supporting economic development and investment attraction strategies.
- Analysis of land demand and supply by employment-zoned land or precinct.

### 6.3 Indicator 12 – Type and value of major economic development projects

This indicator monitors the type and value of major economic development projects occurring in the city.

The Townsville City Plan encourages major business and infrastructure investment in Townsville to support its role as the principal administrative and service centre for Northern Queensland.

This indicator reports major investments in the Townsville economy that have either commenced construction or been delivered over the last year. It reports:

- The type and value of major projects ‘recently completed’ or ‘under construction’ in the municipality.

#### 6.3.1 Method of analysis

This indicator uses data prepared by the Townsville Enterprise Limited, as contained within the *Opportunity Townsville North Queensland* (2019) report. This annual publication provides an insight into economic development and investment within the region.

For the purposes of this indicator, projects that have been ‘Recently Completed’ and ‘Under Construction’ have been analysed in terms of the number of projects, investment dollar value, direct construction jobs and direct operational jobs. Recently completed projects include those successfully delivered and operational in 2017 and 2018 calendar years. Under construction projects include those under construction at the time of publication.

The *Opportunity Townsville North Queensland* report includes projects valued at \$5M or across the Townsville LGA.

Indicative Direct Construction employment numbers are provided by the project proponent or have been calculated using the latest REMPLAN industry data tables. These employment numbers assume the project construction and spend is completed in one year. These numbers are only an estimate.

Indicative Direct Operational employment numbers are provided by the project proponent or have been calculated using the latest REMPLAN industry data tables. The main industry supported by the project has been selected as the guide employment table for each individual project operational employment numbers. These numbers are also only an estimate.

It is acknowledged that the Townsville City Plan has a limited capacity to influence this indicator.

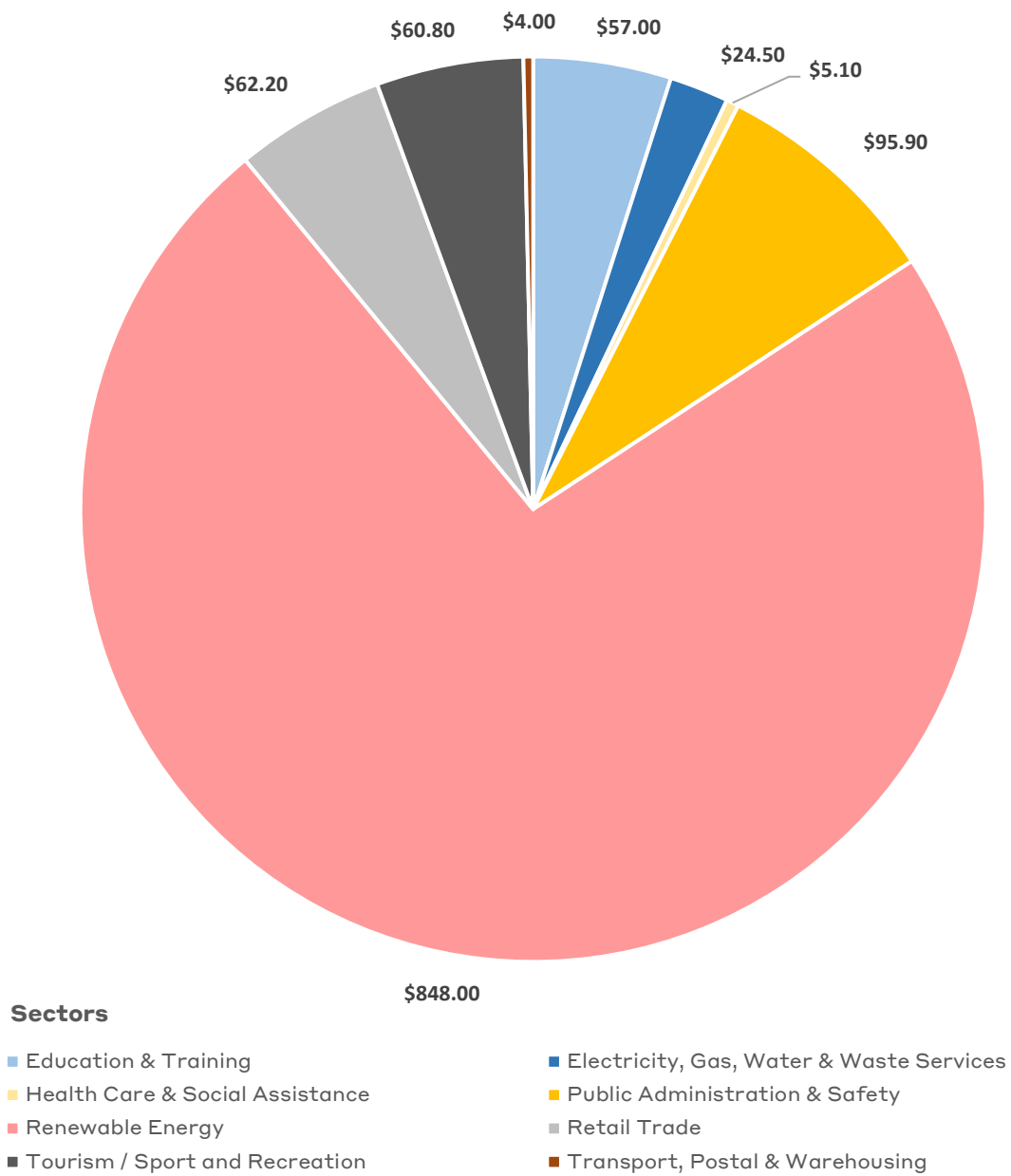
#### 6.3.2 Key findings

An estimated \$1.157 billion of major projects have been completed across the municipality, between 2017 and 2019. This investment has resulted in a total of 1,347 direct construction jobs and 415 direct operational jobs. The top three sectors that have performed over this period include:

- Renewable energy sector (\$848 million),
- Public administration and safety sector (\$95 million)
- Retail trade sector (\$62.2 million).

**Figure 14** provides a breakdown of recently completed major projects by all sectors.

The largest individual project to be recently completed, based on investment value, was the Ross River Solar Farm, with an investment value of \$225 million. The solar farm has the capacity to generate up to 148 megawatts (MW) of electricity, enough to power 54,000 homes. Ross River Solar Farm is a significant investment that will help reshape Australia’s energy future.



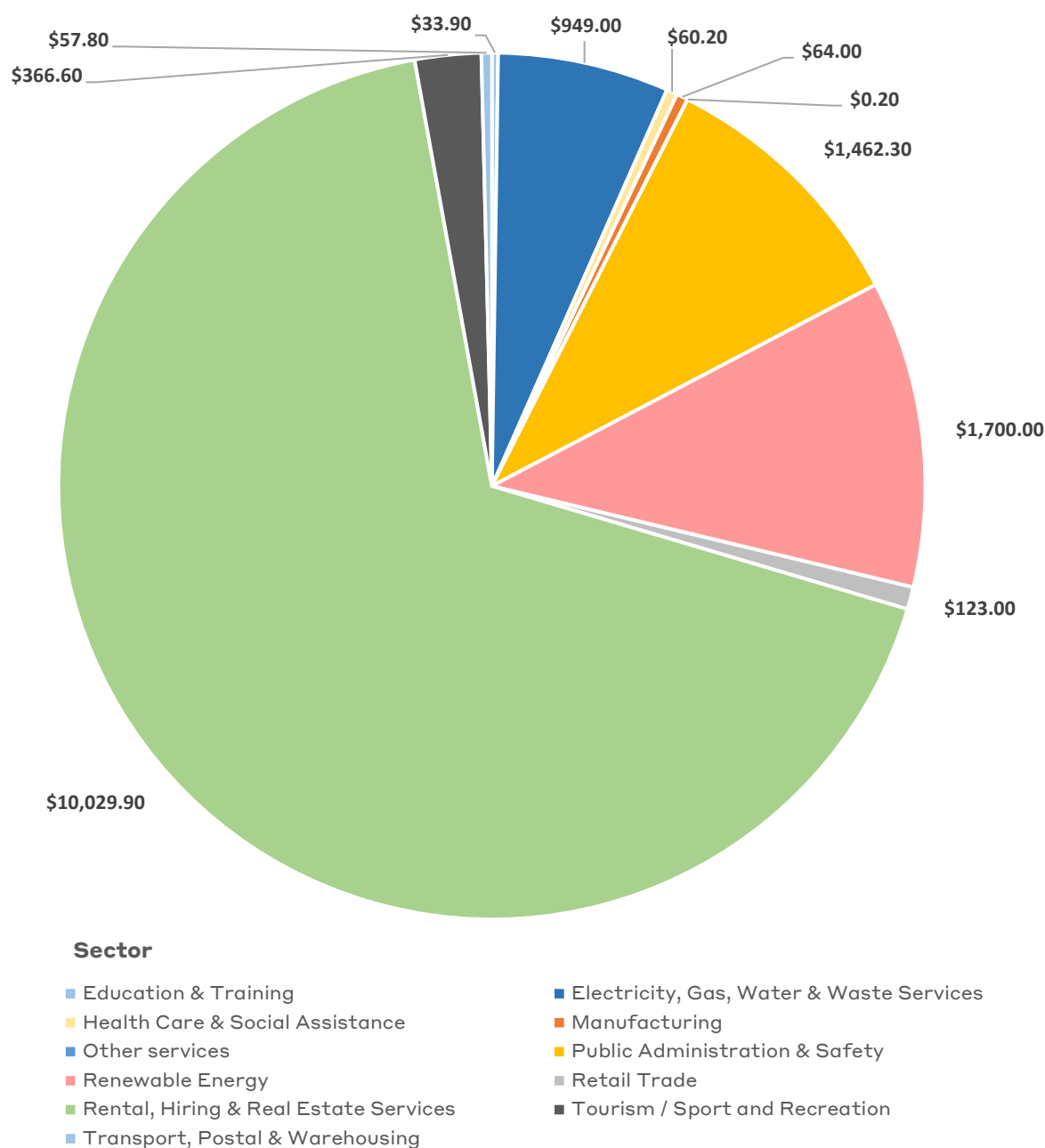
**Figure 16: Graph of Investment value (\$M) by sector – Recently completed projects**

An estimated \$14.846 billion of major projects are currently under construction. These projects are estimated to result in a total of 13,568 direct construction jobs and in a total of 1,339 direct operational jobs. The top three sectors that represent this investment value include:

- Rental, hiring and real estate services sector (\$10.029 billion)
- Renewable energy sector (\$1.7 billion)
- Public administration and safety sector (\$1.46 billion).

**Figure 15** provides a breakdown of major projects by all sectors that are currently under construction.

The largest individual project to be recently commenced, based on investment value, was the Stockland North Shore – Northern Beaches Master Planned Community located in Burdell, with an investment value of \$1.073 billion. The master planned community is made up of 5,487 residential lots and a 50ha sub-regional town centre that offers schools, parks, aquatic centre, town square and a neighbourhood shopping centre.



**Figure 17: Graph of Investment value (\$M) by sector – Projects under construction**

### 6.3.3 Conclusion

A total of \$16 billion worth of major projects has been recently completed or is currently under construction in Townsville. Key sectors which have contributed to this total include the public administration and safety sector (\$1.555 billion), rental, hiring and real estate services sector (\$10.029 billion), renewable energy sector (\$2.548 billion) and retail trade sector (\$62.2 million). The total major projects recently completed or currently under construction is estimated to result in 14,915 direct construction jobs and in a total of 1,754 direct operational jobs. Projects under construction have an estimated complete date ranging from the present to 2040.

In the preparation of future versions of the Townsville Planning Scheme Indicator reporting it is recommended Council collaborate with Townsville Enterprise Limited, author of *Opportunity Townsville North Queensland*, to understand the assumptions that underpin the headline statistics of investment value and job creation within the report. This collaboration could provide greater insight in terms of the breakdown of investment value for each project and an understanding on the anticipated receipt of investment value by year for projects which extend over multiple years.



## 7.0 Conclusion and Future Directions

The Townsville City Plan Performance Indicators are a set of measures that provide the basis for measuring the effectiveness of the planning scheme in meeting its stated long-term vision for the City, as expressed in the strategic framework. The strategic framework outlines the Townsville City Plan's broad policy outcomes and provides the overarching policy direction for future development throughout Townsville.

The Townsville Planning Scheme indicator framework comprises 12 indicators categorised under the four (4) overarching themes contained within the strategic framework of the Townsville City Plan. The indicators will be measured annually by Townsville City Council (TCC) and incorporate data prepared and managed by Council, as well as external sources.

This report has presented the data, analytical approach, including limitations and key assumptions, and key findings for each indicator. It has also included recommendations for how indicators might be refined over time to provide better insight into planning scheme performance or draw on more readily available or relevant data.

It has provided commentary on key trends occurring across the municipality but acknowledges that the planning scheme is one tool in a wider system of governance, development, economic, and environmental frameworks. Over time the Townsville Planning Scheme Indicators will provide a robust evidence base to inform Council decision making as well as consideration of other initiatives and programs that will support achieving the strategic vision for Townsville.

This project presents an approach that can be implemented more broadly across Queensland local Councils.

### 7.1 Future indicators

There were a number of potential future indicators identified in the development of this framework to address key directions within the Strategic Framework. At the time of writing there was not appropriate data or resources available to include these indicators within this publication.

This report has also identified that the indicators, particularly under the Environmentally Sustainable Future and Sustainable Economic Growth themes to provide stronger linkages to the Townsville City Plan outcomes.

**Table 10 - Indicators for future development**

Theme	Topic	Indicator	Description
<b>Strong and connected community</b>	Design quality	Public perceptions of design quality	Indicator to measure the perceptions of design quality across Townsville. This could be similar to the Place Score approach or focus on a smaller set of variables.
		Expert panel rating of design quality	Indicator to measure design quality, as determined through an expert panel. This potential indicator is proposed in the North Queensland Regional Plan, therefore any similar approach developed by Council should seek to realign with the State government measure.
<b>Environmentally sustainable future</b>	Climate change resilience	Climate change resilience	Measure could incorporate a number of different environmental, economic and social factors aspects associated with responding to climate change impacts.
		Coastal hazard change adaptation	Measure could reflect adaptation measures implemented as part of the Townsville Coastal Hazard Adaptation Strategy (currently being undertaken).
	Green infrastructure	Canopy cover	Indicator to measure total area of canopy cover across the Townsville urban area.