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Bundaberg Regional Council

Extrinsic Material to the Local Government Infrastructure Plan – Interim LGIP Amendment

Revision (No. 2.0)

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1.0 Background

This report details all relevant background studies and reports utilised in the preparation of Bundaberg Regional Council's Local Government Infrastructure Plan (LGIP), incorporating the Interim Amendment updates.

The purpose of the Interim LGIP Amendment is to update the Schedule of Works model to ensure that it appropriately aligns with Council's latest network planning outcomes and Capital Investment Planning. The updates include the following:

- Inclusion of existing assets that have recently been constructed / provided / reclassified;
- Removal of future assets that have now been constructed or no longer required;
- Inclusion of future assets that have been conditioned under a development approval or newly identified in the CIP; and
- Adoption of more contemporary financial inputs that align with a revised base year of 2021 (from the previous base date of 2016).

2.0 Planning Assumptions

Underpinning the Planning Assumptions of the LGIP is the Bundaberg Regional Council (BRC) Population and Demand Model. These Geographic Information System (GIS) models have been developed using a "bottom-up" approach, allowing for the spatial allocation of population and demands (residential & non-residential) across all land parcels within the Local Government Area (LGA), from the base date of 2021 through to an ultimate capacity determined by the current Planning Scheme. The base assumptions and methodologies employed to develop these models and other key inputs into the Planning assumptions are detailed in this section. Additional model information is also available in *Bundaberg Regional Council Population and Demand Spatial Model – Water Supply, Sewerage & Transport (Roads) (Integran 2016)*.

2.1 *Population Spatial Model*

Draft 2015 Queensland Government Statistician's Office (QGSO) population projections (Medium Series), were used as a basis for determining the Population Projections for the periods 2015 to 2036 across Bundaberg Regional Council. These have been used in favour of 2013 QGSO figures (the latest published figures at the time of the 2018 LGIP preparation). The population totals for 2041 and beyond have been extrapolated from the totals provided in previous periods. Due to the limited nature of changes proposed under the interim LGIP amendment, apart from updating the base date for the population model (from 2016 to 2021), population projections have remained unchanged (i.e., are still based on the draft 2015 QGSO projections/ have not been updated to reflect more recent QGSO projections).

Tourism forecasts have been included in the projections based on data provided by the ABS relating to tourist accommodation (small area data). This is to ensure that infrastructure networks accommodate the demand generated by both resident and visitor populations. The various accommodation types identified have been assessed and a 2010 "maximum overnight tourist capacity" determined. These results have been trended over projection cohorts using expected population growth rate as a surrogate for determining projected tourists over time.

For the purposes of the LGIP, the ultimate scenario of the BRC Planning Scheme is considered to occur in around 2098/99. Table 1 below identifies the Population and Tourist Figures used as a basis for creating the Population Spatial Model.

***Table 1:* QGSO and Tourist Projections (2021 to 2046)**

	2021	2026	2031	2036	2041	2046
QGSO Projections	101,335	106,322	111,214	115,998	120,785	125,572
Tourism Projections	3,284	3,445	3,604	3,759	3,914	4,069
Total Population Projections	***104,619***	***109,767***	***114,818***	***119,757***	***124,699***	***129,641***

Sources:

1. Queensland Government Statistician's Office (QGSO) – Draft 2015 Edition Population (medium series)
2. Tourism Projections: 8635.3.55.001 - Tourist Accommodation, Small Area Data, Queensland - Electronic Delivery, June 2010 (ABS)

Notes:

1. % tourist growth based on QGSO population growth rates
2. Projections for 2041 to 2046 have been extrapolated from previous periods

2.1.1 Population Projections

Existing population has been allocated on a lot by lot basis to all residential landuses (obtained from Council's landuse data) based on dwelling types and expected household sizes. A summary of the average household sizes used have been provided in Table 2. This allocation has been aligned with the draft 2015 QGSO Projections and refined through comparison with the ABS 2011 Census Data.

***Table 2*: Average Household Size**

Dwelling Type	2021	2026	2031	2036 to Ultimate
Separate House	2.51	2.49	2.47	2.46
Semi, Detached, Flats	1.58	1.57	1.56	1.55
Other	1.79	1.77	1.76	1.75
All	***2.36***	***2.34***	***2.32***	***2.32***

Source: Bundaberg Regional Council Model 2016 & draft QGSO 2015, ABS 2011 PEP
Note: Measured as persons/occupied dwelling

The development potential of the Bundaberg Planning Scheme was determined through analysis of the Planning Scheme Intents (constraints and densities), consideration of approved development applications and understanding of the realistic development trends throughout Bundaberg. The constraints considered as part of this assessment included:

- Airport and aviation facilities;
- Biodiversity areas;
- Bushfire hazards;
- Coastal protection;
- Flood hazards;
- Heritage and neighbourhood character;
- Infrastructure corridors;
- Landslide hazards; and
- Existing easements.

Depending on the nature of the constraint, these have been applied as a mixture of absolute (i.e. no development possible within constraint area), or partial (i.e. constraint results in reduced development yields) constraints to development potential.

On determination of this "realistic" development capacity of Bundaberg, the expected growth for each five year period from 2021 and beyond was allocated across the potential growth areas. The growth available for each 5 year cohort has been based on the growth identified within the draft QGSO Projection in addition to Tourist Populations (as discussed in Section 2.1 above)

with consideration of the displaced populations arising from the reducing household sizes. This total growth has been allocated using a 'gravity model' approach, with consideration of factors relating to propensity to develop, such as:

- The properties location with respect to the Priority Infrastructure Area (i.e. accommodates 10-15 years of growth);
- Availability and proximity to infrastructure services;
- The likely staging of development for particular areas based on direction from BRC Planning department; and
- Existence of Planning Approvals.

Residential populations were allocated across all residential Planning Areas, while tourist growth was only allocated to only those Planning Areas likely to accommodate tourist population (e.g. High and Medium Density Areas along the Coastal Townships, City Centre, etc.). Table 3 below provides a summary of the population found in each Reporting District for the periods 2016 to Ultimate. This information has been used in the development of the spatial model.

***Table 3:* Population Projections 2021 to Ultimate**

Reporting District	2021	2026	2031	2036	2041	Ultimate
Greater Bundaberg	52,001	54,311	56,505	58,688	60,949	86,657
Bargara to Elliott Heads	14,469	15,988	17,440	18,737	19,985	31,795
Burnett Heads	3,133	3,334	3,602	3,898	4,215	6,548
Moore Park Beach	1,992	2,136	2,295	2,421	2,539	3,300
Woodgate	2,818	3,050	3,254	3,439	3,615	5,291
Gin Gin	1,422	1,744	2,053	2,296	2,497	3,365
Childers	1,783	1,934	2,097	2,215	2,307	2,960
Cordalba	346	345	345	354	365	672
Apple Tree Creek	294	300	302	325	347	828
The Hummock	607	613	622	632	644	741
Buxton	538	537	534	546	558	813
Other Areas	25,216	25,475	25,769	26,206	26,680	39,156
Total	***104,619***	***109,767***	***114,818***	***119,757***	***124,699***	***182,126***

Source: Bundaberg Regional Council Model 2016

2.1.2 Development Sequencing Maps

A series of Development Sequencing Maps were produced from the BRC Population Spatial Model, and provide a visual record of the assumed timing, scale and location of development within the LGIP.

2.2 *Demand Spatial Model*

As per the LGIP guideline, Council's spatial demand models expresses residential and non-residential demand as either Equivalent Persons (EPs), Impervious Hectares (imp ha), or Vehicle Trips per Day (VPD) depending on the infrastructure network.

The Water, Sewer and Parks Demand Models express residential and non-residential demand as EPs. An EP represents the level of demand generated by a single person. The Transport Demand Model expresses residential and non-residential demand as VPD. The number of VPD is generated using the number of Equivalent Dwelling Units (EDUs), calculated by applying the relevant separate household size for each period (as identified in Table 2). The Stormwater Demand Model expresses residential and non-residential demand as impervious hectares.

2.2.1 Existing Demand

2.2.1.1 Residential

With regard to the existing residential demand, the 2021 population determined through the Population Modelling exercise described in the section 2 above was converted at a 1:1 ratio to EPs.

For VPD generation rates, the 2021 detached household size was applied to the population to determine EDUs, 10 VPD per EDU were then applied.

2.2.1.2 Non-Residential

The EPs for non-residential demand have been determined using the developable area calculations that were determined through the Population Modelling Process. EDU rates per Hectare for each landuse / Planning Area were multiplied by the developable area in hectares (refer to Table 5), and then converted to EP's using the relevant separate household size for each period (refer to Table 2).

To ensure the existing non-residential demand was not overestimated (the area of the parcel does not necessarily reflect the demand that the existing land use generates), the demand model takes into account the realistic existing demands based on the size of the parcel and whether or not the existing landuse is consistent with the underlying land use intent.

The following list contains the base assumptions used in determining the existing non-residential demand:

- For Consistent Uses on lots **<** 1 Hectare (excl. Open Space/Sport & Rec) – assumes 75% Developed
- For Consistent Uses on lots **>** 1 Hectare (excl. Open Space/Sport & Rec) – assumes 50% Developed
- For Consistent Open Space/Sport & Rec uses on lots **<** 1 Hectare – assumes 50% Developed
- For Consistent Open Space/Sport & Rec uses on lots **>** 1 Hectare– assumes 10% Developed
- For Inconsistent Uses on lots **<** 1 Hectare – assumes 60% Developed
- For Inconsistent Uses on lots **>** 1 Hectare – assumes 2% Developed. This realistic percentage is low due to many large rural parcels being identified under this scenario – E.g. Industry use on a 20Ha Rural Property may only consist of a workshed and house/admin building.

Some other minor modelling amendments, including input of metered data for some parcels, was performed in order to increase the accuracy of the Demand Model outputs. These have been discussed and confirmed with Bundaberg Regional Council throughout the modelling process.

2.2.2 Future Demand

2.2.2.1 Residential

The projected residential demand has also been determined through the Population Modelling exercise described in the section 2. The Population determined for each period has been converted to an EP's at a 1:1 ratio.

For trip generation rates, the relevant detached household size (refer to Table 2) was applied to the population at each cohort to determine Equivalent Dwelling Units (EDU's), 10 trips per EDU were then applied.

2.2.2.2 Non-Residential

Non-residential demand has been determined using the developable hectare calculations determined through the Population Modelling Process, applying these against the EDUs per Hectare for each landuse / Planning Area[1] (refer to Table 4), and converted to EP's using the relevant separate household size for each period (refer to Table 2). The realistic demands created by these uses have been determined based on the size of the parcel and nature of the use. The base assumption used in determining the future non-residential demand is that non-residential areas reach 90% of their development potential. This is with the exception of the Open Space/Sport & Rec zones, whereby a factor of 50% has been applied for sites less than or equal to 1 hectare, and a factor of 15% has been applied for sites greater than 1 hectare.

The future demand calculated through the above process has been trended over the 2016 to Ultimate time period cohorts based on the rate of population growth rate found in each appropriately defined "Trending District" – in other words, assumes that the growth in non-residential demand is proportional to the rate of growth of residential demand. The Trending Districts applied to each Zone/Locality are presented in Appendix A.

Table 4: Non-Residential Demands by Zone - Water Supply, Sewerage & Transport (Roads) – Expressed as EDUs per Hectare

BRC ZONE	BRC PRECINCT	WATER & SEWER EDUs / HA	TRANS-PORT EDUs / HA*
Commonwealth Land		5	5
Community Facilities		5	5
District Centre		15	50
Environmental Management And Conservation		0	0
Extractive Industry		10	7.5
High Impact Industry		12	7.5
Industry		12	7.5
Limited Development (constrained Land)		0	0
Local Centre		15	30
Major Centre		30	75
Neighbourhood Centre		12	24
Open Space		5	5
Principal Centre	PCZ1 - City Centre Core	30	60
Principal Centre	PCZ2 - City Centre Riverfront	30	60
Principal Centre	PCZ3 - City Centre Frame	30	60

[1] Non-residential Demand rates per Hectare based on data provided and agreed to by Bundaberg Regional Council.

BRC ZONE	BRC PRECINCT	WATER & SEWER EDUs / HA	TRANS-PORT EDUs / HA*
Principal Centre	PCZ4	30	60
Specialised Centre		15	15
Sport And Recreation		5	5

**Interim Revision – Non-Residential Transport Demands still to be confirmed*

2.3 *Employment Model*

The Bundaberg Regional Council Employment Model has been developed to provide important inputs into the LGIP. The methodology for the employment modelling process is detailed below.

2.3.1 Current Employment

Australian Bureau of Statistics (ABS) Census data was used to determine an existing employment profile within the Bundaberg LGA by employment sector for the entire local government area.

- The employment profile is based on:
- Total population
- Total current workforce
- Total potential workforce (residents aged 15 and older)
- Residents who both live and work locally
- Industry of employment by occupation
    - For the purposes of the LGIP employment modelling, ABS industry of occupation has been re-categorised into 'employment sectors' in order to align with categories in the LGIP tables. Assumptions made to assign ABS employment industry into LGIP Employment Sector are detailed in Table 5 below.

Table 5: Employment Category and Sector Assumptions

ABS Employment Industry Category	LGIP Employment Sector
Agriculture, forestry & fishing	Other
Mining	Other
Manufacturing	Industry
Electricity, gas, water & waste services	Industry
Construction	Other
Wholesale trade	Industry
Retail trade	Retail
Accommodation & food services	Commercial
Transport, postal & warehousing	Industry
Information media & telecommunications	Commercial
Financial & insurance services	Commercial
Rental, hiring & real estate services	Commercial
Professional, scientific & technical services	Commercial
Administrative & support services	Commercial
Public administration & safety	Commercial
Education & training	Community Purposes
Health care & social assistance	Commercial
Arts & recreation services	Commercial
Other services	Other
Inadequately described/Not stated	Other

2.3.2 Future Employment

The employment projections assume that the employment rate is maintained, considering labour retention and job containment, throughout all projection periods. The ratio of work force to population is used to determine employment projections for each cohort within the employment sectors and regions, as identified above. Population projection figures are used from the completed BRC Population Spatial Model. The outputs of the employment model, as used in the LGIP employment assumption tables, include:

- Total current jobs identified within each LGIP projection area for each employment sector;
- Additional job requirements for local growth (i.e. growth within LGA) for each projection period, mathematically distributed amongst employment sectors within LGIP projection areas.

2.3.3 Floor Space Requirements

Floor space requirements are calculated based assumptions about floor space per employee requirements for each employment sector. The assumed floor space requirements are detailed in Table 6, and have been identified based on industry knowledge, which has been discussed and confirmed with Council officers. As with the employment figures, floor space outputs used in the LGIP assumption tables include:

- Total existing floor space requirements within each LGIP projection area for each employment sector
- Additional floor space requirements for local growth (i.e. growth within LGA) for each cohort, mathematically distributed amongst employment sectors within LGIP projection areas

Table 6: Floor space assumptions by Employment Sector

Employment Sector	Floor Space (m²/employee)
Retail	20
Commercial	20
Industry	180
Community Purposes	20
Other	20

2.3.4 Spatial Allocation

Spatial allocation of the projected floor space requirements has been undertaken at an SA1 level, using a gravity model approach, based on availability of developable land zoned for non-residential uses, with consideration given to:

- Proximity to the PIA
- Potential industry mix within planning scheme zones
- Input from Council officers

2.4 *Priority Infrastructure Area Capacity*

The availability of a spatial parcel-based population model facilitated a rigorous analysis of the appropriateness of the Priority Infrastructure Area (PIA). After consideration was given to factors affecting propensity to develop, the ultimate population capacity inside the PIA boundary was determined to be approximately 29,000 persons, or 11,500 standard detached dwellings.

The population growth shown in Table 7 identifies the projected population growth between base year and 2031. While it is noted that this results in a remaining capacity of approximately 16,000 people (6,400 dwellings) inside the PIA at 2031, this is deemed acceptable when the following considerations are taken into account:

- The majority of this capacity is accounted for through infill development which the modelling has not anticipated to be fully realised within the 10-15 year horizon (approximately 4,000 infill dwelling capacity remaining at 2031); and
- Multiple development fronts, such as the Kalkie and Coastal regions, are anticipated to commence development and require servicing within the 10-15 year horizon and it is not considered reasonable to exclude one of these regions at the expense of another

Table 7: PIA Population Growth Projections

Area	Projected population growth (cumulative)				
	2021	2026	2031	2036	Ultimate
Inside PIA	4,419	8,750	12,972	15,857	28,932
Outside PIA	812	1,659	2,472	4,513	53,805
Total LGA	5,231	10,409	15,444	20,370	82,737

3.0 Cost Assumptions

Unit rates used to determine asset costs utilise the information deemed most accurate and appropriate, which was available at the time the document was drafted. For asset costing purposes within the SOW model, all asset costs have been indexed to the base year of the model, 2021, using the indices identified below:

- Works
  - Water Supply– Index 31: Heavy and civil engineering construction Australia (A85219099L)
  - Sewerage – Index 31: Heavy and civil engineering construction Australia (A85219099L)
  - Stormwater – Index 31: Heavy and civil engineering construction Australia (A85219099L)
  - Transport – Index 3101: Road and bridge construction Queensland (A2333727L)
  - Parks – Index 3020: Non-Residential building construction Queensland (A2333721X)
- Land
  - All networks – CPI; Brisbane (A2325816R)

3.1 *Baseline Valuation and Establishment Costs*

The existing asset valuations within Council's SOW model provide an additional level of detail when compared to the standard SOW models 'baseline valuation'. The 'Base Estimate' within the BRC SOW model provides an equivalent valuation figure, however this is built from a raw unit rate cost and on-cost allowance.

On costs are considered to be an essential element of the 'current replacement cost' identified within the Ministers Guidelines and Rules, relating to design/redesign, environmental considerations, traffic management and project management amongst other things, all necessary components of the cost to replace an asset. The Evans and Peck report referenced within the State SOW model user manual identifies that many Council's already include on costs within their unit rates. BRC has chosen to separate these costs in order to provide additional

transparency and ease of understanding throughout their LGIP documents. The on-cost allowance for each network type is shown in Table 8.

Current replacement cost for all existing assets were sourced from Council's asset register. The establishment costs for future assets were determined either directly from cost estimates in planning reports or by the following method:

- Raw unit rate cost; plus
- Application of various cost modifiers which affect construction cost, including:
  - Existing Development Type (e.g., Rural or Urban);
  - Soil Type (Good soil, poor soil, sand, acid sulfate soil, soft rock, hard rock);
  - Physical dimensions of asset
- On-costs and contingency allowances as shown in Table 8.

Table 8: Asset Cost Adjustments

Network	Cost Modifier	Valuation Component	Applies to	Adjustment Factor
Water Supply and Wastewater (active assets)	On-cost Allowance	Works	Existing assets	10%
Water Supply and Wastewater (passive assets)	On-cost Allowance	Works	Existing assets	5%
Water Supply (active & passive assets)	On-cost Allowance	Works	Future assets	Varies 5-20% (see SOW)
Water Supply (active & passive assets)	Contingency	Works	Future assets	Varies 10-30% (see SOW)
Wastewater (active & passive assets)	On-cost Allowance	Works	Future assets	5%
Wastewater (active & passive assets)	Contingency	Works	Future assets	10%
Stormwater	On-cost Allowance	Works	All existing & future assets	5%
Stormwater	Contingency	Works	Future assets	10%
Transport	On-cost Allowance	Works	All existing & future assets	Varies 2-20% (see SOW)
Transport	Contingency	Works	Future assets	10%
Parks and Land for Community Uses	On-cost Allowance	Works	All existing & future assets	Varies 2-10% (see SOW)
Parks and Land for Community Uses	Contingency	Works	Future assets	10%

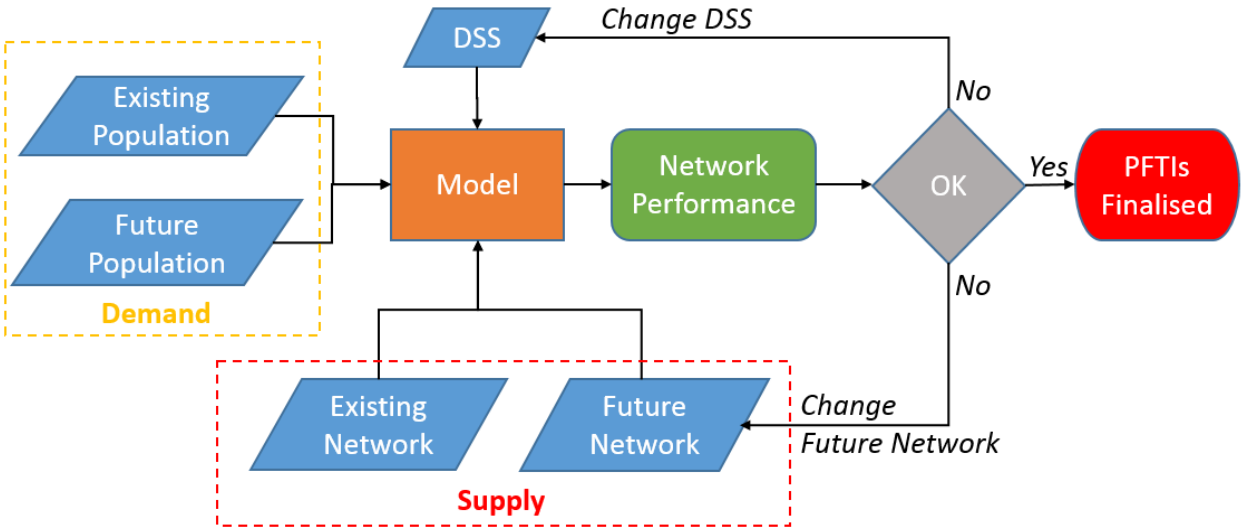
3.2 *Unit Rates*

The unit rates utilised in the LGIP are based on those which inform Council's asset register. Some variability exists in the unit rates used. This variation is due to the various cost modifiers which affect construction as mentioned in Section 3.1.

4.0 Network Planning

The network planning undertaken to support the LGIP is a mixture of various network models and studies. Due to time and resource limitations it was not possible to undertake new modelling for all trunk networks. Priority was given to future growth areas. The model process used is shown in Figure 1. The demand models described in Section 2.2 were utilised as the "demand" input and the existing and future networks made up the "supply" side of the modelling process. The aim of the network modelling was to find a balance between the cost effective Desired Standards of Service (DSS) and network performance. Once this balance was found the Plans for Trunk Infrastructure (PFTIs) were finalised.

***Figure 1:* Model Process**



Additionally, the demand models have been considered against Council's previously completed network planning in order to reassess its appropriateness and assist in determining where planning 'gaps' may exist that need to be addressed.

4.1 *Water Supply Network*

Network planning for the water supply network is based on recent modelling undertaken in Council's identified growth areas within East Bundaberg and along the coast between Burnett Heads and Elliott Heads. In the remaining areas, modelling undertaken as part of the Priority Infrastructure Plan (PIP) (i.e., before 2015) has been reviewed in light of the new demand model outputs. Where necessary Council's network planning engineers have revised infrastructure timings and dimensions. However, due to the long planning horizon utilised for the Water Supply network this has not translated in significant changes to the majority of the recommendations identified within pre-2015 studies and reports. The full list of studies and reports supporting the Water Supply Network Planning are:

- East Bundaberg Water Supply – Draft Infrastructure Planning Report (GHD 2016)
- Capacity Review and Water Quality Enhancement – Gin Gin Water Treatment Plant (Hunter Water Australia 2012)
- Bundaberg Regional Water Supply – Strategic Planning Report (Cardno 2010)

Water supply network planning has been undertaken to a 30 year planning horizon, which exceeds the 10-15 year minimum specified within the Ministers Guidelines and Rules, at a level of service that aligns with the DSS in the LGIP.

4.2 *Wastewater Network*

Network planning for the wastewater network is based on recent modelling undertaken in Council's identified growth areas within East Bundaberg and along the coast between Burnett Heads and Elliott Heads. In the remaining areas, modelling undertaken as part of the PIP has been reviewed in light of the new demand model outputs. Where necessary Council's network planning engineers have revised infrastructure timings and dimensions. However, due to the long planning horizon of utilised for the wastewater network this has not translated in significant changes to the majority of the recommendations identified within pre-2015 studies and reports. The full list of studies and reports supporting the Wastewater Network Planning are:

- East Bundaberg Wastewater Infrastructure Planning – Strategic Planning Report (GHD 2016)
- Coastal Sewerage Reticulation Planning – Volume 1 – Reticulation Solution Report (GHD 2010)

Wastewater network planning has been undertaken to a 30 year planning horizon, which exceeds the 10-15 year minimum specified within the Ministers Guidelines and Rules, at a level of service that aligns with the DSS in the LGIP.

4.3 *Stormwater Network*

Council currently maintains a 3 year capital works program for trunk stormwater infrastructure. Council is working towards developing a 10 year stormwater capital works program as identified in Council's Long Term Asset Management Plan 2017-2026 (LTAMP). In the meantime, longer term network planning is limited to drainage management plans for historic problem areas. For urban growth areas drainage management plans approved as part of development applications are utilised. The full list of studies and reports supporting the Stormwater Network Planning are:

- Moneys Creek - Review of Cardno Study (BRC 2015)
- Moneys Creek - Trunk Drainage Study (Cardno 2014)
- Baldwin Swamp New Lagoon (BMT WBM 2013)
- Urban Stormwater Quality Management Plan - Project Definition Study (BMT WBM 2013)
- Review of Stormwater Drainage Remedial Options for West Bundaberg (BRC 2012)
- Bundaberg City - Drainage Analysis and Catchment Management Plan (GHD 1997)
- West Bundaberg Drainage Scheme Report (BRC)
- Bundaberg Port Drainage Scheme Report (BRC)
- Thabeban Drainage Scheme Report (BRC)

4.4 *Transport Network*

Council currently maintains a 3 year capital works program for trunk transport infrastructure. Council is working towards developing a 10 year transport capital works program as identified in Council's LTAMP. In the meantime, longer term network planning relies on work undertaken by the various detailed studies undertaken by Council and Department of Transport and Main Roads (DTMR). The full list of studies and reports supporting the Transport Network Planning are:

- Hughes Road, Bargara Preliminary Design – Traffic and Engineering Report (GHD 2015)
- Monduran Road Bridge – Options Assessment (GHD 2014)
- North South Distributor – Intersection Upgrade Proposals – Traffic and Engineering Assessment (GHD 2013)
- Intersection of Maynard Street, Enterprise Street, Fitzgerald Street and Branyan Street - Provision of traffic signals and proposed staging (HIG 2013)
- Draft Wide Bay Burnett Principal Cycle Network Plan (PCNP) (DTMR 2013)
- Multi-Modal Pathway Strategy – Connecting our Region (GHD 2012)
- Saturn Model for BRC - Forecasting and Option Testing Draft Report (PB 2011)
- Report for Kensington/Thabeban Area - Traffic Impact Assessment – Construction Methodology (GHD 2010)
- Report for Kensington/Thabeban Area - Traffic Impact Assessment (GHD 2009)

4.5 *Parks and Land for Community Uses Network*

Council currently maintains a 3 year capital works program for trunk parks and land for community uses (parks) infrastructure. Council is working towards developing a 10 year parks capital works program as identified in Council's LTAMP. In the meantime, longer term network planning relies on work undertaken by Council for the PIP. This work was reviewed as part of the LGIP and a GIS-based analysis is undertaken to rationalise the number of trunk parks. The full

list of studies and GIS outputs supporting the Parks and Land for Community Uses Network Planning are:

- LGIP Parks Accessibility Maps (BRC 2017)
- Parks and Open Space Study (Ross Planning 2012)
- Regional Sports and Recreation Strategy (Ross Planning 2010)
- Wide Bay Burnett Regional Recreation and Sport Strategy (Ross Planning 2010)

5.0 Financial Modelling Assumptions

The BRC LGIP SOW model's financial modelling assumptions with comments and/or justifications are listed in Table 9.

Table 9: Financial Modelling Assumptions

Assumptions	Type	Inputs	Comments/Justification
Model Setup	Base Year of Model	2021	Chosen to align with available data at the beginning of the LGIP project
	Infrastructure Planning Horizon	45 years (Water Supply) 45 years (Wastewater) 25 years (Transport) 15 years (Stormwater) 15 years (Parks)	Aligned to reflect the extent of current network planning
	Demand Unit (Unit of Measure)	EP (Water Supply) EP (Wastewater) VPD (Transport) imp ha (Stormwater) Persons (Parks)	Demand Measure of Infrastructure Charge
Financial Inputs	**Discount Rates**		
	Post-tax Nominal WACC (to be applied to Expenses)	6.50% (Water Supply) 6.50% (Wastewater) 7.14% (Transport) 7.14% (Stormwater) 7.14% (Parks)	WACC rates have been advised by BRC finance department to align with long-term planning documents
	Real Post-tax Nominal WACC (to be applied to Revenues)	3.77% (Water Supply) 3.77% (Wastewater) 4.39% (Transport) 4.39% (Stormwater) 4.39% (Parks)	Calculated based on WACC rates above using the Fisher equation
	Average WACC (to be applied in Cashflow NPV Assessment)	6.88%	Average of network WACC rates applied to SoW model cashflow
	Escalations		
	Works Escalation Rate	2.62%	10-y Average PPI (Qld) - as at December 2022 to account for recent movements
	Land Escalation Rate	2.63%	10-y Average CPI (Brisbane) - as at December 2022 to account for recent movements
	Modelled Charge Inflation Rate	2.63%	10-y Average CPI (Brisbane) - as at December 2022 to account for recent movements
	Levied Charge Inflation Rate	2.5%	Based on Average of the RBA Inflation Target of between 2% and 3%

The LGIP SOW model has adopted a "User Pays" approach for the apportionment of infrastructure costs between the users. In addition, this calculation method also employs a Discounted Cashflow methodology to appropriately model the time value of money over the

modelling horizon and to understand the true cost of infrastructure delivery and funding. The SOW model therefore applies the following formula in order to determine a cost per demand unit.

$$x = \frac{\text{Existing Infrastructure Value (\$)} + \text{NPV (Nominal) of Future Infrastructure Expenditure (\$)}}{\text{Current Demand (D)} + \text{NPV (Real) of Future Demand (D)}}$$

The Net Present Value (NPV) of future infrastructure expenditure is determined using the Nominal WACC and Escalation Rates, to take into account the escalation of the capital spend in the years forward of the base year. The NPV of future demand is a proxy, used to represent future revenue from infrastructure charges. This is determined using a Real WACC, which is adjusted to account for inflationary effects.

The use of these equations determines an escalating price path which is driven by the inflation rate. In this way, the contribution rate grows over time in line with other cost growth in works, land, sales and wages. The final Cost Schedules are presented in the LGIP SOW Model.

6.0 Definitions

ABS	Australian Bureau of Statistics
BRC	Bundaberg Regional Council
DSS	Desired Standards of Service
EDU	Equivalent Dwelling Unit
EP	Equivalent Person
GIS	Geographic Information System
imp ha	Impervious Hectares
LGA	Local Government Area
LGIP	Local Government Infrastructure Plan
LTAMP	Long Term Asset Management Plan
LTFF	Long Term Financial Forecast
NPV	Net Present Value
PCNP	Principal Cycle Network Plan
PFTI	Plans for Trunk Infrastructure
PIA	Priority Infrastructure Area
PIP	Priority Infrastructure Plan
QGSO	Queensland Government Statistician's Office
SOW	Schedule of Works
VPD	Vehicle Trips per Day
WACC	Weighted Average Cost of Capital

7.0 Appendix A

Trending District applied to Each Zone / Locality

Reporting District	Zone	Trending District
Apple Tree Creek	Community Facilities	Other Areas (District)
Apple Tree Creek	Limited Development (constrained Land)	Apple Tree Creek (Local)
Apple Tree Creek	Neighbourhood Centre	Apple Tree Creek (Local)
Apple Tree Creek	Open Space	Council Wide
Apple Tree Creek	Specialised Centre	Other Areas (District)
Bargara to Elliott Heads	Community Facilities	Coastal (District)
Bargara to Elliott Heads	District Centre	Coastal (District)
Bargara to Elliott Heads	Limited Development (constrained Land)	Bargara to Elliott Heads (Local)
Bargara to Elliott Heads	Local Centre	Bargara to Elliott Heads (Local)
Bargara to Elliott Heads	Neighbourhood Centre	Bargara to Elliott Heads (Local)
Bargara to Elliott Heads	Open Space	Council Wide
Bargara to Elliott Heads	Sport And Recreation	Coastal (District)
Burnett Heads	Community Facilities	Coastal (District)
Burnett Heads	High Impact Industry	Coastal (District)
Burnett Heads	Limited Development (constrained Land)	Burnett Heads (Local)
Burnett Heads	Local Centre	Burnett Heads (Local)
Burnett Heads	Open Space	Council Wide
Burnett Heads	Sport And Recreation	Coastal (District)
Burnett Heads	Strategic Port Land	Council Wide
Buxton	Community Facilities	Other Areas (District)
Buxton	Limited Development (constrained Land)	Buxton (Local)
Buxton	Open Space	Council Wide
Childers	Community Facilities	Other Areas (District)
Childers	District Centre	Other Areas (District)
Childers	Industry	Other Areas (District)
Childers	Limited Development (constrained Land)	Childers (Local)
Childers	Open Space	Council Wide
Childers	Specialised Centre	Other Areas (District)
Childers	Sport And Recreation	Other Areas (District)
Cordalba	Community Facilities	Other Areas (District)
Cordalba	Limited Development (constrained Land)	Cordalba (Local)
Cordalba	Neighbourhood Centre	Cordalba (Local)
Cordalba	Open Space	Council Wide
Gin Gin	Community Facilities	Other Areas (District)
Gin Gin	District Centre	Other Areas (District)
Gin Gin	Industry	Other Areas (District)
Gin Gin	Open Space	Council Wide
Gin Gin	Specialised Centre	Other Areas (District)
Gin Gin	Sport And Recreation	Other Areas (District)
Greater Bundaberg	Commonwealth Land	Council Wide
Greater Bundaberg	Community Facilities	Council Wide
Greater Bundaberg	District Centre	Council Wide
Greater Bundaberg	High Impact Industry	Council Wide
Greater Bundaberg	Industry	Council Wide
Greater Bundaberg	Limited Development (constrained Land)	Local Bundaberg (Local)
Greater Bundaberg	Local Centre	Local Bundaberg (Local)
Greater Bundaberg	Major Centre	Greater Bundaberg (District)
Greater Bundaberg	Neighbourhood Centre	Local Bundaberg (Local)
Greater Bundaberg	Open Space	Council Wide
Greater Bundaberg	Principal Centre	Council Wide
Greater Bundaberg	Specialised Centre	Council Wide

Greater Bundaberg	Sport And Recreation	Council Wide
Greater Bundaberg	Strategic Port Land	Council Wide
Moore Park Beach	Community Facilities	Other Areas (District)
Moore Park Beach	Industry	Other Areas (District)
Moore Park Beach	Limited Development (constrained Land)	Moore Park Beach (Local)
Moore Park Beach	Local Centre	Moore Park Beach (Local)
Moore Park Beach	Neighbourhood Centre	Moore Park Beach (Local)
Moore Park Beach	Open Space	Council Wide
Moore Park Beach	Sport And Recreation	Other Areas (District)
The Hummock	Community Facilities	Other Areas (District)
The Hummock	Open Space	Council Wide
Woodgate	Community Facilities	Other Areas (District)
Woodgate	Industry	Other Areas (District)
Woodgate	Limited Development (constrained Land)	Woodgate (Local)
Woodgate	Local Centre	Woodgate (Local)
Woodgate	Neighbourhood Centre	Woodgate (Local)
Woodgate	Open Space	Council Wide
Woodgate	Sport And Recreation	Other Areas (District)

July 2016

Bundaberg Regional Council

Population and Demand Spatial Model – Water Supply, Sewerage & Transport (Roads)

Revision (No. 2)

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1	*06/04/2015*	*Interim Revision - Water and Sewerage Only*	SJB	SAB
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1.0 Background to the Project

The Bundaberg Regional Council Population and Demand Model has been developed to provide important inputs into the Local Government Infrastructure Plan (LGIP) and Adopted Charges Resolution (ACR) currently being prepared. In order to determine the Infrastructure Charges to be levied under the LGIP / ACR, an understanding of the residential and non-residential demands generated by the Bundaberg Planning Scheme (under SPA) is required.

Spatial GIS models have been produced that spatially allocate city wide population projections (Population Spatial Model), and residential and non-residential demands (Demand Spatial Model) to the digital cadastre database (DCBD) for Bundaberg Regional Council on a parcel by parcel basis. The latter has been prepared for the infrastructure networks of Water Supply, Sewerage and Transport (Roads). While the population and demand models were prepared separately, the outputs have been included into one (1) GIS table.

The spatial allocation enables aggregation of population and demand data to any spatial area within Council boundaries and should be used in the infrastructure planning for the Bundaberg Regional Council LGIP.

2.0 Population Spatial Model

2.1 *Basis for Population and Tourist Projections*

Draft 2015 Queensland Government Statistician's Office (QGSO) population projections (Medium Series), were used as a basis for determining the Population Projections for the periods 2015 to 2036 across Bundaberg Regional Council. These have been used in favour of currently published 2013 QGSO figures, due to significant changes in growth rates which are evident upon comparison of both sets of figures. The more current figures are expected to provide a more informed assessment of future population growth. The population totals for 2041 and beyond have been extrapolated from the totals provided in previous periods.

Tourism forecasts have been included in the projections based on data provided by the ABS relating to tourist accommodation (small area data). This is to ensure that infrastructure networks accommodate the demand generated by both resident and visitor populations. The various accommodation types identified have been assessed and a 2010 "maximum overnight tourist capacity" determined. These results have been trended over projection cohorts using expected population growth rate as a surrogate for determining projected tourists over time.

For the purposes of the LGIP and ACR, the ultimate scenario of the Bundaberg Planning Scheme is considered to occur in around 2098/99. Table 1 below identifies the Population and Tourist Figures used as a basis for creating the Population Spatial Model.

***Table 1:* OESR and Tourist Projections (2015 to 2046)**

	2015	2016	2021	2026	2031	2036	2041	2046
PIFU Projections	95,429	96,270	101,335	106,322	111,214	115,998	120,785	125,572
Tourism Projections	3,092	3,120	3,284	3,445	3,604	3,759	3,914	4,069
Total Population Projections	***98,521***	***99,390***	***104,619***	***109,767***	***114,818***	***119,757***	***124,699***	***129,641***

Sources:

1. Queensland Government Statistician's Office (QGSO) – Draft 2015 Edition Population (medium series)
2. Tourism Projections: 8635.3.55.001 - Tourist Accommodation, Small Area Data, Queensland - Electronic Delivery, June 2010 (ABS)

Notes:

1. % tourist growth based on QGSO population growth rates
2. Projections for 2041 to 2046 have been extrapolated from previous periods

2.2 *Allocation of Existing Population and Determination of Bundaberg Planning Scheme Capacity*

Existing population has been allocated on a lot by lot basis to all residential landuses (obtained from Council's landuse data) based on dwelling types and expected household sizes. For example, a property identified as containing a house is assigned a 2015 population of 2.55. A summary of the average household sizes used are been provided in Table 2. This allocation has been aligned with the draft 2015 QGSO Projections and refined through comparison with the ABS 2011 Census Data.

***Table 2*: Average Household Size**

Dwelling Type	2015	2016	2021	2026	2031	CRC Model 2036 to Ultimate
Separate House	2.55	2.54	2.51	2.49	2.47	2.46
Semi, Detached, Flats	1.61	1.60	1.58	1.57	1.56	1.55
Other	1.81	1.81	1.79	1.77	1.76	1.75
All	***2.40***	***2.39***	***2.36***	***2.34***	***2.32***	***2.32***

Source: Bundaberg Regional Council Model 2016 & draft QGSO 2015, ABS 2011 PEP
Note: Measured as persons/occupied dwelling

The development potential of the Bundaberg Planning Scheme was determined through analysis of the Planning Scheme Intents (constraints and densities), consideration of approved development applications and understanding of the realistic development trends throughout Bundaberg.

On determination of this "realistic" development capacity of Bundaberg, the expected growth for each five year period from 2016 and beyond was allocated across the potential growth areas. The growth available for each 5 year cohort has been based on the growth identified within the draft QGSO Projection in addition to Tourist Populations (as discussed in Section 2.1 above) with consideration of the displaced populations arising from the reducing household sizes. This total growth has been allocated using a 'gravity model' approach, with consideration of factors relating to propensity to develop, such as:

- The properties location with respect to the Priority Infrastructure Area (i.e. accommodates 10-15 years of growth);
- Availability and proximity to infrastructure services;
- The likely staging of development for particular areas based on direction from BRC Planning department; and
- Existence of Planning Approvals.

Residential populations were allocated across all residential Planning Areas, while tourist growth was only allocated to only those Planning Areas likely to accommodate tourist population (e.g. High and Medium Density Areas along the Coastal Townships, City Centre, etc.). Table 3 below provides a summary of the population found in each Reporting District for the periods 2015 to Ultimate.

This information has been used in the development of the spatial model.

***Table 3:* Population Projections 2015 to Ultimate**

Reporting District	2015	2016	2021	2026	2031	2036	2041	Ultimate
Greater Bundaberg	49,253	49,614	52,001	54,311	56,505	58,688	60,949	86,657
Bargara to Elliott Heads	12,527	12,807	14,469	15,988	17,440	18,737	19,985	31,795
Burnett Heads	2,948	2,974	3,133	3,334	3,602	3,898	4,215	6,548
Moore Park Beach	1,857	1,879	1,992	2,136	2,295	2,421	2,539	3,300
Woodgate	2,583	2,619	2,818	3,050	3,254	3,439	3,615	5,291
Gin Gin	1,007	1,086	1,422	1,744	2,053	2,296	2,497	3,365
Childers	1,602	1,633	1,783	1,934	2,097	2,215	2,307	2,960
Cordalba	346	346	346	345	345	354	365	672
Apple Tree Creek	280	280	294	300	302	325	347	828
The Hummock	608	607	607	613	622	632	644	741
Buxton	541	540	538	537	534	546	558	813
Other Areas	24,969	25,004	25,216	25,475	25,769	26,206	26,680	39,156
Total	***98,521***	***99,390***	***104,619***	***109,767***	***114,818***	***119,757***	***124,699***	***182,126***

Source: Bundaberg Regional Council Model 2016

2.3 *Population Spatial Model Procedures*

The Population Spatial Model is not to be used as an exact measure of the development potential (expressed as population) that can be satisfied within each discrete land parcel of the Bundaberg Regional Council Area. The spatial model is designed to be used as a tool for spatially aggregating parcels using a specified region or catchment (e.g. Water Supply Catchment, PS Catchment, etc). In this way a reasonably accurate averaging of population and demand is achieved for the aggregated catchment or area.

The inputs into the model are based on broad average assumptions of land use outcomes across Planning Areas and Districts. Therefore the smaller the sample size used for the aggregation of data, the less reliable the data becomes. **Hence, existing and projected population identified in the model should not be analysed on a lot by lot or limited area aggregation basis, without further site specific review or verification**.

Table 4 identifies the field names, type of fields, and descriptions contained within the Population and Demand Spatial Model to assist in the spatial aggregation process for existing and projected population or demand.

Please note that the although the Population Spatial Model outputs (expressed as population) and Demand Spatial Model outputs (expressed as EPs or Trips) are contained within the same GIS table, the two models should be used mutually exclusive of each other. That is, the residential population for each parcel is also reflected within an EP or Trip estimate. The EP and Trip calculations include both residential and non-residential demand. To use both tables together would result in a double counting of the demand for residential uses.

***Table 4:* Population and Demand Spatial Model - Field Names, Types and Descriptions**

	Field Name	Field Type	Field Description
Planning Information	**INT_ID**	Char (12)	Unique ID
	LOT_PLAN	Char (15)	Real Property Description
	CALC_AREA	Integer	Area (m²) of Parcel – based on original DCDB
	DEV_AREA	Integer	Developable Area (m²) of Parcel – Based on spatial constraints modelling process using Bundaberg Planning Scheme
	LANDUSE	Char (60)	Landuse of Parcel – Based on information provided by the Bundaberg Regional Council
	BRC_ZONE	Char (45)	Bundaberg Planning Scheme - Planning Area
	BRC_PRECINCT	Char (50)	Bundaberg Planning Scheme – Zone Precinct
	REP_DISTRICT	Char (50)	Reporting Districts
	LOCAL_PLAN	Char (50)	Local Plans identified within the Bundaberg Planning Scheme or by Council officers
	TIMING	Char (32)	Description of potential phasing of particular development areas
Population Spatial Model	**POP_2015**	Decimal (10, 5)	Population as at 2015 - based on QGSO population projections and allowance for tourists
	POP_2016	Decimal (10, 5)	Population as at 2016 - based on QGSO population projections and allowance for tourists
	POP_2021	Decimal (10, 5)	Population as at 2021 - based on QGSO population projections and allowance for tourists
	POP_2026	Decimal (10, 5)	Population as at 2026 - based on QGSO population projections and allowance for tourists
	POP_2031	Decimal (10, 5)	Population as at 2031 - based on QGSO population projections and allowance for tourists
	POP_2036	Decimal (10, 5)	Population as at 2036 - based on QGSO population projections and allowance for tourists
	POP_2041	Decimal (10, 5)	Population as at 2041 - based on QGSO population projections and allowance for tourists
	POP_2046	Decimal (10, 5)	Population as at 2046 - based on QGSO population projections and allowance for tourists
	POP_2051	Decimal (10, 5)	Population as at 2051 - based on QGSO population projections and allowance for tourists
	POP_2056	Decimal (10, 5)	Population as at 2056 - based on QGSO population projections and allowance for tourists
	POP_2061	Decimal (10, 5)	Population as at 2061 - based on QGSO population projections and allowance for tourists
	POP_ULT	Decimal (10, 5)	Population as at Ultimate - based on QGSO population projections and allowance for tourists
Water/Sewer Spatial Model	**R_EP_2015**	Decimal (10, 5)	Residential Equivalent Persons as at 2015
	R_EP_2016	Decimal (10, 5)	Residential Equivalent Persons as at 2016
	R_EP_2021	Decimal (10, 5)	Residential Equivalent Persons as at 2021
	R_EP_2026	Decimal (10, 5)	Residential Equivalent Persons as at 2026
	R_EP_2031	Decimal (10, 5)	Residential Equivalent Persons as at 2031
	R_EP_2036	Decimal (10, 5)	Residential Equivalent Persons as at 2036
	R_EP_2041	Decimal (10, 5)	Residential Equivalent Persons as at 2041
	R_EP_2046	Decimal (10, 5)	Residential Equivalent Persons as at 2046
	R_EP_2051	Decimal (10, 5)	Residential Equivalent Persons as at 2051
	R_EP_2056	Decimal (10, 5)	Residential Equivalent Persons as at 2056
	R_EP_2061	Decimal (10, 5)	Residential Equivalent Persons as at 2061
	R_EP_ULT	Decimal (10, 5)	Residential Equivalent Persons as at Ultimate
	NR_EP_2015	Decimal (10, 5)	Non Residential Equivalent Persons as at 2015

	NR_EP_2016	Decimal (10, 5)	Non Residential Equivalent Persons as at 2016
	NR_EP_2021	Decimal (10, 5)	Non Residential Equivalent Persons as at 2021
	NR_EP_2026	Decimal (10, 5)	Non Residential Equivalent Persons as at 2026
	NR_EP_2031	Decimal (10, 5)	Non Residential Equivalent Persons as at 2031
	NR_EP_2036	Decimal (10, 5)	Non Residential Equivalent Persons as at 2036
	NR_EP_2041	Decimal (10, 5)	Non Residential Equivalent Persons as at 2041
	NR_EP_2046	Decimal (10, 5)	Non Residential Equivalent Persons as at 2046
	NR_EP_2051	Decimal (10, 5)	Non Residential Equivalent Persons as at 2051
	NR_EP_2056	Decimal (10, 5)	Non Residential Equivalent Persons as at 2056
	NR_EP_2061	Decimal (10, 5)	Non Residential Equivalent Persons as at 2061
	NR_EP_ULT	Decimal (10, 5)	Non Residential Equivalent Persons as at Ultimate
	TOT_EP_2015	Decimal (10, 5)	Total Equivalent Persons as at 2015
	TOT_EP_2016	Decimal (10, 5)	Total Equivalent Persons as at 2016
	TOT_EP_2021	Decimal (10, 5)	Total Equivalent Persons as at 2021
	TOT_EP_2026	Decimal (10, 5)	Total Equivalent Persons as at 2026
	TOT_EP_2031	Decimal (10, 5)	Total Equivalent Persons as at 2031
	TOT_EP_2036	Decimal (10, 5)	Total Equivalent Persons as at 2036
	TOT_EP_2041	Decimal (10, 5)	Total Equivalent Persons as at 2041
	TOT_EP_2046	Decimal (10, 5)	Total Equivalent Persons as at 2046
	TOT_EP_2051	Decimal (10, 5)	Total Equivalent Persons as at 2051
	TOT_EP_2056	Decimal (10, 5)	Total Equivalent Persons as at 2056
	TOT_EP_2061	Decimal (10, 5)	Total Equivalent Persons as at 2061
	TOT_EP_ULT	Decimal (10, 5)	Total Equivalent Persons as at Ultimate
Transport Spatial Model	R_TR_2015	Decimal (10, 5)	Residential Trips as at 2015
	R_TR_2016	Decimal (10, 5)	Residential Trips as at 2016
	R_TR_2021	Decimal (10, 5)	Residential Trips as at 2021
	R_TR_2026	Decimal (10, 5)	Residential Trips as at 2026
	R_TR_2031	Decimal (10, 5)	Residential Trips as at 2031
	R_TR_2036	Decimal (10, 5)	Residential Trips as at 2036
	R_TR_2041	Decimal (10, 5)	Residential Trips as at 2041
	R_TR_2046	Decimal (10, 5)	Residential Trips as at 2046
	R_TR_2051	Decimal (10, 5)	Residential Trips as at 2051
	R_TR_2056	Decimal (10, 5)	Residential Trips as at 2056
	R_TR_2061	Decimal (10, 5)	Residential Trips as at 2061
	R_TR_ULT	Decimal (10, 5)	Residential Trips as at Ultimate
	NR_TR_2015	Decimal (10, 5)	Non Residential Trips as at 2015
	NR_TR_2016	Decimal (10, 5)	Non Residential Trips as at 2016
	NR_TR_2021	Decimal (10, 5)	Non Residential Trips as at 2021
	NR_TR_2026	Decimal (10, 5)	Non Residential Trips as at 2026
	NR_TR_2031	Decimal (10, 5)	Non Residential Trips as at 2031
	NR_TR_2036	Decimal (10, 5)	Non Residential Trips as at 2036
	NR_TR_2041	Decimal (10, 5)	Non Residential Trips as at 2041
	NR_TR_2046	Decimal (10, 5)	Non Residential Trips as at 2046
	NR_TR_2051	Decimal (10, 5)	Non Residential Trips as at 2051
	NR_TR_2056	Decimal (10, 5)	Non Residential Trips as at 2056
	NR_TR_2061	Decimal (10, 5)	Non Residential Trips as at 2061
	NR_TR_ULT	Decimal (10, 5)	Non Residential Trips as at Ultimate
	TOT_TR_2015	Decimal (10, 5)	Total Trips as at 2015
	TOT_TR_2016	Decimal (10, 5)	Total Trips as at 2016
	TOT_TR_2021	Decimal (10, 5)	Total Trips as at 2021
	TOT_TR_2026	Decimal (10, 5)	Total Trips as at 2026
	TOT_TR_2031	Decimal (10, 5)	Total Trips as at 2031

	TOT_TR_2036	Decimal (10, 5)	Total Trips as at 2036
	TOT_TR_2041	Decimal (10, 5)	Total Trips as at 2041
	TOT_TR_2046	Decimal (10, 5)	Total Trips as at 2046
	TOT_TR_2051	Decimal (10, 5)	Total Trips as at 2051
	TOT_TR_2056	Decimal (10, 5)	Total Trips as at 2056
	TOT_TR_2061	Decimal (10, 5)	Total Trips as at 2061
	TOT_TR_ULT	Decimal (10, 5)	Total Trips as at Ultimate

3.0 Demand Spatial Model

The Water and Sewer Demand Models express residential and non-residential demand as Equivalent Persons (EPs). An equivalent person represents the level of demand generated by a single person, and is used throughout the LGIP and Charges Modelling process to allow for a consistent relative demand comparison between landuses and Planning Areas.

The Transport Demand Model expresses residential and non-residential demand as Trips. The number of trips is generated using the number of equivalent dwellings, calculated by applying the relevant separate household size for each period (as identified in Table 2).

3.1 *Existing Demand*

3.1.1 Residential

With regard to the existing residential demand, the 2015 population determined through the Population Modelling exercise described in the section 2 above was converted at a 1:1 ratio to EP's.

For trip generation rates, the 2015 detached household size was applied to the population to determine Equivalent Dwelling Units (EDU's), 10 trips per EDU were then applied.

3.1.2 Non-Residential

The EPs for Non-residential demand has been determined using the developable area calculations that were determined through the Population Modelling Process. EDU rates per Hectare for each landuse / Planning Area were multiplied by the developable area in hectares (refer to Table 5), and then converted to EP's using the relevant separate household size for each period (refer to Table 2).

To ensure the existing non-residential demand was not overestimated (the area of the parcel does not necessarily reflect the demand that the existing land use generates), the demand model takes into account the realistic existing demands based on the size of the parcel and whether or not the existing landuse is consistent with the underlying land use intent.

The following list contains the base assumptions used in determining the existing non-residential demand:

- For Consistent Uses on lots **<** 1 Hectare (excl. Open Space/Sport & Rec) – assumes 75% Developed
- For Consistent Uses on lots **>** 1 Hectare (excl. Open Space/Sport & Rec) – assumes 50% Developed
- For Consistent Open Space/Sport & Rec uses on lots **<** 1 Hectare – assumes 50% Developed
- For Consistent Open Space/Sport & Rec uses on lots **>** 1 Hectare– assumes 10% Developed
- For Inconsistent Uses on lots **<** 1 Hectare – assumes 60% Developed

- For Inconsistent Uses on lots **>** 1 Hectare – assumes 2% Developed. This realistic percentage is low due to many large rural parcels being identified under this scenario – E.g. Industry use on a 20Ha Rural Property may only consist of a workshed and house/admin building.

Some other minor modelling amendments, including input of metered data for some parcels, was performed in order to increase the accuracy of the Demand Model outputs. These have been discussed and confirmed with Bundaberg Regional Council throughout the modelling process.

3.2 *Future Demand*

3.2.1 Residential

The projected residential demand has also been determined through the Population Modelling exercise described in the section 2. The Population determined for each period has been converted to an EP's at a 1:1 ratio.

For trip generation rates, the relevant detached household size (refer to Table 2) was applied to the population at each cohort to determine Equivalent Dwelling Units (EDU's), 10 trips per EDU were then applied.

3.2.2 Non-Residential

Non-residential demand has been determined using the developable hectare calculations determined through the Population Modelling Process, applying these against the EDUs per Hectare for each landuse / Planning Area[1] (refer to Table 5), and converted to EP's using the relevant separate household size for each period (refer to Table 2). The realistic demands created by these uses have been determined based on the size of the parcel and nature of the use. The base assumption used in determining the future non-residential demand is that non-residential areas reach 90% of their development potential. This is with the exception of the Open Space/Sport & Rec zones, whereby a factor of 50% has been applied for sites less than or equal to 1 hectare, and a factor of 15% has been applied for sites greater than 1 hectare.

The future demand calculated through the above process has been trended over the 2016 to Ultimate time period cohorts based on the rate of population growth rate found in each appropriately defined "Trending District" – in other words, assumes that the growth in non-residential demand is proportional to the rate of growth of residential demand. The Trending Districts applied to each Zone/Locality are presented in Appendix A.

***Table 5:* Non-Residential Demands by Zone - Water Supply, Sewerage & Transport (Roads) – Expressed as EDUs per Hectare**

BRC ZONE	BRC PRECINCT	WATER & SEWER EDUs / HA	TRANS-PORT EDUs / HA*
Commonwealth Land		5	5
Community Facilities		5	5
District Centre		15	50
Environmental Management And Conservation		0	0
Extractive Industry		10	7.5
High Impact Industry		12	7.5
Industry		12	7.5
Limited Development (constrained Land)		0	0

[1] Non-residential Demand rates per Hectare based on data provided and agreed to by Bundaberg Regional Council.

BRC ZONE	BRC PRECINCT	WATER & SEWER EDUs / HA	TRANS-PORT EDUs / HA*
Local Centre		15	30
Major Centre		30	75
Neighbourhood Centre		12	24
Open Space		5	5
Principal Centre	PCZ1 - City Centre Core	30	60
Principal Centre	PCZ2 - City Centre Riverfront	30	60
Principal Centre	PCZ3 - City Centre Frame	30	60
Principal Centre	PCZ4	30	60
Specialised Centre		15	15
Sport And Recreation		5	5

**Interim Revision – Non-Residential Transport Demands still to be confirmed*

3.3 *Spatial Model Procedures*

Similar to the Population Model, the Demand Spatial Model is not to be used as an exact measure of the development potential (expressed as EP's or Trips) that can be satisfied within each parcel of land within the Bundaberg Area. Rather, this spatial model is designed to be used as a tool for spatially aggregating parcels using a specified region or catchment (e.g. Water Supply Catchment, PS Catchment, etc), as the inputs into the model are based on broad average assumptions of land use outcomes and demand.

Table 4 identifies the field names, type of fields and descriptions contained within the Pop and Demand Spatial Model and should be used as a guide within seeking to aggregate demand data to a specific spatial area.

Please note that the although the Population Spatial Model (POP) and Demand Spatial Model (EP/Trips) are contained within the same GIS table, the two models should be used mutually exclusive of each other. That is, the residential population for each parcel is also reflected within Demand estimates (the EPs and Trips include both residential and non-residential demand).

4.0 Model Limitations and Caveats

This Spatial Model has been developed using a range of assumptions relating to existing and future land uses, Planning Area densities, average household sizes, constraints data, development applications, and growth distribution. The existing land use information used has been derived from Council data as at November 2015 which may not reflect current landuses for all properties.

Bundaberg Planning Scheme density and development potential (constraints) have been adapted from the Planning Scheme and realistic application of these determined through discussions with Council Planning Officers. Although rigour and detail is provided in the preparation of these assumptions, the outputs of the spatial model are based on broad assumptions across the City and may not provide accurate reflection of the development potential for every parcel.

It is for this reason that the data identified within the model should not be analysed on a lot by lot or limited aggregation area basis, but rather at a larger aggregated level such as infrastructure service catchment, Reporting District, or the like.

This information has been provided by Integran Pty Ltd to Bundaberg Regional Council for sole use in the Local Government Infrastructure Plan (LGIP) and other associated Infrastructure Planning Projects that will ultimately inform the LGIP. This information is to be used only as a guide for assessing infrastructure planning demands through aggregation of population and demand information on an infrastructure service catchment level or similar basis, rather than interrogation of specific parcels.

Permission must be sought from Integran for any use of the data other than for the purposes specified above. Integran Pty Ltd accepts no responsibility for loss or damages incurred by the use of this information. The dataset is current as at the 12th April 2015.

5.0 Appendix A

Trending District applied to Each Zone / Locality

Reporting District	Zone	Trending District
Apple Tree Creek	Community Facilities	Other Areas (District)
Apple Tree Creek	Limited Development (constrained Land)	Apple Tree Creek (Local)
Apple Tree Creek	Neighbourhood Centre	Apple Tree Creek (Local)
Apple Tree Creek	Open Space	Council Wide
Apple Tree Creek	Specialised Centre	Other Areas (District)
Bagara to Eliott Heads	Community Facilities	Coastal (District)
Bagara to Eliott Heads	District Centre	Coastal (District)
Bagara to Eliott Heads	Limited Development (constrained Land)	Bagara to Eliott Heads (Local)
Bagara to Eliott Heads	Local Centre	Bagara to Eliott Heads (Local)
Bagara to Eliott Heads	Neighbourhood Centre	Bagara to Eliott Heads (Local)
Bagara to Eliott Heads	Open Space	Council Wide
Bagara to Eliott Heads	Sport And Recreation	Coastal (District)
Burnett Heads	Community Facilities	Coastal (District)
Burnett Heads	High Impact Industry	Coastal (District)
Burnett Heads	Limited Development (constrained Land)	Burnett Heads (Local)
Burnett Heads	Local Centre	Burnett Heads (Local)
Burnett Heads	Open Space	Council Wide
Burnett Heads	Sport And Recreation	Coastal (District)
Burnett Heads	Strategic Port Land	Council Wide
Buxton	Community Facilities	Other Areas (District)
Buxton	Limited Development (constrained Land)	Buxton (Local)
Buxton	Open Space	Council Wide
Childers	Community Facilities	Other Areas (District)
Childers	District Centre	Other Areas (District)
Childers	Industry	Other Areas (District)
Childers	Limited Development (constrained Land)	Childers (Local)
Childers	Open Space	Council Wide
Childers	Specialised Centre	Other Areas (District)
Childers	Sport And Recreation	Other Areas (District)
Cordalba	Community Facilities	Other Areas (District)
Cordalba	Limited Development (constrained Land)	Cordalba (Local)
Cordalba	Neighbourhood Centre	Cordalba (Local)
Cordalba	Open Space	Council Wide
Gin Gin	Community Facilities	Other Areas (District)
Gin Gin	District Centre	Other Areas (District)
Gin Gin	Industry	Other Areas (District)
Gin Gin	Open Space	Council Wide
Gin Gin	Specialised Centre	Other Areas (District)
Gin Gin	Sport And Recreation	Other Areas (District)
Greater Bundaberg	Commonwealth Land	Council Wide
Greater Bundaberg	Community Facilities	Council Wide
Greater Bundaberg	District Centre	Council Wide
Greater Bundaberg	High Impact Industry	Council Wide
Greater Bundaberg	Industry	Council Wide
Greater Bundaberg	Limited Development (constrained Land)	Local Bundaberg (Local)
Greater Bundaberg	Local Centre	Local Bundaberg (Local)
Greater Bundaberg	Major Centre	Greater Bundaberg (District)
Greater Bundaberg	Neighbourhood Centre	Local Bundaberg (Local)
Greater Bundaberg	Open Space	Council Wide
Greater Bundaberg	Principal Centre	Council Wide
Greater Bundaberg	Specialised Centre	Council Wide

Greater Bundaberg	Sport And Recreation	Council Wide
Greater Bundaberg	Strategic Port Land	Council Wide
Moore Park Beach	Community Facilities	Other Areas (District)
Moore Park Beach	Industry	Other Areas (District)
Moore Park Beach	Limited Development (constrained Land)	Moore Park Beach (Local)
Moore Park Beach	Local Centre	Moore Park Beach (Local)
Moore Park Beach	Neighbourhood Centre	Moore Park Beach (Local)
Moore Park Beach	Open Space	Council Wide
Moore Park Beach	Sport And Recreation	Other Areas (District)
The Hummock	Community Facilities	Other Areas (District)
The Hummock	Open Space	Council Wide
Woodgate	Community Facilities	Other Areas (District)
Woodgate	Industry	Other Areas (District)
Woodgate	Limited Development (constrained Land)	Woodgate (Local)
Woodgate	Local Centre	Woodgate (Local)
Woodgate	Neighbourhood Centre	Woodgate (Local)
Woodgate	Open Space	Council Wide
Woodgate	Sport And Recreation	Other Areas (District)

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

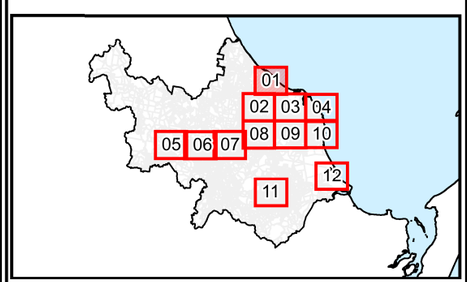
Property Boundaries

- Boundary

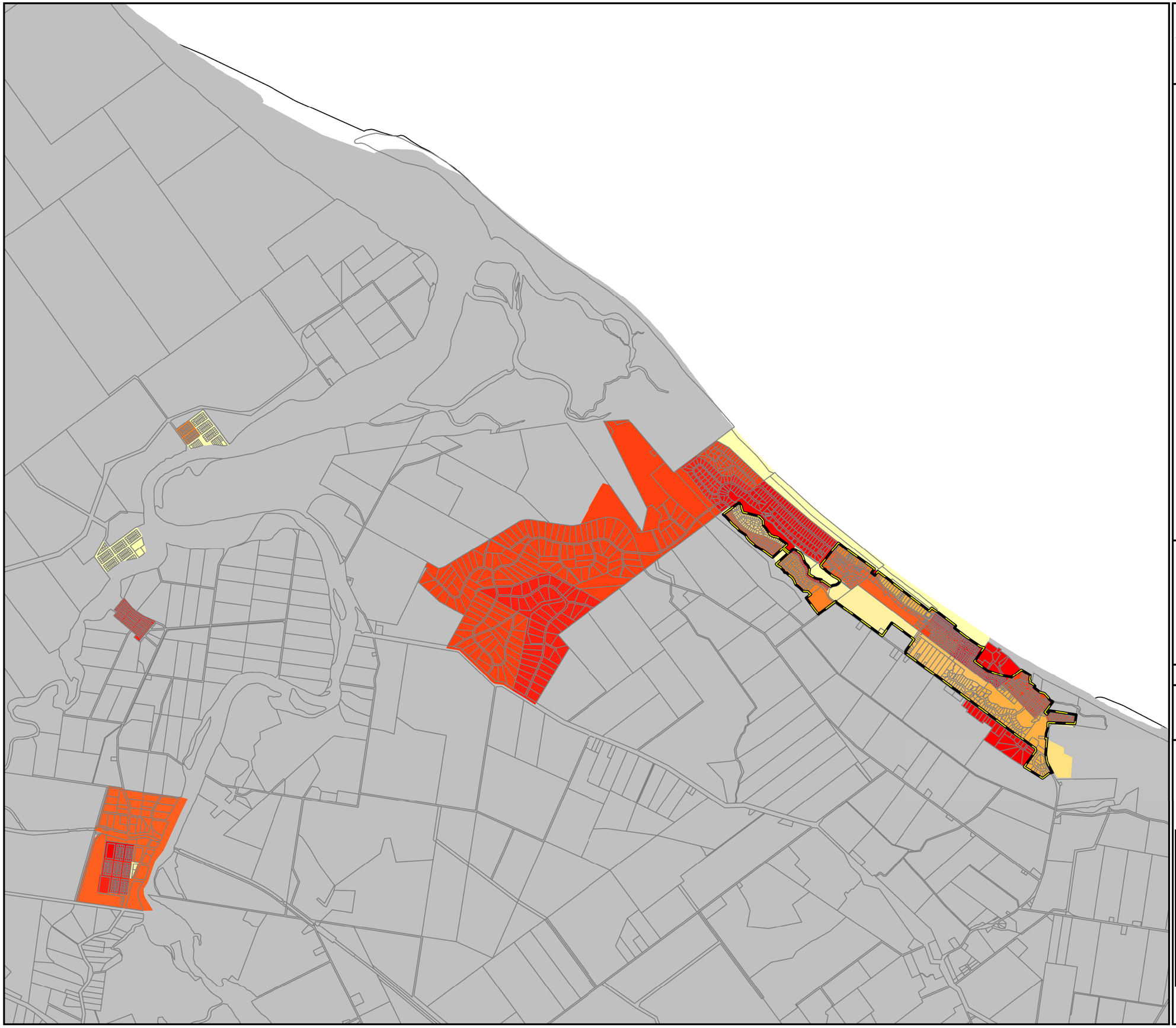
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-01



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

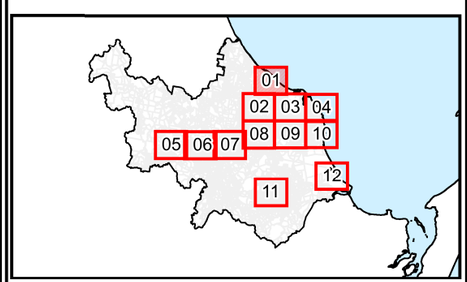
Property Boundaries

- Boundary

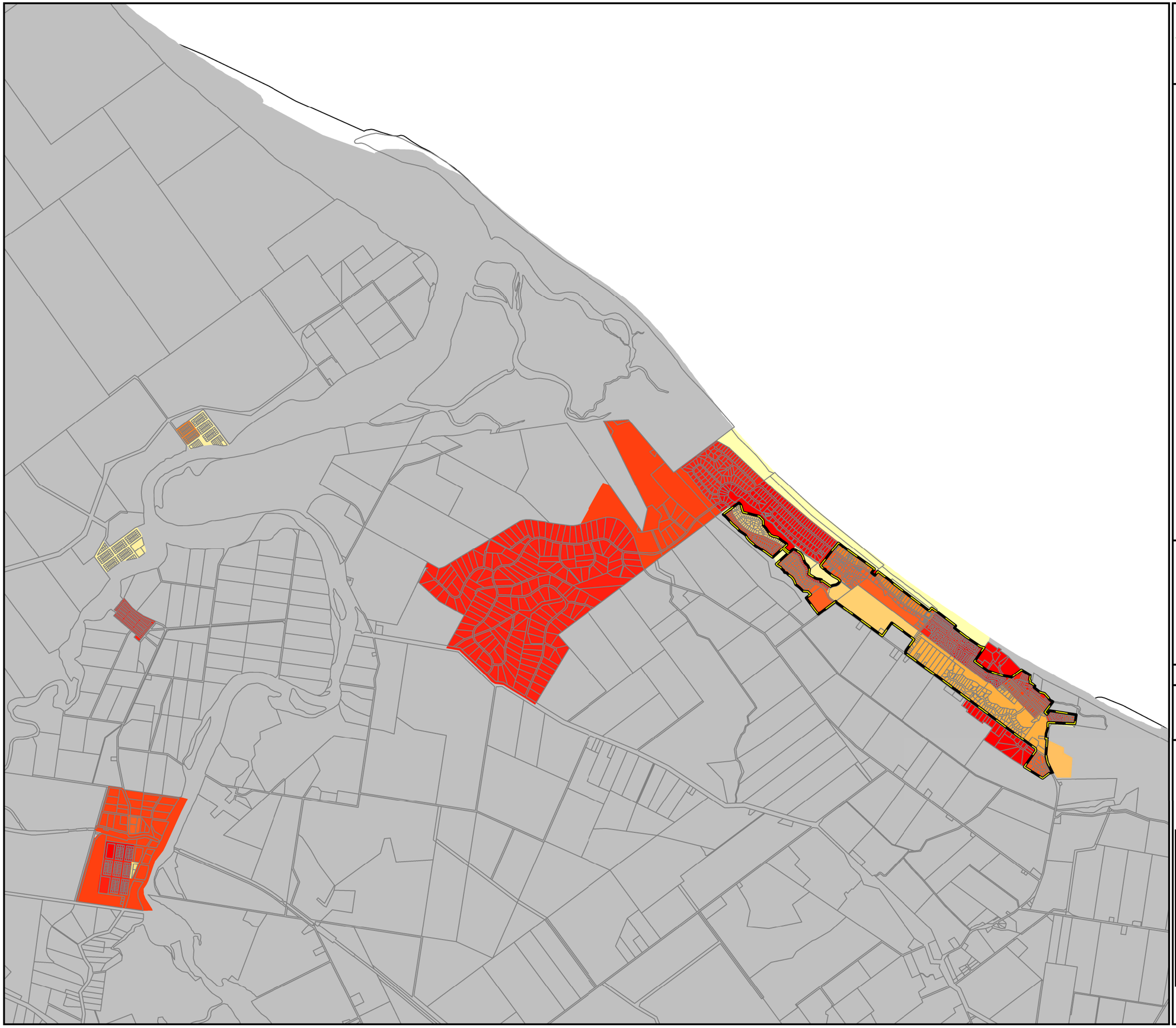
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-01



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

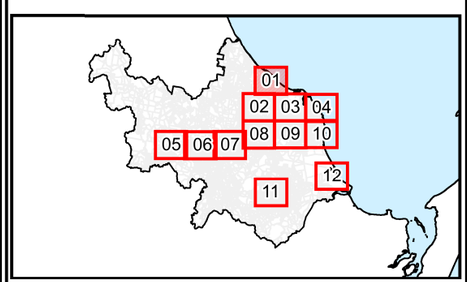
Property Boundaries

- Boundary

Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-01

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

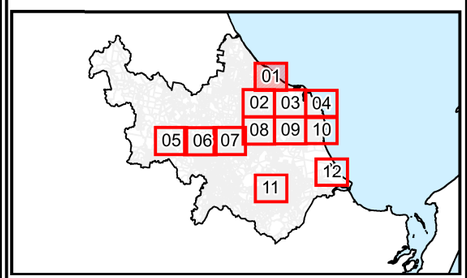
Property Boundaries

- Boundary

Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-01

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

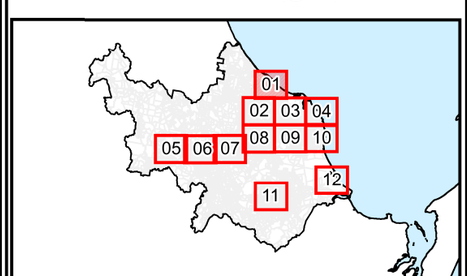
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-01

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

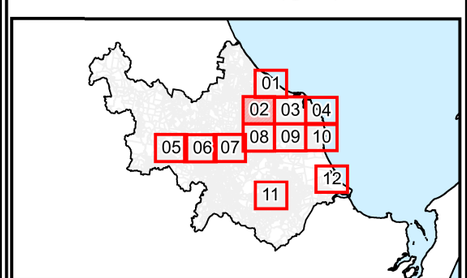
Property Boundaries

- Boundary

Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-02

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

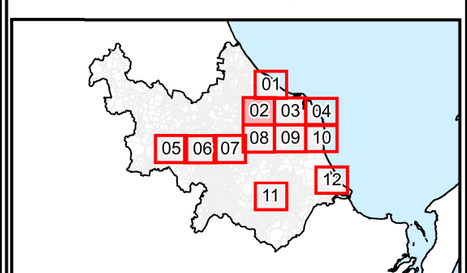
Property Boundaries

- Boundary

Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-02

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

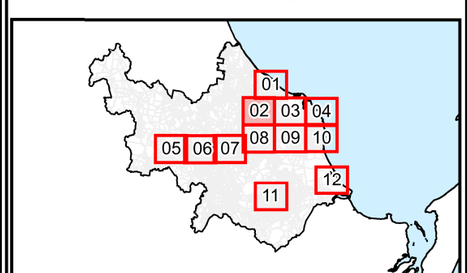
Property Boundaries

- Boundary

Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-02

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

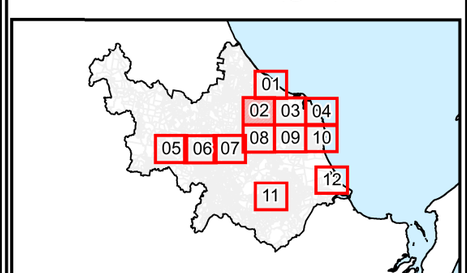
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-02

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

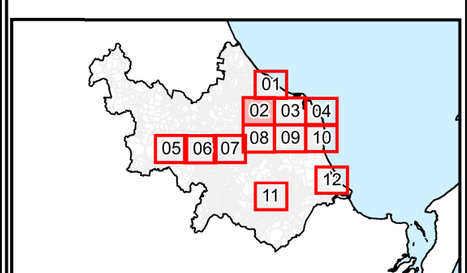
Property Boundaries

- Boundary

Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-02

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

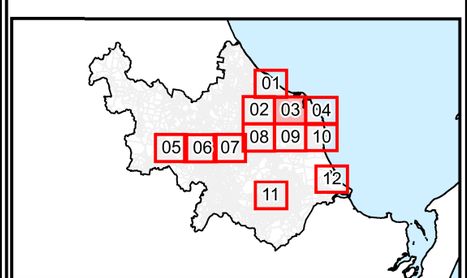
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-03

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

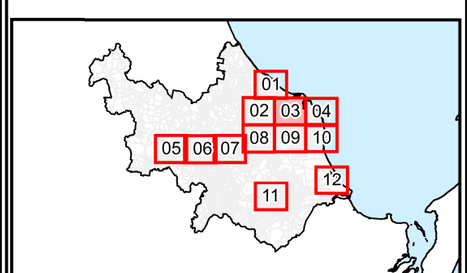
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-03

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

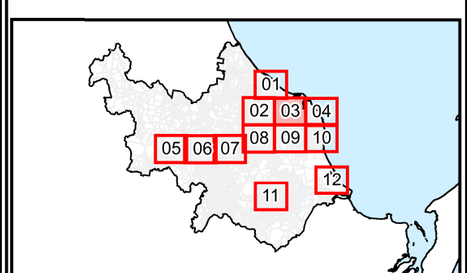
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-03

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

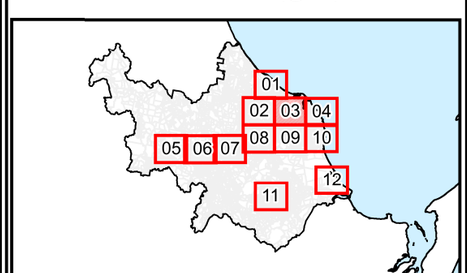
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-03

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

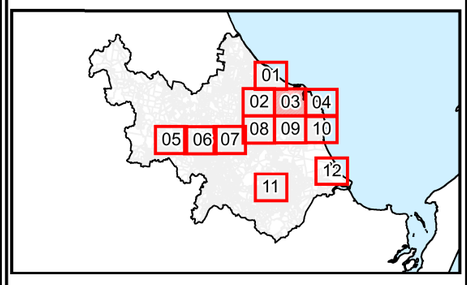
Property Boundaries

- Boundary

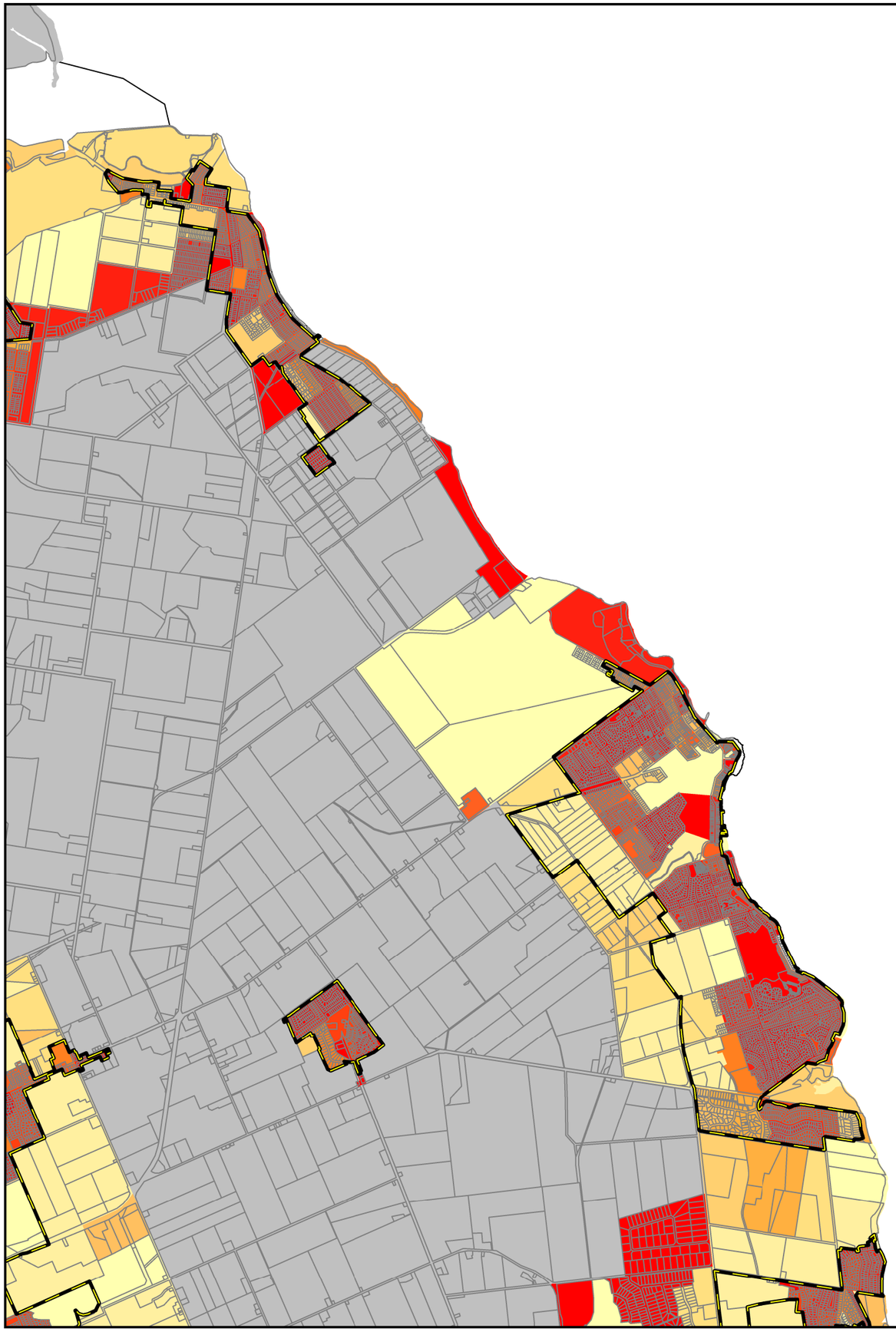
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-03



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

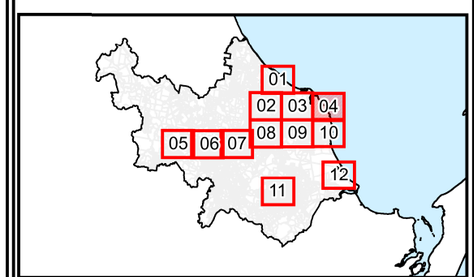
Property Boundaries

- Boundary

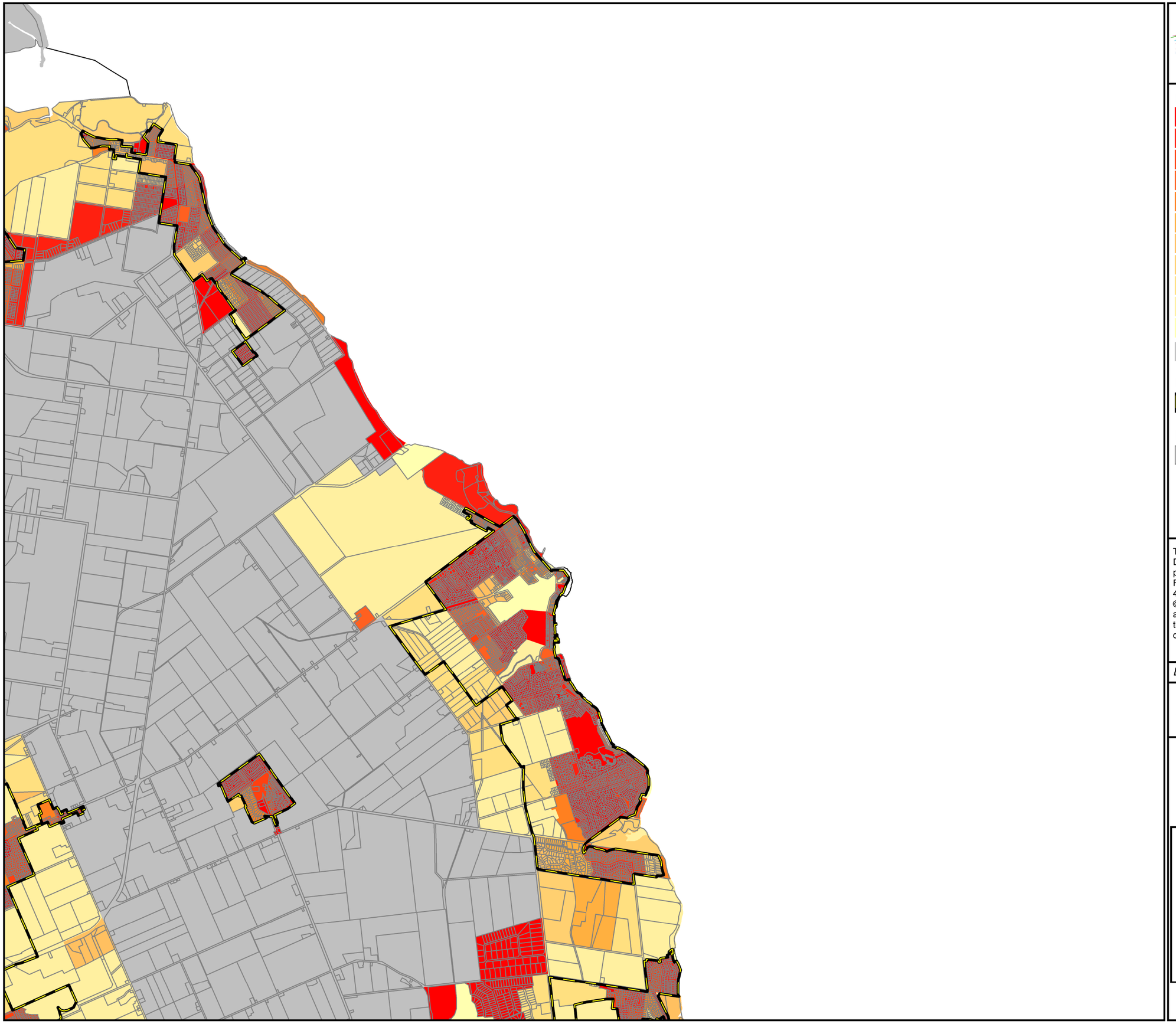
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-04



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

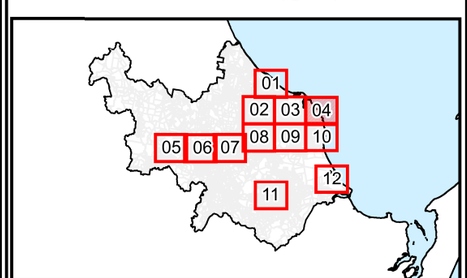
Property Boundaries

- Boundary

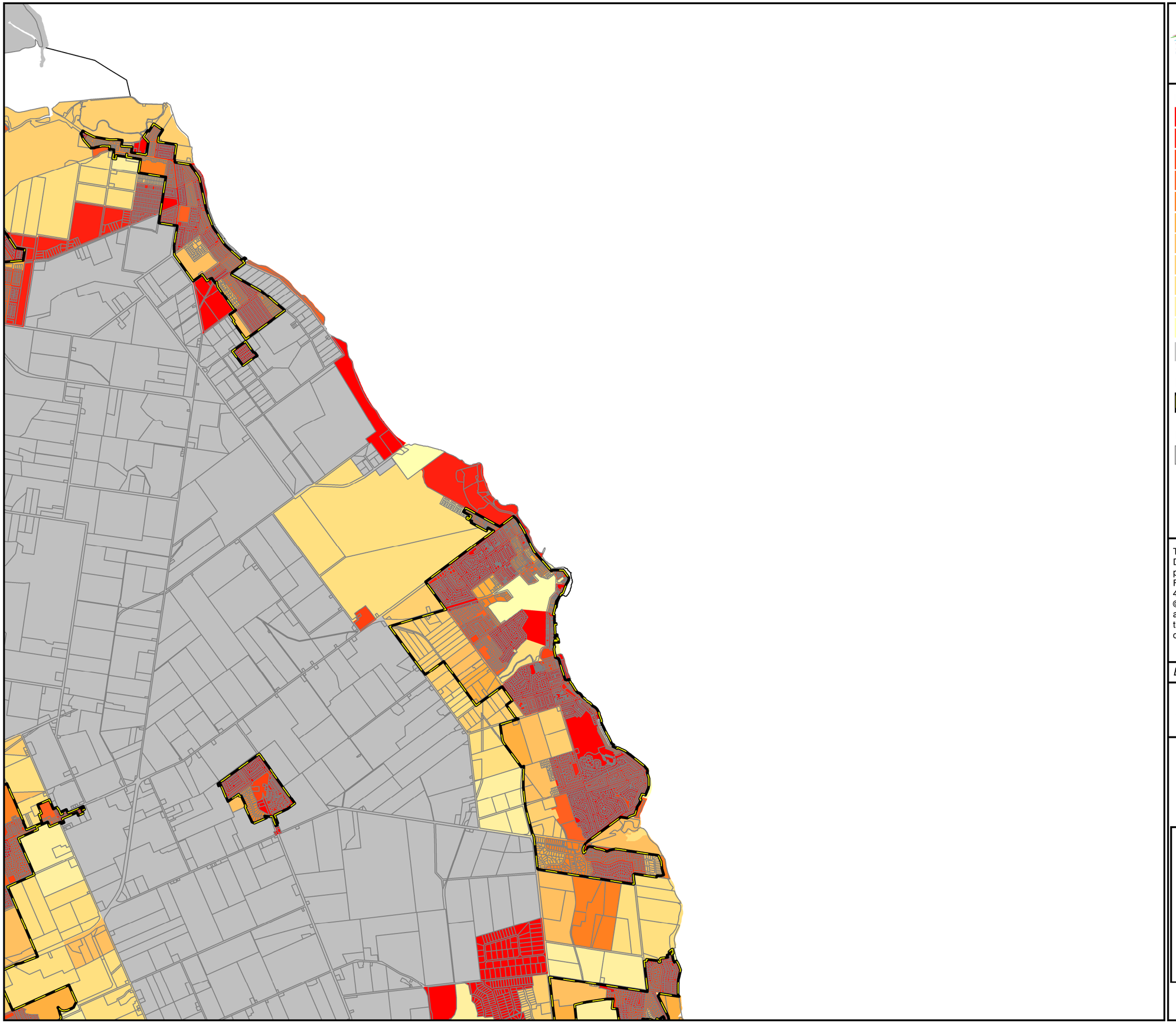
Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-04



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

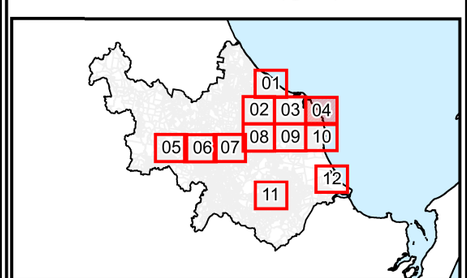
Property Boundaries

- Boundary

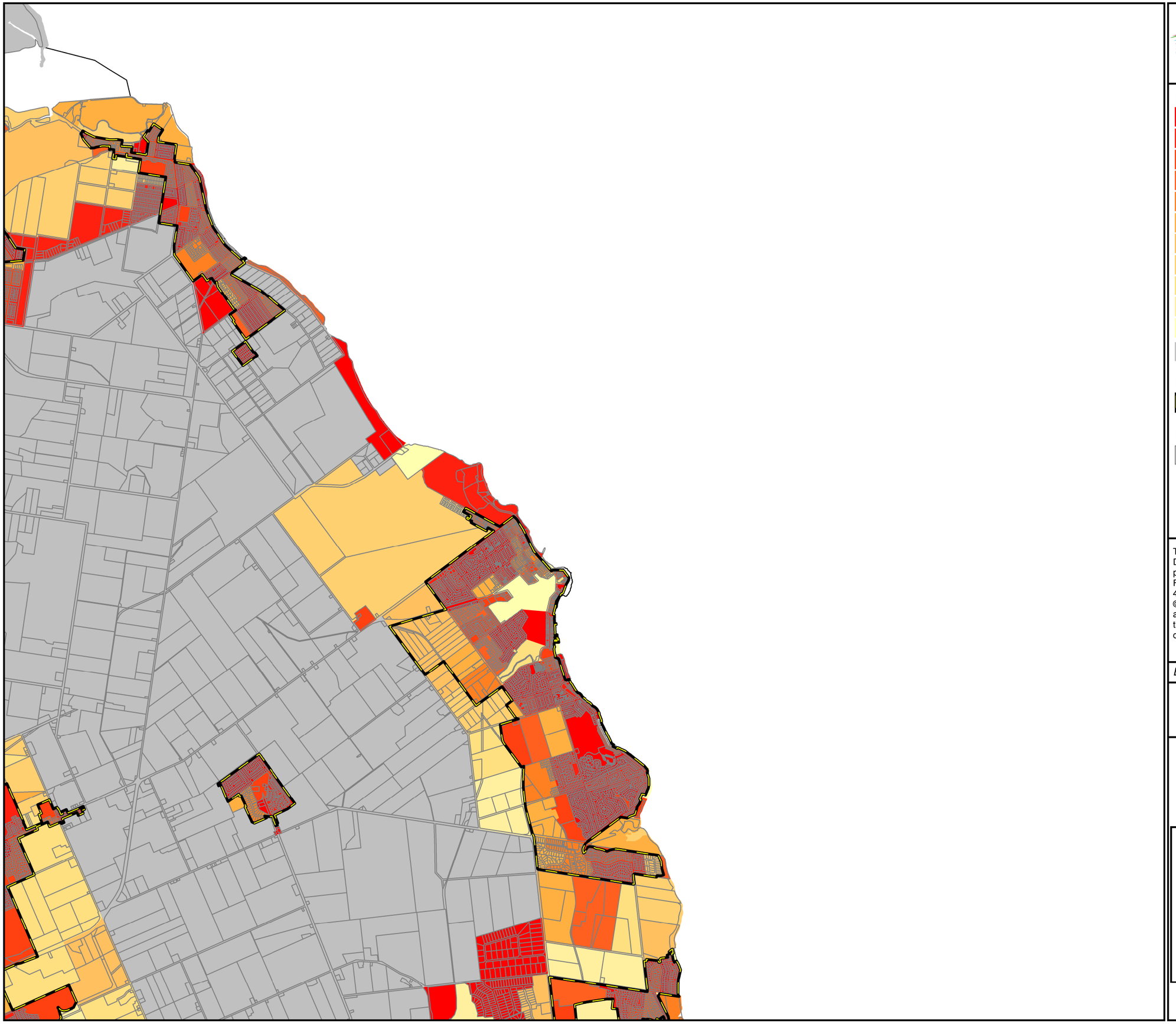
Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-04



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

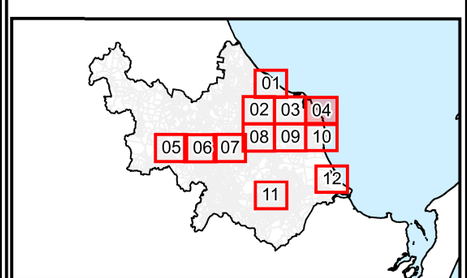
Property Boundaries

- Boundary

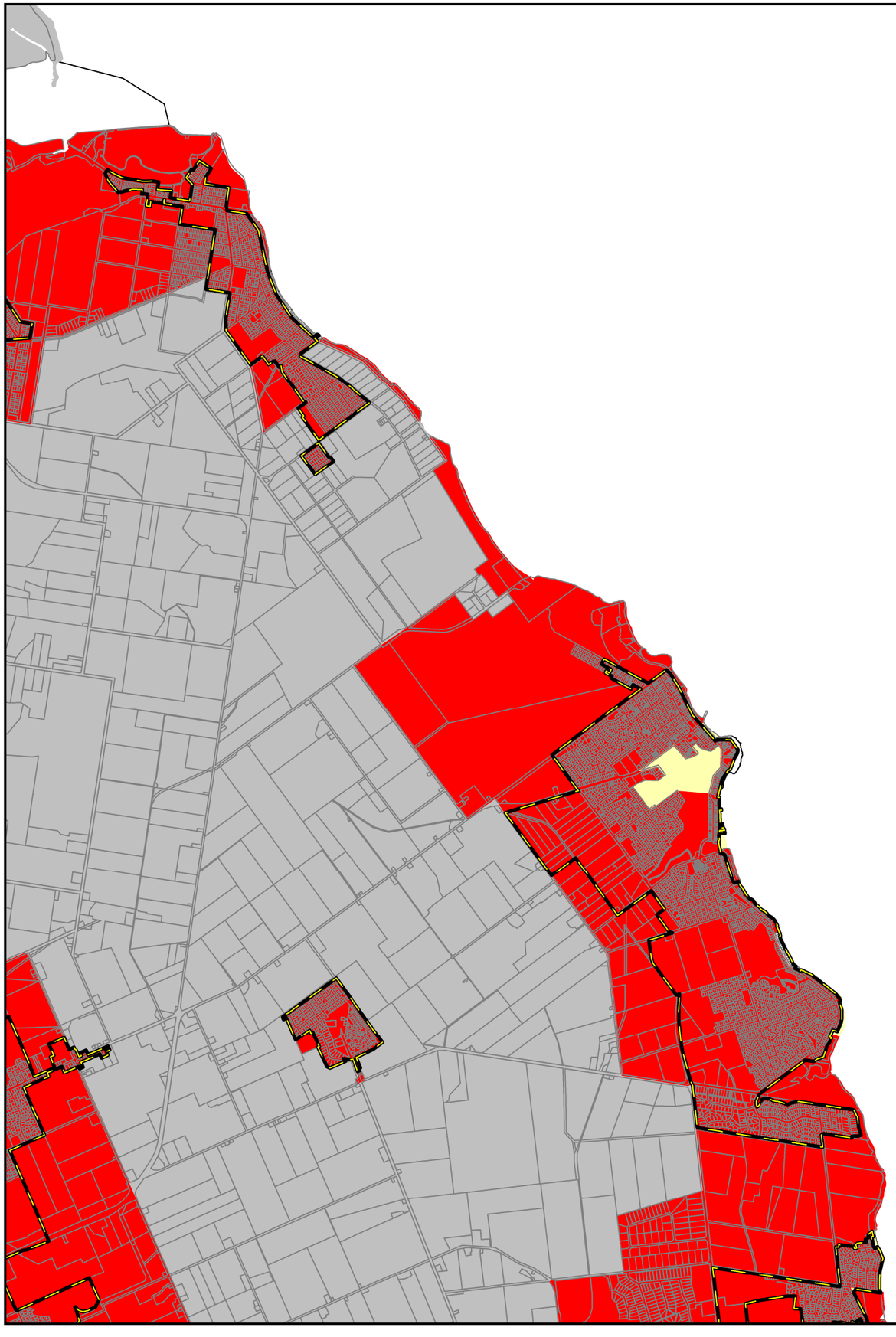
Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-04



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

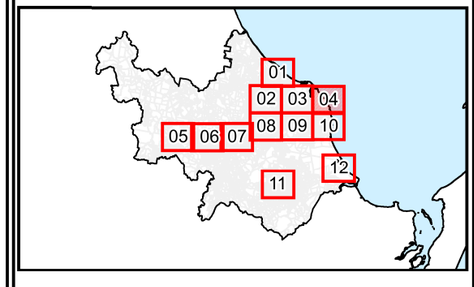
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-04

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

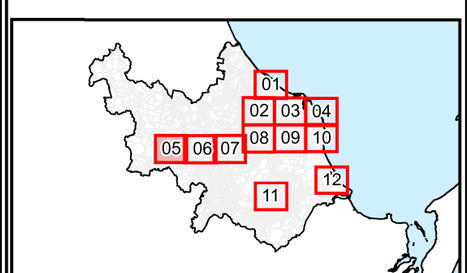
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-05

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

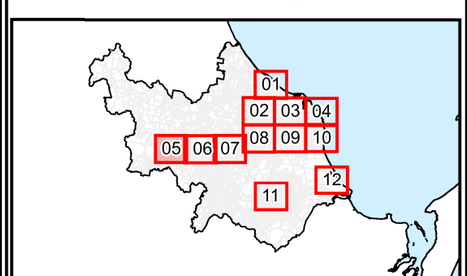
Property Boundaries

- Boundary

Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-05

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

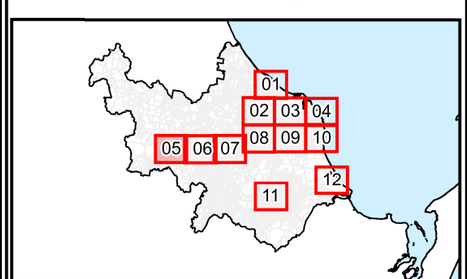
Property Boundaries

- Boundary

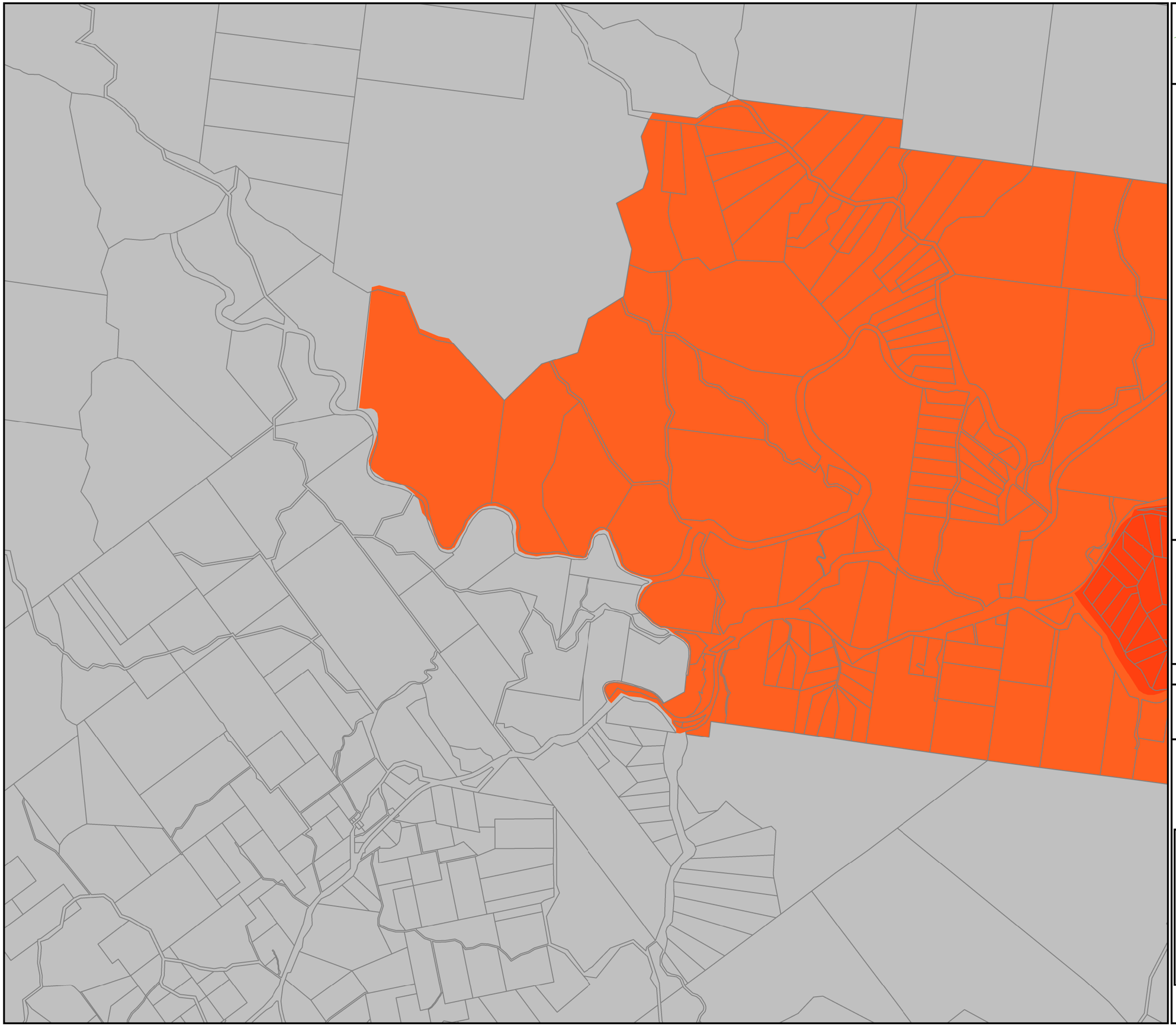
Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-05



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

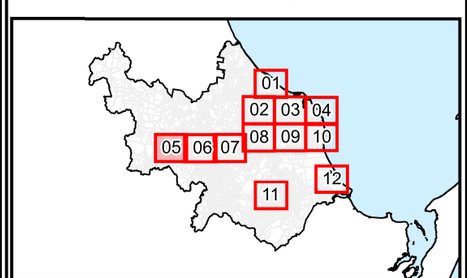
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-05

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

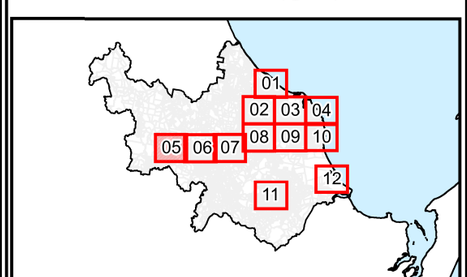
Property Boundaries

- Boundary

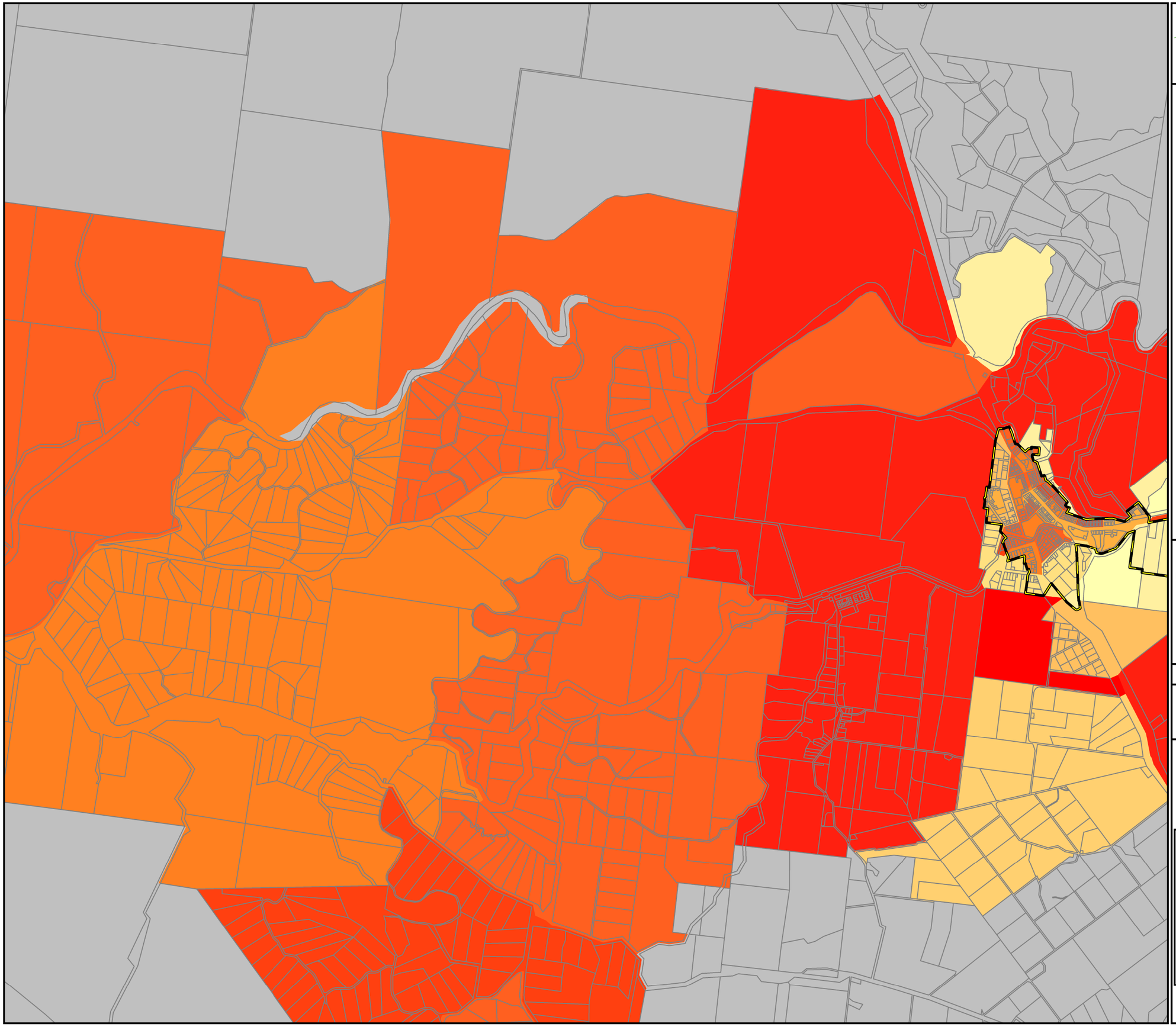
Date 25/07/2016	START DATE	
N	AMENDMENT DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-05



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

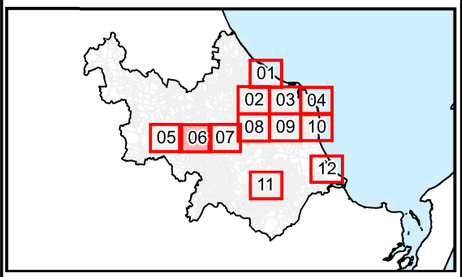
Property Boundaries

- Boundary

Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-06

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

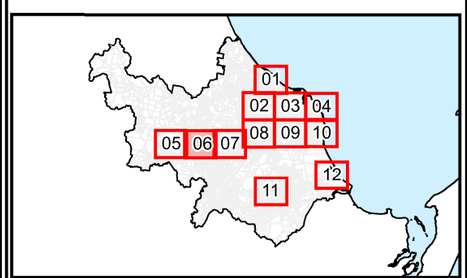
Property Boundaries

- Boundary

Date 25/07/2016	START DATE	
N	AMENDMENT DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-06

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

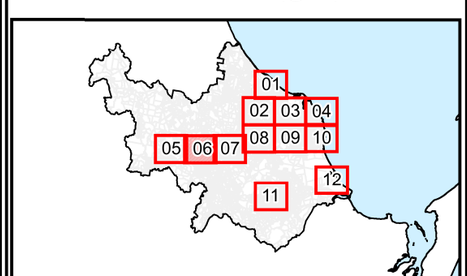
Property Boundaries

- Boundary

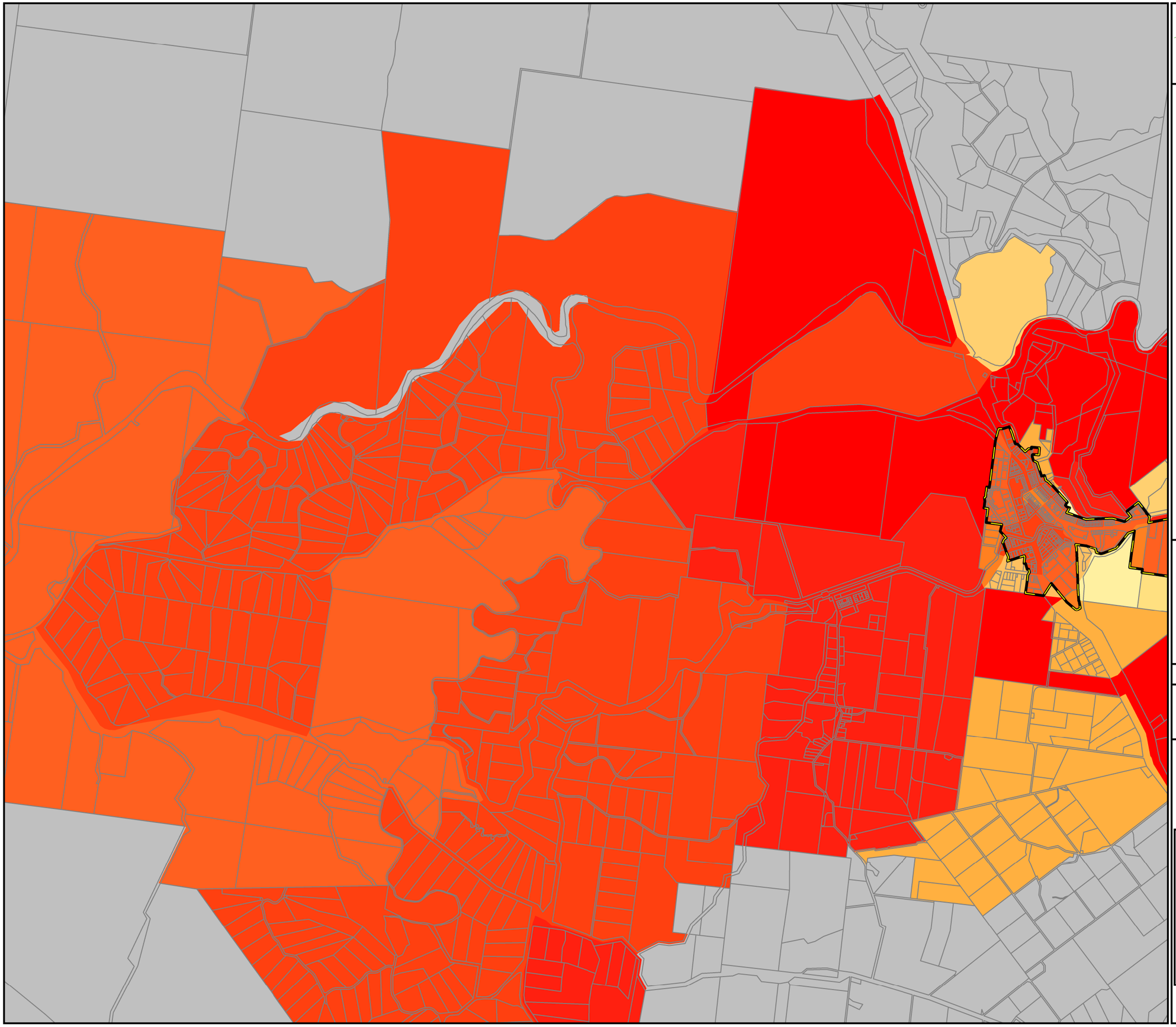
Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-06



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

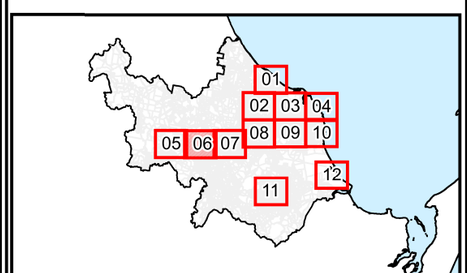
Property Boundaries

- Boundary

Date 25/07/2016	START DATE	
N	AMENDMENT DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-06

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

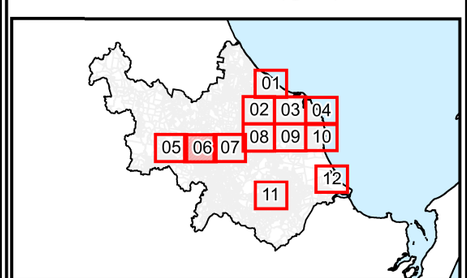
Property Boundaries

- Boundary

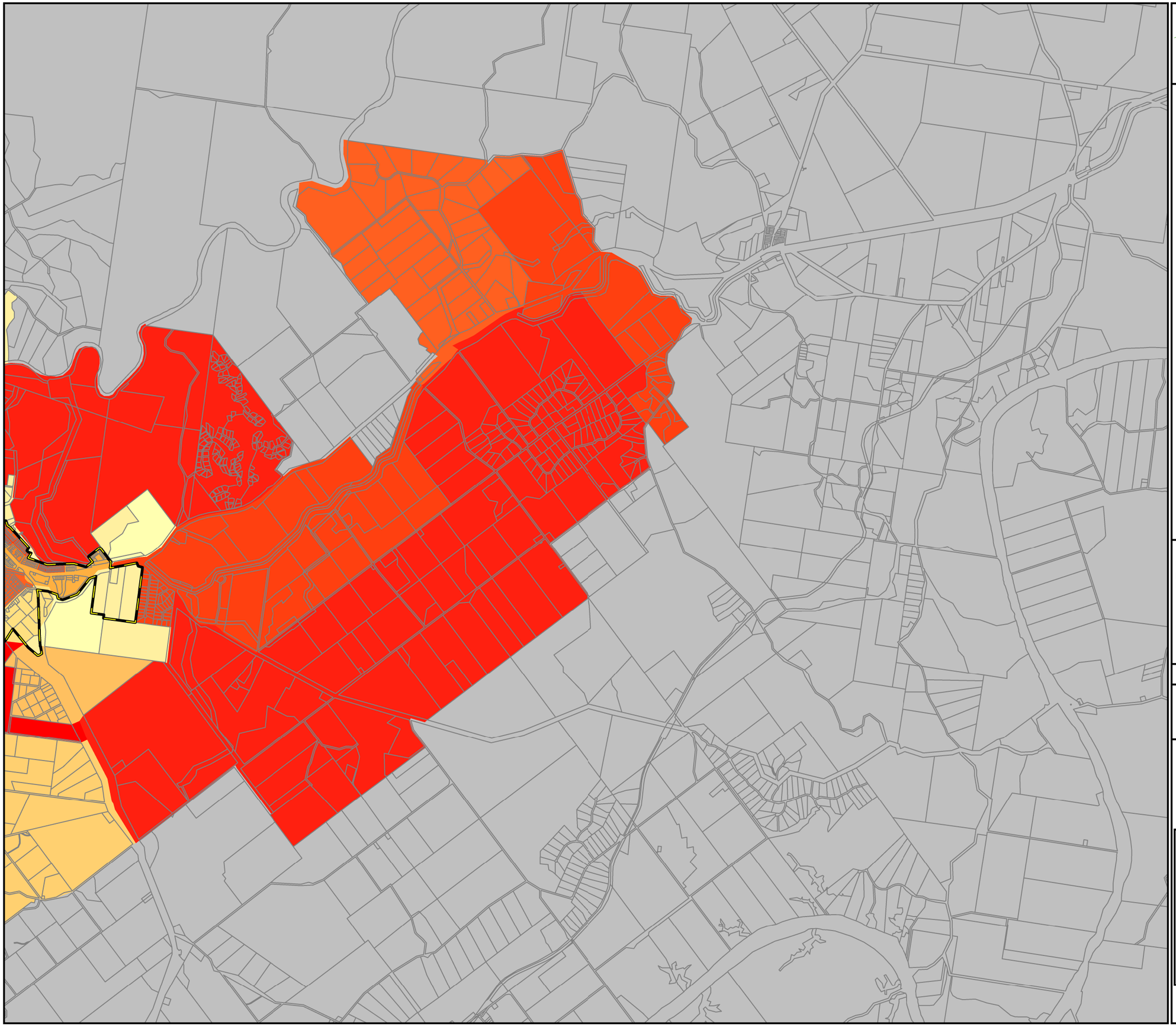
Date 25/07/2016		START DATE
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE
		AMENDMENT No.

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-06



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

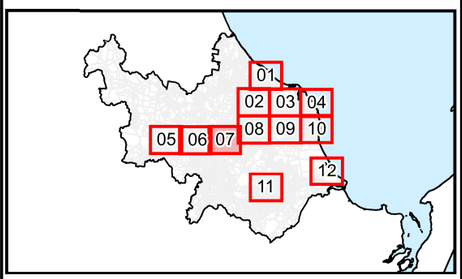
Property Boundaries

- Boundary

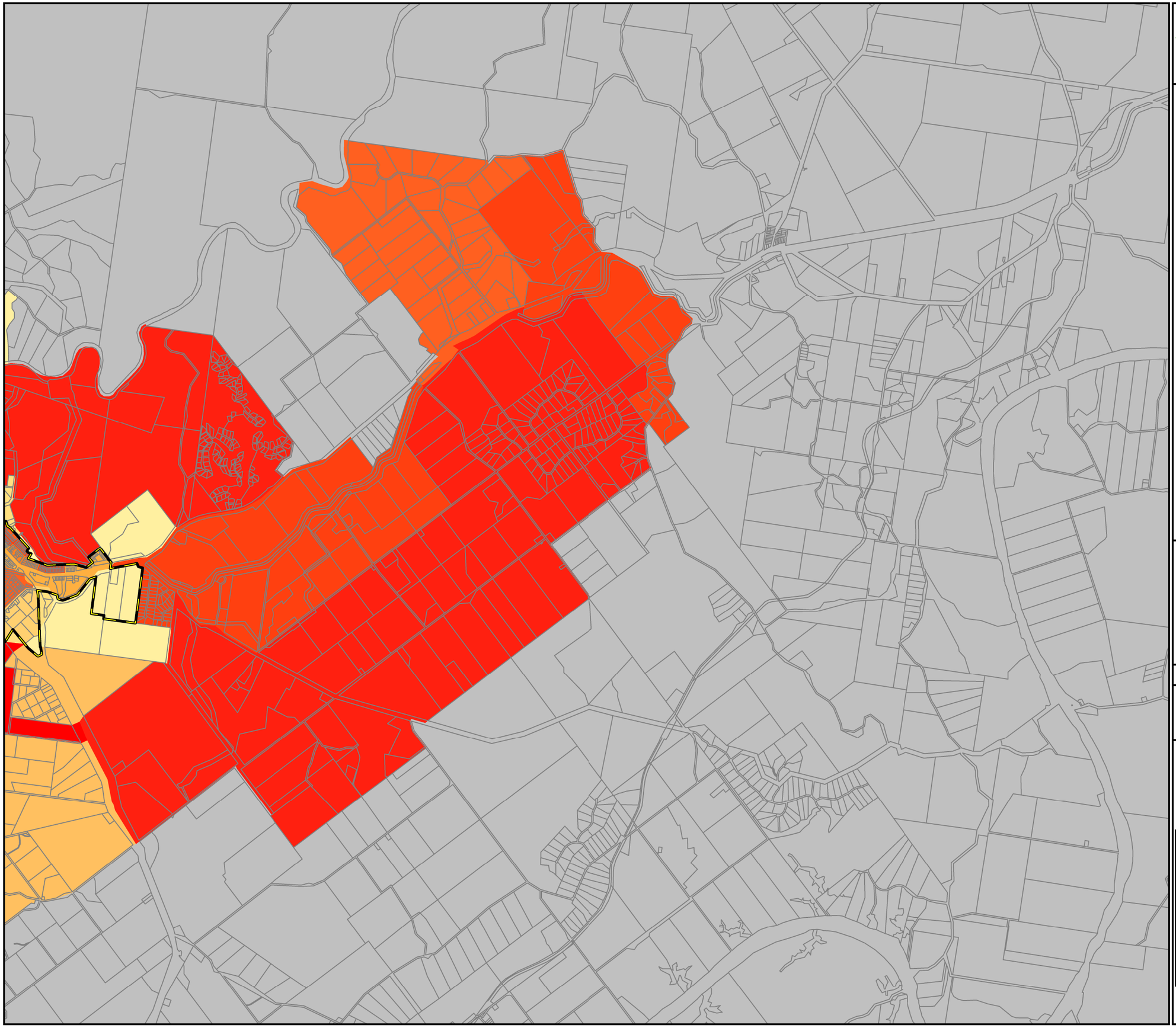
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-07



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

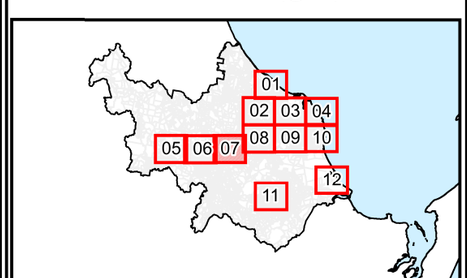
Property Boundaries

- Boundary

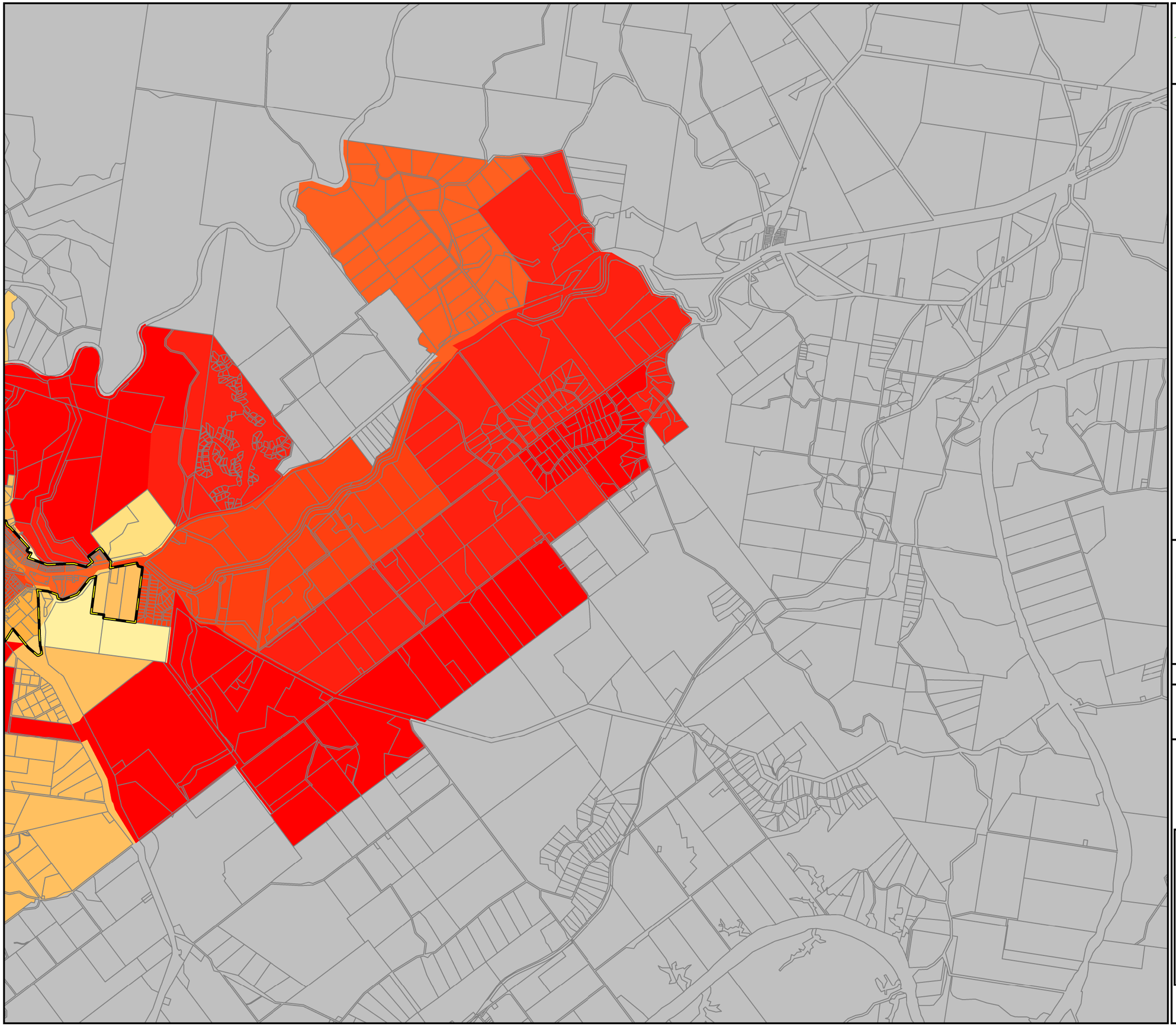
Date 25/07/2016	START DATE	
N	AMENDMENT DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-07



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

Property Boundaries

- Boundary

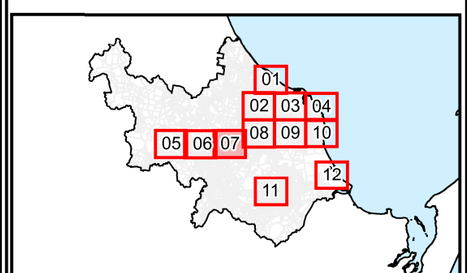
Date *25/07/2016*

DATUM:
Geocentric Datum of Australia 1994 (GDA94 - Zone 55)

START DATE	
AMENDMENT DATE	
AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-07

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

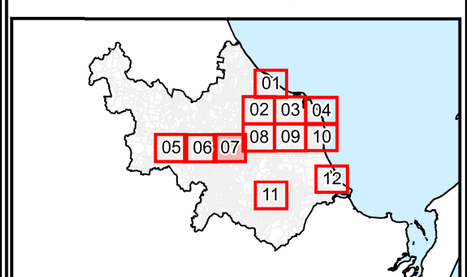
Property Boundaries

- Boundary

Date 25/07/2016	START DATE	
N	AMENDMENT DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-07

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

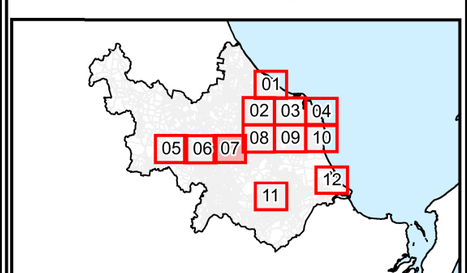
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-07

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

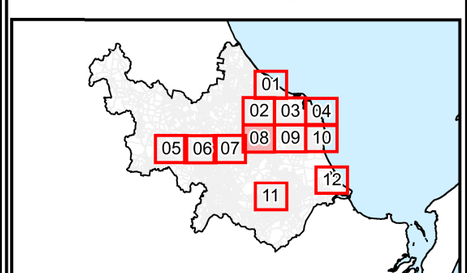
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-08

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

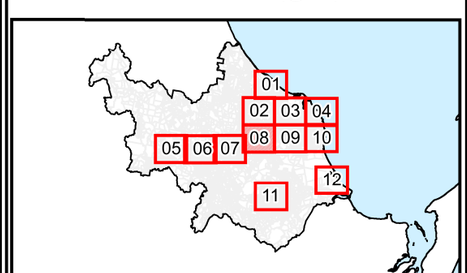
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-08

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

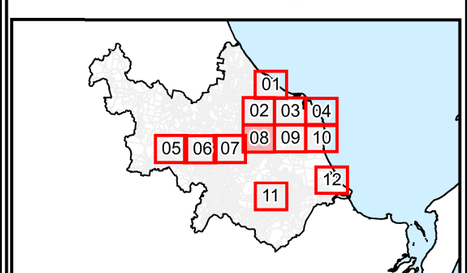
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-08

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

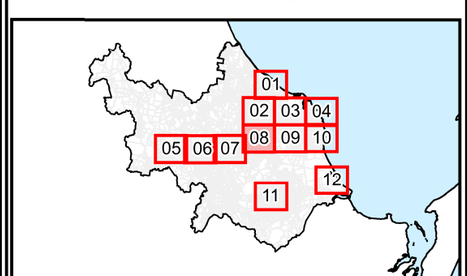
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-08

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

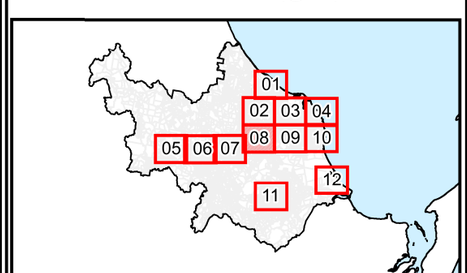
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-08

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

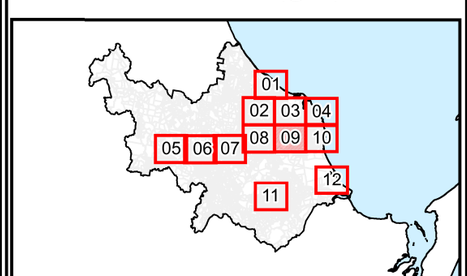
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-09

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

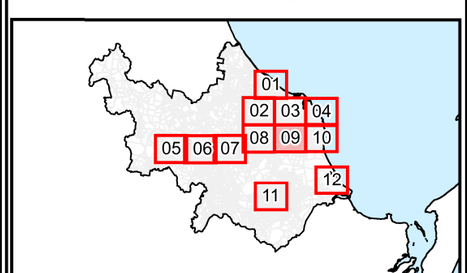
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-09

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

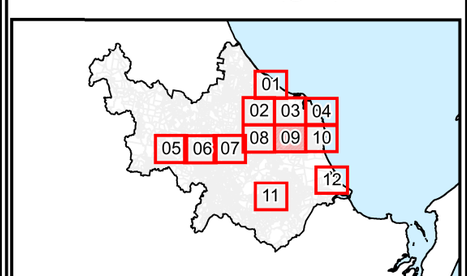
Property Boundaries

- Boundary

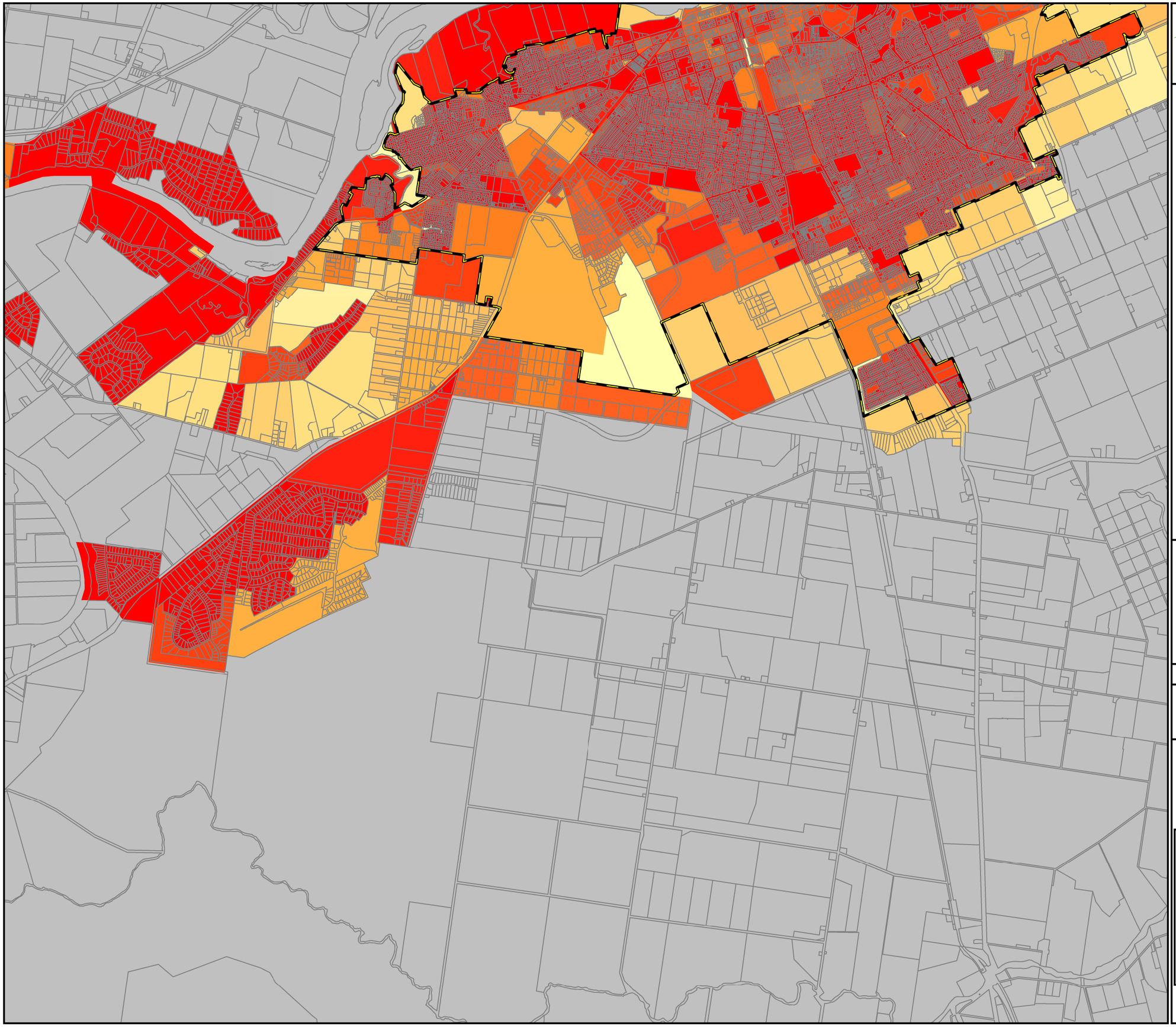
Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-09



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

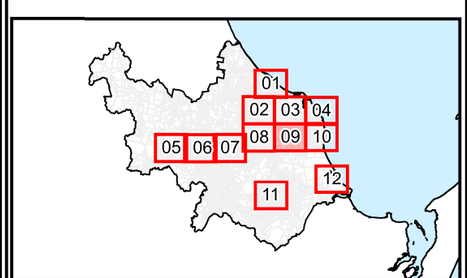
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-09

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

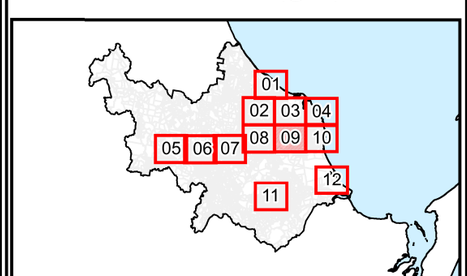
Property Boundaries

- Boundary

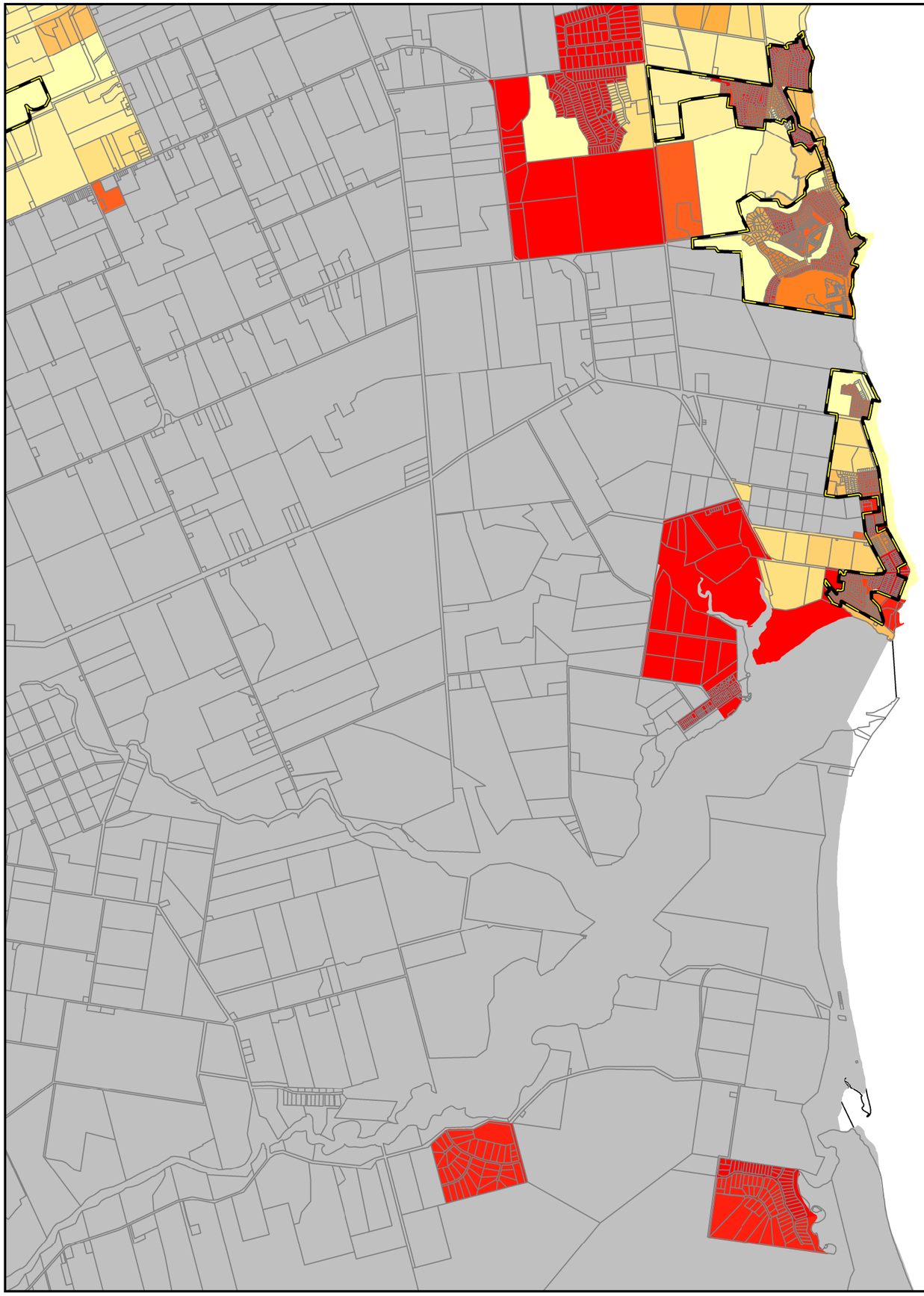
Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-09



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

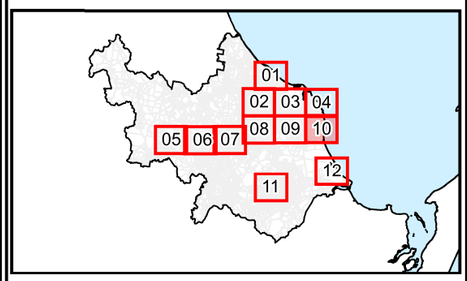
Property Boundaries

- Boundary

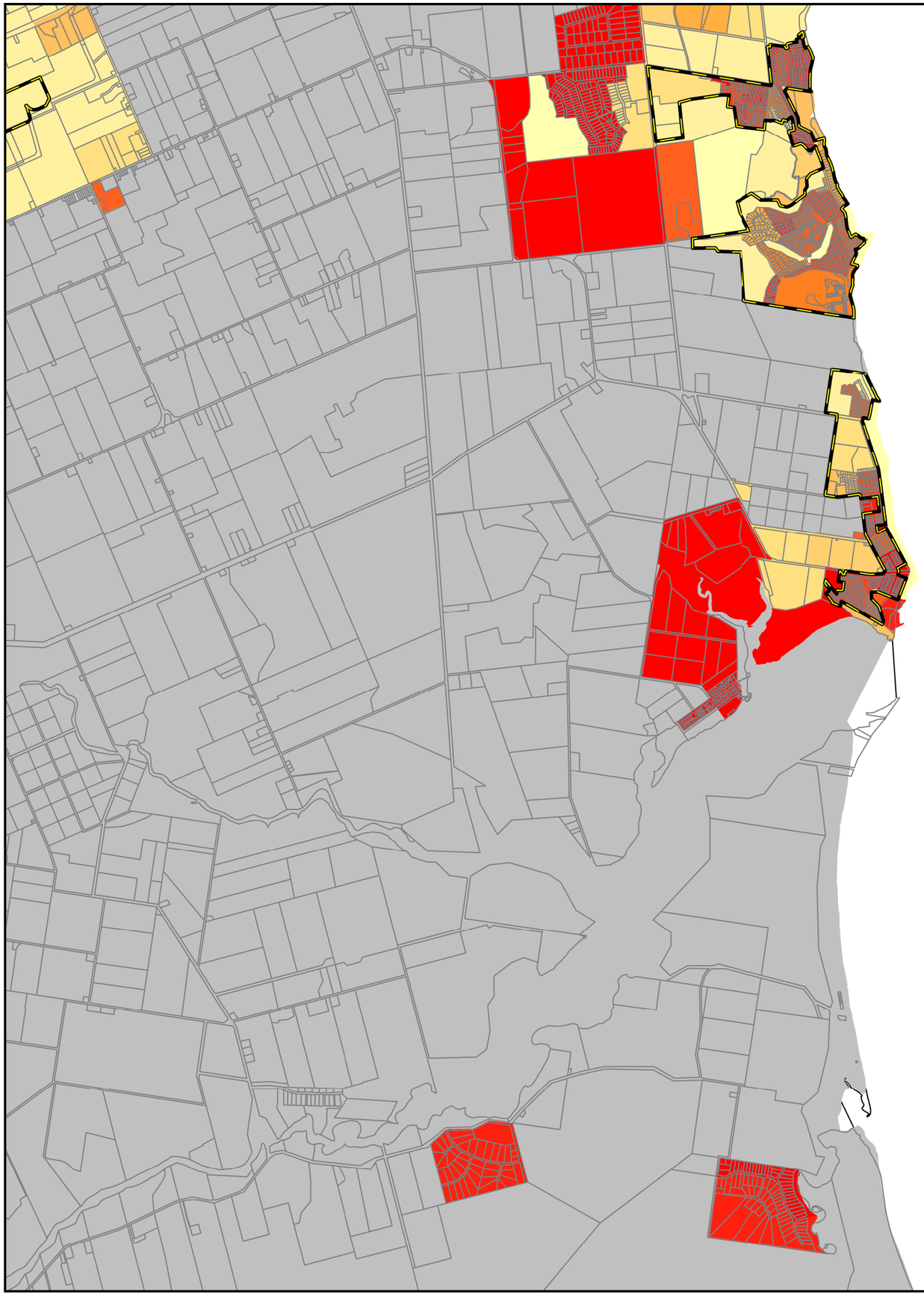
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-10



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

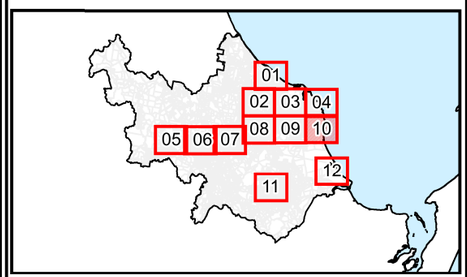
Property Boundaries

- Boundary

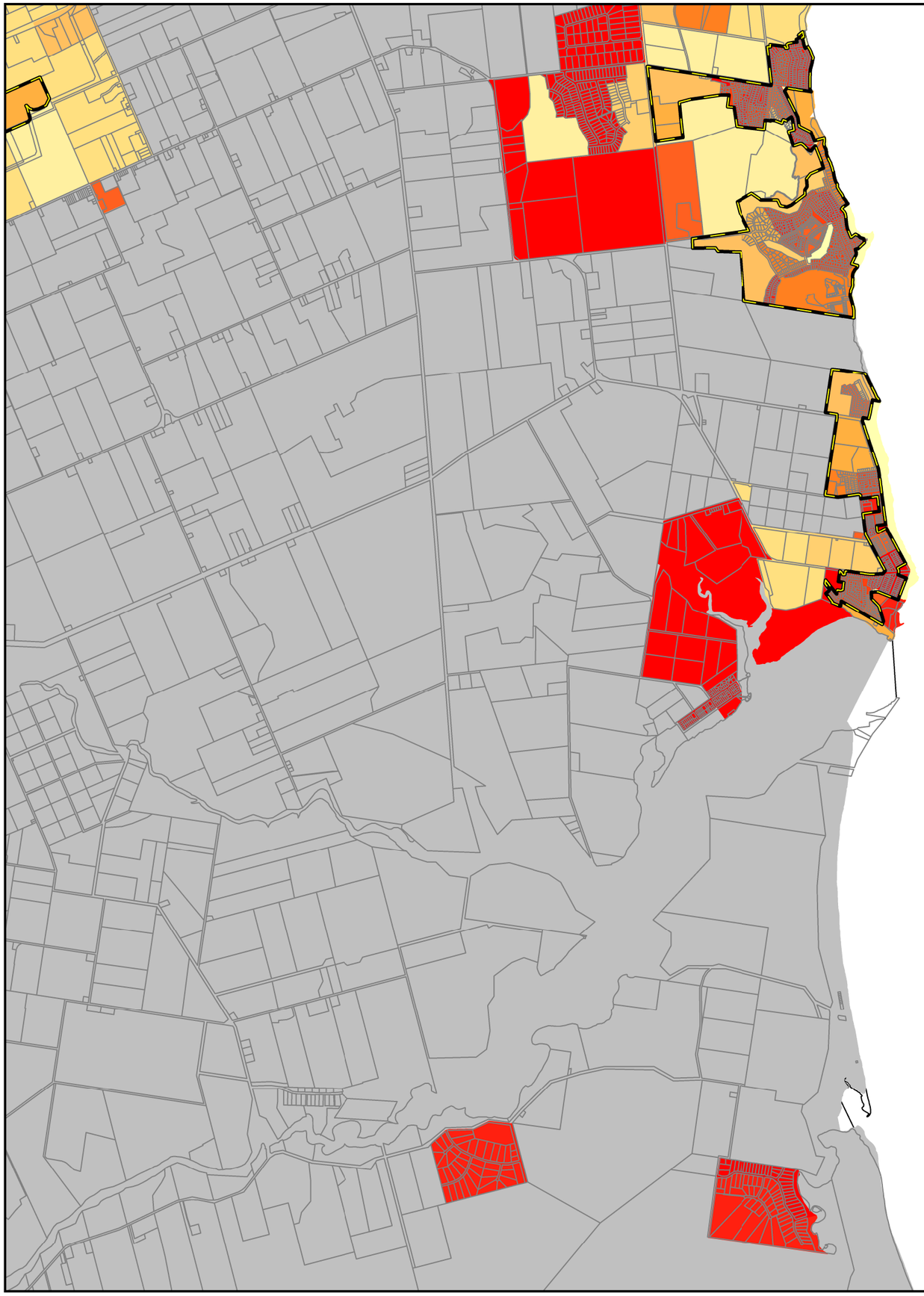
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-10



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

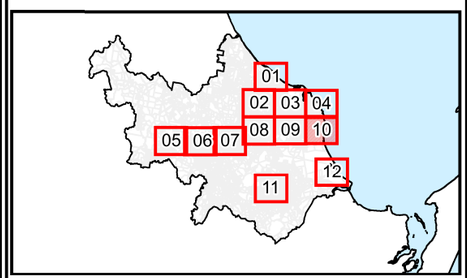
Property Boundaries

- Boundary

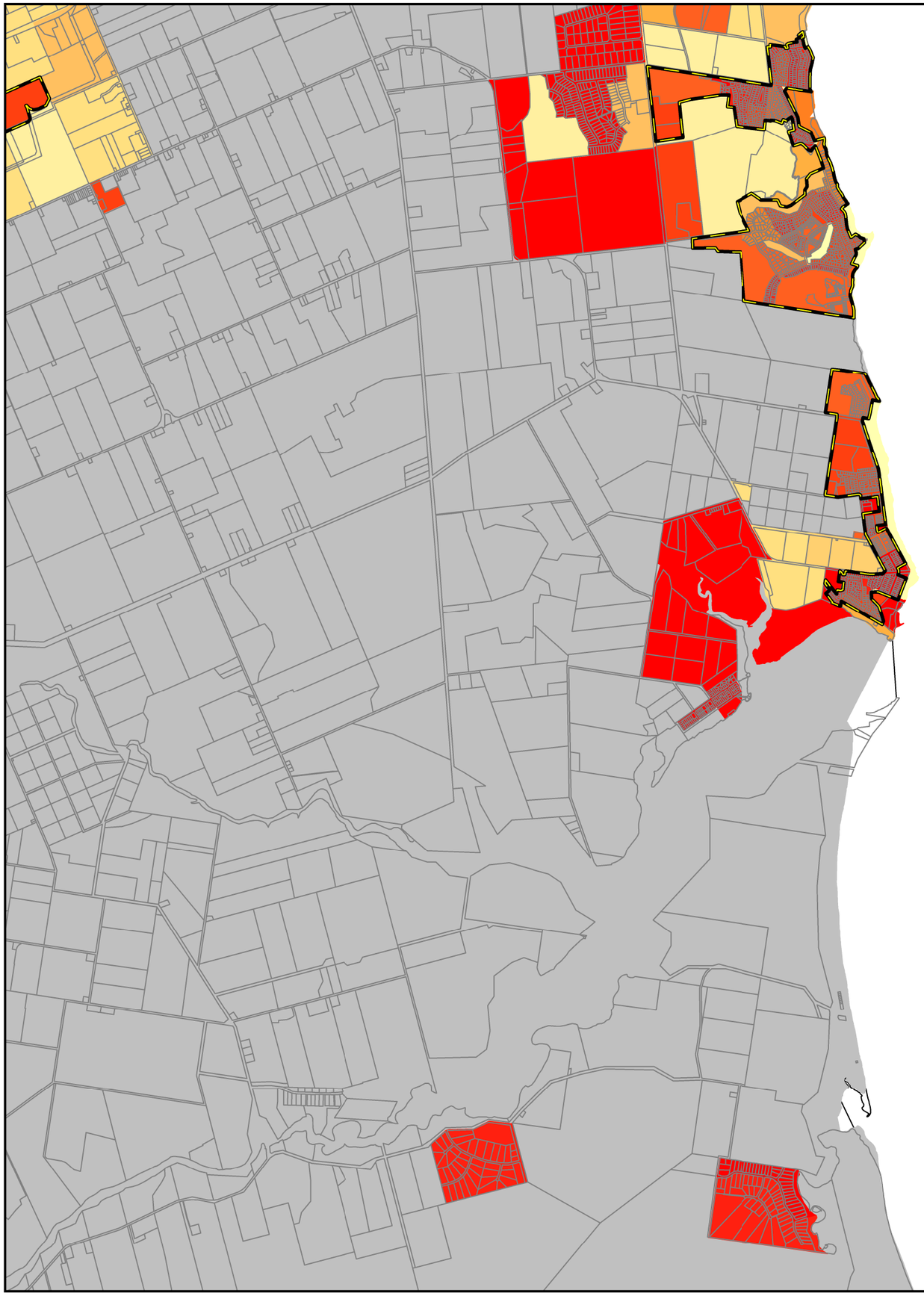
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-10



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

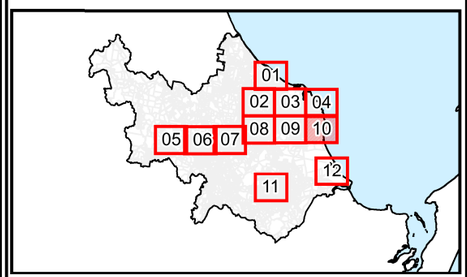
Property Boundaries

- Boundary

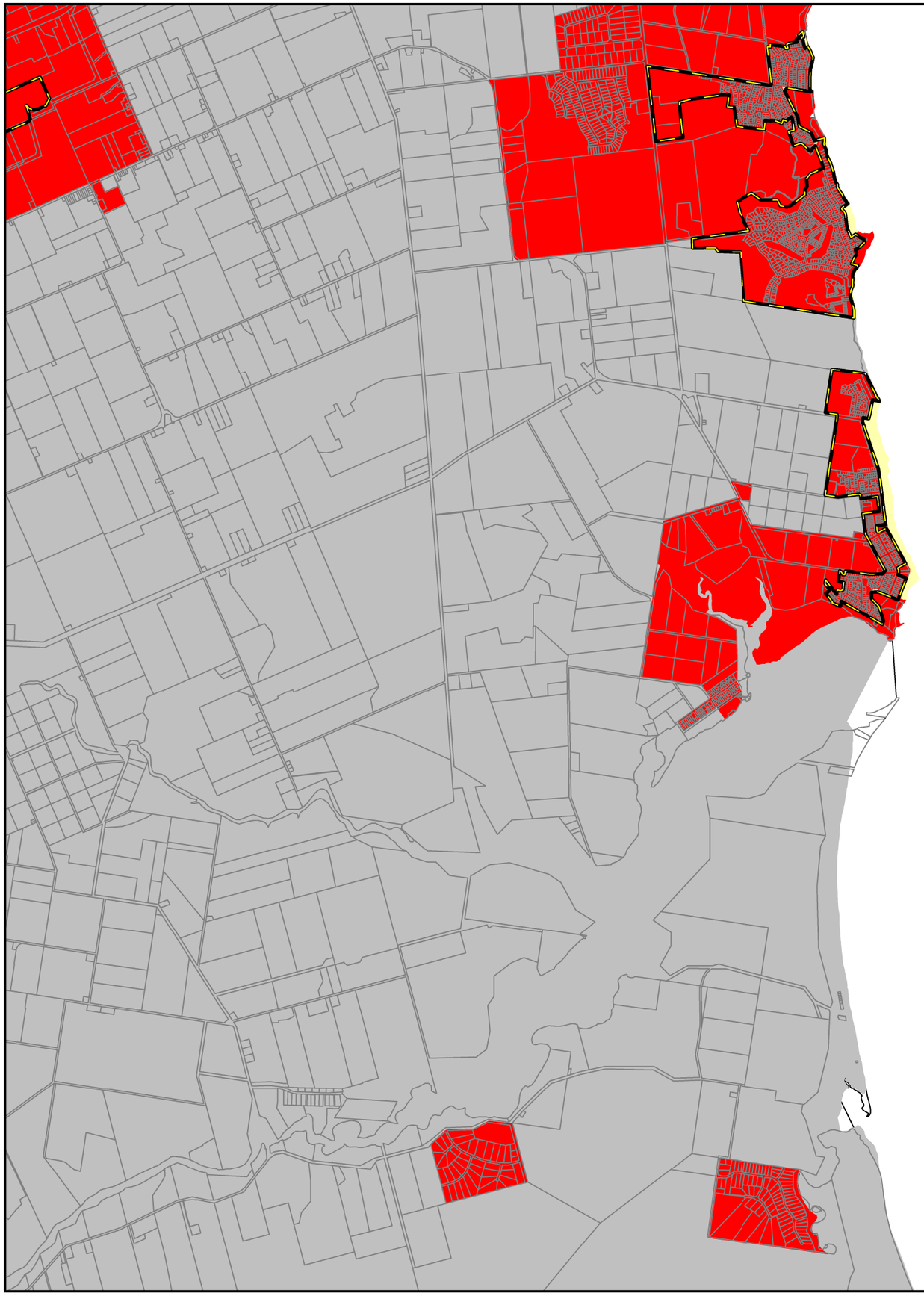
Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-10



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

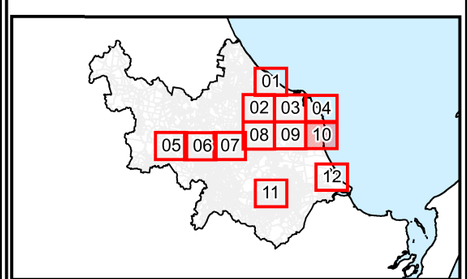
Property Boundaries

- Boundary

Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-10

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

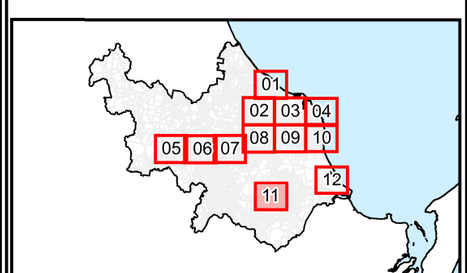
Property Boundaries

- Boundary

Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-11

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

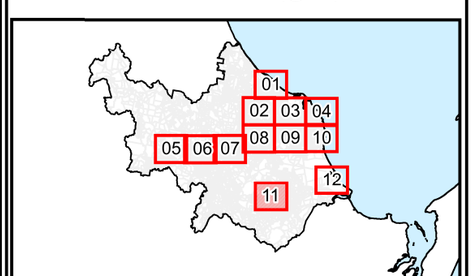
Property Boundaries

- Boundary

Date *25/07/2016*		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-11

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

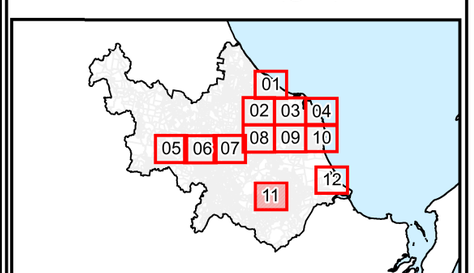
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-11

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

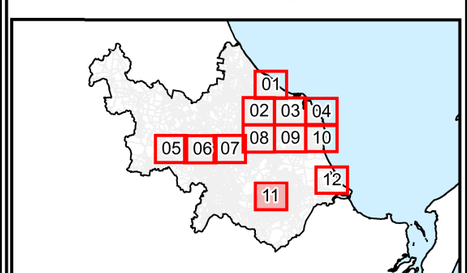
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-11

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

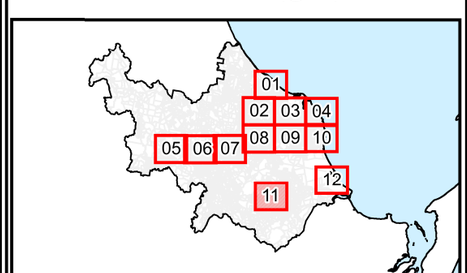
Property Boundaries

- Boundary

Date	*25/07/2016*	START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-11

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2016

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

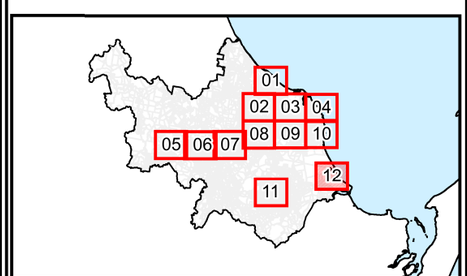
Property Boundaries

- Boundary

Date *25/07/2016*	START DATE
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE
	AMENDMENT No.

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2016-12

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2021

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

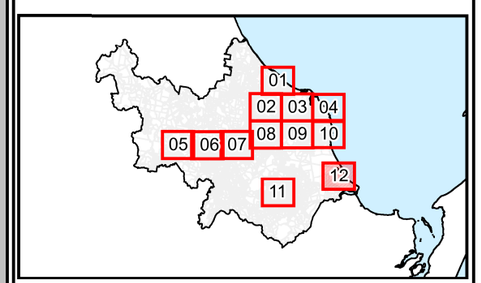
Property Boundaries

- Boundary

Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2021-12

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2026

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

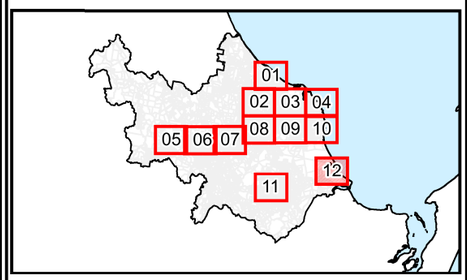
Property Boundaries

- Boundary

Date 25/07/2016	START DATE	
DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
	AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2026-12

Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT 2031

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
- 20% - 30%
- 10% - 20%
- 0% - 10%
- 0%
- Non-Urban

Priority Infrastructure Area

- PIA Boundary

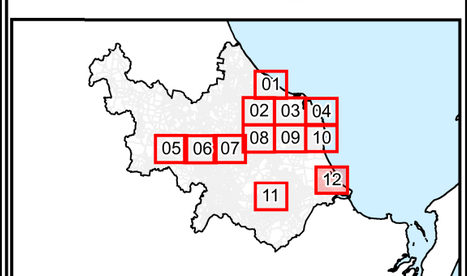
Property Boundaries

- Boundary

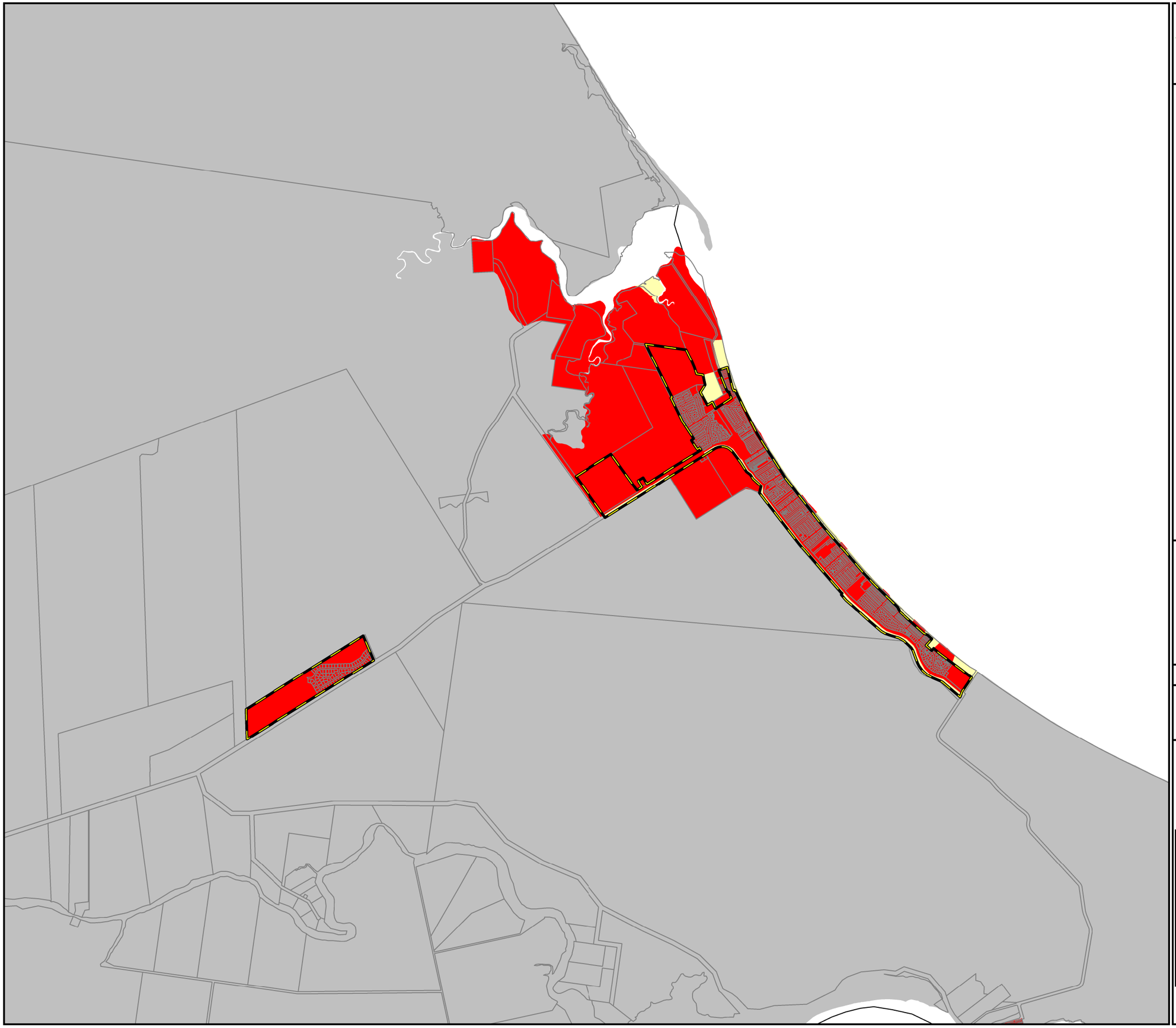
Date 25/07/2016		START DATE	
N	DATUM: Geocentric Datum of Australia 1994 (GDA94 - Zone 55)	AMENDMENT DATE	
		AMENDMENT No.	

0 1,500 3,000
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-2031-12



Bundaberg Regional Council

DEVELOPMENT SEQUENCING MAPS
LEVEL OF DEVELOPMENT: ULTIMATE

LEVEL OF DEVELOPMENT (%)

- 90% - 100%
- 80% - 90%
- 70% - 80%
- 60% - 70%
- 50% - 60%
- 40% - 50%
- 30% - 40%
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		AMENDMENT No.	

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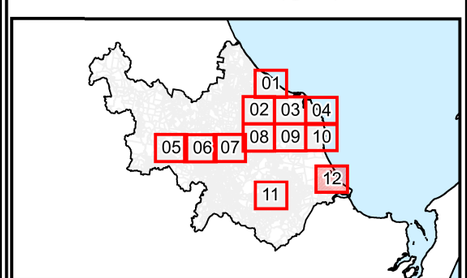
metres

Scale - 1:50,000 (@ A3)



SHEET No.DSM-ULT-12