The new Whitsunday Regional Council Planning Scheme

Whitsunday Regional Council Urban Growth Study

Draft Report

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List of Abbreviations

APSDA	Abbot Point State Development Area
BPS	Bowen Shire Planning Scheme
DCDB	Digital Cadastre Database
DIDO	Drive in – Drive out
Du	Dwelling unit
FIFO	Fly in – Fly out
GBSDA	Galilee Basin State Development Area
GIS	Geographic Information Systems
Ha	Hectare
Mtpa	Mega-tonnes per annum
PDA	Priority Development Area
PIP	Priority Infrastructure Plan
QPP	Queensland Planning Provisions
SPA	*Sustainable Planning Act* 2009
SPP	State Planning Policy
TLPI 02/2013	Temporary Local Planning Instrument 02/2013 Bowen Flooding and Storm Tide Regulation
WCAPDA	Whitsunday Coast Airport Priority Development Area
WRC	Whitsunday Regional Council

Glossary

Airlie Study Area	Comprised of the Jubilee Pocket – Shute Harbour and Cannonvale - Airlie Beach Small planning areas from the Economic and Population Study, prepared by Norling Consulting. Detailed urban growth analysis for the Airlie Study Area is contained within section 10.0 of this report.
Bowen Study Area	Comprised of the Abbot Point – Merinda, Bowen North and Bowen South Small planning areas from the Economic and Population Study, prepared by Norling Consulting. Detailed urban growth analysis for the Bowen Study Area is contained within section 7.0 of this report.
Class A agricultural land	Land that is suitable for current and potential crops with limitations to production which range from none to moderate levels.
Class B agricultural land	Land that is marginal for current and potential crops due to severe limitations; and suitable for pastures. Engineering and/or agronomic improvements may be required before the land is considered suitable for cropping.
Constrained land	Land that is limited in density or yield due to one or more constraints E.g. Flooding, slope etc.
Collinsville Study Area	Comprised of the Collinsville Small planning areas from the Economic and Population Study, prepared by Norling Consulting. Detailed urban growth analysis for the Collinsville Study Area is contained within section 8.0 of this report.
Demand analysis	Establishes the estimated quantity of residential and industrial land to be developed by 2036.
Developed land	Land that is subdivided and being used for a purpose which is consistent with the intention of the zone it is in.
Growth estimates	Growth estimates were provided by Norling Consulting and establish the population, employment and development estimates for the region to 2036.
Industrial land/purpose	Zones identified as being of industrial use within Version 3.0 Queensland Planning Provisions (October 2013) include: Low impact industry, Medium impact industry, High impact industry, Special industry and Industry investigation.
Proserpine Study Area	Comprised of the Proserpine Small planning areas from the Economic and Population Study, prepared by Norling Consulting. Detailed urban growth analysis for the Proserpine Study Area is contained within section 9.0 of this report.
Residential land/purpose	Zones identified as being of residential use within Version 3.0 Queensland Planning Provisions (October 2013) include: Low density residential, Low-medium density residential, Rural residential, Mixed use and Emerging community.
Small Planning Area	Established by Norling Consulting based on ABS data availability and environmental, engineering, planning and infrastructure constraints. Are the baseline boundary areas for calculations within the Study Area boundaries.

Executive Summary

The Whitsunday Urban Growth Study (urban growth study) is Whitsunday Regional Council's (WRC) response to the appropriate provision of future residential and industrial land across the WRC area, with the results being intended to inform land use planning and coordinated infrastructure delivery through the new Whitsunday Regional Council Planning Scheme (the new planning scheme).

The overall objective of this study is to gain a greater understanding of the WRC area's ability to accommodate projected residential and industrial growth and demand until 2036. With this key objective it is anticipated that results of the study will not only assist in the preparation of the new planning scheme and PIP but also assist WRC in effectively:

- Responding to shifts in economic markets, demographics and lifestyle;
- Maximising the development and infrastructure potential of the study area; and
- Guiding development that will achieve the objectives of the new planning scheme.

In order to respond and satisfy to the overall objectives of the study, the report has been split into two parts.

Part One of the urban growth study provides an informative introduction, establishing the studies scope, methodology and baseline assumptions. This is an important element of the report as it identifies the analyses undertaken and highlights the consistency in approach and decision making applied throughout the study methodology.

Part Two of the urban growth study is broken down into several sub-sections in order to efficiently demonstrate the findings and recommendations made for each Study Area, being:

- Bowen (Abbot Point – Merinda, Bowen North and Bowen South)
- Collinsville
- Proserpine
- Airlie (Cannonvale – Airlie Beach and Jubilee Pocket – Shute Harbour)

The structure and layout of the study aims to provide a clear and concise snapshot of each investigated Small Planning Area (as it is contained within a Study Area), and in particular details the anticipated demand and subsequent capacity of each area to accommodate estimated residential and industrial growth to 2036.

Findings

To create consistency and clarity across the region the recommendations of the urban growth study have been provided in two forms; the first being a written policy response and the second a recommended land allocation map through zoning maps.

By recommending a written policy response, Council is able to provide a consistent policy position across the region when addressing land use and development decisions which can be consistently integrated into the strategic framework of the new planning scheme. The development of a recommendations map on the other hand assists in establishing the local context of the area and the suggested physical reallocation of land.

A summary of the findings and recommendations of this study is demonstrated in the following table. Specific recommendations and land allocation maps are detailed in the report

Summary of findings from the Whitsunday Regional Council Urban Growth Study

Area	Residential	Emerging Community	Industry	Industry investigation
Bowen	• A moderate oversupply of residential land exists. • Infill is encouraged to consolidate the existing urban form around the CBD/Queens Beach.	• Recommended on the growth front of Bowen, south of Mount Gordon.	• An oversupply of industrial land exists, largely in the vicinity of the Bowen Airport. • Land to be protected and consolidated.	• Recommended in the proximity of the Township of Merinda, to appropriately support Abbot Point industrial needs.
Collinsville	• Moderate oversupply of residential land adjacent to the Collinsville boundary.	• Recommended for consideration to the west of Collinsville CBD, in line with exiting development.	• An oversupply of industrial land exists to the east of Pelican Creek, south of the CBD. • Land to be protected and consolidated.	• Recommended in the vicinity of the Collinsville Airport, to support resource development.
Proserpine	• Small shortfall of residential land, taking into account that adjacent to the Proserpine boundary. • Infill is encouraged to consolidate existing urban form	• Recommended for consideration to the north-west of Proserpine	• Small shortfall of industrial land exists. • Land to be protected and consolidated. • Future land to be allocated in proximity to Whitsunday Coast Airport and to the east of Proserpine.	• Not recommended within area. • Consider reallocation within proximity to the Whitsunday Coast Airport.
Airlie	• A significant oversupply of residential land exists. • Infill is encouraged to consolidate the existing urban form around the Airlie beach and Centro.	• Recommended to the south-west of the area adjacent to Shute Harbour Road, south of Centro.	• Small shortfall of industrial land exists. • Land to be protected and consolidated. • Small amount of land to be allocated in Jubilee Pocket • Land to be allocated in proximity to Whitsunday Coast Airport.	• Not recommended within area. • Consider reallocation within proximity to the Whitsunday Coast Airport.

Councillor Consultation

The study has been prepared in consultation with Councillors, predominantly throughout the months of April and May 2014. Consultation undertaken includes:

- Councillor Planning Workshop, on the 1 April 2014
- Councillor Briefing Session, on the 16 April 2014
- Councillor Briefing Session, on the 14 May 2014
- Council Ordinary Meeting, on the 21 May 2014

Based on this consultation and Council resolution on the 21 May 2014, the findings and recommendations of the study will be carried forward as part of the process of preparing the new planning scheme. In particular the content of this study and its recommendations will not only provide input into the strategic framework of the new planning scheme, but also inform the land use zoning of the region and the Priority Infrastructure Area (PIA) of the PIP.

Part A

Whitsunday Regional Council Urban Growth Study

1. Introduction

1.1. Background & Context

Since the local government amalgamations in 2008 the WRC has operated with two planning schemes (former Bowen and Whitsunday Shire) to manage land use planning, development and infrastructure delivery for the region. In order to move towards a more consistent approach to undertaking and regulating development the current Councillors and Administration are committed to delivering the new planning scheme by 2016.

As part of WRC's resolution to prepare a new planning scheme compliant with the *Sustainable Planning Act* 2009 (SPA), WRC commissioned Norling Consulting Pty. Ltd. to prepare the Whitsunday Region Economic and Population Study (Economic and Population Study) for the purpose of providing input into the likely future need for and location of, additional residential and industrial land within the Whitsunday Region.

In order to progress the outcomes of the Economic and Population Study in a manner that can be readily integrated into the new planning scheme it was considered necessary (by Council) to prepare the Whitsunday Regional Council Urban Growth Study (UGS) to quantify how the projected population and employment growth may be accommodated within existing zoned land and identify recommendations for updated land zonings as part of the new planning scheme.

1.1.1. The Economic and Population Study

The Economic and Population Study was completed and presented to Councillors in November 2013, with WRC resolving to receive this study on the 29 January 2014. This study recognises the importance of how economic factors (both internal and external to the region) play a role in the development and growth of the region over the next 25 years. Understanding these factors in-turn influences how WRC chooses to respond, particularly as it develops land use and infrastructure planning for the future. Key objectives of the study included:

- Investigating potential growth scenarios and economic influences within the region; and
- Developing small area projections based on a preferred growth/economic scenario.

This work identified the expected population and employment projections for the Whitsunday region to 2036, while also providing an indication as to where such growth is anticipated. To effectively determine and demonstrate such growth, Norling Consulting, in consultation with WRC separated the local government area into 10 small planning areas. These areas were defined by a number of factors including ABS data availability and environmental, engineering, planning and infrastructure constraints. The resulting 10 small areas developed were:

- Abbot Point – Merinda;
- Bowen North;
- Bowen South;
- Collinsville;
- Balance former Bowen Shire;
- Whitsunday islands;
- Jubilee Pocket – Shute Harbour;
- Cannonvale – Airlie Beach;
- Proserpine; and
- Balance former Whitsunday Shire.

Population and employment projections were carried out for each of the small planning areas (excluding Balance former Bowen and Whitsunday Shire and the Whitsunday Islands), establishing

where and to what extent growth could be expected to occur and the ability of the nominated area to accommodate such growth. Two sets of projections were produced by Norling Consulting, each developed under a different growth scenario; that of a modest growth and an all potential growth scenario.

The modest growth scenario is estimated to have the highest probability of being realised within the 2036 timeframe and assumes that modest growth occurs across the key industries of the region. This data is used to inform the land use planning across WRC and the preparation of the PIP.

The all potential growth scenario in comparison assumes strong population growth and strong growth across all of the key industries within the region. Although it is recognised that the all potential growth scenario has a limited probability of occurring, such data ensures that adequate strategic planning is carried out to anticipate and respond to future growth, informing the Strategic Framework of the new planning scheme. The results of the regional population projections are demonstrated in Table 1 below.

Table 1: Estimated residential population projections for the Whitsunday region 2013 – 2036 (Norling Consulting, 2013)

	2013	2016	2021	2026	2031	2036	Growth p.a.
Modest Growth Scenario	33,070	34,400	37,400	40,700	44,000	47,200	1.56%
All potential growth scenario	33,070	35,000	39,500	44,800	50,000	55,000	2.24%

This data has formed a key input into the UGS. The findings of the Economic and Population Study provide the baseline for expected residential and industrial land requirements up until 2036, ensuring land is appropriately zoned to accommodate anticipated growth.

1.2. Purpose and Objectives

As part of preparing the new planning scheme the UGS is WRC's response to the appropriate provision of future residential and industrial zoned land throughout the region. The results of the UGS are intended to inform the Whitsunday regions future land use planning and infrastructure coordination by allowing WRC to effectively:

- Respond to shifts in economic markets, demographics and lifestyle;
- Maximise the development and infrastructure potential of the study area; and
- Guide development that will achieve the objectives of the new planning scheme.

Based on the findings of the Economic and Population Study the UGS seeks to achieve the following objectives:

- Confirm the growth projections of Economic and Population Study and detailed residential and industrial land supply and dwelling/floor space projections provided by Norling Consulting. This information represents the baseline assumptions for growth for which the UGS sets out to accommodate.
- Identify existing residential and industrial land supply (constructed and unconstructed) throughout the region;
- Identify shortfall/surplus between existing land supply and projected land supply requirements; and
- Provide recommendations as to the potential locations of additional residential and industrial zoned land where a shortfall is identified exist. These recommendations are readily transferrable to updated strategic framework and zoning maps included in the new planning scheme.

In order to achieve the purpose and objectives of this study a concise methodology was applied to carrying out investigations, findings and final recommendations for the new panning scheme. Full details of the methodology have been provided in section 1.4.

1.3. Contents and structure of report

This report sets out the investigations and findings of the UGS in the following manner:
Part A – Whitsunday Regional Council Urban Growth Study

- Section 1.0: Introduction
- Section 2.0: Regional Study Area discussion
- Sections 3.0 - 5.0: Regional UGS components
- Section 6.0: Conclusion

Part B – Small Area Studies

- Section 7.0: Bowen Study Area
- Section 8.0: Collinsville Study Area
- Section 9.0: Proserpine Study Area
- Section 10.0: Airlie Study Area

1.4. Methodology

This study was conducted using the methodology described below and depicted in Figure 1. A consistent methodology was applied for both residential and industrial zoned land in order to effectively identify the development capacity of each zone.

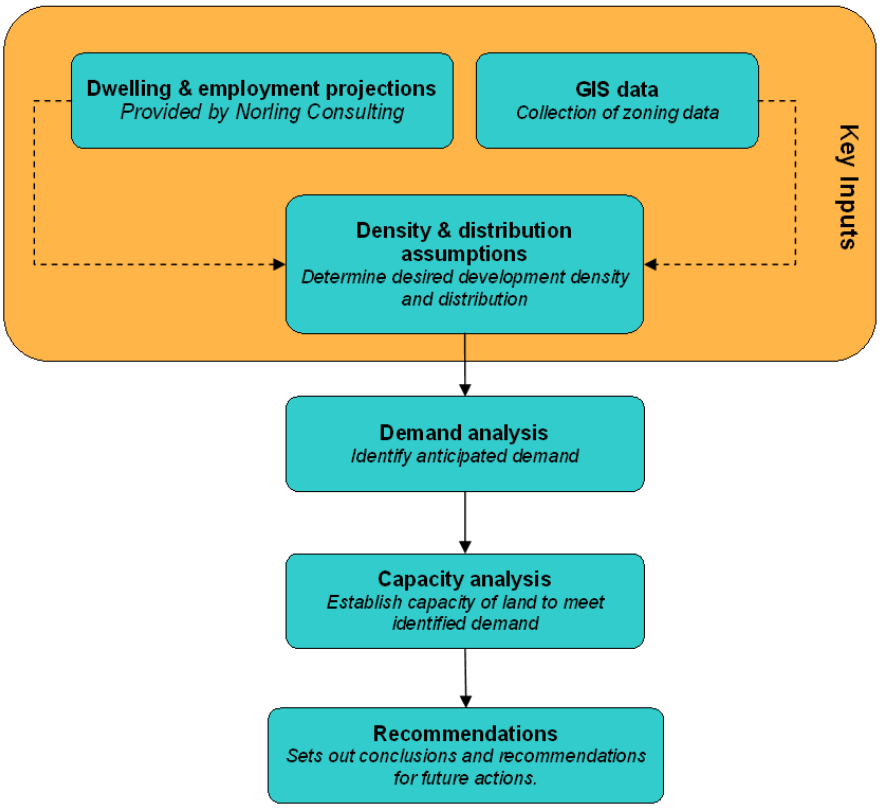


Figure 1: Methodology overview

1.4.1. Key inputs

A series of key inputs were required in order to undertake the demand and capacity analyses of the UGS. The major inputs into this study include:

- Baseline GIS mapping; and
- Dwelling and employment projections from Norling Consultancy.

These data inputs were used to determine a number of key assumptions, being:

Residential density assumptions

Set a baseline for desired dwelling densities across the residential zones of the Whitsunday region. Density assumptions were produced through the comparison of the dwelling and employment projections and the WRC desired future density values.

The development density of industrial land was developed by the dwelling and employment projections and required no further action.

Residential dwelling distributions

Establish the baseline proportion of single and multiple dwellings per residential zone across the Whitsunday region. These assumptions were prepared through the translation of dwelling and employment projections from 'dwelling types' into 'dwelling types per zone'.

Within the provided baseline data three key dwelling types were identified (Single, multiple and other dwellings). This classification is consistent with the *Statutory Guideline 01/11 – Priority infrastructure Plan* and subsequent PIP practice notes. A detailed summary of how Queensland Planning Provisions (QPP) defined uses have been split over the three dwelling types has been provided as Appendix A.

Note that for the purpose of this report 'Other dwellings' has been excluded, as the activities grouped within this category are not expected to be developed within the residential zones.

To appropriately translate the dwelling projections a distribution range was established to apportion the desired regional distribution of single and multiple dwellings over the various residential zones. Further refinement of the distribution range has been nominated for each Small Planning Area range to appropriately reflect the specific socio-economic changes and existing patterns of urban development of each locality.

Industrial zoned land was dealt with a single grouping, therefore not requiring set distribution assumptions.

1.4.2. Demand Analysis

This work was undertaken to establish the estimated quantity of single and multiple dwellings to be developed within each residential zone until 2036. This demand estimate was created through the use of the residential dwelling distribution assumptions in conjunction with residential dwelling estimates in the dwelling and employment projections. The result of the demand analysis determined the allocation of anticipated single and multiple dwellings to each residential zone as per the assumed distribution of residential dwellings.

The demand analysis for industrial land was developed by the dwelling and employment projections and required no further action.

1.4.3. Capacity analysis

The capacity analysis was undertaken to determine the ability of zoned land to accommodate the dwelling estimates established in the demand analyses. The results of the demand analysis were used collectively with the GIS data and assumed dwelling density/plot ratios to produce two key capacity estimates for each Small Planning Area:

- Surplus/shortfall of dwellings/floor space; and
- Surplus/shortfall of developable hectares.

The capacity analysis was undertaken to identify if and where anticipated growth could be accommodated within the individual small planning areas of the UGS and the greater study area. Where a shortfall in land capacity was demonstrated, an appropriate location within the UGS small planning areas was determined by repeating the above methodology.

1.5. Limitations & assumptions

The UGS was prepared over a two month period with the primary objective to review land capacity to accommodate future projects dwelling and industrial growth until 2036. The study was prepared as a desktop exercise by Strategic Planning Council Officers and GIS technical assistance. No ground truthing or testing was undertaken of recommendations due to time and resource limitations. Overall this report provides a documented approach to reviewing growth requirements, identifying potential zoning shortfalls and subsequent recommendations for consideration in the new planning scheme. This study was undertaken as a high-level planning exercise and has been informed by a series of underlying assumptions and data inputs summarised below.

1.5.1. Assumptions

In order to best prepare and deliver the UGS a number of specific assumptions were made to provide consistency and clarity in approach. These assumptions are summarised below:

GIS data assumptions

- Developed land was identified using the latest DCDB (January 2014) based on zoned lots shown as being subdivided. Extensive ground truthing was not undertaken, rather relied on up to date advice from the Development Assessment team.
- Undeveloped land was identified using the latest DCDB (January 2014) based on suitably zoned lots not yet subdivided.
- Zoned land was based on the current Whitsunday Shire Planning Scheme 2009 (WPS) and Bowen Shire Planning Scheme 2006 (BPS).
- Land classified as developed reflects land parcels only (not including roads, parks etc).
- Land classified as undeveloped reflects development parcels as a whole (not taking into account estimates for future roads, parks etc.)

Residential dwelling distributions assumptions

- Estimated single and multiple dwelling numbers were split based on assigned percentages apportioning each residential zone an appropriate share of dwelling types.
- ‘Other dwellings’ identified in the Economic and Population Study was excluded as these uses were not expected to be developed within a residential zone.

Demand analysis assumptions

- Residential dwelling distribution assumptions developed are assumed to be correct and achievable.
- Plot ratios provided in the dwelling and employment projections for industrial land are assumed to be correct.

Constraints assumptions

- Given this has not been completed the entire study is based on the assumption that all land is unconstrained.

2. Study Area

This section provides a brief summary as to the physical, socio-economic and political attributes of the Study Area.

2.1. Socio-economic & physical context

WRC is situated in the heart of tropical North Queensland, incorporating the towns of Bowen, Collinsville, Proserpine and Airlie Beach. Spread over 23,000 square kilometres this region consists of a vast landscapes from sprawling cattle plains and coal fields to the west and fertile agricultural soil and rainforest laden peaks the east, all within close proximity to the Great Barrier Reef and 74 Whitsunday Islands.

The local government area depends largely on its nationally significant horticulture and agriculture industry, with a variety of fruit, vegetables, cane, cattle and seafood produced in the area. The region also benefits from a strong tourism foundation and increasing resource and industrial development.

In light of these economic drivers, it has been identified that the region is likely to experience strong population growth throughout the timeframe of the new planning scheme. These estimates are provided in Table 2 below.

Table 2: 2013 – 2036 Population and Employment Projections – Modest and All Potential Growth Scenarios (Norling Consultancy, 2013).

Location	2013 Population	2013 Jobs	2036 Population	2036 Jobs	2013-2036 Population Difference	2013-2036 Job Difference
Modest Growth Scenario						
WRC Area	33,100	16,200	47,200	21,100	+14,100	+5,900
All Potential Growth Scenario						
WRC Area	33,100	16,200	55,000	26,100	+21,900	+9,900

The table above highlights the anticipated extent of growth across the WRC region. These details will be further broken down into individual small planning areas throughout the following chapters, highlighting the population shifts to 2036.

2.2. Political context

The WRC area is influenced by a number of political factors. These political attributes result from both local and state policy positions and have the potential to affect the way in which WRC manages its growth and development.

The WRC area has been identified as an area likely to undergo significant change as a result of state and local political influences. The key policy influences affecting the region include but are not limited to:

- Proposed Whitsunday Coast Airport Priority Development Area (WCAPDA);
- Introduction of the Temporary Local Planning Instrument 02/2013 Bowen Flooding and Storm Tide Regulation (TLPI 02/2013);

- Expansion of the APSDA;
- Proposed GBSDA; and
- Release of the new single State Planning Policy (SPP).

2.2.1. Whitsunday Coast Airport Priority Development Area

The proposed WCAPDA was formally requested by WRC on the 14 January 2014. The purpose of the Priority Development Area (PDA) is to facilitate the development of land for economic development or community purposes, in particular the upgrade of airport facilities to an international standard. Once declared by the State this site will be subject to a development assessment process separate to that under the SPA, allowing for the more timely development of land.

The WCAPDA intends to promote and encourage further economic development across the WRC region, providing the following key industry benefits:

- Agricultural industry: The ability to accommodate integrated transport logistics (air, rail and road) for key regional agricultural exports such as fruit, vegetables and seafood;
- Tourism industry: Upgrading of the airport facilities to provide greater domestic and international services; and
- Resources industry: Provision of Fly in – Fly out (FIFO) links to the Bowen and Galilee Basins and other regional airports such as Emerald and Moranbah.

The proposed WCAPDA presents a number of opportunities for the WRC area, not only directly supporting the industries on which the WRC local government relies, but also increasing employment and development opportunities throughout the region.

2.2.2. Temporary Local Planning Instrument 02/2013 Bowen Flooding and Storm Tide Regulation

The TLPI 02/2013 was adopted by WRC in December 2013 and is applicable to the *Bowen Shire Council Planning Scheme* 2006 (BPS). This temporary planning instrument takes into account the Queensland Governments planning reform for more resilient floodplains and subsequent release of coastal hazard mapping guidelines and information.

The TLPI 02/2013 is operational for 12 months from its date of effect and acts to provide greater guidance for development in areas particularly affected by flooding or storm tide. This TLPI ensures that development is designed and located in accordance with relevant state guidelines and up to date flood data, minimising potential adverse impacts of flooding and storm tide on new and existing developments.

The introduction of the TLPI 02/2013 and its mapping enables WRC to better manage and deliver land use and infrastructure decisions that will reduce the risk of flooding and storm tide on future residential and industrially zoned land.

2.2.3. Abbot Point State Development Area

The APSDA was declared by the Queensland Government in June 2008 to provide a hub for the establishment of large scale industrial development and essential infrastructure corridors. This site is located approximately 20km west of Bowen and has access to an existing deep water port facility (Port of Abbot Point), existing transport networks (Bruce Highway) and nearby Bowen and Galilee Basins and the North West Mineral Province.

The APSDA is approximately 16ha in size and has recently gained federal approval for an expansion of the existing terminal (T1), along with the creation of two additional offshore berths to facilitate the transportation of up to 250Mega-tonnes per annum (Mtpa) of coal. This approval has enabled the site to export an additional 200mtpa of coal, transforming the site into one of

Australia's most significant emerging bulk port precincts. Development of this site is further supported by the proposed GBSDA discussed below.

Future development of the APSDA area has the ability to greatly shape the socio-economic fabric of the WRC local government area. The APSDA may not only drive growth in the industrial industries of the region but also increase the area skilled workforce and population. For these reasons it is important that WRC appropriately respond to this development.

2.2.4. Galilee Basin State Development Area

The proposed GBSDA is the Queensland Governments approach to supporting existing and future development in the Galilee Basin. This basin is located 200km west of the Bowen Basin and covers an area of approximately 247,000km^2 with vast deposits of the states high-volatile, low sulphur thermal coal.

The purpose of the GBSDA is to assist in the facilitation of necessary rail, water, power and other infrastructure in order to optimise development in the Galilee Basin. Currently the State has announced its support for two common-user rail corridors (South to North and West to East) from the Galilee Basin to the Port of Abbot Point as well as a mining services precinct to the north of the Basin. The current boundary of this proposed SDA is in dynamic state, with the Queensland Government to refine this boundary once proposed proponent corridors are finalised.

The GBSDA encompasses a substantial amount of land with the WRC local government area, namely that surrounding Collinsville and the greater Bowen area. Development within the proposed GBSDA has the ability to affect the social-economic attributes of the WRC area, creating additional economic and employment opportunities and increasing the resident population, consequently influencing and impacting on the land use and infrastructure delivery plans of WRC.

2.2.5. State Planning Policy

The new SPP came into effect in December 2013. This document defines the Queensland Governments policies on matters of state interest in land use planning and development; establishing a new approach that simplifies and clarifies the states interests. The introduction of the new SPP replaces 14 previous individual SPPs and allows the state to provide more clarity to local governments, ensuring each appropriately reflects and balances the state interests within their region.

Under the new SPP the state has established five broad themes to encompass a multitude of 16 individual state interests. These themes include:

- Liveable communities and housing;
- Economic growth;
- Environment and heritage;
- Hazards and safety; and
- Infrastructure.

A range of non-statutory guidance material has been made available to assist local governments in implementing the states interests as well as new interactive mapping to provide visual representation of the applicable policies. The introduction of the new SPP has the potential to influence land use and development planning within the WRC area. This policy provides a variety of region specific information (particularly through the mapping) which must be appropriately reflected within this UGS and the new planning scheme.

3. Growth estimates & demand analysis

This section of the report highlights the growth estimates and demand analysis undertaken for each of the investigated study areas. For the purpose of this report, the consistent region-wide assumptions will be detailed below, with small area specific assumptions illustrated separately within the subsequent individual area chapters contained within Part 2.

3.1. Residential estimates & assumptions

In order to progress the dwelling and employment projections a number of density and distribution assumptions were required. These assumptions create a consistency in approach across the WRC area and set clear benchmarks to guide development in the future.

3.1.1. Dwelling density assumption

The purpose of the dwelling density assumption is to set an appropriate density standard for each of the residential zones within the WRC area. This was undertaken upfront to provide a consistency in approach when undertaking demand and capacity analyses within the UGS. The assumed density of residential development across the WRC local government area is illustrated below in Table 3.

Table 3: Assumed residential density for the WRC local government area until 2036.

Zone	Unconstrained land (du/ha)
Low density residential	10
Low-medium density residential	20
Mixed use	30
Rural residential	2
Emerging community	8

Despite the creation of this density assumption, it is recognised that it may not be achieved in all areas due to existing development and other constraining factors (such as overlays). Similarly in some cases, it is noted that the desired density may be exceeded.

3.1.2. Dwelling estimates and assumed dwelling distribution

The dwelling and employment projections provided an array of data indicating the potential speed and composition of growth through the WRC area. The key statistic taken from this work is that of the dwelling projections per dwelling type. This data was provided in intervals of 5 years from 2013 to 2036. The details of the dwelling estimate data is available in Appendix B.

To appropriately reflect the dwelling estimates of the dwelling and employment projections a conversion was undertaken to establish the distribution of anticipated single and multiple dwellings across each residential zone. To better allow for variations in urban form across the region, an assumed regional distribution range was produced. This range (detailed in Table 4) reflects the desired distribution or proportion of dwelling types across the WRC area.

Table 4: Regional range of dwelling type distribution.

Zone	Single dwellings	Multiple Dwellings	Other dwellings
Low density residential	60-95%	20-30%	-
Low-medium density residential	10-35%	65-80%	-
Mixed use	0%	0-15%	-
Rural residential	0-15%	0%	-
Emerging community	0%	0%	-

This assumed distribution range was applied to each of the small planning areas and appropriately tailored to reflect the attributes of each. This process took account of the:

- Proportion of single and multiple dwellings currently within the residential zones of the small planning areas;
- Proportion of land currently developed within the residential zones; and
- Objectives and zoning policy of the new planning scheme.

When producing this assumption for each Small Planning Area the total number of additional single and multiple dwellings were taken into account and allocated to a particular residential zone. For this reason, it can be seen that the total distribution percentage of each dwelling type is always equal to 100%.

3.2. Residential demand analysis

The purpose of the demand analysis was to determine the additional number of single and multiple dwellings anticipated within each residential zone by 2036. To achieve this, the dwelling estimates supplied in the dwelling and employment projections were applied to the assumed dwelling distributions of each small area.

3.3. Industrial estimates & assumptions

The dwelling and employment projections provided floor space estimates for industrial growth through the WRC area to 2036. This data was provided in intervals of 5 years from 2013 to 2036. The full extent of the dwelling estimate data is available in Appendix C.

No key assumptions were used in the analysis of industrial land. For the purpose of this report estimates were maintained in the format presented by the dwelling and employment projections.

3.4. Industrial demand analysis

No further industrial demand analysis was necessary. The dwelling and employment projections were presented in a manner consistent with the format of the capacity analysis.

4. Residential land capacity analysis

4.1. Introduction

The residential land capacity analysis was undertaken to determine the WRC area's ability to accommodate anticipated residential growth till 2036. This analysis was informed by a number of inputs including:

- Dwelling and employment projections by Norling Consulting;
- GIS data;
- Assumed dwelling density; and
- Assumed distribution of residential dwellings.

The results produced by this analysis demonstrate not only where a shortfall or surplus of residential land exists but also indicates where additional land may need to be allocated to better meet future needs. The following section provides an outline of residential capacity analysis with specific results of these analyses detailed in the individual chapters of this report.

4.2. Findings & recommendations

The findings of the demand and capacity analyses will assist WRC in responding to the regions anticipated population growth and the allocation of relevant zones. Each of the following chapters in Part 2 introduces a summary of results table, before establishing the key findings of the calculations and a succinct list of recommendations for each of the small planning areas. Full calculations for all of the small planning areas investigated are available in Appendix D.

4.3. Residential growth beyond 2036

This section of the report details recommended residential land use considerations beyond 2036, particularly the allocation of the Emerging community zone. In light of the findings of the capacity analyses it is important the WRC recognise the potential for growth beyond the lifetime of the new planning scheme and accompanying PIP.

It is important that new development (especially greenfield development) is facilitated in an orderly, sequenced and logical manner. In particular allowing for long term growth and sufficient land supply beyond the 2036 timeframe.

To ensure land use planning and development is managed effectively into the future land should be identified for future growth and zoned as Emerging community. The purpose of the Emerging community zone is to identify land that is suitable for urban purposes and conserve land that may be suitable for urban development in the future. The use of this zone also ensures that land is supplied in a timely and appropriate manner, preventing out-of sequence development and an oversupply of developable land.

4.4. Summary

The undertaking of the UGS enables WRC to not only identify the capacity of the study areas to accommodate predicted future growth but also assists WRC in recognising land that can be safeguarded against inappropriate development beyond the life of the new planning scheme. This enables land use planning, development and infrastructure provision across the WRC area to be appropriately managed and supplied as population growth occurs across the study area.

5. Industrial land capacity analysis

5.1. Introduction

This section establishes an indication as to the location and quantity of industrial land needed within the Study Area up until 2036. This analysis was informed by several pieces of work, namely the:

- Dwelling and employment projections provided by Norling Consulting; and
- GIS data.

The results produced in this analysis demonstrate not only where a shortfall or surplus of industrial land exists but also indicates where additional land may need to be allocated to better meet future development needs. The following provides a brief insight into the UGS industrial capacity analysis with specific results of these analyses detailed in the individual chapters of this report.

5.2. Findings and recommended response

The findings of the demand and capacity analyses will assist WRC in responding to future development in the industrial sector and associated infrastructure demand. Each of the following chapters introduces a summary of results table, before establishing the key findings of the calculations and a succinct list of recommendations for each of the small planning areas. Full calculations for all of the small planning areas investigated are available in Appendix F.

5.3. Industrial growth beyond 2036

This section of the report details recommended industrial land use considerations beyond 2036, particularly the allocation of the Industry investigation zone. After considering the results of the industrial capacity analyses it is important that WRC recognise the potential for growth beyond the lifetime of the new planning scheme and PIP.

To ensure new industrial development is facilitated and located in a timely, sequenced and logical manner, it is important that potential development growth beyond 2036 is considered. Forward planning for development in this way, ensures that WRC doesn't not make decisions that impede the growth potential of the future development, creating long term bottlenecks or reductions in land safety, value or availability.

The purpose of the Industrial investigation zone is to identify and protect land that may be suitable for industrial activities following further detailed planning, investigations and studies to determine the suitability of the land for industrial use.

Establishing Industrial investigation zones also allows WRC to provide guidance to future industry looking to develop in the WRC area. Through this mechanism WRC will be able to pre-emptively designate appropriate land taking into account existing industrial corridors and the logical sequencing of potential development.

5.4. Summary

The undertaking of this capacity analysis for industrial development enables WRC to not only identity the capacity of the Study Area to accommodate predicted future growth but also assists WRC in recognising land that can be safeguarded against inappropriate development beyond the life of the new planning scheme. This enables land use planning, development and infrastructure provision across the small planning areas of the UGS to be appropriately managed and supplied as investment and increased industrial interest occurs across the study area.

6. Land capacity conclusions

This section of the report summarises the findings and recommendations for each study area. In particular this section discusses the capacity of the study areas existing residential and industrial zoned land to accommodate anticipated growth to 2036 and provide identify the potential location and quantity of additional residential and industrial land required to accommodate future growth projections of the WRC area.

Findings are summarised in a table and supporting maps. Mapping demonstrates WRC's response to the recommendations of this report and are intended to be incorporated within the zoning of the new planning scheme and accompanying PIP.

Part B

Small Area Studies

7. Bowen

7.1. Bowen Study Area

The Bowen Study Area is located approximately 200km from Townsville (to the north) and Mackay (to the South) and within 100km of the Whitsunday Islands and the Bowen Basin, making it well located to take advantage of a variety of economic and social opportunities associated with the resource, agricultural and tourism industries. The Bowen Study Area is illustrated in Map 1.
The small planning areas to be examined in this report are:

- Abbot Point – Merinda;
- Bowen North; and
- Bowen South.

7.1.1. Physical and socio-economic context

The Bowen Study Area is located in the north of the WRC local government area, extending east to Splitters Creek and west to Rose Bay, with the southern end of the Study Area continuing to Euri Creek and Mount Gordon. Collectively the three small planning areas of the Bowen study represent approximately 39,666.3ha of land, the majority of which is used for rural purposes with moderate supplies of industrial, residential and commercial land.

The area's local economy is largely based on its nationally significant horticulture industry, commercial fishing and aquaculture with growth also being demonstrated in the resource industry as a result of its proximity to the Bowen and Galilee Basins.

With the expansion of the APSDA and the proposed GBSDA within the Abbot Point – Merinda small area, it is anticipated that the Bowen Study Area will experience a variety of socio-economic changes, with population and employment figures expected to rise as a direct result of the construction and operation phases of development and associated supporting industries.

The population and employment projections of the Bowen Study Area have been summarised below in Table 5. It is noted however that the projections of both scenarios only take into account permanent jobs and do not reflect temporary non-resident workforces that may be associated with the APSDA/GBSDA through its construction phase.

Table 5: 2013 – 2036 Population and Employment Projections – Modest and All Potential Growth Scenarios (Norling Consultancy, 2013).

Location	2013 Population	2013 Jobs	2036 Population	2036 Jobs	2013-2036 Population Difference	2013-2036 Job Difference
Modest Growth Scenario						
Abbot Point – Merinda	800	400	900	700	+100	+300
Bowen North	8,200	3,800	8,900	4,300	+700	+400
Bowen South	1,000	300	2,800	400	+1,800	+100
TOTAL	10,000	4,500	12,600	5,400	+2,600	+800
All Potential Growth Scenario						
Abbot Point – Merinda	800	400	1,000	1,000	+200	+600
Bowen North	8,200	3,800	9,700	4,800	+1,500	+900
Bowen South	1,000	300	4,000	600	+3,000	+300
TOTAL	10,000	4,500	14,700	6,400	+4,700	+1,800

7.1.1.1. Abbot Point – Merinda

The Abbot Point – Merinda Small Planning Area covers the APSDA and the rural area to the south extending to Euri Creek. This small area also includes the township of Merinda to the east of the APSDA and the rural and open space to the north, extending east to the Don River, where it boarders with Bowen North (Map 2).

The Abbot Point– Merinda area, being 35,366.8ha in area, is largely used for rural purposes due to the agricultural productivity of the land. Currently and estimated 24.3ha of land is zoned for residential purposes with 15,665.7ha of land for industrial. Of this industrial land 15,565.6ha is contained within the APSDA. It is also noted that an additional 28.7ha of industrial land exists outside of the boundary of this Small Planning Area. Given the size, location and zoning of these parcels it has have been considered appropriate to include them within the results of this study.

As at the 2011 Census approximately 23% of persons employed in this area were engaged in agriculture, forestry and fishing with 12% employed in construction and 8% in health care and social services. Given the expansion of the APSDA these numbers are expected to shift slightly with potential increases in the mining, manufacturing and construction industries.

As identified in Table 5, the Abbot Point – Merinda area is anticipated to experience limited population growth and modest employment growth through to 2036 under both growth scenarios. Commensurate with a modest growth scenario, both population and employment figures are expected to experience limited growth with small increases anticipated to 2036. The all growth potential scenario on the other hand anticipates moderate growth in both population and employment figures, with it assumed that Abbot Point and its associated industries will continue to develop and expand.

As a result of this areas location, it is impacted by a limited number of physical attributes. Of these attributes the most constraining in terms of land development capacity are:

- Class A and B agricultural land located throughout the area;
- High susceptibility to flooding across the majority of the area;
- Localised storm tide inundation to the north of the area;
- Localised susceptibility to bushfire; and

- Localised areas of state environmental significance in the form of regulated vegetation and wetlands.

In addition to these physical attributes, the area is also limited by a current lack of urban infrastructure available to service this area.

7.1.1.2. Bowen North

The Small Planning Area of Bowen North comprises the northern part of Bowen's urban locality, extending south to Doughty's Creek. This area also encompasses Bowens Central Business District (CBD), Rose Bay and Queens Beach as well as the rural lands to the east of the Don River, north of Richmond Road (Map 3).

Bowen North contains a mix of land uses, being for both urban and rural purposes, having a total area of 1,869.5ha; 416.9ha of which is zoned for residential purposes and 11.2ha for industrial. This area supplies a range of dwelling densities as well as a mixture of district, local and neighbourhood scale commercial centres to service the greater Bowen area.

According to 2011 Census data for this Small Planning Area an estimated 16% of the employed population worked for the construction industry, closely followed by transport, postal and warehousing work (14%) and the agriculture, forestry and fishing industry (13%). Similarly to the Abbot Point – Merinda area, Bowen North is anticipated to experience an increase in employment within the resource industry and other associated supporting industries.

As demonstrated in Table 5, Bowen North is expected in experience a significant increase in population under both a moderate and all potential growth scenarios, limited largely by the physical constraints of the land. As the major centre for the greater Bowen area, employment is similarly anticipated to experience moderate growth, with the majority of jobs anticipated to result from mining and transportation-related industrial uses as well as tourism, employment servicing and agriculture servicing industries.

Despite the abundance of flat land available within this Small Planning Area its future development capacity is greatly limited. The physical attributes constraining development within this area include:

- Class A and B agricultural land to the west of the area;
- High susceptibility to flooding throughout the area;
- Localised storm tide inundation along the coastline; and
- Localised areas of state significance including regulated vegetation and wetlands.

7.1.1.3. Bowen South

The Bowen South Small Planning Area spans 2,430.1ha and encompasses the southern portion of Bowen's urban locality including the constrained land to the south of Doughty's creek such as the Bowen salt works and the Bowen Airport. This area extends south, covering the small residential pockets south of the Airport and along Ocean View Drive, with the southern boundary extending past Mount Gordon (Map 4). Currently the Bowen South Small Planning Area has approximately 558.7ha of residential and 107.6ha of industrially zoned land.

Bowen South comprises of two relatively low density urban areas along the Bruce Highway, the first just south of the Bowen Airport, in the north of the Small Planning Area and the second a greenfield site to the east of the Bruce Highway in the vicinity of Mount Gordon. As at the 2011 Census it was estimated that 16% of the residential population were employed in the agriculture, forestry and fishing industry, with the manufacturing and construction industries both engaging an approximately 11% of the population. In line with the other small planning areas of the Bowen Study Area this area is expected to show shifts in employment industries with increases to the construction, manufacturing and resources workforce.

Of the three small planning areas investigated, Bowen South is expected to experience the largest increase in population growth under both the moderate growth and all potential growth scenarios (Illustrated in Table 5). Employment in the area however is anticipated to experience very limited growth compared Abbot Point – Merinda and Bowen North. This anticipated localisation of employment growth results from development in the APSDA and growth in other industries such as agriculture and tourism to the north. Consequently it is expected that Bowen South will grow as a dormitory' suburb; housing the workforce of the other small planning areas and supporting the substantial population growth predicted to establish within the area.

The area of Bowen South has limited physical constraints in the provision of residential and industrial land. The key physical attributes of this area include:

- Class A and B agricultural land throughout the majority of the area;
- Localised flooding along the coastline;
- Localised storm tide inundation along the coastline; and
- High susceptibility of bushfire throughout the area.

7.1.2. Political context

There are four key political attributes anticipated to influence the development of the Bowen study area. In addition to earlier discussion of these matters in section 2.2 the following key considerations relevant to the Bowen Study Area have been summarised below.

7.1.2.1. Temporary Local Planning Instrument 02/2013 Bowen Flooding and Storm Tide Regulation

TPLI 02/2013 applies only to the BPS area, and affects only land within the Bowen Study Area. The TLPI places specific requirements where development is proposed within the mapped flood hazard area. Whilst the TLPI does not necessarily prohibit development within the hazard area, it does require specific design outcomes (i.e raised building design) and create increased pressure of areas not affected by flooding or storm tide to accommodate urban growth.

The Bowen North Small Area is most affected by the hazard mapping; therefore an increased reliance has been placed on unconstrained areas of Bowen South to accommodate the majority of the estimated residential growth for the Study Area.

7.1.2.2. Abbot Point State Development Area

Situated in greatest proximity to the APSDA future opportunities to provide accommodation and services from within the Bowen Study Area have been identified. In particular this includes, but is not limited to:

- Provision of both temporary and permanent accommodation of workforce throughout the Bowen Study Area
- New industrial development in the general vicinity of Merinda
- Opportunities for local business and commercial operators, throughout the Bowen Study Area to service development at ABSDA

7.1.2.3. Galilee Basin State Development Area

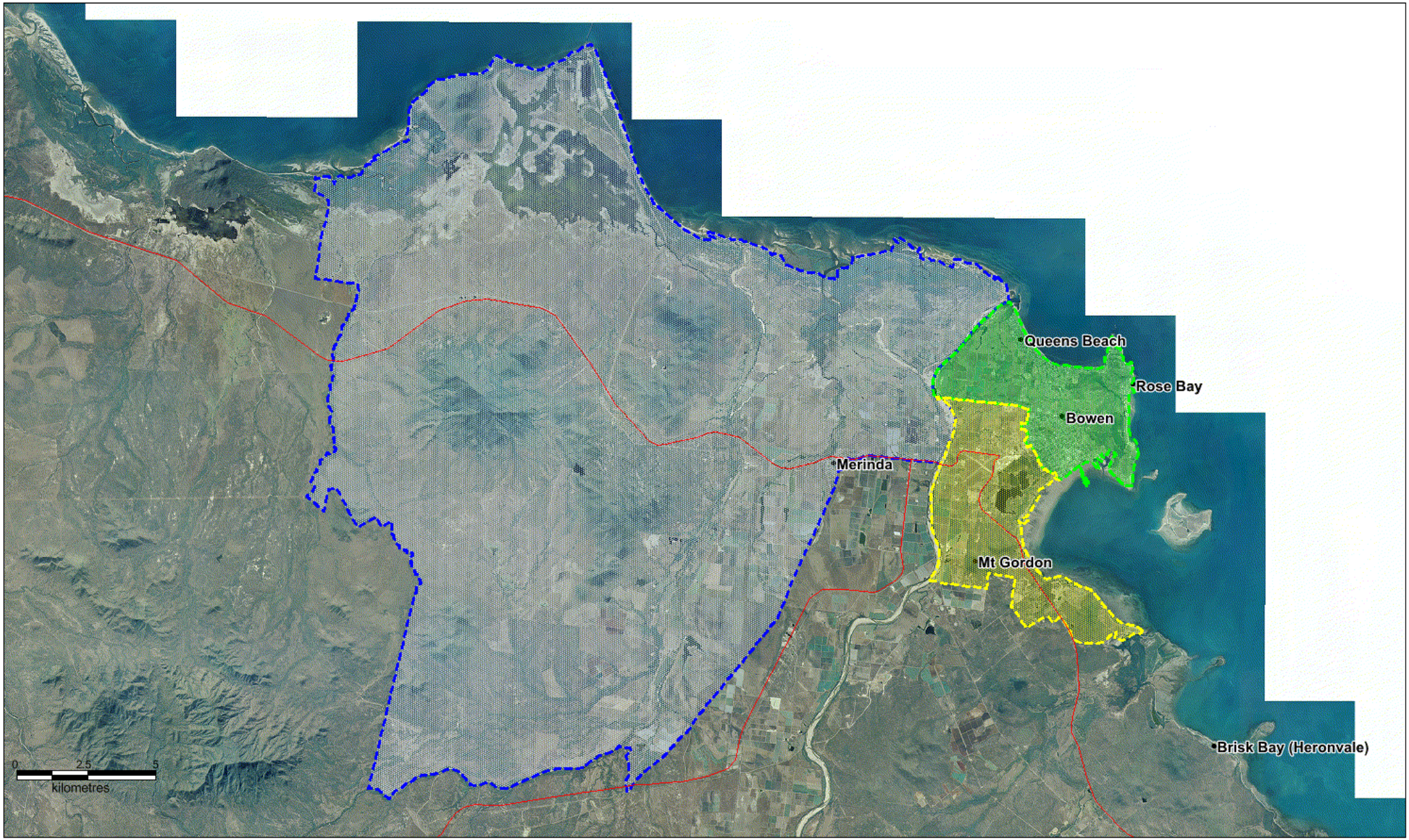
The Bowen Study Area is dissected by the proposed GBSDA. Whilst it is understood that the boundaries of this SDA are subject to change, development of a rail corridor provides opportunities to provide accommodation, or industrial/business servicing the construction and operation of the corridor similar to that identified for the APSDA.

7.1.2.4. State Planning Policy

The key themes and attributes of SPP, particularly in relation to the Bowen Study Area outlined below in Table 6.

Table 6: Key anticipated impacts of the SPP on the Bowen Study Area to 2036.

Theme	Attributes	Impacts
Liveable communities & Housing	▪ Housing supply and diversity: Land for development should be located in areas that are accessible, well connected to services, employment and infrastructure.	▪ Bowen encompasses urban centres which are currently lack services and infrastructure. ▪ Urban growth needs to be aligned with the PIP to ensure infrastructure and services are available/have capacity when development turns on.
Economic growth	▪ Agriculture: Protecting class A and B agricultural land by: avoiding its fragmentation, avoiding non-agricultural development on the land and maintaining the lands condition.	▪ High amount of Class A and B agricultural land present. ▪ Development of this land needs to be well considered and appropriately justified before reallocation away from a rural use.
	▪ Mining & extractive resources: Consider the importance of the mining and resource industry, the economical supply of construction materials and the avoidance of land use conflicts.	▪ APSDA and GBSDA both encroach on the Bowen study area. ▪ Appropriate placement of supporting industrial land needs to be considered. ▪ Potential conflicts between urban (residential) and industrial land uses may need to be addressed.
Hazards & safety	▪ Natural hazards: Natural hazards are identified and appropriately avoided or mitigated to maintain natural processes and avoid cumulative increases in severity.	▪ Flooding, bushfire and coastal hazards are all identified in this study area. ▪ Development needs to be suitably designed and constructed to reduce developments susceptibility to natural hazards (Bushfire and flooding). ▪ Development needs to be appropriately located to avoid the risk of natural hazards (Coastal hazards).



Legend

- Town
- Major Road
- Abbot Point Merinda
- Bowen North
- Bowen South

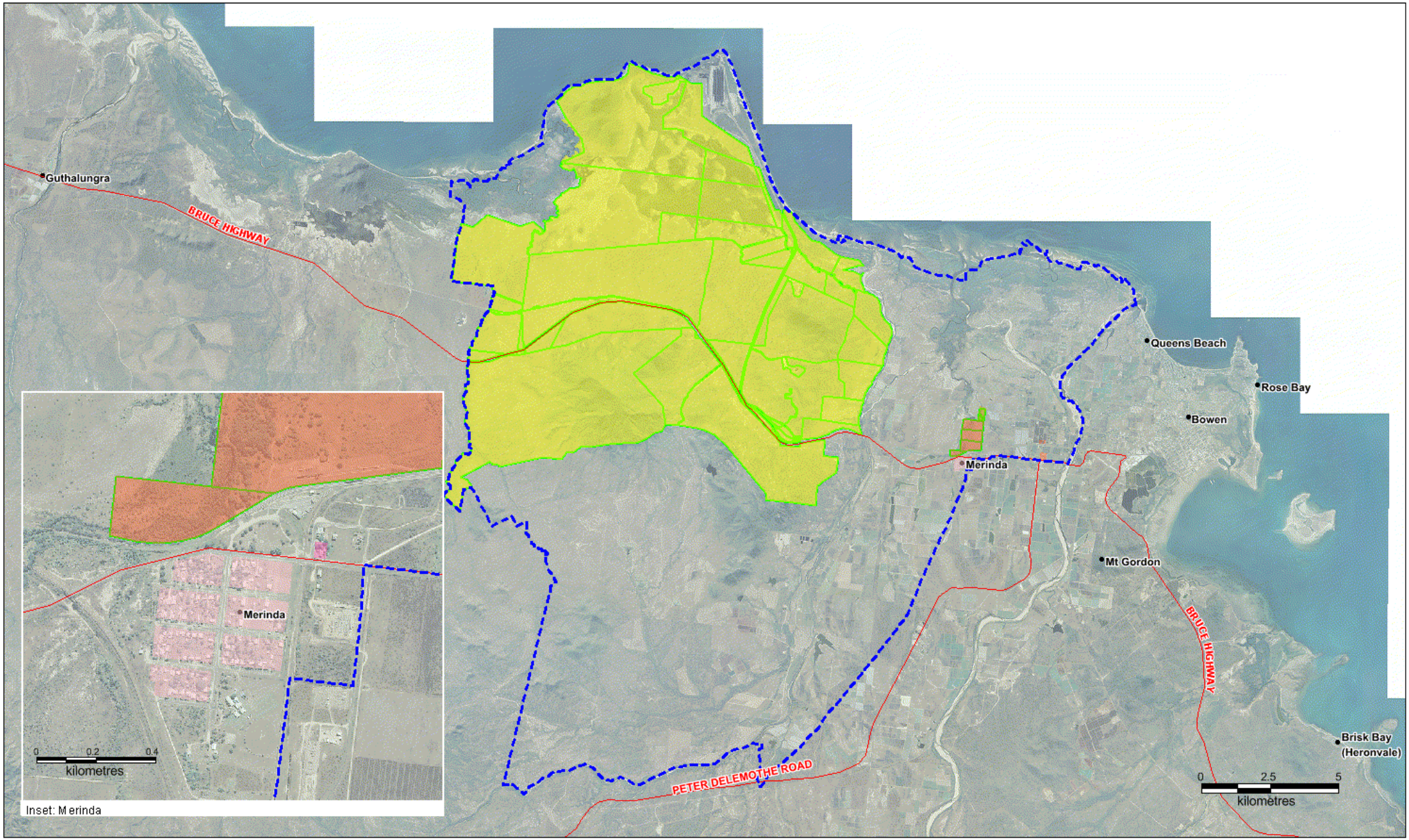
Created By: M Ruff

Map Scale: Scale 1:130,000 (A3)

Date Created: 31/03/2014

Title:

Map 1
Urban Growth Study Boundary
Bowen



Legend

- Town
- Major Road

Urban Growth Study Area

- Abbot Point Merinda
- Undeveloped

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural Residential
- Emerging community
- Industry
- Industry investigation area

Created By: M Ruff

Map Scale: Scale 1:130,000 (A3)

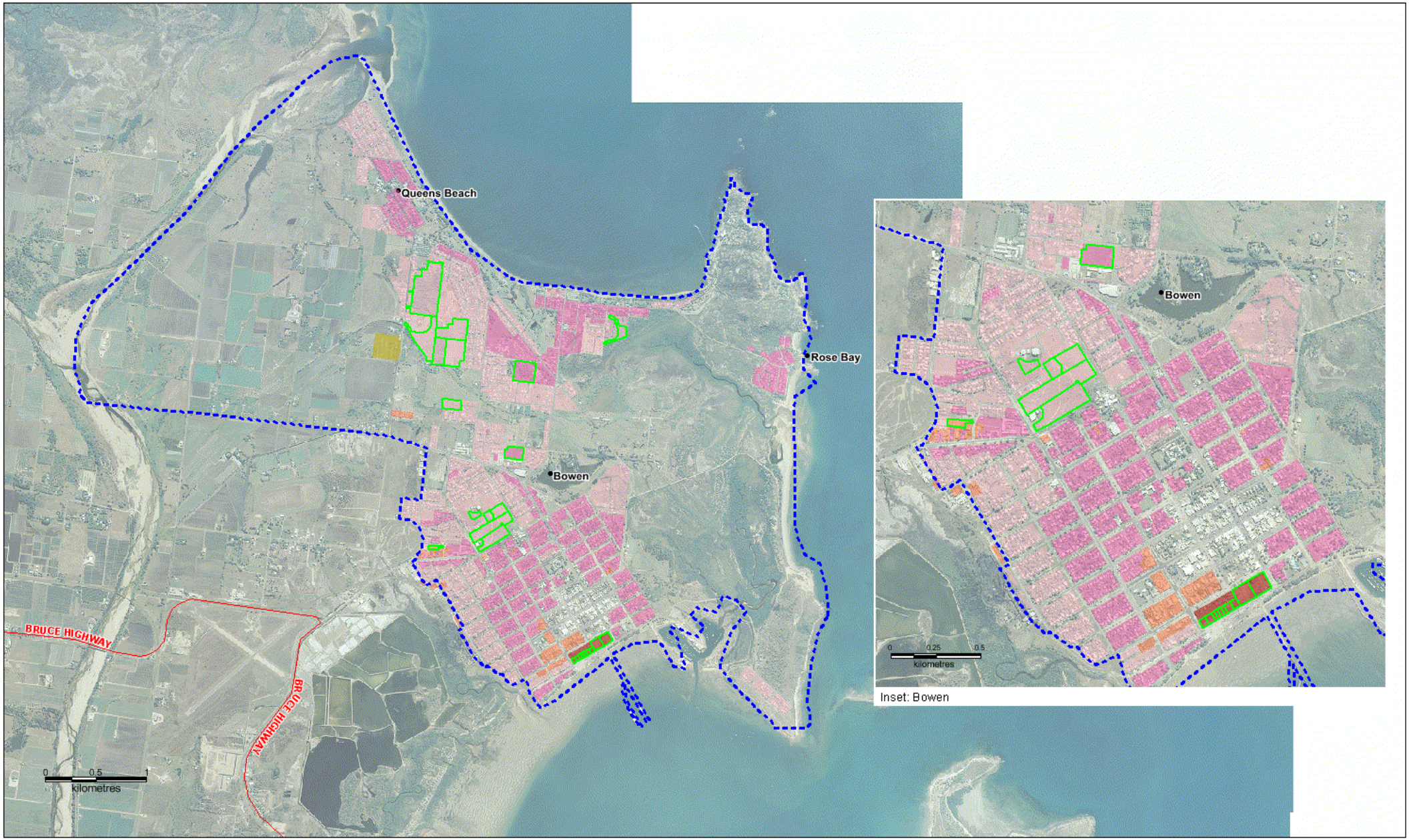
Date Created: 03/04/2014

Title:

Map 2

Residential and industrial land capacity

AbbotPoint/Merinda



LEGEND

- Town
- Major Road
- Urban Growth Study Area
- Bowen North
- Undeveloped

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural Residential
- Emerging community
- Industry

Created By: M Ruff

Map Scale: Scale 1:35,000 (A3)

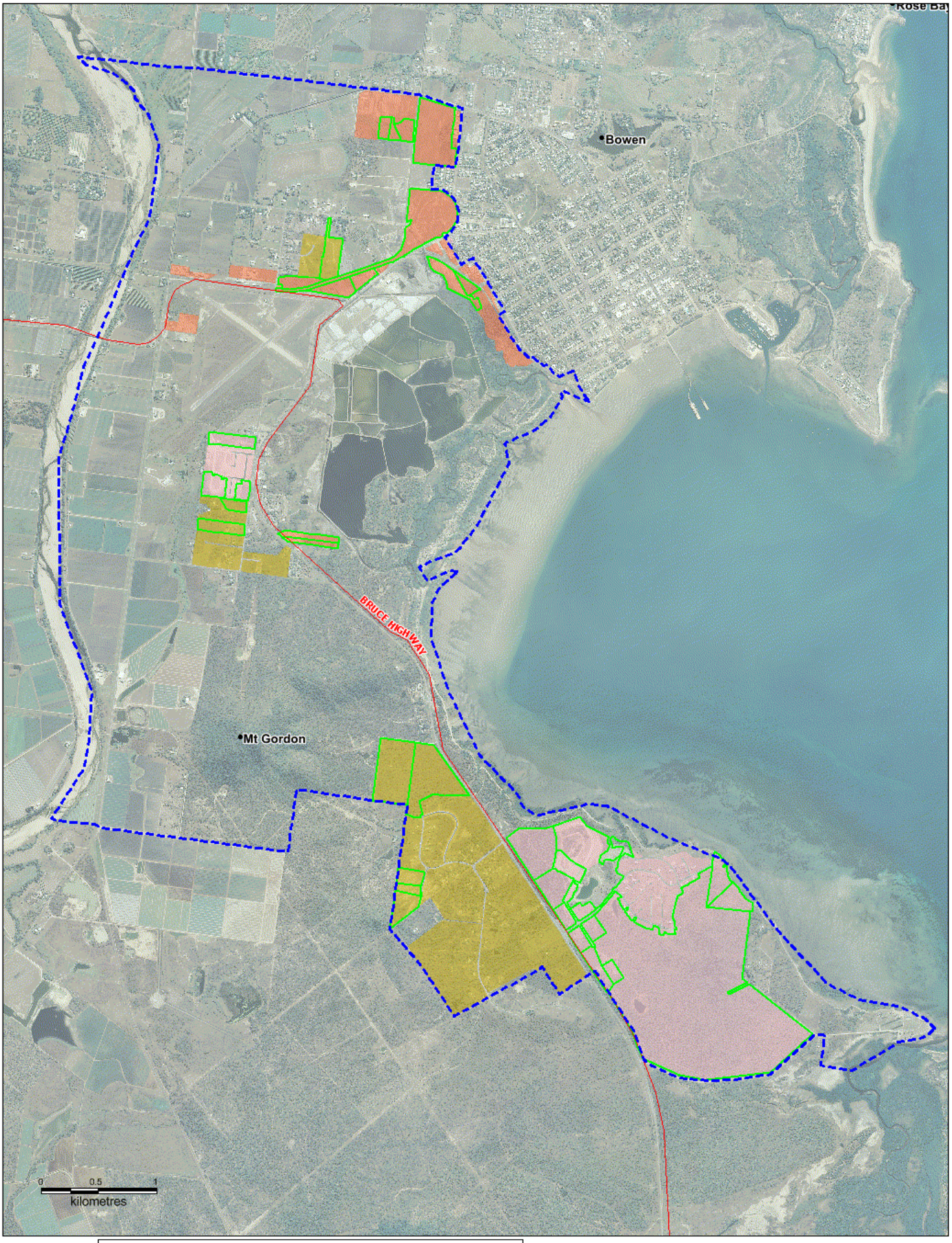
Date Created: 21/03/2014

Title:

Map 3

Residential and industrial land capacity

Bowen North



LEGEND

- Town
- Major Road

Urban Growth Study Area

- Bowen South
- Undeveloped

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural Residential
- Emerging community
- Industry
- Industry investigation area

Created By: M Ruff

Map Scale: Scale 1:30,000 (A3)

Date Created: 03/04/2014

Title: **Map 4**

Residential and industrial land capacity

Bowen South

7.2. Bowen growth estimates & demand analysis

7.2.1. Residential assumptions & demand analysis

Residential estimates and assumptions were developed for the three small planning areas of the Bowen study area. The assumed distribution and subsequent demand analysis is demonstrated in Table 7 with specific details for each Small Planning Area detailed below.

Table 7: Results of the demand analysis for the Bowen study areas.

Zone	Additional Single Dwellings		Additional Multiple dwellings	
	Assumed distribution (%)	Dwelling estimates (du)	Assumed distribution (%)	Dwelling estimates (du)
Abbot Point – Merinda				
TOTAL	100	53.0	100	3
Low density residential	85	45.1	20	.6
Low-medium density residential	0	0.0	80	2.4
Mixed use	0	0.0	0	0.0
Rural residential	15	8.0	0	0.0
Emerging community	0	0.0	0	0.0
Bowen North				
TOTAL	100	118.0	100	334.0
Low density residential	60	70.8	20	66.8
Low-medium density residential	35	14.3	65	217.1
Mixed use	0	0.0	15	50.1
Rural residential	5	5.9	0	0.0
Emerging community	0	0.0	0	0.0
Bowen South				
TOTAL	100	463.00	100	297.0
Low density residential	95	439.8	80	237.6
Low-medium density residential	0	0.0	20	59.4
Mixed use	0	0.0	0	0.0
Rural residential	5	23.2	0	0.0
Emerging community	0	0.0	0	0.0

7.2.1.1. Abbot Point – Merinda

The assumed distribution of residential dwelling types for the Abbot Point – Merinda Small Planning Area has been developed taking into expected political and socio-economic changes including but not limited to:

- Limited growth in population; and
- Moderate growth in employment.

As demonstrated in Table 7 the assumed residential dwelling distribution of Abbot Point – Merinda falls generally within the regional distribution range (Chapter 1: Section 3.1.2) with the exception of the Low-medium density residential zone. This figure differs slightly from the regional range in response to the existing quantity and characteristics Low-medium density residential zoned land within this Small Planning Area.

The assumed distribution of the Abbot Point – Merinda Small Planning Area has been developed taking the following attributes into account:

- Historical settlement pattern of single dwellings on large lots (800m^2 or larger);
- Limited quantity of multiple dwellings located in the Low and Low-medium density residential zones;
- Limited quantity of Low-medium density residential land zoned;
- Limited development of multiple dwellings anticipated;
- No Mixed use zoned land; and
- Strong foundation of Rural residential zoned land.

In light of the assumed dwelling distribution for single and multiple dwellings within Abbot Point – Merinda, a demand analysis was carried out to determine the estimated number of dwellings expected within each residential zone. Through this analysis it was determined that the Low density residential zone would increase by approximately 46 dwellings with the Low-medium density residential zone to experience an increase of approximately 2 dwellings.

7.2.1.2. Bowen North

The Bowen North assumed dwelling distribution has been similarly developed based on the socio-economic and political context of the area and the distribution range for the region. Key changes anticipated within this Small Planning Area include:

- Moderate growth in population; and
- Significant growth in employment.

As illustrated in Table 7, the assumed dwelling distribution of single and multiple dwellings within Bowen North aligns with the regional dwelling distribution range (Chapter One: Section 3.1.2). This distribution was developed having regard to the following development traits of Bowen North:

- Historical settlement pattern of single dwellings on moderate sized lots (600m^2 or larger);
- Significant quantities of single dwellings within both the Low and Low-medium density residential zones;
- Moderate quantities of multiple dwellings in the Low and Low-medium density residential zoned land;
- Undeveloped Mixed use zone land available; and
- Strong foundation of Rural residential zoned land.

Using the established dwelling distribution assumptions a demand analysis was undertaken, establishing the number of dwellings to be accommodated in each zone to 2036. This analysis demonstrated that the Bowen North area is expected to experience the development of significant numbers of multiple dwellings, largely within the Low –medium density residential zone, with smaller proportion anticipated in the Low density residential zone where single dwelling are more prevalent.

7.2.1.3. Bowen South

The assumed dwelling distribution of the Bowen South area takes into account the anticipated socio-economic and political context of the Small Planning Area including but not limited to:

- Significant growth in population; and
- Limited growth in employment.

The residential dwelling distribution of Bowen South presents two anomalies when compared with the regional range of dwelling distribution (Chapter 1:3.1.2). The reasons for these shifts in assumed distribution of single and multiple dwellings in the Bowen South Small Planning Area result from:

- Significant quantities of Low density residential zoned land;
- Historical settlement pattern of single dwellings on moderate sized lots (600m^2 or larger);
- Existing multiple dwelling approvals within the Low density residential zone;
- Limited quantities of Low-medium density residential zoned land;
- No Mixed use land zoned; and
- Foundation of Rural residential zoned land.

Following the development of this assumed dwelling distribution, dwelling demand estimates were developed to establish the number of single and multiple dwellings to be anticipated within each residential zone. Within the Bowen South area it was determined that single dwellings would dominate the low-density residential zone, with limited numbers of multiple dwellings being developed across the low and low-medium density residential zones.

7.3. Bowen residential land capacity analysis

The results of the residential land capacity analysis for the Bowen Study Area are demonstrated in Table 8 overleaf.

Table 8: Results of the residential capacity analysis for the Bowen study area (*Dwelling distributed as per nominated dwelling distributions – Section 2.1)

Zone	Single Dwellings (du)			Multiple dwellings (du)			Existing capacity		
	Existing dwellings 2013	Anticipated dwellings 2036	Additional dwellings 2013-3036	Existing dwellings 2013	Anticipated dwellings 2036	Additional dwellings 2013-3036	Total additional dwellings (du)*	Estimated dwelling capacity (du)	Estimated land capacity (ha)
Abbot Point – Merinda									
Low density residential	250	303	45.0	28	31	0.8	45.8	-45.9	-4.6
Low-medium density residential			0.0			3.2	3.2	-3.2	-0.2
Mixed use			0.0			0.0	0.0	0.0	0.0
Rural residential			8.0			0.0	8.0	+7.4	+3.7
Emerging community			0.0			0.0	0.0	0.0	0.0
TOTAL			53			4.0	57.0	-41.7	-1.1
Bowen North									
Low density residential	2,412	2,530	70.8	1,144	1,478	66.8	137.6	+306.9	+30.7
Low-medium density residential			41.3			217.1	258.4	-136.2	-6.8
Mixed use			0.0			50.1	50.1	+47.7	+1.6
Rural residential			5.9			0.0	5.9	-5.9	-3.0
Emerging community			0.0			0.0	0.0	0.0	0.0
TOTAL			118.0			334.0	452.0	+212.5	+22.5
Bowen South									
Low density residential	249	712	439.8	153	450	237.6	677.4	+1,866.6	+186.6
Low-medium density residential			0.0			59.4	59.4	-59.4	-3.0
Mixed use			0.0			0.0	0.0	0.0	0.0
Rural residential			23.2			0.0	23.2	+87.0	+43.5
Emerging community			0.0			0.0	0.0	0.0	0.0
TOTAL			463.0			297.0	760.0	+1894.2	+227.1

7.3.1. Findings & recommendations

The following findings and recommendations have been developed for the three small planning areas of the Bowen study area.

7.3.1.1. Abbot Point – Merinda

The Abbot Point – Merinda Small Planning Area was identified to have no zoned developable land to accommodate future growth. With this area expected to accommodate limited population growth, it was anticipated that this small area would experience a minor deficit in land supply. This initial estimation was supported in the results of the Abbot Point – Merinda capacity analyses, with estimates indicating a land supply shortfall in the order of 1.1ha. Specific findings inferred from these results, and consequential recommendations are demonstrated in Table 9 below.

Table 9: Findings and recommendation of the Abbot Point – Merinda residential capacity analysis.

Applicable Zone	Key findings	Recommended response
Low density residential	▪ Limited additional land may be required within the urban township of Merinda (4.6ha).	▪ Additional land required. ▪ Available land supply in Merinda is limited due to physical constraints and limited infrastructure provision. ▪ Anticipated dwellings to be accommodated through subdivision of existing large residential lots within the Merinda Township.
Low-medium density residential	▪ Sufficient land exists to support anticipated multiple dwellings development.	▪ No requirement for additional zoned land. ▪ Anticipated multiple dwellings are to be accommodated through infill of existing zoned land.
Rural residential	▪ Sufficient land exists to support anticipated rural residential development.	▪ No requirement for additional zoned land. ▪ Additional dwellings will be accommodated within existing zoned land.

In the circumstance where dwelling estimates are not accommodated within this Small Planning Area it is anticipated that growth will be naturally taken up in the Bowen North or Bowen South areas where there is greater access to goods and services.

7.3.1.2. Bowen North

The Bowen North Small Planning Area has been identified as having a moderate amount of developable Low density residential zoned land (44.5 ha) and a limited quantity of developable Low-medium density residential zoned land (6.1ha). Having regard for these identified areas, and the results of the demand analysis, the capacity analysis for Bowen North was produced. From the results of the capacity analysis a number of key assertions and recommendations have been made regarding future growth in the Bowen North area. These are illustrated in Table 10.

Table 10: Findings and recommendations of the Bowen North residential capacity analysis.

Applicable Zone	Key findings	Recommended response
Low density residential	▪ Moderate oversupply of land exists within the north-west of Bowen CBD, in proximity to Queens Beach.	▪ No requirement for additional zoned land. ▪ Existing zoned land to be appropriately developed.
Low-medium density residential	▪ Additional land may be required in proximity to the Bowen CBD to accommodate additional dwellings (6.8ha).	▪ Additional land required. ▪ Re-allocation of land in areas of close proximity to existing centres such as Bowen CBD and/or land which demonstrates a logical extension of low-medium density land. ▪ Infill development within existing zoned land will reduce the need for additional allocation of land and create a more consolidated urban form.
Mixed use	▪ Sufficient land exists along Bowen front beach to support additional dwellings.	▪ No requirement for additional zoned land. ▪ Existing zoned land to be appropriately developed.
Rural residential	▪ Limited additional land may be required on the western fringe of existing urban settlement to the west (3ha).	▪ Additional land required. ▪ Proposed that additional dwellings be accommodated within existing zoned land with policy changes (i.e. reduction of minimum lot size) to maximise existing capacity of this land.

Overall Bowen North is anticipated to have an oversupply of approximately 22.5ha of land. This demonstrates that the developable land currently zoned within the Small Planning Area is ample for anticipated increases in population to 2036. These findings also indicate that Bowen North is able to accommodate additional growth from surrounding small planning areas.

7.3.1.3. Bowen South

Bowen South was identified as having the largest area of developable land out of the three small planning areas within the Bowen study area, with approximately 254.4ha of Low density residential land available. The results of the capacity analysis for the Bowen South area demonstrated that this developable area supplies more then enough land for the anticipated growth of this Small Planning Area to 2036. The conclusions and recommendation drawn from these results of the capacity analysis are described below in Table 11.

Table 11: Findings and recommendations of the Bowen South residential capacity analysis.

Applicable Zone	Key findings	Recommended response
Low density residential	▪ Significant oversupply of land exists to the South of Bowen airport and a Greenfield site to the south-east of Mount Gordon.	▪ No requirement for additional zoned land. ▪ Existing zoned land to be appropriately developed.
Low-medium density residential	▪ Limited additional land may be required within the greenfield site to the south-east of Mount Gordon (3ha).	▪ Additional land required. ▪ Re-allocation of land within the greenfield site to appropriately reflect existing approvals.
Rural residential	▪ Significant oversupply of land exists to the South of Bowen airport and to the south of Mount Gordon to the west of the Bruce Highway.	▪ No requirement for additional land. ▪ Additional dwellings will be accommodated within existing zoned land.

As demonstrated, the Bowen South Small Planning Area is anticipated to have a surplus of 227.2ha of residential land. This finding reveals that current zoned land within Bowen South will be able to accommodate the significant amount of population growth anticipated in the area until 2036.

It is noted that the proportion of the multiple dwellings anticipated to occur within the residential zones of Bowen South may present an unrealistic estimate due to the sites location and existing approvals. In the case that Bowen South is able to support such growth it is expected that Bowen North will naturally accommodate this development within its urban form.

7.3.2. Residential growth beyond 2036

This report recommends that the following locations be considered for rezoning to Emerging community:

- Abbot Point – Merinda:
  - Emerging community is not recommended within this Small Planning Area, as no significant growth fronts are currently anticipated.
- Bowen North:
  - Emerging community is not recommended within this Small Planning Area.
- Bowen South:
  - Sites to the west of the Bruce Highway extending south from existing Rural residential land in the vicinity of Mount Gordon.

7.3.3. Residential land summary

The Bowen Study Area has been progressed through a number of analyses to determine the demand and capacity of the area in the years to 2036. Overall the Bowen area has been demonstrated to have sufficient capacity to support Council's adopted dwelling and population estimates for the new planning scheme

Although population and dwelling estimates have been provided on a Small Planning Area basis, it is noted that growth and development may be distributed across the Bowen Study Area in a manner that differentiates from that fashioned in this report. Despite this, it is clear that the Bowen Study Area as a whole has the ability to accommodate a range of growth scenarios, with the capacity to supply varied dwelling types and densities within the existing supply of residential zoned land.

The results of the capacity analysis clearly demonstrate the capacity of the three small planning areas investigated. From these findings the Abbot Point – Merinda Small Planning Area emerged as the anomaly of the Bowen Study Area demonstrating a need for increased residential zoned

land. In this circumstance it was recommended that a limited supply of addition land be appropriately zoned. Given the location and settlement pattern of this Small Planning Area however it is anticipated that proportions of this predicted growth may be accommodated elsewhere in the Bowen Study Area where residents have greater access to services and facilities.

The Bowen North and Bowen South small planning areas, presented quite similar results, indicating that an oversupply of zoned residential land was available. In the instance where Low-medium density land was in shortfall it was recommended that a two step process occur, whereby Low density residential land is reallocated, and existing Low medium land is consolidated, reinvigorating the Bowen CBD and reducing the need for extensive rezoning.

It was also inferred from the results of the Bowen South small planning areas that a proportion of the multiple dwellings anticipated in this area could be naturally drawn into the Bowen North as a result of the areas existing urban form, access to goods and services and capacity for infill and consolidation around the CBD.

The final physical reallocation recommendations of the Bowen Study Area for are detailed in Map 5, 6 and 7. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.

7.4. Bowen industrial land capacity analysis

The results of the Bowen Study Area's industrial land capacity analysis is demonstrated below in Table 12.

Table 12: Results of the industrial capacity analysis for the Bowen Study Area.

Zone	Industrial floor space (m^2)			Existing industrial capacity	
	Existing floor space 2013	Anticipated Floor space 2036	Additional 2013-2036	Estimated floor space (m^2)	Estimated land (ha)
Abbot Point – Merinda					
Industrial land	13,440	32,256	18,948	+256,193.0	+25.6
Bowen North					
Industrial land	94,428	104,364	9,936	-8,691.0	-.9
Bowen South					
Industrial land	7,200	8,112	912	+165,265.5	+16.5
Total	114,936	144,732	28,884	+412,767.5	+41.2

As illustrated in the Table above, there is a moderate over supply of industrial land across the Bowen study area, the majority of which is located within the Abbot Point – Merinda Small Planning Area (25.6ha).

7.4.1. Findings and recommended response

The following findings and recommendations have been developed for the three small planning areas of the Bowen Study Area (Table 13).

Table 13: Findings and recommendations of the Bowen Study Area industrial capacity analysis.

Location	Key findings	Recommended response
Abbot Point – Merinda		
Industrial land	▪ Moderate oversupply of land to the north and north east of the Merinda Township.	▪ No requirement for additional zoned land. ▪ Protect and consolidate existing zoned land for future use.
Bowen North		
Industrial land	▪ Limited additional land may be required on the western fringe of Bowen North (0.9ha)	▪ Additional land required. ▪ Industrial development will be naturally accommodated in Bowen South.
Bowen South		
Industrial land	▪ Significant oversupply of industrial land to the north, in proximity to the Bowen Airport and existing industry.	▪ No requirement for additional zoned land. ▪ Protect and consolidate existing zoned land for future use.

In accords with Tables 12 & 13 it is clear that moderate surplus of industrial exists across the Bowen Study Area (41.2ha). Across the three small planning areas Abbot Point – Merinda has demonstrated the largest capacity for industrial growth with 25.6ha of land deemed available for development. Similarly Bowen south has demonstrated an oversupply of 16.5ha, it is noted however that a proportion is owned by the State government and is unlikely to be released to WRC in the short term.

From these results and the existing location of industrial zoned land, it is anticipated that future industrial development in Bowen North may be naturally accommodated within Abbot Point – Merinda or Bowen South where access existing larger and less constrained parcels of land are available.

7.4.2. Industrial growth beyond 2036

The establishment of an Industry investigation zone within the Bowen Study Area is particularly tailored towards the Abbot Point – Merinda and Bowen South small planning areas. This rezoning is recommended in order to best optimise potential opportunities for development in association with the Abbot Point and proposed Galilee Basin SDA's.

Through this mechanism WRC will be able to provide guidance to future industry, pre-emptively designating appropriate land while having regard for existing industrial corridors and the logical sequencing of potential development.

The following locations are recommended for Industry investigation zoning consideration:

- Abbot Point – Merinda
  - Sites to the south west of the Merinda Township, running adjacent to the existing rail yard.
  - Sites to the west of Merinda between the Bruce Highway and Lauriston Street, as a logical extension of existing industrial development.
- Bowen North
  - Industry investigation is not recommended within this Small Planning Area.
- Bowen South
  - Industry investigation is not recommended within this Small Planning Area.

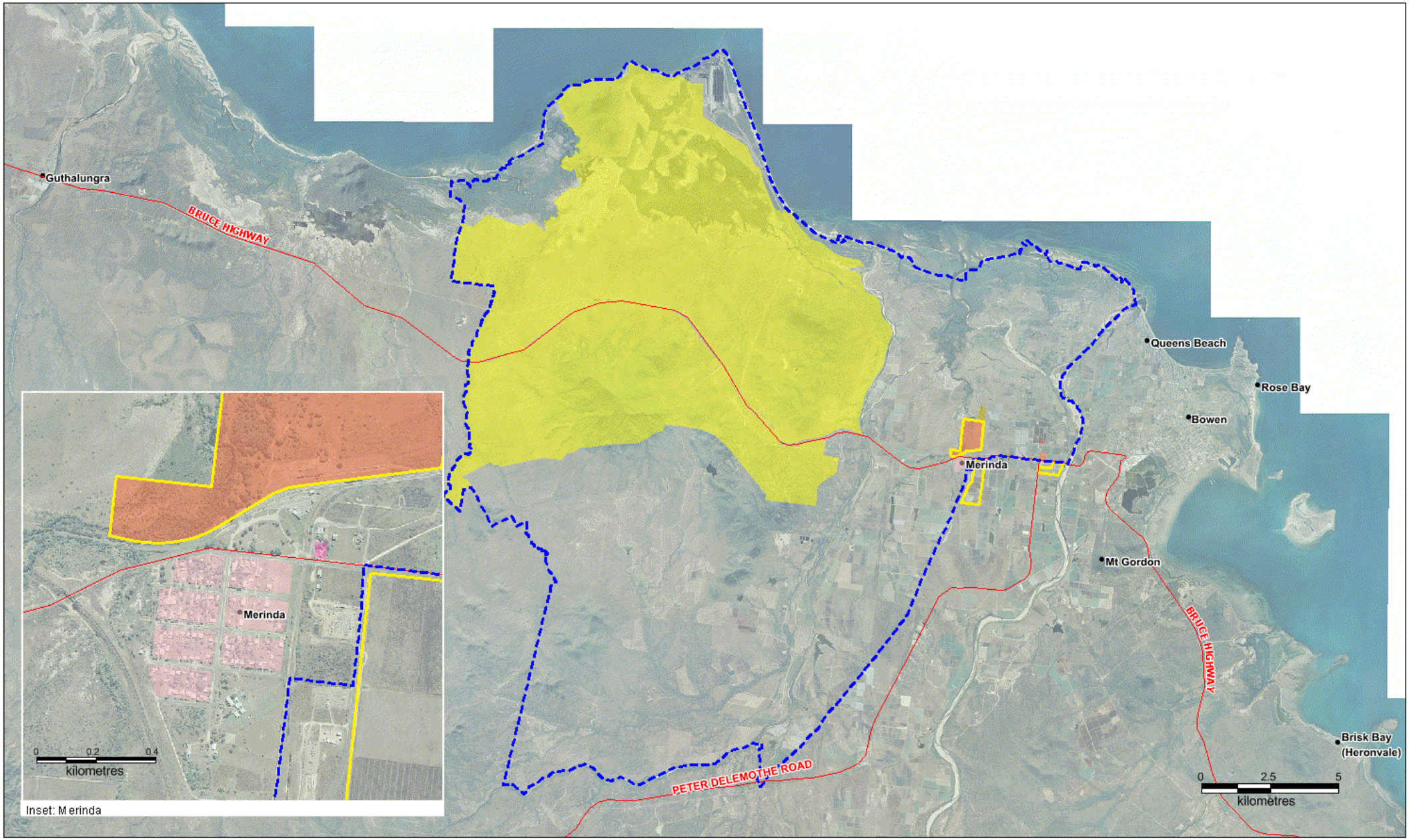
7.4.3. Industrial land summary

Through the capacity analysis it was determined that Abbot Point – Merinda had the greatest oversupply of industrial land, located largely to the north and east of the Small Planning Area. This was determined through the removal of industrial zoned land within the Abbot Point SDA. Similarly the Bowen South Small Planning Area demonstrated a moderate oversupply of industrial land in the vicinity of the Bowen Airport.

Bowen North, in contrast to the other two small planning areas was determined to have deficit of industrially zoned land. With existing zoned land largely being surrounded by residential and centre uses it was recommended that additional industrial land be located on the areas western fringe to the north of Richardson road, providing a logical extension to existing industrial zoned land within neighbouring Bowen South.

The capacity analysis demonstrated that the Bowen study area's as a whole has an oversupply of approximately 41.2ha of industrial zoned land. Despite this apparent oversupply, recommendations have been made to consider the inclusion of further Industrial investigation zones within the Abbot Point – Merinda and Bowen South small areas. Such zoning is intended to optimise are areas opportunities to supply supporting industries to the Abbot Point and proposed Galilee Basin SDA's.

The final physical reallocation recommendations of the Bowen Study Area for are detailed in Map 5, 6 and 7. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.



Legend

Town

Major Road

Urban Growth Study Area

Abbot Point Merinda

Existing Classification

Low density residential

Low-medium density residential

Mixed use

Rural residential

Emerging community

Industry

Industry investigation

Recommended Classification

Industry Investigation

Created By:
M Ruff

Map Scale:
Scale 1:130,000 (A3)

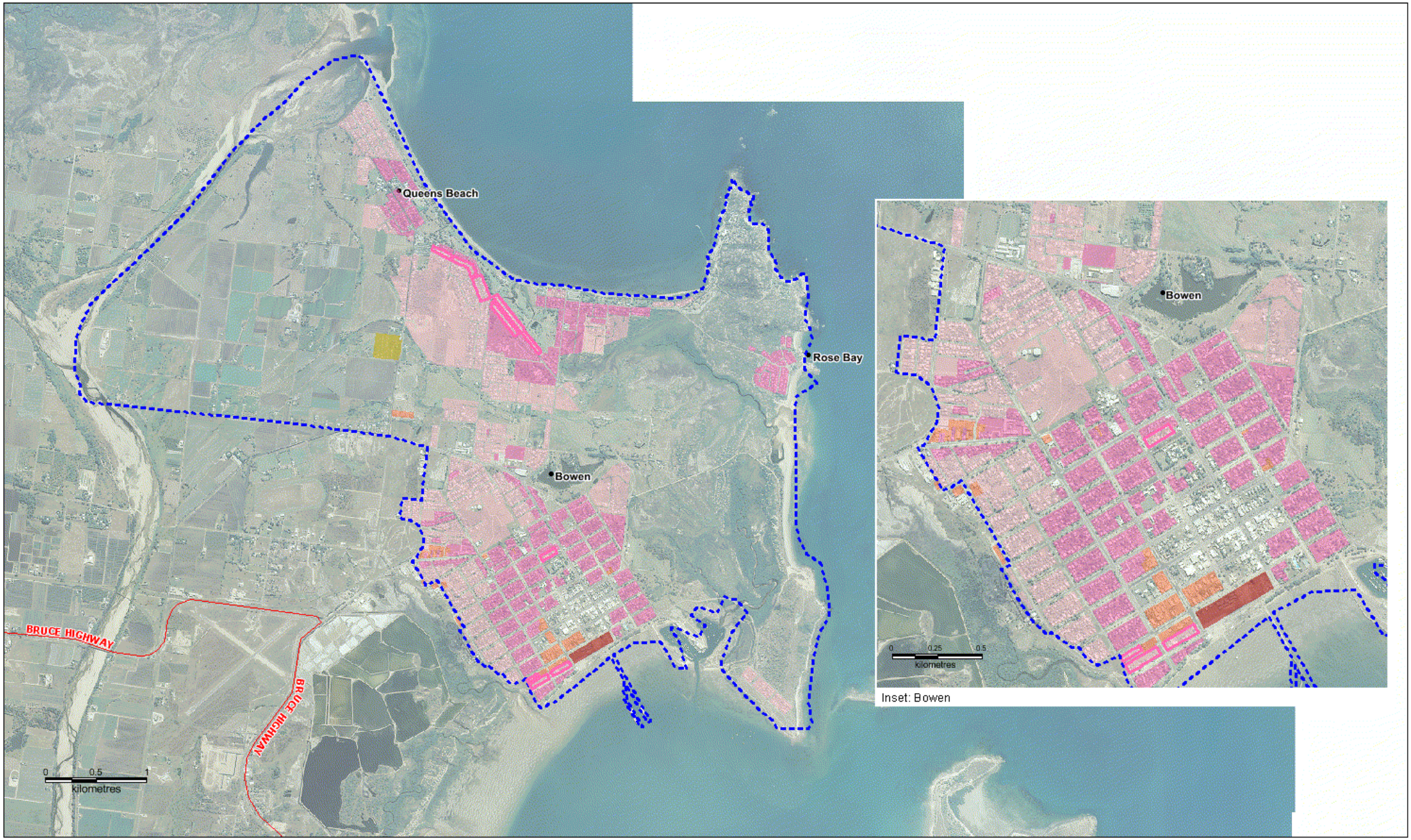
Date Created:
03/04/2014

Title:

Map 5

Reallocation of land recommendations

AbbotPoint/Merinda



LEGEND

- Town
- Major Road
- Urban Growth Study Area
- Bowen North

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging community

Recommended Classification

- Low-medium density residential

Created By: M Ruff

Map Scale: Scale 1:35,000 (A3)

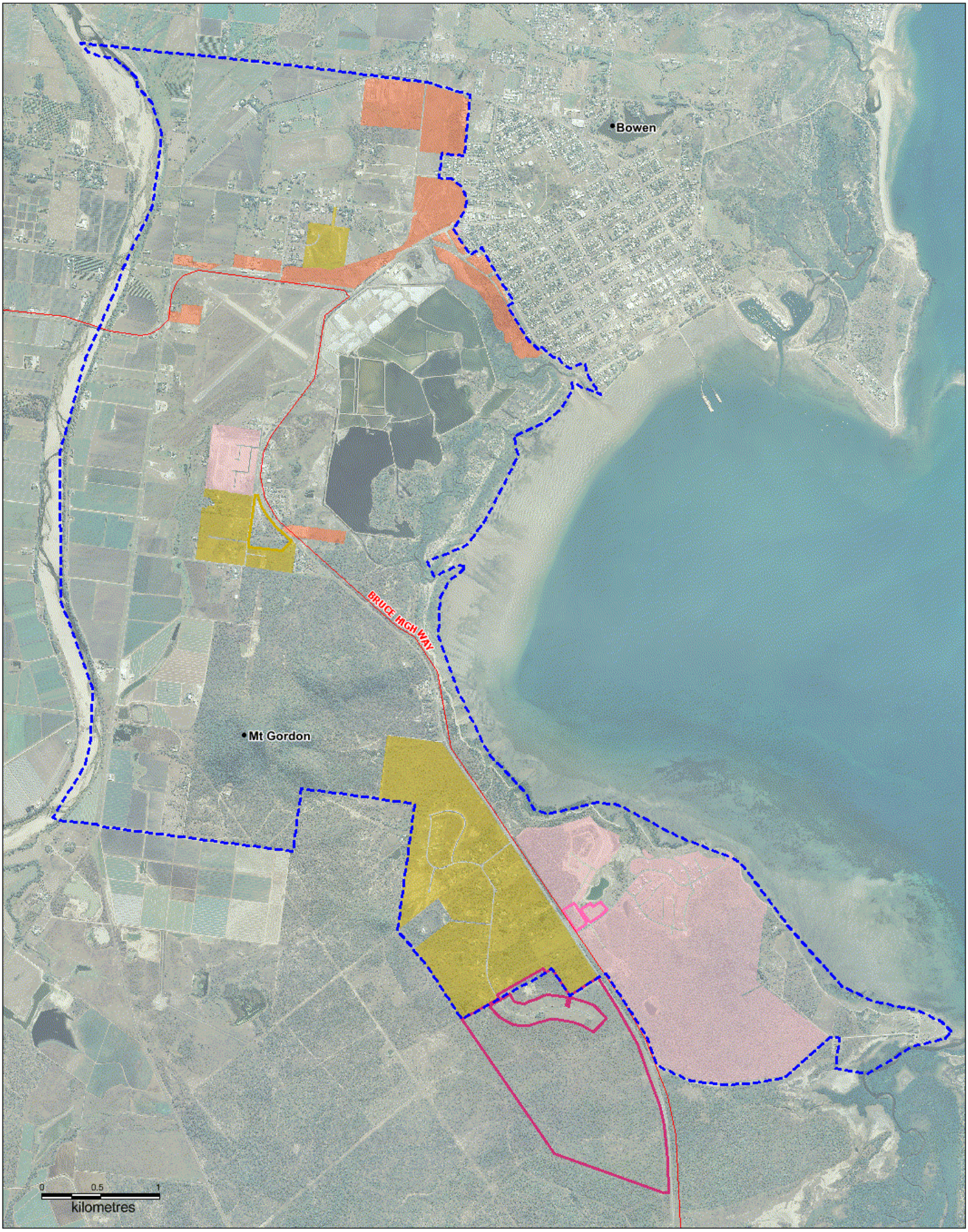
Date Created: 31/03/2014

Title:

Map 6

Recommended reallocation of land

Bowen North



LEGEND

- Town
- Major Road

Urban Growth Study Area

- Bowen South

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging community
- Industry
- Industry investigation

Recommended Classification

- Low-medium density residential
- Emerging community
- Rural residential

Created By: M Ruff

Date Created: 08/04/2014

Map Scale: Scale 1:30,000 (A3)

Title:

Map 7

Reallocation of land recommendations

Bowen South

7.5. Bowen land capacity conclusions

From the conclusions and recommendations of Sections 7.3 and 7.4 consistent policy positions have been established in a uniform manner across the entire WRC local government area. The key findings and recommendations of the Bowen Study Area illustrated in Table 14.

Table 14: Overall findings and recommendations of the Bowen study area.

Zone	Key findings	Recommendations
Low density residential	▪ Significant oversupply of land is available.	▪ Existing land is appropriately developed.
Low-medium density residential	▪ Moderate supply of additional land required.	▪ Existing land is consolidated through appropriate infill development. ▪ Appropriate reallocation of low density residential land.
Mixed use	▪ Sufficient land available.	▪ Existing land is appropriately developed.
Rural residential	▪ Moderate oversupply of land is available.	▪ Proposed reduction in minimum lot sizes are to maximise the existing capacity of this land.
Industry	▪ Moderate oversupply of land is available.	▪ Existing land is protected and consolidated.

The Bowen Study Area has provided a clear and succinct snapshot as to current supply, demand and capacity of residential and industrial land across the study area. Given the anticipated demand and capacity of existing residential and industrial zoned land within the Bowen Study Area it has been concluded that there is sufficient residential capacity within existing zones to meet the anticipated growth till 2036, with a minor deficit within the Low-medium density residential zone identified and appropriately allocated. Similarly the industrial capacity of the Bowen Study Area has been demonstrated to be sufficient to meet future needs to 2036.

8. Collinsville

8.1. Collinsville Study Area

The Collinsville Study Area is located approximately 90km from Bowen, sitting on the northern end of the Bowen Basin, within 200km of the Galilee Basin. This area is well located to take advantage of a variety of economic opportunities associated with the resources industry.

With the expansion of the APSDA and the proposed GBSDA within close proximity to this Small Planning Area, it is anticipated that the Collinsville Study Area will experience a variety of socio-economic changes. Such changes include increases in population and employment figures as a direct result of the construction and operation phases of development and associated supporting industries.

This Study Area encompasses the single Small Planning Area of Collinsville (Map 1).

8.1.1. Physical and socio-economic context

The Collinsville Study Area is located in the centre of the WRC local government area, directly west of Proserpine. The area of Collinsville consists of two key settlements; the district of Collinsville and the residential satellite suburb of Scottville. Currently the majority of retail, commercial and industrial uses are located within the district of Collinsville, with Scottville forming a dormitory residential suburb to the south. All land external to these sites is largely zoned for rural use.

The Collinsville Study Area has an estimated area of 248.6ha, 125ha of which is zoned for residential purposes and 2.7ha for industrial. It is noted however that an additional 85.5ha of residential land and 88.3ha of industrial land is within close proximity to the Collinsville study area, adjacent to the areas boundaries (Map 2). Given the significant size of these greenfield parcels, their being zoned and the presence of some existing of preliminary approvals it was considered appropriate to include them within the results of this study.

At the 2011 Census approximately 37% of the employed population were engaged with the mining industry, with 10% employed in the accommodation and food services industry and 8% engaged in both retail trade and health care and social services respectively. Potential expansion of local coal mines and development within the APSDA and proposed GBSDA are expected to shift employment slightly with potential increases in the mining, manufacturing and construction industries across the Collinsville study area.

The population and employment projections of the Collinsville Study Area have been summarised in Table 15. It is noted however that the projections of both scenarios only take into account permanent jobs and do not reflect temporary non-resident workforces that may be associated with the APSDA/GBSDA through their construction phases. Queensland Trade and Treasury have however prepared four projection series (projected to 2019) for the Bowen Basin (Bowen and Galilee Basins non-residential population projections 2012-2013, Queensland Treasury and Trade, 2013). These projections estimate that between 630 and 1,000 non-resident workers may be temporarily located within the Collinsville area, depending on the construction and operation of the mining and resource industry.

Table 15: 2013 - 2036 Population and Employment Projections for Collinsville - Modest and All growth scenarios

Location	2013 Population	2013 Jobs	2036 Population	2036 Jobs	2013-2036 Population Difference	2013-2036 Job Difference
Modest Growth Scenario						
Collinsville	1,900	1,600	2,200	1,900	+300	+200
All Potential Growth Scenario						
Collinsville	1,900	1,600	2,600	2,200	+700	+600

As identified in Table 15 , Collinsville is expected to experience increases in population and employment figures between now and 2036, with moderate estimates provided under the modest growth scenario and substantially higher estimates under the all potential growth scenario on the basis that all proposed mining projects proceed.

Despite this anticipated growth the area of Collinsville contains several physical attributes potentially limiting the provision of residential and industrial land to 2036. This area has been identified as having the following physical characteristics:

- High susceptibility to bushfire to the north, south, east and west this area;
- Localised flooding along Pelican creek to the west of town; and
- Localised areas of state environmental significance including regulated vegetation.

Although these physical constraints have been identified, it is not anticipated that they will have a significant effect on the areas ability to provide residential or industrial land in the future, with design and construction measures available to reduce the risk of such hazards.

8.1.2. Political Context

There are thee key political attributes anticipated to influence the development of the Collinsville Study Area. In addition to earlier discussion of these matters in section 2.2 the following key considerations relevant to the Collinsville Study Area have been summarised below.

8.1.2.1. Abbot Point State Development Area

The expansion of development within the APSDA may bring moderate opportunities to the Collinsville study area. This development may provide a series of direct and indirect benefits. Direct benefits of the APSDA may arise through the economic and employment opportunities resulting from the supply end of the resource chain due to the areas proximity to active resource basins.

Additionally a variety of indirect benefits may be anticipated due to the location of Collinsville. Being on a key development road between the resource basins and the APSDA there is potential for this area to optimise opportunities in becoming a key location for large format heavy industry and logistic industries.

8.1.2.2. Galilee Basin State Development Area

The Collinsville Study Area is anticipated to be one of the key towns to be influenced by the proposed GBSDA across the WRC region. Due to the variability of the current SDA boundaries, the entire Collinsville Study Area is currently within the proposed GBSDA. It is understood that in finalising the designation of the SDA that clarification of how it will affect the township of Collinsville will be confirmed.

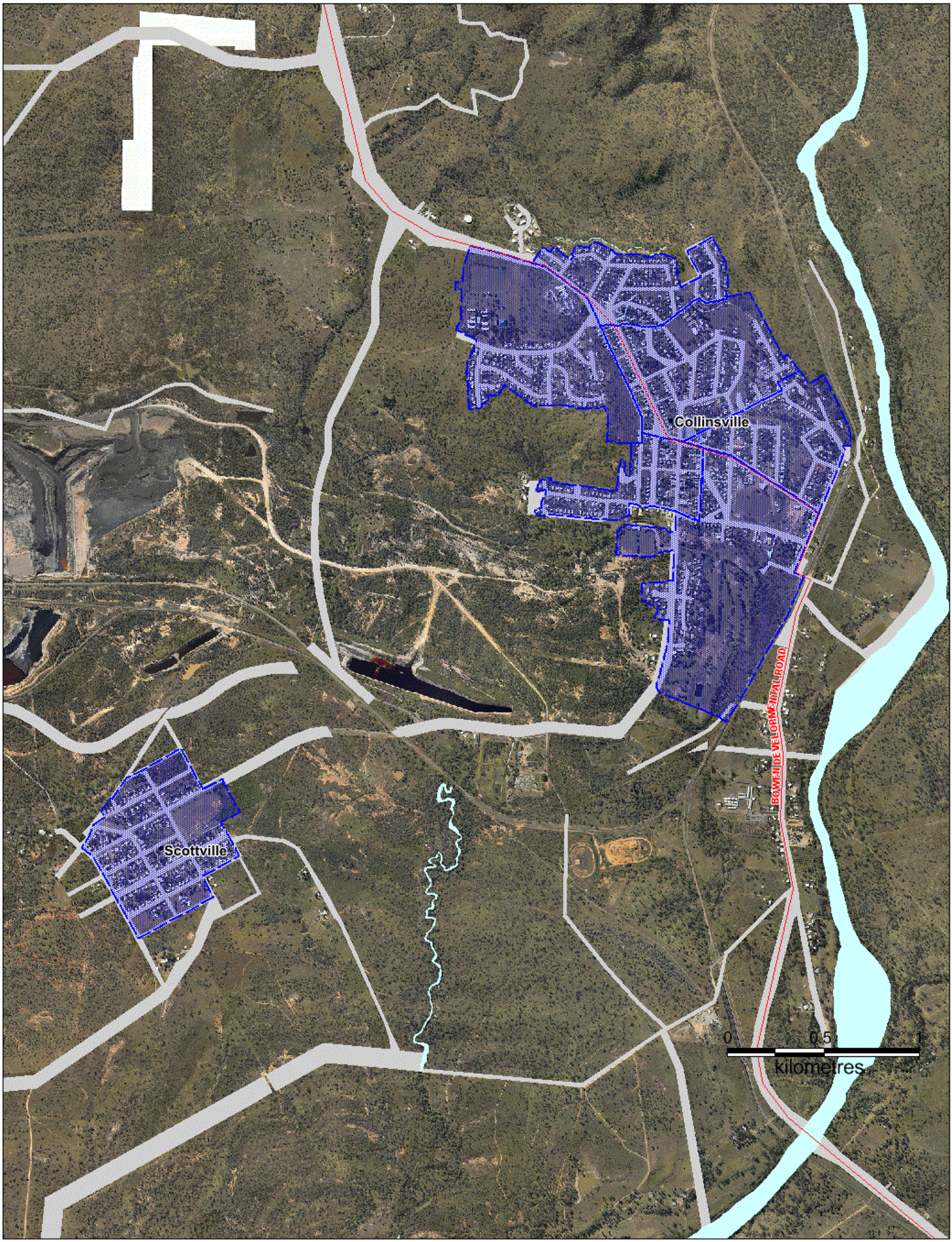
In terms of growth the proposed GBSDA is likely to have a series of socio-economic influences on the Collinsville study area, similar to that anticipated as a result of the APSDA. Once again, due to its location, Collinsville is in a prime position to maximise development opportunities for resource construction and supporting operation industries. The development of these industries would subsequently support economic and employment growth of the area and increasing the local population (both temporary and permanent).

8.1.2.3. State Planning Policy

The key themes and attributes of SPP, particularly in relation to the Bowen Study Area outlined below in Table 16.

Table 16: Key anticipated impacts of the SPP on the Airlie Study Area to 2036.

Theme	Attributes	Impacts
Liveable communities & housing	▪ Housing supply and diversity: Provision and location of land for housing permanent and temporary residents that are accessible and well connected to services.	▪ Temporary workforces are expected in the area. ▪ Housing for the permanent and temporary population should be considered.
Economic growth	▪ Mining & extractive resources: Consider the importance of the mining and resource industry, the economical supply of construction materials and the avoidance of land use conflicts.	▪ APSDA and GBSDA both encroach on the Collinsville study area. ▪ Appropriate placement of supporting industrial land needs to be considered. ▪ Potential conflicts between urban (residential) and industrial land uses may need to be addressed.
Hazards & safety	▪ Natural hazards: Natural hazards are identified and appropriately avoided or mitigated to maintain natural processes and avoid cumulative increases in severity.	▪ Bushfire and flooding hazards are identified in this area. ▪ Development needs to be suitably designed and constructed to reduce developments susceptibility to natural hazards.



Legend

- Town
- Major Road

Urban Growth Study Areas

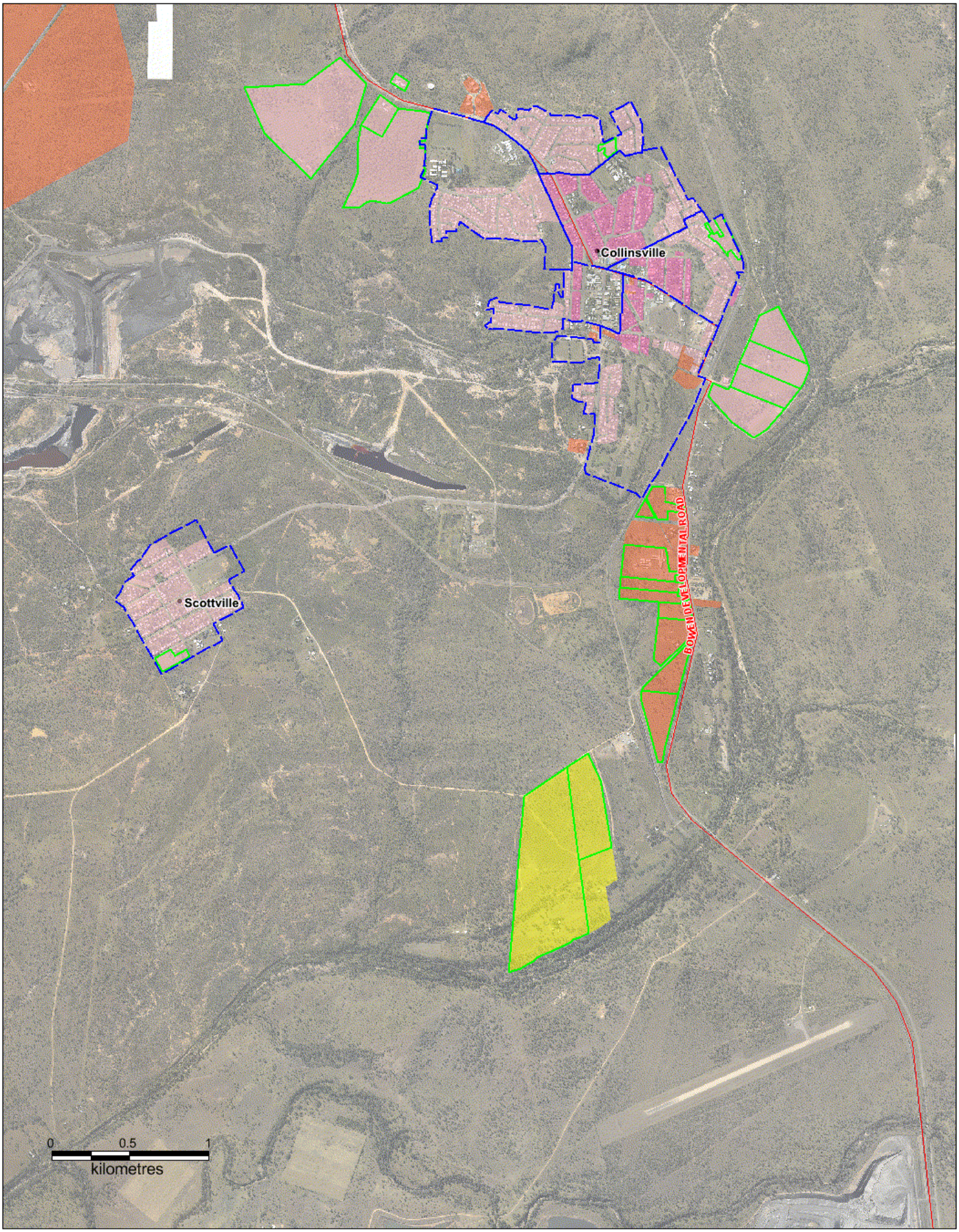
- Collinsville/Scottville

Created By: M Ruff

Map Scale: Scale 1:18,000 (A3)

Date Created: 15/04/2014

Title: Urban Growth Study
Collinsville
Map 1



LEGEND

- Town
- Major Road

Urban Growth Study Area

- Collinsville
- Undeveloped

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging community
- Industry
- Industry investigation ar

Created By: M Ruff

Map Scale: Scale 1:22,000 (A3)

Date Created: 03/04/2014

Title: **Map 2**
Residential and industrial land capacity
Collinsville

8.2. Collinsville growth estimates and demand analysis

8.2.1. Residential assumptions & demand analysis

Residential estimates and assumptions were developed for both small planning areas of the Collinsville study area. The assumed distribution and subsequent demand analysis can be seen in Table 17 with specific details for each Small Planning Area detailed below.

Table 17: Results of the demand analysis for the Collinsville study area.

Zone	Additional Single Dwellings		Additional Multiple dwellings	
	Assumed distribution (%)	Dwelling estimates (du)	Assumed distribution (%)	Dwelling estimates (du)
TOTAL	100	112.0	100	105.0
Low density residential	70	100.8	30	31.5
Low-medium density residential	30	11.2	70	73.5
Mixed use	0	0.0	0	0.0
Rural residential	0	0.0	0	0.0
Emerging community	0	0.0	0	0.0

The assumed distribution of residential dwelling types for the Collinsville Study Area has been developed taking into expected political and socio-economic changes including but not limited to:

- Moderate growth in population; and
- Moderate growth in employment

As demonstrated above the assumed residential dwelling distribution of single and multiple dwellings of the Collinsville Study Area aligns with the regional dwelling distribution range (Chapter One, Section 3.1.2). The dwelling distribution developed had regard to the following attributes of the Collinsville area:

- Historical settlement pattern of single dwellings on large lots (700m^2 or larger);
- Significant quantity of Low density residential land zoned and a moderate quantity of Low-medium density residential land zoned;
- Significant quantities of single dwellings within both the Low and Low-medium density residential zones;
- Moderate quantity of multiple dwellings located in the Low and Low-medium density residential zones;
- No Mixed use zoned land; and
- No Rural residential zoned land.

In light of the dwelling distribution, the demand analysis was performed to determine the number of dwellings projected to occur in each of the residential zones. From this analysis it was determined that a most development would occur in the low density residential zones (approximately 132 dwellings) with fewer dwellings anticipated within the low-medium density residential zone (approximately 85 dwellings).

8.3. Collinsville residential land capacity analysis

The results of the residential land capacity analysis for the Airlie Study Area are demonstrated in Table 18 and 19 overleaf.

Table 18: Initial results of the residential capacity analysis for the Collinsville study area (*Dwelling distributed as per nominated dwelling distributions – Section 2.1)

Zone	Single Dwellings			Multiple dwellings			Existing capacity		
	Existing dwellings 2013 (du)	Anticipated dwellings 2036 (du)	Additional dwellings 2013-3036	Existing dwellings 2013 (du)	Anticipated dwellings 2036 (du)	Additional dwellings 2013-3036	Total additional dwellings (du)*	Estimated dwelling capacity (du)	Estimated land capacity (ha)
Low density residential	497	609	100.8	333	438	31.5	132.3	+769.9	+76.9
Low-medium density residential			11.2			73.5	84.7	-84.7	-4.2
Mixed use			0.0			0.0	0.0	0.0	0.0
Rural residential			0.0			0.0	0.0	0.0	0.0
Emerging community			0.0			0.0	0.0	0.0	0.0
TOTAL			112.0			105.0	217	+685.2	+72.7

8.3.1. Findings & recommendations

The Collinsville Study Area was identified as having a moderate quantity of developable land with which to accommodate future residential growth. Despite being expected to experience a modest population growth, an oversupply of developable residential land was demonstrated in the order of 72.7ha.

Specific findings inferred from the results of this analysis and consequential recommendations are demonstrated in Table 19 below.

Table 19: Findings and recommendation of the Collinsville Study Area residential capacity analysis.

Applicable Zone	Key findings	Recommended response
Low density residential	▪ Significant oversupply of land exists to the east and west of the Collinsville area boundary, adjacent to the current urban settlement.	▪ No requirement for additional zoned land. ▪ Existing zoned land to be appropriately developed.
Low-medium density residential	▪ Limited additional land may be required within the urban centre of Collinsville to support additional dwellings (4.2ha).	▪ Additional land required. ▪ Infill development within existing zoned land will reduce the need for additional allocation of land and create a more consolidated urban form. ▪ Preliminary approvals as part of a greenfield development to the north of Collinsville will accommodate additional dwellings.

Overall the Collinsville Study Area is anticipated to have a significant oversupply of approximately 72.7ha of land. This demonstrates that the developable land currently zoned within the Small Planning Area is ample for anticipated increases in population to 2036. These findings also indicate that Collinsville is able to accommodate additional growth if the resources industry experiences a significant boom.

8.3.2. Residential growth beyond 2036

This report recommends that the following locations be considered for rezoning to Emerging community:

- Emerging community is not recommended in this area due to the oversupply of developable land available.

8.3.3. Residential land summary

The Collinsville Study Area has been progressed through a number of analyses to determine the demand and capacity of the area in the years to 2036. Overall Collinsville has been demonstrated to have sufficient capacity to support the anticipated dwelling and population projections. From this study it is clear that the Collinsville Study Area has the ability to accommodate a range of growth scenarios, with the capacity to supply varied dwelling types and densities within the existing supply of residential zoned land.

Overall the Collinsville area has an estimated oversupply of Low density residential land, the majority of which exists adjacent to the boundaries of this study area. Where Low-medium density residential land was in shortfall it was recommended that a two step process occur where by Low-density residential land be reallocated, and existing low-medium land be consolidated, subsequently reinvigorating the centre of Collinsville and reducing the need for the reallocation of land.

The final physical reallocation recommendations of the Collinsville Study Area are detailed in Map 3. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.

8.4. Collinsville industrial land capacity analysis

The results of the Collinsville study area's industrial land capacity analysis is demonstrated below.

Table 20: Results of the industrial capacity analysis for the Collinsville study area.

Zone	Industrial floor space (m^2)			Existing industrial capacity	
	Existing floor space 2013	Anticipated Floor space 2036	Additional 2013-2036	Estimated floor space (m^2)	Estimated land (ha)
Industrial land	12,984.0	28,500.0	15,516.0	+72,731.0	+7.3

8.4.1. Findings and recommended response

The following findings and recommendations have been developed for the Collinsville study area.

Table 21: Findings and recommendations of the Collinsville area industrial capacity analysis.

Zone	Key findings	Recommended response
Industrial land	▪ Limited oversupply of land to the south of Collinsville, east of Pelican Creek.	▪ No requirement for additional zoned land. ▪ Protect and consolidate existing zoned land for future use.

In accords with Tables 20 & 20 it is clear that small surplus of industrial exists across the Collinsville Study Area (7.3ha). Although this land extends beyond the boundaries of the Collinsville study area, it is anticipated that this land will sufficiently accommodate industrial development in Collinsville until 2036.

8.4.2. Industrial growth beyond 2036

Within the Collinsville study area, the establishment of this zone will enable WRC to effectively respond to expansion in the APSDA and proposed GBSDA, as well as optimising opportunities to support future development in the Bowen and Galilee Basins. An Industry investigation zone will not only provide guidance to future industry looking to develop in the Collinsville but also enable WRC to pre-emptively designate appropriate land taking into account existing industrial and transit corridors.

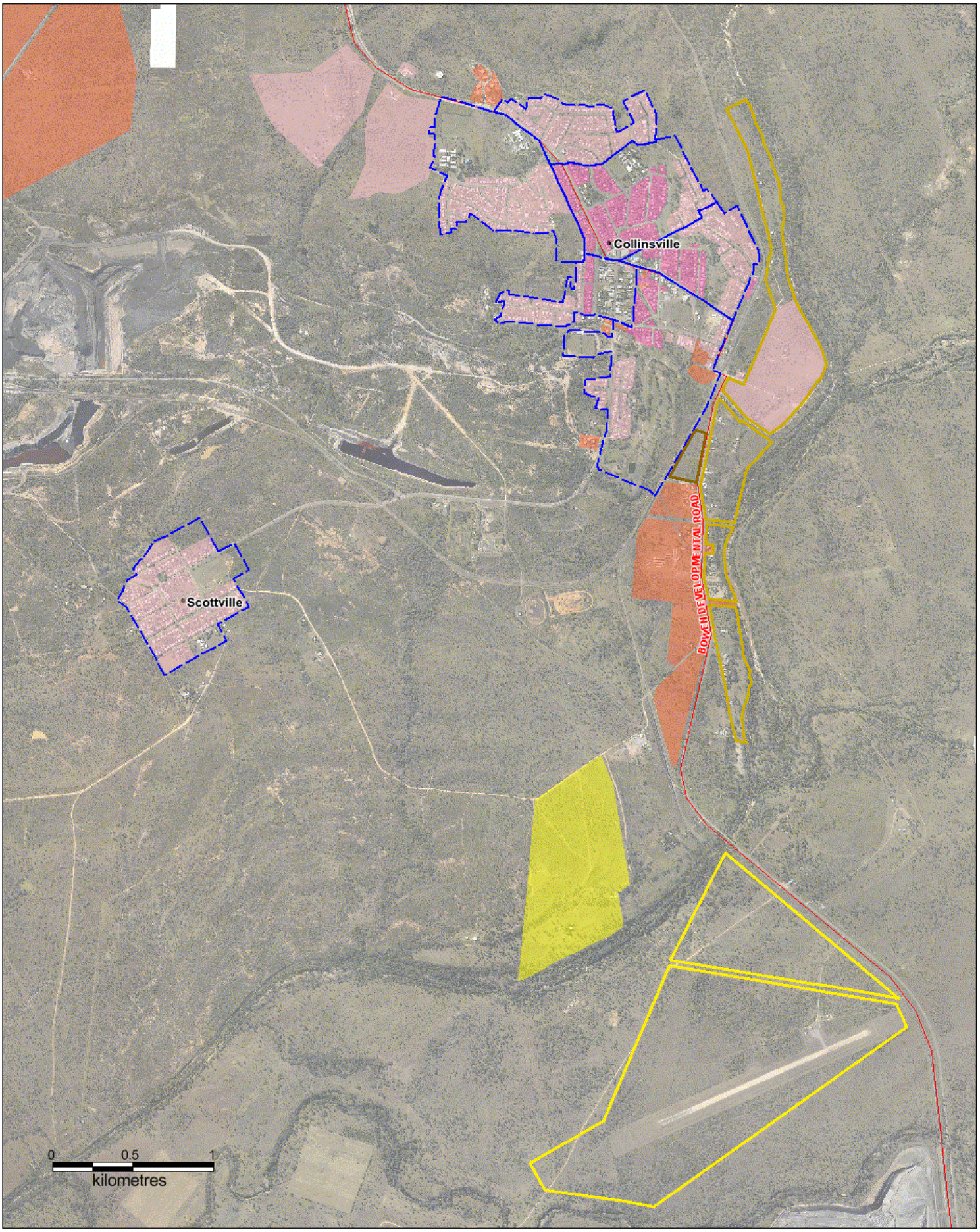
The following locations are recommended for Industry investigation zoning consideration:

- Sites to the south of Collinsville, including the Collinsville Airport site.

8.4.3. Industrial land summary

Through the capacity analysis it was determined that the Collinsville Study Area had a limited oversupply of industrially zoned land. Although this surplus land was located outside of the Collinsville Study Area boundary, it has been included within this study due to its close proximity of the Small Planning Area and its existing zoning. Despite the area's established oversupply, recommendations have been made to consider the inclusion of further Industrial investigation zones within Collinsville study area. Such zoning is intended to optimise are areas opportunities to supply supporting industries to the APSDA and proposed GBSDA.

The final physical reallocation recommendations of the Collinsville Study Area are detailed in Map 3. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.



LEGEND

Town

Major Road

Urban Growth Study Area

Collinsville

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging community
- Industry
- Industry investigation

Recommended Classification

- Industry investigation
- Medium impact industry
- Rural residential

Created By: M Ruff

Map Scale: Scale 1:22,000 (A3)

Date Created: 31/03/2014

Title: **Map 3**
Reallocation of land recommendations
Collinsville

8.5. Collinsville land capacity conclusions

From the conclusions and recommendations of Sections 8.3 and 8.4 consistent policy positions have been established in a uniform manner across the entire WRC local government area. The key findings and recommendations of the Collinsville Study Area illustrated in Table 22.

Table 22: Overall findings and recommendations of the Bowen study area.

Zone	Key findings	Recommendations
Low density residential	▪ Significant oversupply of land is available.	▪ Existing land is appropriately developed.
Low-medium density residential	▪ Limited supply of additional land required.	▪ Existing land is consolidated through appropriate infill development. ▪ Existing preliminary approvals in the area to accommodate additional dwellings.
Industry	▪ Limited oversupply of land is available.	▪ Existing land is protected and consolidated.

Given the anticipated demand and capacity of existing residential and industrial zoned land within the Collinsville Study Area it has been concluded that there is sufficient residential capacity within existing zones to meet the anticipated growth till 2036, with a minor deficit within the Low-medium density residential zone identified and appropriately responded to. Similarly the industrial capacity of the Collinsville Study Area has been demonstrated to be sufficient to meet future needs to 2036.

9. Proserpine

9.1. Proserpine Study Area

The Proserpine Study Area is located approximately 70km from Bowen (to the north) and 130km of Mackay (to the south) and within 50km of the Whitsunday Islands, enabling this area to take advantage of a variety of economic and social opportunities associated with the agricultural, tourism and (to a lesser extent) resources industries. This Study Area encompasses the single Small Planning Area of Proserpine (Map 1).

9.1.1. Physical and socio-economic context

The Proserpine Study Area is located in the south eastern corner of the WRC local government area, to the west of the Bruce Highway. This area represents one of the major administration centres of the Whitsunday region, providing key services (such as health, education and transport) and infrastructure for the tourism centres of Airlie Beach and the Whitsunday Islands to the east. This area, located on the banks of the Proserpine River, is surrounded by vast rural lands, with the local economy historically based on the cane and cattle industries.

The Proserpine Study Area has an estimated area of 287ha, 118.5ha of which is zoned for residential purposes and 51.6ha for industrial. It is noted however that an addition 24.7ha of emerging community greenfield land is located within close proximity to the Proserpine study area, adjacent to the areas southern boundary (Map 2). It is also noted that an additional 24.7ha of land zoned emerging community is available adjacent to the Proserpine Study Area boundary, to the south of Proserpine, the majority of which has an existing preliminary approval. Given the significant size of this parcel, it's being zoned and the presence of existing of residential preliminary approvals it was considered appropriate to include this land within the results of this study.

In terms of employment the Proserpine population is engaged across a vast number of industries. As at the 2011 Census approximately 13% of the employed population were engaged in retail trade, with approximately 10% employed in both the manufacturing and construction industries respectively and 9% engaged health care and social services. Given the expansion of the APSDA and proposed GBSDA growth employment numbers in the construction and manufacturing industries are expected to experience limited growth. The current strength of the administrative, retail and services employment industries are also expected to continue in line with anticipated population growth.

As illustrated in Table 23 below, Proserpine is expected to experience moderate growth in population and employment numbers within the modest growth scenario over the 25 year period with substantially higher growth expected under the all potential scenario for the same period.

Table 23: 2013 - 2036 Population and Employment Projections for Proserpine - Modest and All growth scenarios (Norling Consultancy, 2013)

Location	2013 Population	2013 Jobs	2036 Population	2036 Jobs	2013-2036 Population Difference	2013-2036 Job Difference
Modest Growth Scenario						
Proserpine	3,600	1,800	4,200	2,000	+600	+200
All Potential Growth Scenario						
Proserpine	3,600	1,800	5,700	2,700	+2,100	+900

The variance in projected employment and population figures result from the growth potential of Proserpine's agricultural industry as well as its perceived ability to become a major administration, services and entertainment hub under the all growth potential scenario. The modest growth scenario in comparison recognises that the Proserpine area is unlikely to experience such growth within the scope of this study's timeframe.

Despite the potential for moderate growth, the area of Proserpine contains several physical attributes capable of limiting the provision of residential and industrial land to 2036. The greatest physical constraints experienced in the Proserpine Study Area include:

- Class A and B agricultural land surrounding the entire urban locality; and
- Flooding surrounding the entire locality.

9.1.2. Political Context

There are three key political attributes anticipated to influence the development of the Proserpine Study Area. In addition to earlier discussion of these matters in section 2.2 the following key considerations relevant to the Proserpine Study Area have been summarised below.

9.1.2.1. Whitsunday Coast Airport Priority Development Area

The proposed WCAPDA has the ability to significantly influence development in the Proserpine study area. The declaration of the PDA will not only directly support the industries on which this town relies, but can also increase employment and development opportunities within the region.

The Proserpine Study Area has a strong reliance on agricultural industry, with this industry not only creating substantial numbers of direct and indirect jobs across the area, but also directly injecting cash flow into the areas economy. The WCAPDA is expected to deliver the following key benefits to the Proserpine study area:

- Domestic and international export of local produce will be more accessible through the development of an integrated transport logistics hub, with access to road, rail and air infrastructure;
- The export of local fresh produce will be supported by onsite supply chain infrastructure such as storage facilities;
- Tourist numbers will continue recover and substantially increase, as the WRC area gains becomes more accessible to the domestic and international market; and
- Flight links with small resource towns providing greater potential for FIFO/DIDO workforces of the Bowen and Galilee basins to settle in the area.

Additionally it is anticipated that this site will assist in supplementing the industrial capacity of the Proserpine study area, where the development capacity of industrial land is somewhat limited by a variety of physical attributes. The economic feasibility of this occurring has recently been analysed by Norling Consulting (Proposed Whitsunday Coast Airport PDA: Preliminary Economic Assessment, March 2014), indicating that such development would be compatible with future industrial needs.

9.1.2.2. Abbot Point State Development Area and the proposed Galilee Basin State Development Area

The Proserpine Study Area is anticipated to experience limited influence from the APSDA and the proposed GBSDA. Due to the distance between these two SDA's and the Proserpine study area, it is expected that the minimal changes will occur within the social-economic fabric of the area. It is noted however that the Study Area may be able to optimise opportunities from the FIFO /DIDO workforce potentially travelling from Whitsunday Coast Airport north through Proserpine to the SDA's.

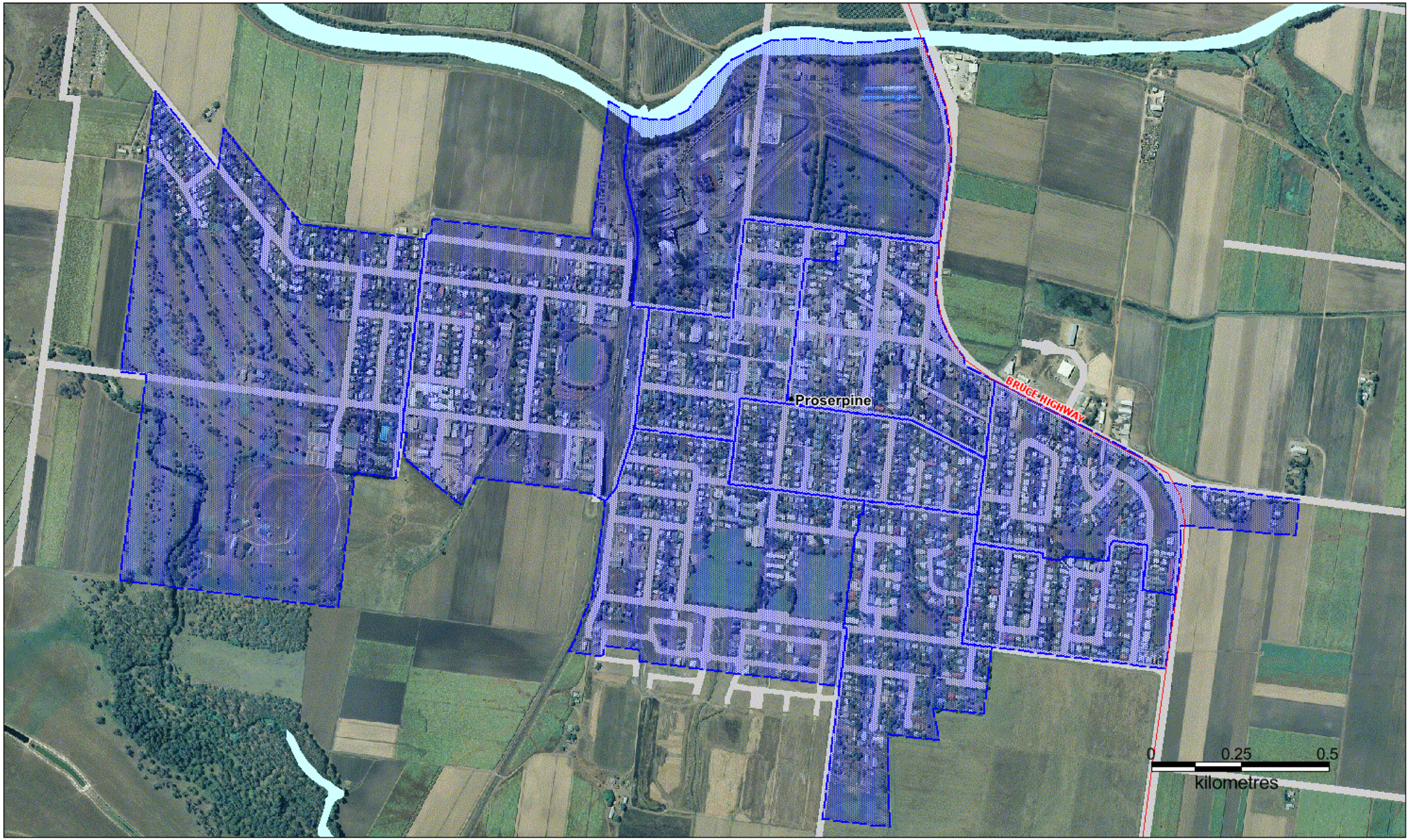
Despite the minor effects expected in the Proserpine Study Area as a result of development within the APSDA and proposed GBSDA, it is expected that these developments will continue to have an influence on the greater WRC area making it an important consideration when planning for future land use, development and infrastructure delivery.

9.1.2.3. State Planning Policy

The key themes and attributes of SPP, particularly in relation to the Bowen Study Area outlined below in Table 24.

Table 24: Key anticipated impacts of the SPP on the Proserpine Study Area to 2036.

Theme	Attributes	Impacts
Economic growth	▪ Agriculture: Protecting class A and B agricultural land by: avoiding its fragmentation, avoiding non-agricultural development on the land and maintaining the lands condition.	▪ Significant amount of Class A and B agricultural land present. ▪ Proserpine is one of the key urban centres of the region. ▪ Potential development within identified agricultural land should be well considered and justified.
Hazards & safety	▪ Natural hazards: Natural hazards are identified and appropriately avoided or mitigated to maintain natural processes and avoid cumulative increases in severity.	▪ Flooding is identified in this area. ▪ Development needs to be suitably designed and constructed to reduce developments susceptibility to natural hazards. ▪ Development needs to be appropriately located to avoid the risk of natural hazards.



Legend

- Town
- Major Road

Urban Growth Study Areas

- Collinsville/Scottville

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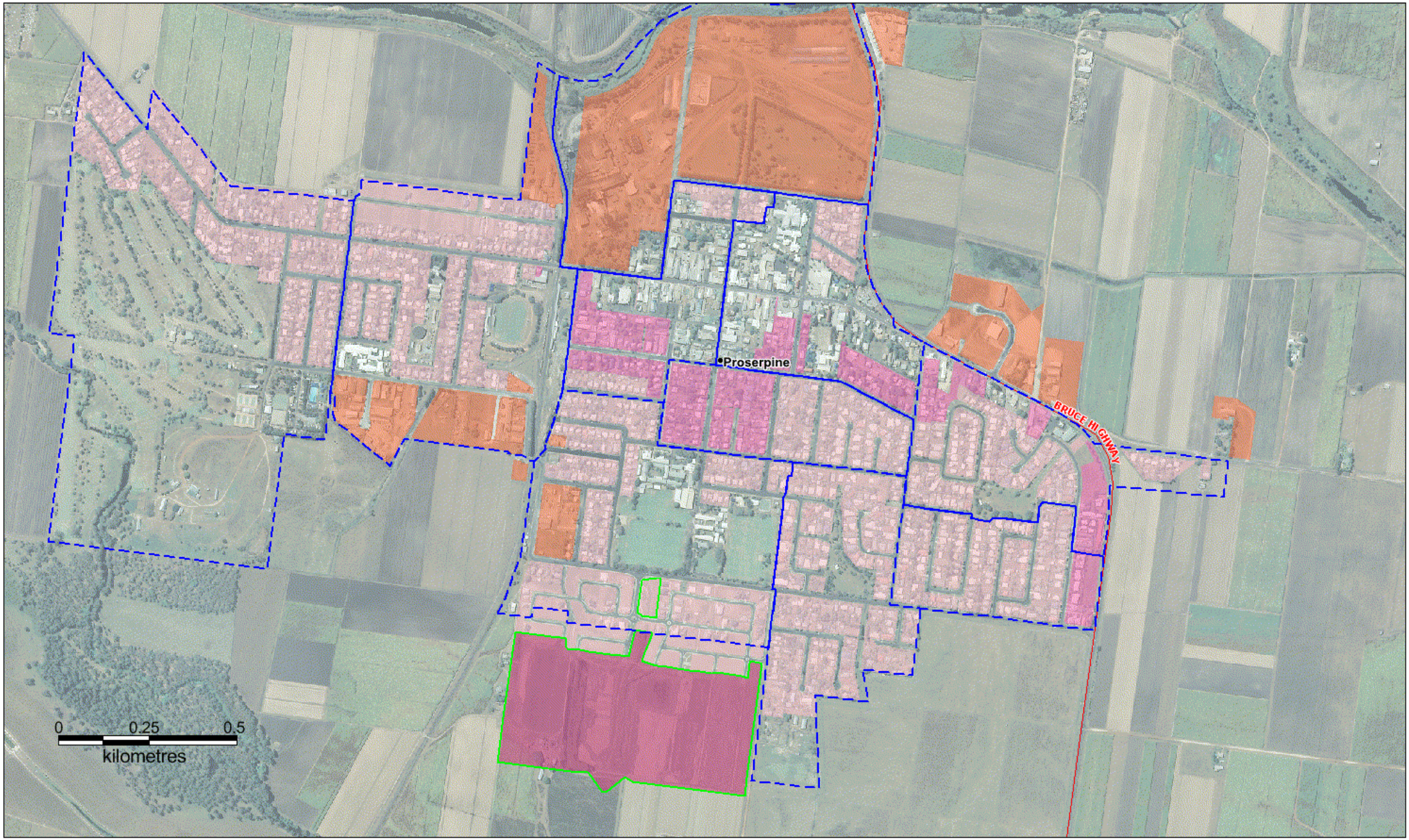
Map Scale: Scale 1:10,000 (A3)

Date Created: 15/04/2014

Title: **Urban Growth Study**
Proserpine
Map 1



LEGEND

- Town
- Major Road

Urban Growth Study Area

- Proserpine
- Undeveloped

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging community
- Industry

Created By: M Ruff

Map Scale: Scale 1:10,000 (A3)

Date Created: 09/04/2014

Title:

Map 2

Residential and industrial land capacity

Proserpine

9.2. Proserpine growth estimates and demand analysis

9.2.1. Residential assumptions & demand analysis

Residential estimates and assumptions were developed for both small planning areas of the Proserpine study area. The assumed distribution and subsequent demand analysis can be seen in Table 25 with specific details for each Small Planning Area detailed below.

Table 25: Results of the demand analysis for the Proserpine study areas.

Zone	Additional Single Dwellings		Additional Multiple dwellings	
	Assumed distribution (%)	Dwelling estimates (du)	Assumed distribution (%)	Dwelling estimates (du)
TOTAL	100	175.0	100	174.0
Low density residential	80	140.0	20	34.8
Low-medium density residential	20	35.0	80	139.0
Mixed use	0	0.0	0	0.0
Rural residential	0	0.0	0	0.0
Emerging community	0	0.0	0	0.0

The assumed distribution of residential dwelling types for the Proserpine Study Area has been developed taking into expected political and socio-economic changes including but not limited to:

- Moderate growth in population; and
- Moderate growth in employment.

As demonstrated above the assumed residential dwelling distribution of single and multiple dwellings of the Proserpine Study Area aligns with the regional dwelling distribution range of Chapter one (Section 3.1.2). This dwelling distribution was developed had regard to the following attributes of the Proserpine area:

- Historical settlement pattern of single dwellings on moderate sized lots (600m^2 or larger);
- Significant quantities of single dwellings within both the Low and Low-medium density residential zones;
- Moderate quantity of multiple dwellings located in the Low and Low-medium density residential zones;
- No Mixed use zoned land; and
- No Rural residential zoned land.

Having consideration of the established dwelling distribution, a demand analysis was carried out to determine the number of dwellings expected within each residential zone. This analysis determined that the Low and Low-medium density residential zone were to experience similar increases in the anticipated number of dwellings to the 2036 timeframe (Approximately 175 dwelling respectively).

9.3. Proserpine residential land capacity analysis

The results of the residential land capacity analysis for the Proserpine Study Area are demonstrated in Table 26 overleaf.

Table 26: Initial results of the residential capacity analysis for the Proserpine study area (*Dwelling distributed as per nominated dwelling distributions – Section 2.1)

Zone	Single Dwellings			Multiple dwellings			Existing capacity		
	Existing dwellings 2013 (du)	Anticipated dwellings 2036 (du)	Additional dwellings 2013-3036	Existing dwellings 2013 (du)	Anticipated dwellings 2036 (du)	Additional dwellings 2013-3036	Total additional dwellings (du)*	Estimated dwelling capacity (du)	Estimated land capacity (ha)
Low density residential	1,140.0	1,315.0	140.0	390.0	564.0	34.8	174.8	-169.1	-16.9
Low-medium density residential			35.0			139.2	174.2	-174.2	-8.7
Mixed use			0.0			0.0	0.0	0.0	0.0
Rural residential			0.0			0.0	0.0	0.0	0.0
Emerging community			0.0			0.0	0.0	+197.9	+24.7
TOTAL			175.0			174.0	349.0	-145.4	-0.9

9.3.1. Findings & recommendations

The Proserpine Study Area was identified as having a very limited quantity of developable land with which to accommodate future residential growth. With this area expected to experience a modest population growth, a shortfall of developable residential land was demonstrated in the order of 0.9ha.

Specific findings inferred from the results of this analysis and consequential recommendations are demonstrated in Table 27 below.

Table 27: Findings and recommendation of the Proserpine Study Area residential capacity analysis.

Applicable Zone	Key findings	Recommended response
Low density residential	▪ Moderate additional land may be required as a logical extension of existing residential uses (16.9ha).	▪ Additional land required. ▪ Existing zoned land to be appropriately developed. ▪ Preliminary approval over land to the south of Proserpine will accommodate additional dwellings.
Low-medium density residential	▪ Limited additional land may be required within the urban centre of Proserpine to support additional dwellings (8.7ha).	▪ Additional land required. ▪ Reallocation of land in areas of proximity to the main street and/or land which demonstrates a logical extension of low-medium density land. ▪ Infill development within existing zoned land will reduce the need for additional allocation of land and create a more consolidated urban form.

Overall the Proserpine Study Area is anticipated to have a minor deficit of approximately 0.9ha of land. This indicates that additional land will need to be allocated in order to accommodate the anticipated increases in population to 2036. Renewed consolidation within the existing urban settlement of Proserpine however is expected to enhance the areas ability to accommodate expected growth.

9.3.2. Residential growth beyond 2036

The use of an Emerging community zone is a practical way for WRC to respond to the Proserpine's all potential growth population projections (Section 2.1). By safeguarding sites with development potential WRC will be able to release residential land to effectively respond to potential changes in population. The use of this zone also ensures that land is supplied in a timely and appropriate manner, preventing out-of sequence development and an oversupply of developable land.

This report makes the following recommendations regarding future Emerging community allocation within the Proserpine study area:

- Sites to the north of Faust Street, south of the Proserpine River.

9.3.3. Residential land summary

The Proserpine Study Area has progressed through a number of analyses to determine the demand and capacity of the area in the years to 2036. Overall Proserpine has been demonstrated to have minor deficit in its ability to support the anticipated dwelling and population projections.

Through these analyses it was identified that Proserpine could sufficiently accommodate growth within the Low density residential land (through existing preliminary approvals), with a limited short fall in Low-medium density residential land. It has been ascertained however, that through the reallocation and infill of the current residential land, supply will adequately cater for anticipated population growth to 2036. The use of these mechanisms will not only create consolidation through the areas current centre, but also provide a varied supply of dwelling types and densities. Emerging community has also been identified with the Proserpine Study Area to address the potential for fluctuations in population in line with the all potential growth scenario.

The final physical reallocation recommendations of the Proserpine Study Area are detailed in Map 3 and 4. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.

9.4. Proserpine industrial land capacity analysis

The results of the Proserpine study area's industrial land capacity analysis is demonstrated below.

Table 28: Results of the industrial capacity analysis for the Proserpine study area.

Zone	Industrial floor space (m^2)			Existing industrial capacity	
	Existing floor space 2013	Anticipated Floor space 2036	Additional 2013-2036	Estimated floor space (m^2)	Estimated land (ha)
Industrial land	46,332.0	52,380.0	6,048.0	-6,048.0	-0.6

9.4.1. Findings and recommended response

The following findings and recommendations have been developed for the Proserpine study area.

Table 29: Findings and recommendations of the Proserpine Study Area industrial capacity analysis.

Zone	Key findings	Recommended response
Industrial land	▪ Limited additional land require within Proserpine (0.6ha).	▪ Additional land required. ▪ Protect and consolidate existing zoned land for future use. ▪ Reallocation of land to the east of Proserpine and the Bruce Highway as a logical extension of existing industrial uses. ▪ Where new industry is inconsistent with exiting development, land should be allocated in proximity to the Whitsunday Coast Airport to the south of Proserpine.

In accords with Tables 28 & 29 it is clear that small shortfall of industrial exists across the Proserpine Study Area (0.6ha). Physical constraints surrounding the Proserpine Study Area limits the extent of large format industrial growth on the urban fringe of Proserpine, as a result future heavy industrial growth is recommended in proximity to the Whitsunday Coast Airport proposed WCAPDA, with small service industries being maintain on the urban fringes.

The proposal to reallocate industrial land in the vicinity of the Whitsunday Coast Airport is supported by the findings of the Proposed Whitsunday Coast Airport PDA: Preliminary Economic Assessment report recently completed by Norling Consulting (March 2014). This report establishes the ability and capacity of the proposed PDA site to supplement large format industrial sites, highlighting that industrial land in the Proserpine area be preserved for population servicing light industrial activities.

9.4.2. Industrial growth beyond 2036

The establishment of an Industry investigation zone within the Proserpine Study Area will enable WRC to effectively optimise opportunities to support future growth and diversification within the agricultural industry, expansion of the tourism industry, and at the same time maintain the ability of WRC to respond to expansion of the APSDA and proposed GBSDA. .

The following locations are recommended for Industry investigation zoning consideration:

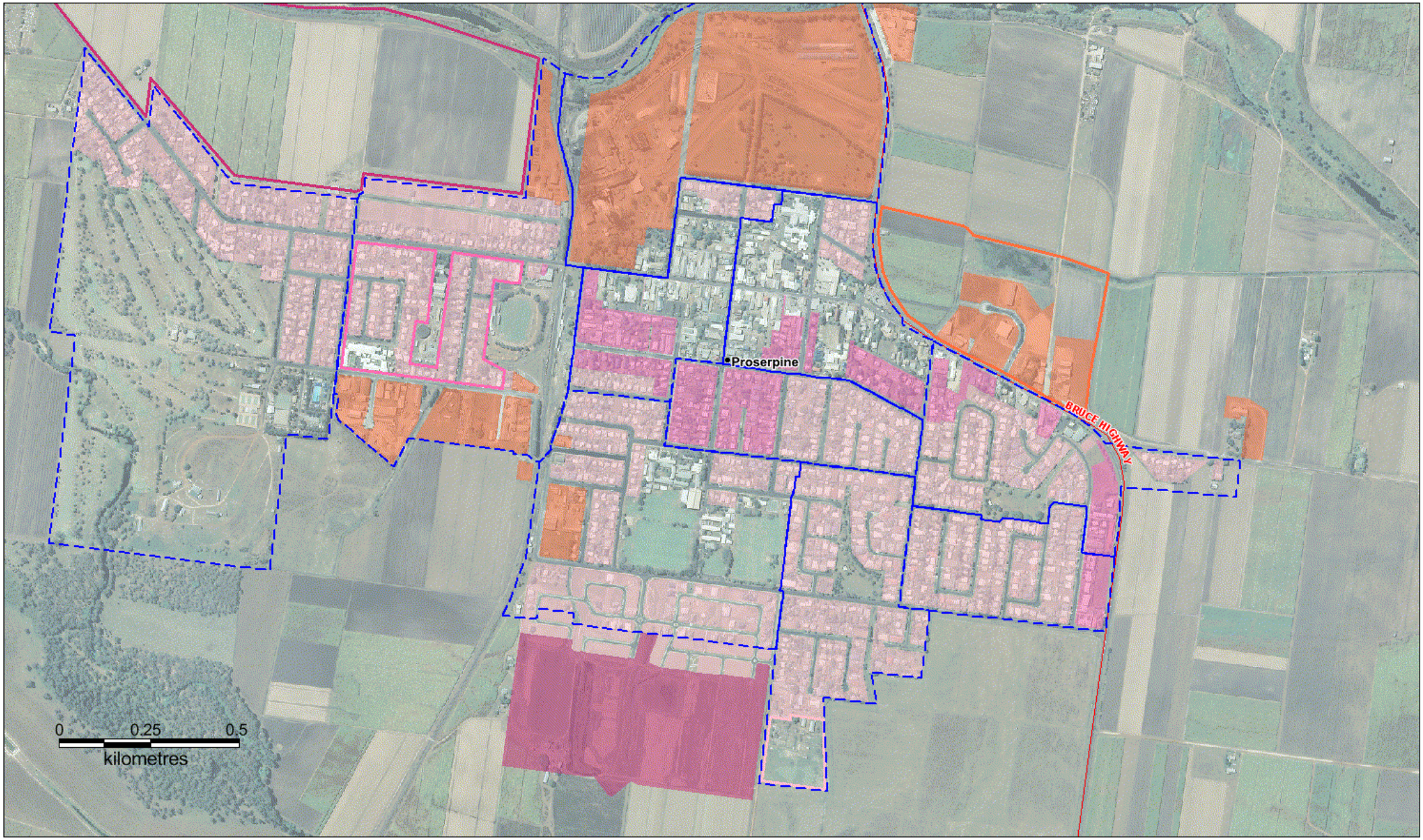
- Sites to the south of Proserpine, within close proximity to the Whitsunday Coast Airport and the proposed WCAPDA.

9.4.3. Industrial land summary

Through the capacity analysis it was determined that the Proserpine Study Area had a minor deficit of industrially zoned land. As a result of the physical constraints of the Proserpine Small Planning Area, it was determined that additional large format industry could not be sourced from within the Proserpine study area. Consequently, to appropriately address this shortfall, additional land outside of the Proserpine Study Area was recommended for reallocation; being in proximity to the proposed WCAPDA. It is anticipated that the development of smaller service industries will continue to be located within the vicinity of the urban centre as a logical extension of existing industrial uses.

In light of this minor industrial land deficit additional land in proximity to the WCAPDA was recommended for inclusion in the Industry Investigation zone, with such reallocation intended to optimise industrial development as part of the Airport expansion.

The final physical reallocation recommendations of the Proserpine Study Area are detailed in Map 3 and 4. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.



LEGEND

- Town
- Major Road
- Urban Growth Study Area
- Proserpine

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging community
- Industry

Recommended Classification

- Low density residential
- Low-medium density residential
- Emerging community
- Low Impact Industry

Created By: M Ruff

Map Scale: Scale 1:10,000 (A3)

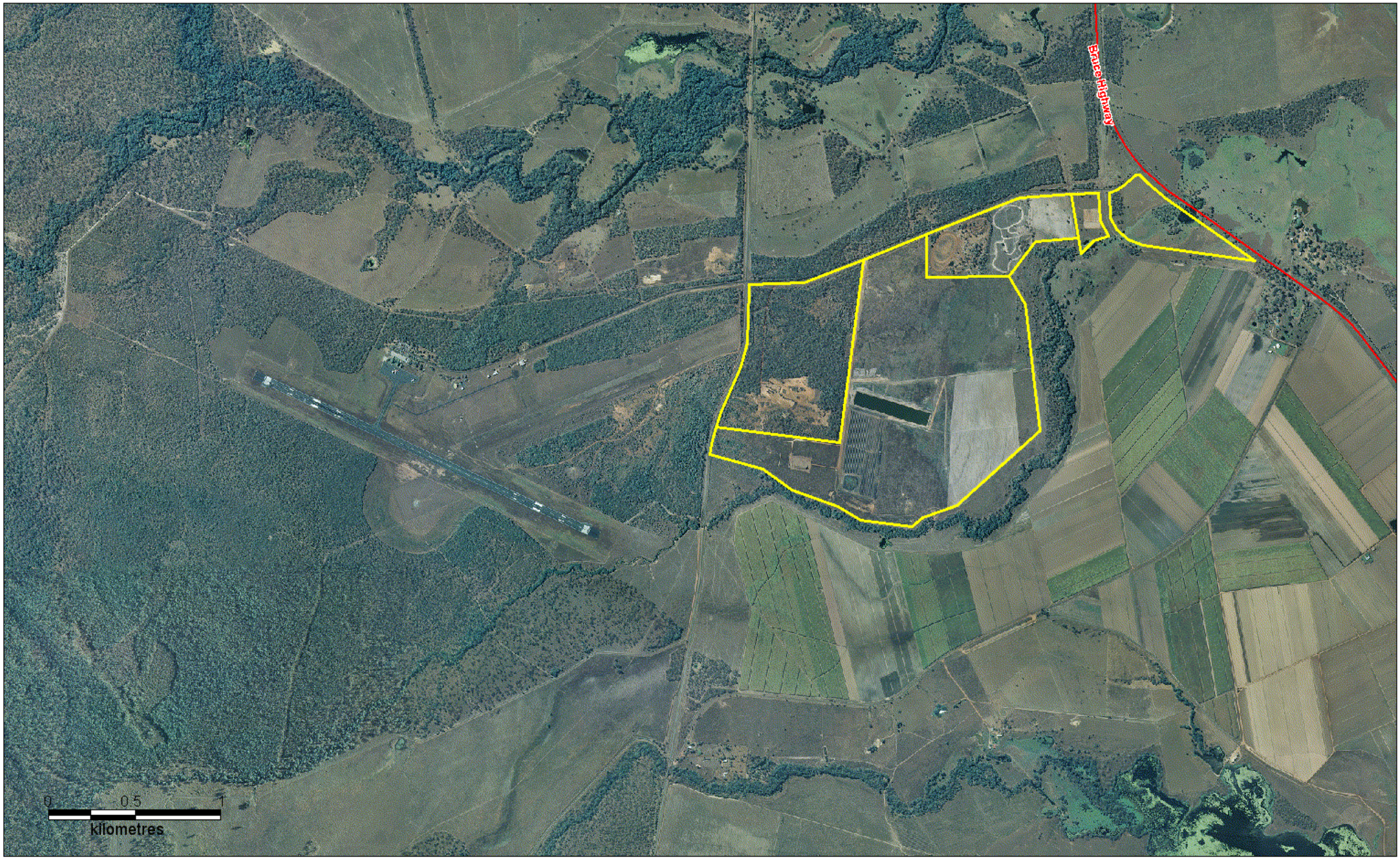
Date Created: 09/04/2014

Title:

Map 3

Reallocation of land recommendations

Proserpine



Legend

Major Road

Recommended Classification

Industry investigation

Created By: M Ruff

Map Scale: Scale 1: 20,000 (A3)

Date Created: 14/04/2014

Title:

Map 4

Reallocation of land recommendations

Whitsunday Coast Airport

9.5. Proserpine land capacity conclusions

From the conclusions and recommendations of Sections 9.3 and 9.4 consistent policy positions have been established in a uniform manner across the entire WRC local government area. The key findings and recommendations of this Proserpine Study Area illustrated in Table 30.

Table 30: Overall findings and recommendations of the Proserpine study area.

Zone	Key findings	Recommendations
Low density residential	▪ Moderate supply of additional land required.	▪ Existing land is appropriately developed. ▪ Preliminary approvals of greenfield site to accommodate additional dwellings.
Low-medium density residential	▪ Limited supply of additional land required.	▪ Existing land is consolidated through appropriate infill development. ▪ Appropriate reallocation of low density residential land.
Industry	▪ Limited supply of additional land is required.	▪ Existing land is protected and consolidated. ▪ Appropriate reallocation of small and large format industry.

The Proserpine study has provided a clear and succinct snapshot as to current supply, demand and capacity of residential and industrial land across the study area. Given the anticipated demand and capacity of existing residential and industrial zoned land within the Proserpine Study Area it has been concluded that there is minor deficit in the supply of both residential and industrial land to 2036. Several recommendations have been identified, that appropriately respond to this shortfall, ensuring that the Proserpine Study Area has capacity to meet the residential and industrial demand through to 2036.

10. Airlie

10.1. Airlie Study Area

The Airlie Study Area is located approximately 75km from Bowen (to the north) and within 25km of both Proserpine (to the west) and the Whitsunday Islands (to the east), giving it the ability to take advantage of a variety of economic and social opportunities associated with the tourism and (to a lesser extent) resource industries. The Airlie Study Area is illustrated in Map 1.
The small planning areas to be examined in this chapter are:

- Cannonvale – Airlie Beach; and
- Jubilee Pocket – Shute Harbour.

10.1.1. Physical and socio-economic context

The Airlie Study Area is located in the south-east of the WRC local government area, extending along Shute Harbour Road from Mount Marlow in the west to Shute Harbour in the east. Collectively the two small planning areas of Airlie represent approximately 4,773ha of land, the majority of which is used for urban purposes comprised of industrial, residential and commercial land.

The population and employment projections of the Airlie Study Area have been summarised below in Table 31.

Table 31: 2013 – 2036 Population and Employment Projections – Modest and All Potential Growth Scenarios (Norling Consultancy, 2013).

Location	2013 Population	2013 Jobs	2036 Population	2036 Jobs	2013-2036 Population Difference	2013-2036 Job Difference
Modest Growth Scenario						
Cannonvale – Airlie Beach	6,800	3,400	12,700	7,300	+5,900	+3,900
Jubilee Pocket – Shute Harbour	2,300	900	5,500	1,200	+3,200	+300
TOTAL	9,100	4,300	18,300	8,500	+9,100	+4,200
All Potential Growth Scenario						
Cannonvale – Airlie Beach	6,800	3,400	14,400	8,500	+7,600	+5,100
Jubilee Pocket – Shute Harbour	2,300	900	6,600	1,400	+4,300	+500
TOTAL	9,100	4,300	21,000	9,900	+11,900	+5,600

10.1.1.1. Cannonvale – Airlie Beach

The Cannonvale – Airlie Beach area comprises of the urban centres of Cannonvale and Airlie Beach and extends as far west as Mount Marlow and the intersection of Mountney Road and Gregory Cannonvale Road. To the east, this Small Planning Area extends as far as Hermitage Drive (Map 2).

This Small Planning Area encompasses an approximate area of 2,465ha, boarded by Conway National Park to the south with rural and coastal lands to the north. Of the land encompassed

within the Cannonvale – Airlie Beach Small Planning Area 1,423.5ha is currently zoned for residential purpose and 31.4ha for industrial.

According to the 2011 Census for this Small Planning Area, an estimated 19% of the population were employed by the accommodation and food services industry. This industry was closely followed by the retail trade (13%) and construction industry (12%) with the transport, postal and warehousing industry employing approximately 9% of the Cannonvale – Airlie Beach population. These estimates are anticipated to fluctuate in the future with the recovery and growth of the tourism industry and the expansion of the APSDA and proposed GBSDA.

As identified in Table 2, Cannonvale – Airlie Beach is expected to experience significant growth over the scope of this study. Under the modest growth scenario the population of this area is anticipated to almost double, with employment growth increasing by over 100%. These figures are expected as a result of the areas:

- Large capacity for housing;
- Proximity to employment generating tourism and resource industry expansion;
- Existing retail and commercial areas;
- Existing infrastructure; and
- Variety of lifestyle opportunities.

Similarly the all potential growth scenario indicates significantly high growth across both the population and employment figures, reflecting the potential expansion of the tourism industry. The tourism industry has a significant influence on Cannonvale – Airlie Beach. Tourism is a very labour intensive, providing a variety of employment opportunities across this Small Planning Area, in turn supporting and driving its potential population growth. The proximity of this area to Bowen and the APSDA and proposed GBSDA also correlate to increasing populations with FIFO and Drive in – Drive out (DIDO) workforces anticipated to settle in the area.

Despite anticipated growth, the Cannonvale – Airlie Beach Small Planning Area is identified as having a number of key physical attributes which may limit the development capacity of this land. The following attributes include:

- Class A and B agricultural land to the north of the Small Planning Area;
- Storm tide inundation along the areas coast line;
- Steeply sloped land in proximity to the areas southern boarder;
- Localised areas of State environmental significance;
- Localised flooding of creeks, waterways and flood plains;
- Localised susceptibility to bushfire; and
- Conway National Park and Conway State Forest adjacent to the southern boarder.

10.1.1.2. Jubilee Pocket – Shute Harbour

The Jubilee Pocket – Shute Harbour Small Planning Area extends to the east of Cannonvale – Airlie Beach, following Shute Harbour Road from Hermitage Drive through to Shute Harbour in the east. Within this area there are several key suburbs including Jubilee Pocket, Mandalay, Flametree, Mt Rooper and Shute Harbour (Map 3).

The Jubilee Pocket – Shute Harbour Small Planning Area encompasses a total area of approximately 2,308ha. Of this land approximately 463ha is currently designated for residential purposes with a further 7.6ha identified for industrial purposes.

As at the 2011 Census approximately 15% of the Jubilee Pocket – Shute Harbour population was employed in the accommodation and food services industry with 13% employed in both the retail trade and construction industry respectively. An additional 11% of the population were employed by the transport, postal and warehousing industry. Similar to Cannonvale – Airlie Beach this area is expected to demonstrate continued growth in industries supporting local tourism, with potential

increases in resource related employment as a result of development in Bowen and Galilee Basins.

As demonstrated in Table 2, the Small Planning Area of Jubilee Pocket – Shute Harbour is anticipated to experience increases in both its population and employment figures under both moderate and all potential growth scenarios. In terms of population growth, the Jubilee Pocket – Shute Harbour area is expected to more then double under the moderate growth scenario and nearly triple under the all potential growth scenario.

Employment figures in comparison are expected to experience a moderate increase under both scenarios. Given these projections it is anticipated that the Jubilee Pocket – Shute Harbour area will act largely as a dormitory suburb, with residents finding employment elsewhere in the region, particularly within the Cannonvale – Airlie Beach area where the majority of businesses and services are located.

In spite of the growth anticipated within the Jubilee Pocket – Shute Harbour Small Planning Area, a number of physical attributes have been identified with the potential to limit the capacity of land in the area. The key physical constraints demonstrated in this area largely result from the layout and topography of the area with steep slopes and small valleys dominating the landscape. Other attributes also include:

- Significant quantities of wildlife habitat and protected areas recognised as being of state significance;
- Strom tide inundation along the coast line;
- Localised susceptibility to bushfire; and
- Conway National Park and Conway Conservation Park to the north and south of the area.

10.1.2. Political context

There are three key political attributes anticipated to influence the development of the Airlie Study Area. In addition to earlier discussion of these matters in section 2.2 the following key considerations relevant to the Airlie Study Area have been summarised below.

10.1.2.1. Whitsunday Coast Airport Priority Development Area

The proposed WCAPDA has the ability to greatly influence development in the Airlie study area. The Airlie Study Area has a strong reliance on tourism, with this industry not only creating substantial numbers of direct and indirect jobs across the area, but also directly injecting cash flow into the areas economy.

The WCAPDA is expected to deliver the following key benefits to the Airlie study area:

- Tourist numbers will continue recover and substantially increase, as the WRC area gains becomes more accessible to the domestic and international market; and
- Flight links with small resource towns providing greater potential for FIFO/DIDO workforces of the Bowen and Galilee basins to settle in the area.

Additionally it is anticipated that this site will assist in supplementing the industrial capacity of the Airlie study area, where the development capacity of industrial land is limited by a variety of physical and socio-economic constraints (See Section 5 for further details). The economic feasibility of this occurring has recently been analysed by Norling Consulting (Proposed Whitsunday Coast Airport PDA: Preliminary Economic Assessment, Norling Consulting, March 2014), indicating that such development would be compatible with future industrial needs.

10.1.2.2. Abbot Point State Development Area and the proposed Galilee Basin State Development Area

The Airlie Study Area is anticipated to experience limited influence from the APSDA and the proposed GBSDA. Due to the distance between these two key development areas and the Airlie study area, it is expected that the minimal changes will occur within the social-economic fabric of the area. It is noted however that the Airlie Study Area may be able to optimise opportunities in becoming a dormitory area for the FIFO and DIDO workforce given the services, facilities and lifestyle of the area.

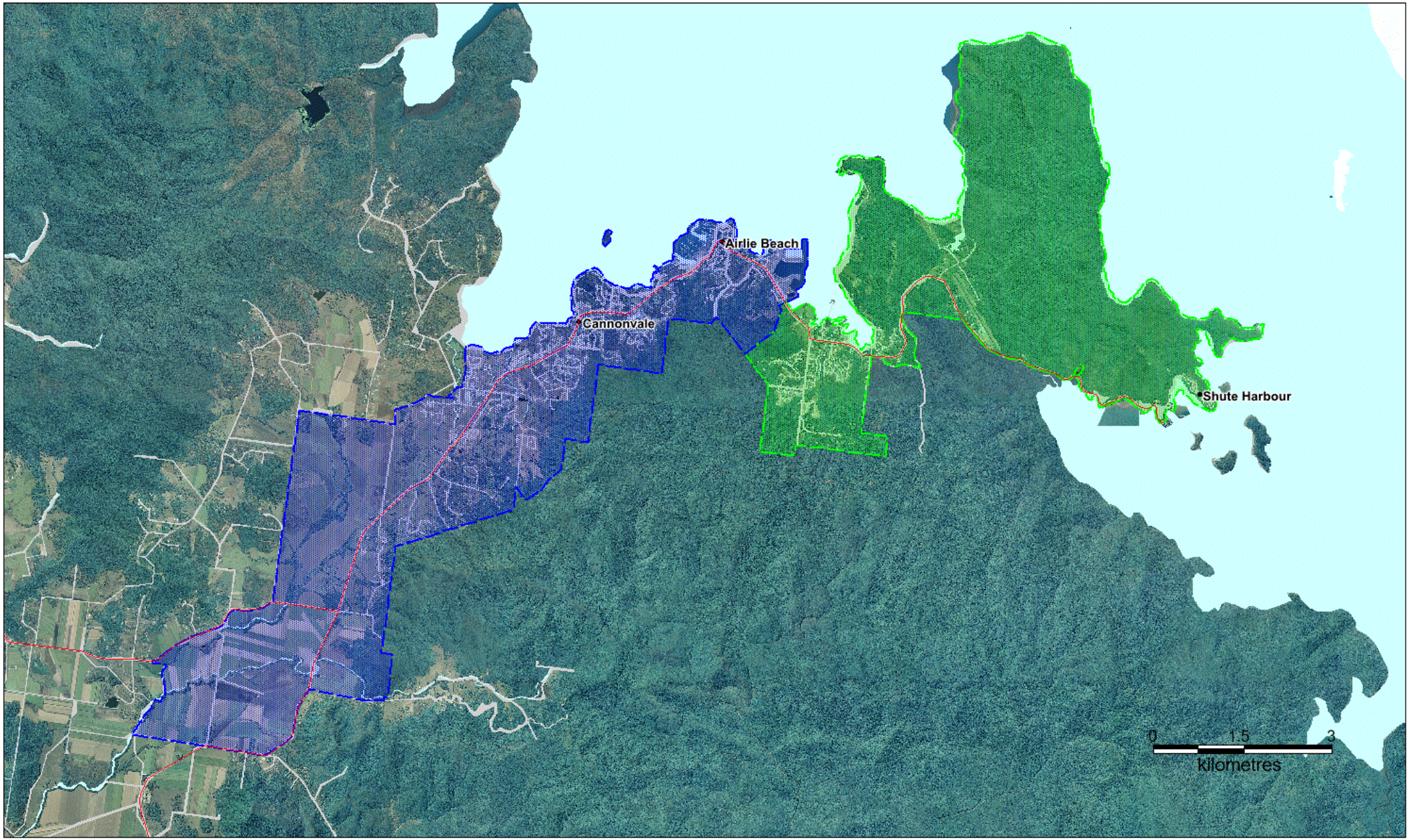
Despite the minor effects expected in the Airlie Study Area as a result of development within the APSDA and proposed GBSDA, it is expected that these developments will continue to have an influence on the greater WRC area making it an important consideration when planning for future land use, development and infrastructure delivery.

10.1.2.3. State Planning Policy

The key themes and attributes of SPP, particularly in relation to the Bowen Study Area outlined below in Table 32.

Table 32: Key anticipated impacts of the SPP on the Airlie Study Area to 2036.

Theme	Attributes	Impacts
Economic growth	▪ Agriculture: Protecting class A and B agricultural land by: avoiding its fragmentation, avoiding non-agricultural development on the land and maintaining the lands condition.	▪ Moderate amount of Class A and B agricultural land present. ▪ Airlie is one of the largest urban centres of the area, expecting the largest growth, therefore considered and well justified decisions should be made regarding the need to rezone rural land.
Environment & heritage	▪ Biodiversity: Matters of National and State significance identified and protected from significant development impacts.	▪ Presence of Conway National Park, Conway State Forest, Conway Conservation Park and protected wildlife habitat. ▪ Development be suitably located and constructed to avoid or mitigate significant adverse environmental impacts and encroach into these areas.
Hazards & safety	▪ Natural hazards: Natural hazards are identified and appropriately avoided or mitigated to maintain natural processes and avoid cumulative increases in severity.	▪ Bushfire, landslide and coastal hazards are all identified in this area. ▪ Development needs to be suitably designed and constructed to reduce developments susceptibility to natural hazards (Bushfire and flood). ▪ Development needs to be appropriately located to avoid the risk of natural hazards (Coastal hazards and landslide).



LEGEND

- Town
- Major Road

Urban Growth Study Area

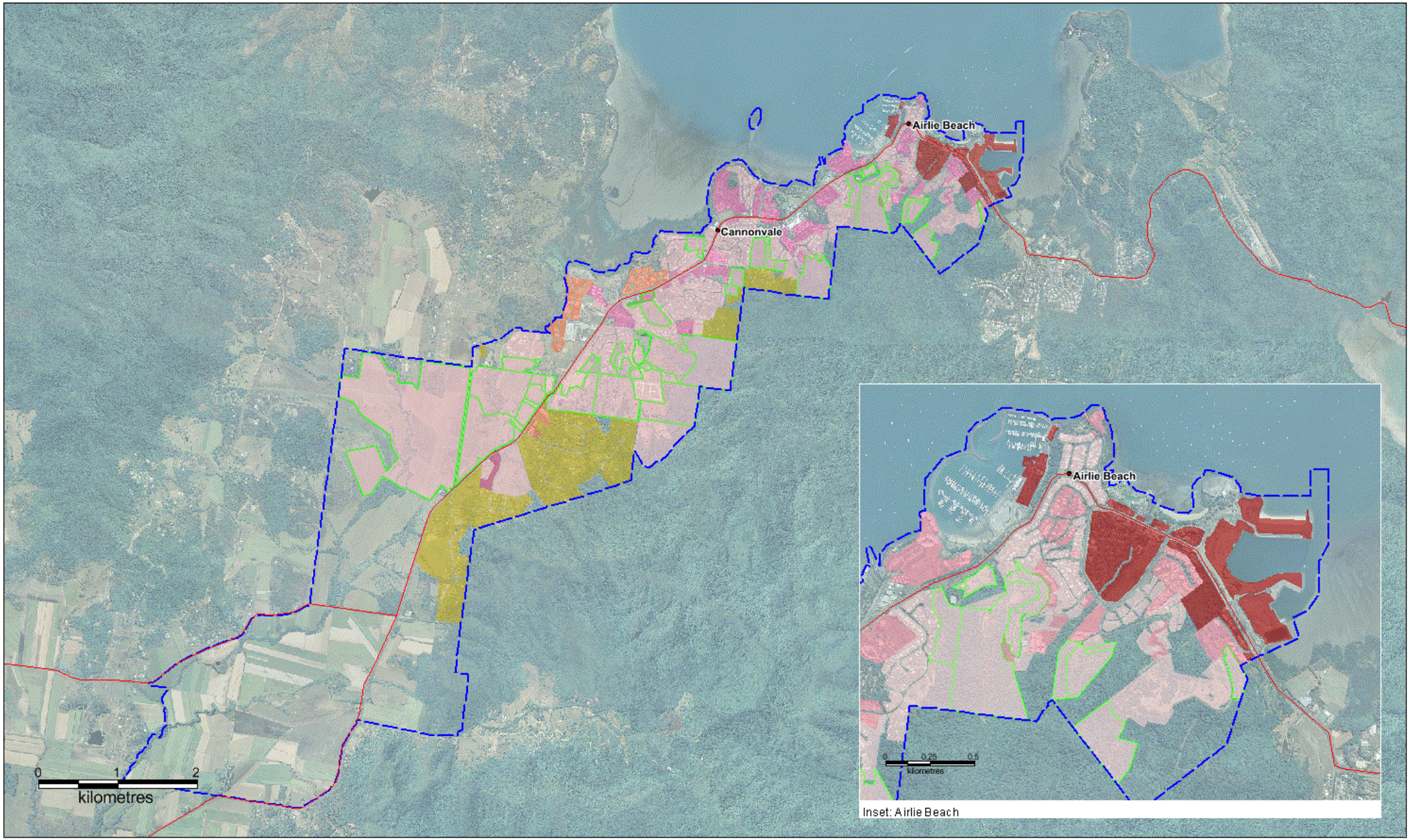
- Cannonvale/Airlie Beach
- Jubilee Pocket/Shute Harbour

Created By: M Ruff

Map Scale: Scale 1:60,000 (A3)

Date Created: 14/03/2013

Title: Urban Growth Study Whitsunday Map 1



LEGEND

- Town
- Major Road

Urban Growth Study Area

- Cannonvale/ Airlie Beach
- Undeveloped

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging communities
- Industry

Created By: M Ruff

Map Scale: Scale 1:45,000 (A3)

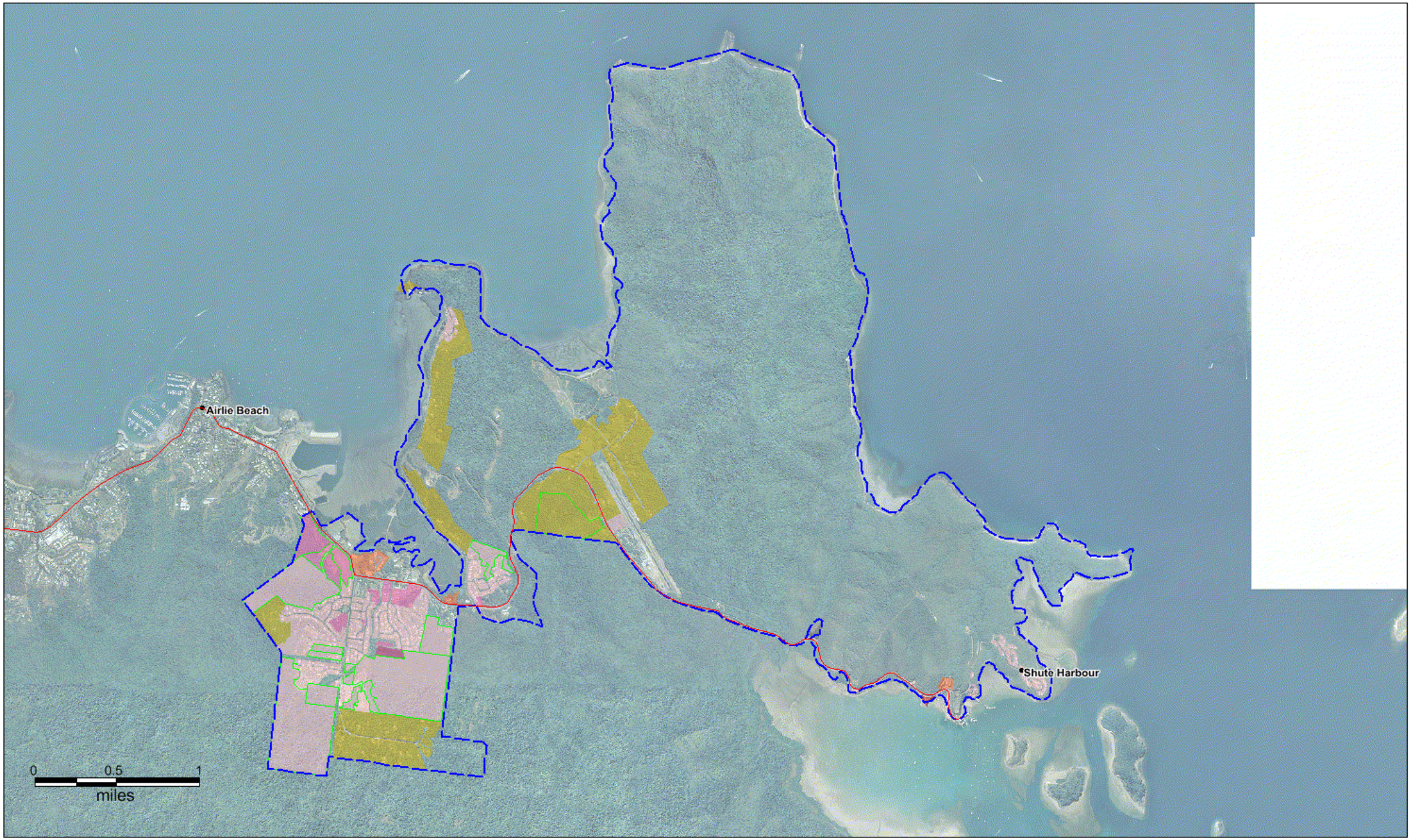
Date Created: 31/03/2014

Title:

Map 2

Residential and industrial land capacity

Cannonvale/Airlie Beach



LEGEND

- Town
- Major Road

Urban Growth Study Area
- Jubilee Pocket/ Shute Harbour
- Undeveloped

Existing Classification
- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging community
- Industry

Created By: M Ruff

Map Scale: Scale 1:35,000 (A3)

Date Created: 31/03/2014

Title: **Map 3**

Residential and industrial land capacity

Jubilee Pocket/Shute Harbour

10.2. Airlie growth estimates and demand analysis

10.2.1. Residential assumptions & demand analysis

Residential estimates and assumptions were developed for both small planning areas of the Airlie study area. The assumed distribution and subsequent demand analysis can be seen in Table 33 with specific details for each Small Planning Area detailed below.

Table 33: Results of the demand analysis for the Airlie study area.

Zone	Additional Single Dwellings		Additional Multiple dwellings	
	Assumed distribution (%)	Dwelling estimates (du)	Assumed distribution (%)	Dwelling estimates (du)
Cannonvale – Airlie Beach				
TOTAL	100	1,517.0	100	1,177.0
Low density residential	70	1,061.9	25	294.3
Low-medium density residential	25	379.2	65	765.0
Mixed use	0	0.0	10	117.7
Rural residential	5	75.9	0	0.0
Emerging community	0	0.0	0	0.0
Jubilee Pocket – Shute Harbour				
TOTAL	100	818.0	100	631.0
Low density residential	75	613.5	30	189.3
Low-medium density residential	20	163.6	70	441.7
Mixed use	0	0.0	0	0.0
Rural residential	5	40.9	0	0.0
Emerging community	0	0.0	0	0.0

10.2.1.1. Cannonvale – Airlie Beach

The assumed distribution of residential dwelling types (demonstrated above) for the Cannonvale – Airlie Beach Small Planning Area has been developed taking into account expected political and socio-economic changes including but not limited to:

- Significant growth in population; and
- Significant growth in employment.

As demonstrated, the assumed residential dwelling distribution single and multiple dwellings within Cannonvale – Airlie Beach aligns with the regional dwelling distribution range detailed in Chapter One of this report (Section 3.1.2). The above distribution was developed having regard for the following development traits:

- Existing settlement pattern of single dwellings on moderate sized lots (400m^2 or larger);
- Significant quantities of Low density residential land;
- Moderate quantity of multiple dwellings located in the Low and Low-medium density residential zones;
- Significant quantities of Mixed use zoned land; and
- Moderate quantities of Rural residential zoned land.

Based on this assumed distribution of single and multiple dwellings, dwelling estimates for each zone have been developed, establishing the anticipated demand for residential dwellings in each

residential zone. This demonstrates that the Low density residential zone will continue to maintain a strong single dwelling component, with multiple dwelling featuring largely in the Low-medium density residential and Mixed use zones.

10.2.1.2. Jubilee Pocket – Shute Harbour

The Jubilee Pocket – Shute Harbour assumed dwelling distribution has been similarly developed based on the socio-economic and political context of the area and the distribution range for the region. Key changes anticipated within this Small Planning Area include:

- Moderate growth in population; and
- Limited growth in employment.

As illustrated above, the assumed dwelling distribution of Jubilee Pocket – Shute Harbour aligns with the regional distribution range of Table 4. The dwelling distribution illustrated above was developed having regard to the following attributes of the Small Planning Area:

- Existing settlement pattern of single dwellings on moderate sized lots (500m^2 or larger);
- Moderate quantity of Low density residential land available;
- Moderate quantities of multiple dwellings in the Low and Low-medium density residential zoned land;
- No Mixed use zone land; and
- Moderate quantities of Rural residential zoned land.

In light of the dwelling distribution assumptions the demand analysis was completed. As demonstrated in Table 35 the Jubilee Pocket – Shute Harbour Small Planning Area is likely to experience the highest growth in single dwellings across the residential zones, the majority of which will be located within the Low density residential zone. Multiple dwellings are largely anticipated within the Low-medium density residential zone.

10.3. Residential land capacity analysis

The results of the residential land capacity analysis for the Airlie Study Area are demonstrated in Table 34 overleaf.

Table 34: Results of the residential capacity analysis for the Airlie study area (*Dwelling distributed as per nominated dwelling distributions – Section 2.1)

Zone	Single Dwellings (du)			Multiple dwellings (du)			Existing capacity		
	Existing dwellings 2013	Anticipated dwellings 2036	Additional dwellings 2013-3036	Existing dwellings 2013	Anticipated dwellings 2036	Additional dwellings 2013-3036	Total additional dwellings (du)*	Estimated dwelling capacity (du)	Estimated land capacity (ha)
Cannonvale – Airlie Beach									
Low density residential	1,589.0	3,106.0	1,061.9	1,382.0	2,559.0	294.3	1,356.2	+4,071.8	+407.2
Low-medium density residential			379.3			765.0	1,144.3	-1,105.0	-55.2
Mixed use			0.0			117.7	117.7	+1,101.5	+36.7
Rural residential			75.8			0.0	75.8	-75.8	-37.9
Emerging community			0.0			0.0	0.0	+17.3	+2.2
TOTAL			1,517.0			1,177.0	2,694.0	+4,009.8	+353.0
Jubilee Pocket – Shute Harbour									
Low density residential	647.0	1,465.0	613.5	376.0	1,007.0	189.3	802.8	+742.0	+74.2
Low-medium density residential			163.6			441.7	605.3	-243.1	-12.2
Mixed use			0.0			0.0	0.0	0.0	0.0
Rural residential			40.9			0.0	40.9	-2.2	-1.1
Emerging community			0.0			0.0	0.0	+17.6	+2.2
TOTAL			818.0			631.0	1,449.0	+514.3	+63.1

10.3.1. Findings & recommendations

The following findings and recommendations have been developed for the two small planning areas of the Airlie study area.

10.3.1.1. Cannonvale – Airlie Beach

Cannonvale – Airlie Beach was identified as having the largest area of developable land out of the two small planning areas of the Airlie study area, with approximately 542.8ha of Low density residential land available. The results of the capacity analysis for Cannonvale – Airlie Beach demonstrated that this developable area supplies more then enough land for the anticipated growth of this Small Planning Area to 2036. The conclusions and recommendations drawn from these results are described below in Table 35.

Table 35: Findings and recommendation of the Cannonvale – Airlie Beach residential capacity analysis.

Applicable Zone	Key findings	Recommended response
Low density residential	▪ Significant oversupply of land exists to the north and south of Shute Harbour Road, along the length of the Small Planning Area.	▪ No requirement for additional zoned land. ▪ Existing zoned land to be appropriately developed.
Low-medium density residential	▪ Moderate quantities of additional land may be required within the existing urban footprint to accommodate additional dwellings (55.2ha).	▪ Additional land required. ▪ Re-allocation of land in areas of close proximity to existing centres such Airlie Beach and Centro shopping centre and/or land which demonstrates a logical extension of low-medium density land. ▪ Infill development within existing zoned land will create a more consolidated urban form.
Mixed use	▪ Sufficient land exists within Airlie Beach to support additional dwellings.	▪ No requirement for additional zoned land. ▪ Existing zoned land to be appropriately developed.
Rural residential	▪ Moderate additional land may be required on the north-western fringe of existing urban settlement (37.9ha).	▪ Additional land required. ▪ Additional dwellings are accommodated within existing zoned land with policy changes (i.e. reduction of minimum lot size) to maximise existing capacity of this land. ▪ Additional zoned land is available to the north of the Airlie study boundary.

Overall Cannonvale – Airlie Beach is anticipated to have an oversupply of approximately 353ha of residential land. This demonstrates that the developable land currently zoned within the Small Planning Area is ample for anticipated increases in population to 2036. These findings also indicate that Cannonvale – Airlie Beach is able to readily accommodate additional growth from surrounding small planning areas.

It is also noted that additional rural residential land exists outside of the Cannonvale – Airlie Beach Small Planning Area, capable of adequately accommodating additional demand for rural residential land.

10.3.1.2. Jubilee Pocket – Shute Harbour

The Jubilee Pocket – Shute Harbour Small Planning Area has been identified as having a significant amount of developable Low density residential zoned land (154.5 ha) and a moderate supply of developable Low-medium density residential land (18.1ha). Having regard for these identified areas and the results of the demand analysis, the capacity analysis for Jubilee Pocket – Shute Harbour was produced. From these results a number of key conclusions and recommendations have been made regarding future growth in the Jubilee Pocket – Shute Harbour Small Planning Area. These are illustrated in Table 36.

Table 36: Findings and recommendations of the Jubilee Pocket – Shute Harbour residential capacity analysis.

Applicable Zone	Key findings	Recommended response
Low density residential	▪ Moderate oversupply of land exists within the south west of the Small Planning Area.	▪ No requirement for additional zoned land. ▪ Existing zoned land to be appropriately developed.
Low-medium density residential	▪ Additional land may be required within the existing urban footprint to accommodate additional dwellings (12.2ha).	▪ Additional land required. ▪ Re-allocation of land which demonstrates a logical extension of low-medium density land. ▪ Infill development within existing zoned land will reduce the need for additional allocation of land and create a more consolidated urban form.
Rural residential	▪ Limited additional land may be required on the fringe of existing urban settlement (1.1ha).	▪ Additional land required. ▪ Additional dwellings are accommodated within existing zoned land with policy changes (i.e. reduction of minimum lot size) to maximise existing capacity of this land.

As demonstrated, the Jubilee Pocket – Shute Harbour Small Planning Area is anticipated to have a surplus of 63.1ha of residential land. This finding reveals that current zoned land within Jubilee Pocket – Shute Harbour will be able to accommodate the significant amount of population growth anticipated in the area until 2036.

It is noted that the proportion of the multiple dwellings anticipated to occur within the residential zones of Jubilee Pocket – Shute Harbour may present a slightly unrealistic estimate due to the sites location, environmental constraints (steep slope) and the extent of existing settlement. In the case that this Small Planning Area is unable to support such growth it is expected that the Cannonvale – Airlie Beach Small Planning Area will naturally accommodate this development within its existing urban form.

10.3.2. Residential growth beyond 2036

This report makes the following recommendations regarding future Emerging community allocation within the Airlie study area:

- Cannonvale – Airlie Beach:
  - Sites to the south of existing zoned residential land along Shute Harbour Road as far south as Gregory Cannon-valley Road and west to Sugarloaf Road.
  - Sites to the west of Centro shopping centre, extending off Paluma Road.
- Jubilee Pocket – Shute Harbour:
  - Additional Emerging community is not recommended within this Small Planning Area.

10.3.3. Residential land summary

The Airlie Study Area has been progressed through a number of analyses to determine the demand and capacity of the area in the years to 2036. Overall this area has been demonstrated to have sufficient capacity to support the dwelling and population estimates of Economic and Population Study.

Although population and dwelling estimates have been provided on a Small Planning Area basis, it is noted that growth and development may be distributed across the Airlie Study Area in a manner that differentiates from that fashioned in this report. This is acceptable given that the Airlie Study Area as a whole has the ability to accommodate a range of growth scenarios.

The results of the capacity analysis clearly demonstrate the capacity of the two small planning areas investigated. From these findings Cannonvale – Airlie Beach was demonstrated to:

- Contain the largest developable area,
- Have a significant oversupply of residential land;
- Require additional low-medium density residential land; and
- Require additional Emerging community.

Given the above conclusions, it was recommended that Low-Medium density land be supplied via a two step process whereby Low density residential land is reallocated, and existing Low-medium land is consolidated, reinvigorating development along Shute Harbour Road and within the Airlie Beach precinct.

The Jubilee Pocket – Shute Harbour Small Planning Area presented quite similar results, indicating that an oversupply of zoned residential land was available. It was indicated however that additional Low-medium density residential land may be naturally accommodated within the Cannonvale – Airlie Beach area as a result of the physical constraints limiting development in Jubilee Pocket – Shute Harbour.

The final physical reallocation recommendations of the Airlie Study Area are detailed in Map 4 and 5. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.

10.4. Airlie industrial land capacity analysis

The results of the Airlie study area's industrial land capacity analysis is demonstrated below.

Table 37: Results of the industrial capacity analysis for the Airlie study area.

Zone	Industrial floor space (m^2)			Existing industrial capacity	
	Existing floor space 2013	Anticipated Floor space 2036	Additional 2013-2036	Estimated floor space (m^2)	Estimated land (ha)
Cannonvale – Airlie Beach					
Industrial land	61,004	121,812	60,808	-60,808	-6.08
Jubilee Pocket – Shute Harbour					
Industrial land	13,788	14,700	912	-912	-0.09
Total	74,792	135,882	61,720	-61,720	-6.07

10.4.1. Findings and recommended response

The following findings and recommendations have been developed for the two small planning areas of the Airlie study area.

Table 38: Findings and recommendations of the Airlie Study Area industrial capacity analysis.

Location	Key findings	Recommended response
Cannonvale – Airlie Beach		
Industrial land	▪ Limited additional land may be required to accommodate additional growth (6.08ha).	▪ Additional land required. ▪ Protect and consolidate existing zoned land for future use. ▪ Where new industry is inconsistent with exiting development, land should be allocated in proximity to the Whitsunday Coast Airport.
Jubilee Pocket – Shute Harbour		
Industrial land	▪ Limited additional land may be required to accommodate additional growth (0.09ha).	▪ Additional land required. ▪ Protect and consolidate existing zoned land for future use. ▪ Where new industry is inconsistent with exiting development, land should be allocated in proximity to the Whitsunday Coast Airport.

In accords with Tables 37 & 38 it is clear that small shortfall of industrial exists across the small planning areas of the Airlie Study Area (6.07ha). Having regard for the key economic driver of the this area (tourism) and the existing physical attributes of the area, it has been recommended that existing industrial land be protected and consolidated for future use with further large format industrial development being better located external to the existing urban settlement of the Airlie study area. The recommended response for this undersupply of land consequently identifies the reallocation of additional industrial development to the vicinity of the Whitsunday Coast Airport as part of the proposed WCAPDA.

The proposal to reallocate industrial land in the vicinity of the Whitsunday Coast Airport is supported by the findings of the Proposed Whitsunday Coast Airport PDA: Preliminary Economic Assessment report recently completed by Norling Consulting (March 2014). This report establishes the ability and capacity of the proposed PDA site to supplement large format industrial sites, highlighting that industrial land in the Airlie area be preserved for population servicing light industrial activities.

10.4.2. Industrial growth beyond 2036

The following locations are recommended for Industry investigation zoning consideration for the Airlie study area:

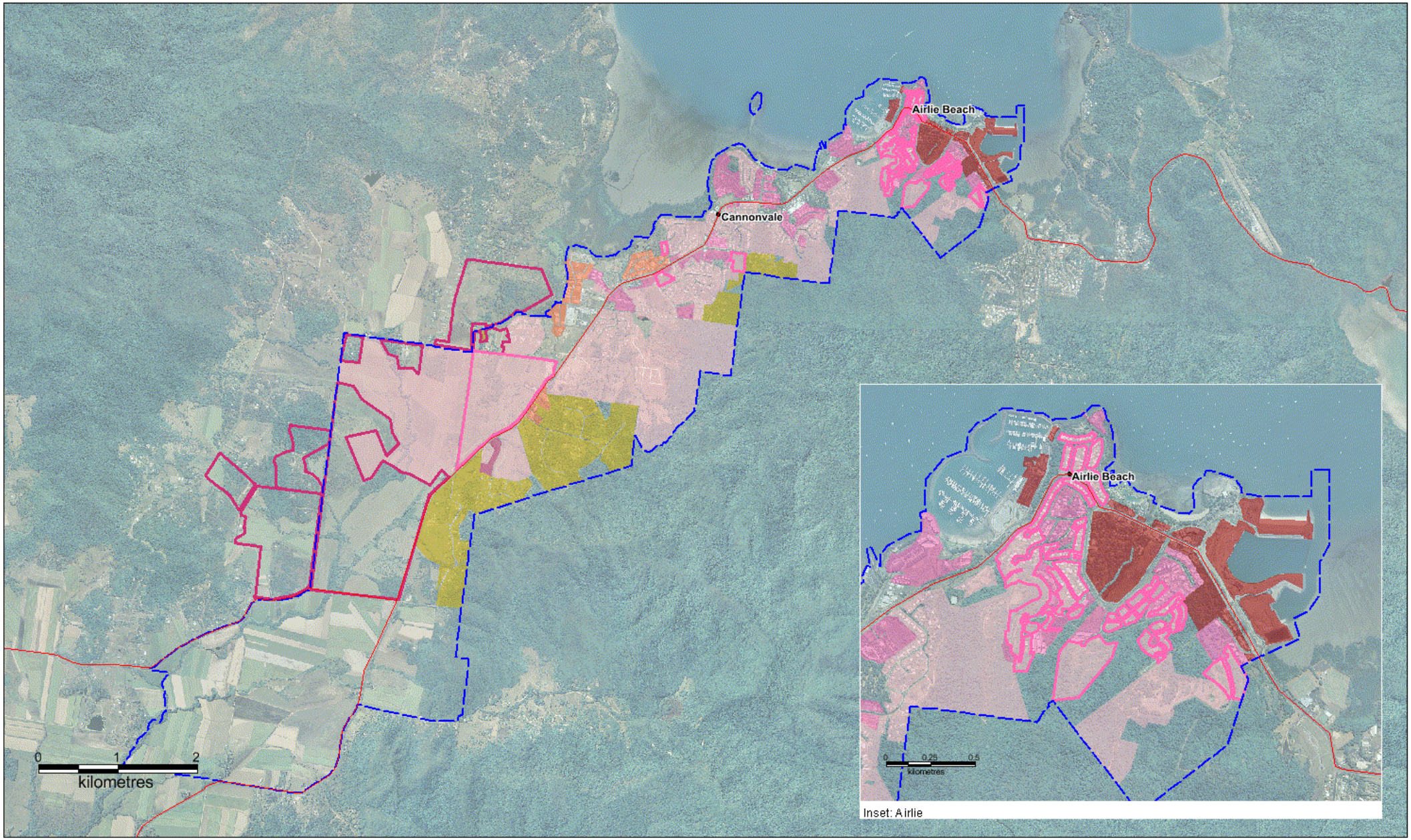
- Sites within close proximity to the Whitsunday Coast Airport, from the Bruce Highway along Lascelles Avenue.

In this case, it is recommended that Industry investigation be allocated external to the Airlie study area, where it may be better located and accessed. The establishment of this zone within the proximity to the WCAPDA will enable WRC to effectively optimise opportunities to support future growth and expansion of the tourism industry, at the same time maintaining the ability of WRC to respond to expansion of the APSDA and proposed GBSDA and preserving the service based industry of the Airlie study area.

10.4.3. Industrial land summary

Through the capacity analysis it was determined that the Airlie Study Area had a minor deficit of industrially zoned land. As a result of the areas economic drivers, location and environmental constraints, it was determined that additional industrial capacity could not be sourced from within the Airlie study area. Consequently, to appropriately address this short fall, additional land outside of the Airlie study was recommended for reallocation. In light of this land deficit, additional land in the proximity to the WCAPDA was recommended for inclusion in the Industry Investigation zone, with such zoning intended to optimise industrial development as part of the potential Airport expansion.

The final physical reallocation recommendations of the Airlie Study Area are detailed in Map 4 and 5. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.



LEGEND

- Town
- Major Road
- Urban Growth Study Area: Cannonvale/ Airlie Beach

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural residential
- Emerging community
- Industry

Recommended Classification

- Low-medium density residential
- Emerging Community

Created By: M Ruff

Map Scale: Scale 1:45,000 (A3)

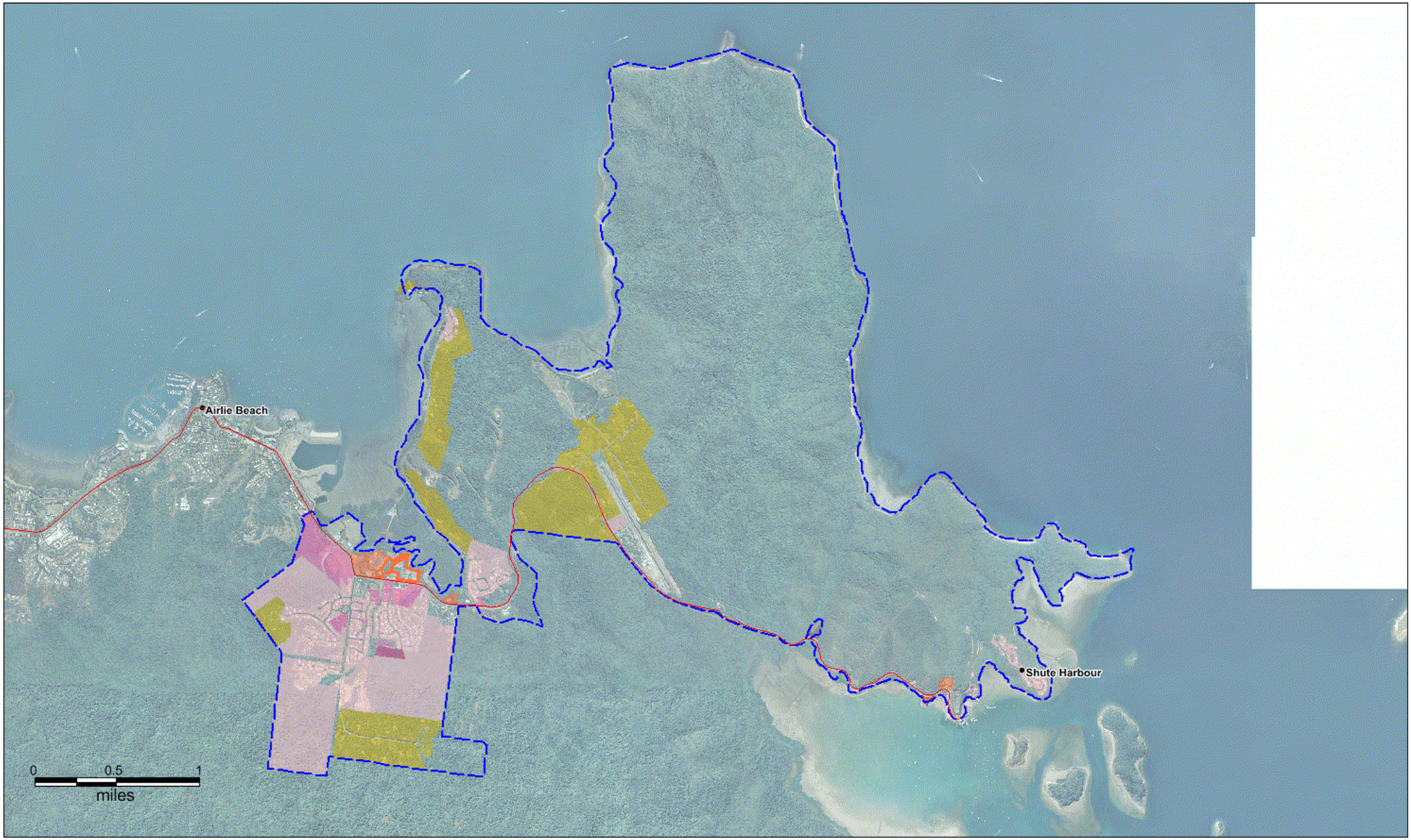
Date Created: 31/03/2014

Title:

Map 4

Recommended reallocation of land

Cannonvale/Airlie Beach



LEGEND

- Town
- Major Road
- Urban Growth Study Area
- Jubilee Pocket/ Shute Harbour

Existing Classification

- Low density residential
- Low-medium density residential
- Mixed use
- Rural Residential
- Emerging community
- Industry

Recommended Classification

- Low Impact Industry

Created By: M Ruff

Map Scale: Scale 1:35,000 (A3)

Date Created: 31/03/2014

Title: **Map 5**

Reallocation of land recommendations

Jubilee Pocket/Shute Harbour

10.5. Airlie land capacity conclusions

From the conclusions and recommendations of Sections 10.3 and 10.4 consistent policy positions have been established in a uniform manner across the entire WRC local government area. The key findings and recommendations of this Airlie Study Area illustrated in Table 41.

Table 39: Overall findings and recommendations of the Airlie study area.

Zone	Key findings	Recommendations
Low density residential	▪ Significant oversupply of land is available.	▪ Existing land is appropriately developed.
Low-medium density residential	▪ Moderate supply of additional land required.	▪ Existing land is consolidated through appropriate infill development. ▪ Appropriate reallocation of low density residential land.
Mixed use	▪ Sufficient land available.	▪ Existing land is appropriately developed.
Rural residential	▪ Limited supply of additional land required.	▪ Proposed reduction in minimum lot sizes are to maximise the existing capacity of this land.
Industry	▪ Limited supply of additional land required.	▪ Existing land is protected and consolidated. ▪ Additional land is located in proximity to the Whitsunday Coast Airport.

The Airlie Study Area has provided a clear and succinct snapshot as to current supply, demand and capacity of residential and industrial land across the study area. Given the anticipated demand and capacity of existing residential and industrial zoned land within the Airlie Study Area it has been concluded that there is sufficient residential capacity within existing zones to meet the anticipated growth till 2036, with a minor deficit in industrial land identified and appropriately allocated. This report has not only provided recommendations to improve the areas residential and industrial capacity to 2036, but also recognised the importance in planning for growth beyond 2036.

The final physical reallocation recommendations of the Airlie Study Area are detailed in Map 4 and 5. In some instances it is noted that an additional reallocation of land has been undertaken to appropriately consolidate the existing urban footprint.

Appendices

Appendix A: Breakdown of dwelling type categories per QPP v3.0 defined uses

Appendix A:

Dwelling categories	QPP defined uses
Single dwelling	Caretaker's accommodation Community residence Dwelling house Dwelling unit Home-based business
Multiple dwelling	Dual occupancy Multiple dwelling Relocatable home park Residential care facility Retirement facility Rooming accommodation Rural workers accommodation Short term accommodation
Other dwelling	Resort complex Nature-based tourism Non-resident workforce accommodation Tourist park

Appendix B: Dwelling estimates the WRC area (2013-2036)

Appendix B:

Zone	Single Dwellings (du)							Multiple Dwellings (du)						
	2013	2016	2021	2026	2031	2036	Difference 2013-2036	2013	2016	2021	2026	2031	2036	Difference 2013-2036
Abbot Point – Merinda	250	537	292	294	297	303	53	28	59	32	32	32	32	4
Bowen North	2,412	2,416	2,434	2,471	2,498	2,530	119	1,144	1,180	1,246	1,323	1,398	1,478	334
Bowen South	249	279	382	499	613	712	463	153	172	237	311	385	450	297
Collinsville	497	587	581	596	603	609	112	333	396	398	415	426	438	105
Proserpine	1,140	1,166	1,203	1,240	1,279	1,315	175	390	412	448	485	524	564	174
Cannonvale – Airlie Beach	1,589	1,713	2,032	2,391	2,744	3,106	1,517	1,382	1,479	1,734	2,017	2,288	2,559	1,177
Jubilee Pocket – Shute Harbour	647	721	887	1,064	1,267	1,465	818	376	429	548	681	840	1,007	631

Appendix C: Industry estimates for the WRC area (2013-2036)

Appendix C:

Zone	Anticipated floor space (m^2)						
	2013	2016	2021	2026	2031	2036	Difference 2013-2036
Abbot Point – Merinda	13,308	15,779	19,899	24,018	28,137	32,256	18,948
Bowen North	94,428	95,724	97,884	100,044	102,204	104,364	9,936
Bowen South	7,200	7,319	7,517	7,715	7,914	8,112	912
Collinsville	12,984	15,008	18,381	21,754	25,127	28,500	15,516
Proserpine	46,332	47,121	48,436	49,750	51,065	52,380	6,048
Cannonvale – Airlie Beach	61,044	68,970	82,181	95,391	108,602	121,812	60,768
Jubilee Pocket – Shute Harbour	13,788	13,907	14,105	14,303	14,502	14,700	912

Appendix D: Residential capacity analysis calculations for the WRC area

Small Area Summary

Last Update 19/02/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Development capacity statistics									
	Norling dwellng estimates			Dwelling surplus/shortfall			Ha surplus/shorfall (unconstrained)		
Zone	Merinda Abbot Pt	Bowen North	Bowen South	Merinda Abbot Pt	Bowen North	Bowen South	Merinda Abbot Pt	Bowen North	Bowen South
Low Density Res	45.850	137.600	677.450	-45.850	306.860	1,866.610	-4.585	30.686	186.661
Low-Med Density Res	3.200	258.400	59.400	-3.200	-136.180	-59.400	-0.160	-6.809	-2.970
Mixed use	0.000	50.100	0.000	0.000	47.730	0.000	0.000	1.591	0.000
Rural Residential	7.950	5.900	23.150	7.372	-5.900	86.972	3.686	-2.950	43.486
Emerging Community	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Totals	57.000	452.000	760.000	-41.678	212.510	1,894.182	-1.059	22.518	227.177
Study Area Total	1,269.000			2,065.014			248.636		

Applicable Small Area Merinda/Abbot Point
Last Update 19/02/14 - Kat

Density Assumptions (Du/Ha)	
Zone	**Assumed density**
Low Density Res	10.000
Low-Med Density Res	20.000
Mixed use	30.000
Rural Residential	2.000
Emerging Community	8.000

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Total Area	
Low density residential	15.321
Low medium density residential	0.202
Mixed use	0.000
Rural residential	8.745
Emerging community	0.000
Total	24.268

Future development capacity statistics					
			Dwelling/land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated yield**	**Norling dwellng estimates**	**Dwelling surplus/shortfall**	**Ha surplus/shorfall (unconstrained)**
Low Density Res	0.000	0.000	45.850	-45.850	-4.585
Low-Med Density Res	0.000	0.000	3.200	-3.200	-0.160
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	7.661	15.322	7.950	7.372	3.686
Emerging Community	0.000	0.000	0.000	0.000	0.000
Totals	0.000	15.322	57.000	-41.678	-1.059

Merinda-Abbot point

GIS Baselines	
Total residential area (ha)	39.820
Total developed residential area (2013) ha	39.820
Total undeveloped residential area (2036) ha	0.000

Norling Baseline data						
	Single Dwellings			Multiple Dwellings		
Projections	2013	2036	Difference	2013	2036	Difference
Norling total projected pop (not including 'other dwelling' types)	**697.000**	809.000	112.000	**43.000**	51.000	8.000
Norling total projected dwelling (not including 'other dwelling' types)	250.000	303.000	**53.000**	28.000	32.000	**4.000**

Population and dwelling asumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.850	0.200	0.000
Low-Med Density Res	0.000	0.800	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.150	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	1.000	1.000	0.000

Breakdown of Norling Population Projections - 2013			
	Single dwellings	Multiple Dwellings	Total Population in Zone
Low Density Res	592.450	8.600	601.050
Low-Med Density Res	0.000	34.400	34.400
Mixed use	0.000	0.000	0.000
Rural Residential	104.550	0.000	104.550
Emerging Community	0.000	0.000	0.000
Total	**697.000**	**43.000**	740.000

Breakdown of Norling Additional Dwelling projections - 2036			
	Single dwellings	Multiple Dwellings	Total additional dwellings in Zone
Low Density Res	45.050	0.800	45.850
Low-Med Density Res	0.000	3.200	3.200
Mixed use	0.000	0.000	0.000
Rural Residential	7.950	0.000	7.950
Emerging Community	0.000	0.000	0.000
Total	**53.000**	**4.000**	57.000

Background Calculations - Informing population and dwelling assumptions

Population and dwelling % assumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.850	0.200	0.000
Low-Med Density Res	0.000	0.800	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.150	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	100.000	100.000	0.000

Dwelling assumptions							
	Single dwellings 2036		Multiple Dwellings 2036				
Zone	All	Additional	All	Additional	Other dwellings	Total 2036	Total additional
Low Density Res	257.550	45.050	6.400	0.800	0.000	263.950	45.850
Low-Med Density Res	0.000	0.000	25.600	3.200	0.000	25.600	3.200
Mixed use	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rural Residential	45.450	7.950	0.000	0.000	0.000	45.450	7.950
Emerging Community	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	303.000	53.000	32.000	4.000	0.000	335.000	57.000

Applicable Small Area Bowen North
Last Update 19/02/14 - Kat

Density Assumptions (Dwellings/Ha)	
Zone	**Assumed density**
Low Density Res	10.000
Low-Med Density Res	20.000
Mixed use	30.000
Rural Residential	2.000
Emerging Community	8.000

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Total Area	
Low density residential	256.760
Low medium density residential	179.837
Mixed use	4.494
Rural residential	5.864
Emerging community	0.000
Total	446.955

Future development capacity statistics					
		Total estimated yield	Dwelling/land capacity statistics		
Zone	**Total Undeveloped Area (ha)**		**Norling dwellng estimates**	**Dwelling surplus/shortfall**	**Ha surplus/shorfall (unconstrained)**
Low Density Res	44.446	444.460	137.600	306.860	30.686
Low-Med Density Res	6.111	122.220	258.400	-136.180	-6.809
Mixed use	3.261	97.830	50.100	47.730	1.591
Rural Residential	0.000	0.000	5.900	-5.900	-2.950
Emerging Community	0.000	0.000	0.000	0.000	0.000
Totals	53.818	664.510	452.000	212.510	22.518

Bowen North

GIS Baselines	
Total residential area (ha)	442.461
Total developed residential area (2013) ha	391.904
Total undeveloped residential area (2036) ha	50.557

Norling Baseline data						
	Single Dwellings			Multiple Dwellings		
Projections	2013	2036	Difference	2013	2036	Difference
Norling total projected pop (not including 'other dwelling' types)	**6,130.000**	6,199.000	69.000	**2,072.000**	2,531.000	459.000
Norling total projected dwelling (not including 'other dwelling' types)	2,412.000	2,530.000	**118.000**	1,144.000	1,478.000	**334.000**

Population and dwelling asumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.600	0.200	0.000
Low-Med Density Res	0.350	0.650	0.000
Mixed use	0.000	0.150	0.000
Rural Residential	0.050	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	1.000	1.000	0.000

Breakdown of Norling Population Projections - 2013			
	Single dwellings	Multiple Dwellings	Total Population in Zone
Low Density Res	3,678.000	414.400	4,092.400
Low-Med Density Res	2,145.500	1,346.800	3,492.300
Mixed use	0.000	310.800	310.800
Rural Residential	306.500	0.000	306.500
Emerging Community	0.000	0.000	0.000
Total	**6,130.000**	**2,072.000**	8,202.000

Breakdown of Norling Additional Dwelling projections - 2036			
	Single dwellings	Multiple Dwellings	Total additional dwellings in Zone
Low Density Res	70.800	66.800	137.600
Low-Med Density Res	41.300	217.100	258.400
Mixed use	0.000	50.100	50.100
Rural Residential	5.900	0.000	5.900
Emerging Community	0.000	0.000	0.000
Total	**118.000**	**334.000**	452.000

Background Calculations - Informing population and dwelling assumptions

Population and dwelling % assumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.600	0.200	0.000
Low-Med Density Res	0.350	0.650	0.000
Mixed use	0.000	0.150	0.000
Rural Residential	0.050	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	100.000	100.000	0.000

Dwelling assumptions							
	Single dwellings 2036		Multiple Dwellings 2036				
Zone	All	Additional	All	Additional	Other dwellings	Total 2036	Total additional
Low Density Res	1,518.000	70.800	295.600	66.800	0.000	1,813.600	137.600
Low-Med Density Res	885.500	41.300	960.700	217.100	0.000	1,846.200	258.400
Mixed use	0.000	0.000	221.700	50.100	0.000	221.700	50.100
Rural Residential	126.500	5.900	0.000	0.000	0.000	126.500	5.900
Emerging Community	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	2,530.000	118.000	1,478.000	334.000	0.000	4,008.000	452.000

Applicable Small Area Bowen South
Last Update 19/02/14 - Kat

Density Assumptions (Dwellings/Ha)	
Zone	**Unconstrained**
Low Density Res	10.000
Low-Med Density Res	20.000
Mixed use	30.000
Rural Residential	2.000
Emerging Community	8.000

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Total Area	
Low density residential	490.674
Low medium density residential	0.000
Mixed use	0.000
Rural residential	353.709
Emerging community	0.000
Total	844.383

Future development capacity statistics					
			Dwelling/land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated yield**	**Norling dwellng estimates**	**Dwelling surplus/shortfall**	**Ha surplus/shorfall (unconstrained)**
Low Density Res	254.406	2,544.060	677.450	1,866.610	186.661
Low-Med Density Res	0.000	0.000	59.400	-59.400	-2.970
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	55.061	110.122	23.150	86.972	43.486
Emerging Community	0.000	0.000	0.000	0.000	0.000
Totals	309.467	2,654.182	760.000	1,894.182	227.177

Bowen South

GIS Baselines	
Total residential area (ha)	859.473
Total developed residential area (2013) ha	589.977
Total undeveloped residential area (2036) ha	269.496

Norling Baseline data						
	Single Dwellings			Multiple Dwellings		
Projections	2013	2036	Difference	2013	2036	Difference
Norling total projected pop (not including 'other dwelling' types)	**742.000**	2,038.000	1,296.000	**254.000**	770.000	516.000
Norling total projected dwelling (not including 'other dwelling' types)	249.000	712.000	**463.000**	153.000	450.000	**297.000**

Population and dwelling asumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.950	0.800	0.000
Low-Med Density Res	0.000	0.200	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.050	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	1.000	1.000	0.000

Breakdown of Norling Population Projections - 2013			
	Single dwellings	Multiple Dwellings	Total Population in Zone
Low Density Res	704.900	203.200	908.100
Low-Med Density Res	0.000	50.800	50.800
Mixed use	0.000	0.000	0.000
Rural Residential	37.100	0.000	37.100
Emerging Community	0.000	0.000	0.000
Total	**742.000**	**254.000**	996.000

Breakdown of Norling Additional Dwelling projections - 2036			
	Single dwellings	Multiple Dwellings	Total additional dwellings in Zone
Low Density Res	439.850	237.600	677.450
Low-Med Density Res	0.000	59.400	59.400
Mixed use	0.000	0.000	0.000
Rural Residential	23.150	0.000	23.150
Emerging Community	0.000	0.000	0.000
Total	**463.000**	**297.000**	760.000

Background Calculations - Informing population and dwelling assumptions

Population and dwelling % assumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.950	0.800	0.000
Low-Med Density Res	0.000	0.200	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.050	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	100.000	100.000	0.000

Dwelling assumptions							
	Single dwellings 2036		Multiple Dwellings 2036				
Zone	All	Additional	All	Additional	Other dwellings	Total 2036	Total additional
Low Density Res	676.400	439.850	360.000	237.600	0.000	1,036.400	677.450
Low-Med Density Res	0.000	0.000	90.000	59.400	0.000	90.000	59.400
Mixed use	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rural Residential	35.600	23.150	0.000	0.000	0.000	35.600	23.150
Emerging Community	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	712.000	463.000	450.000	297.000	0.000	1,162.000	760.000

Small Area Summary Collinsville
Last Update 13/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

	Development capacity statistics			AS APPLICABLE - Adding capibilities of adjacent external land	
	Norling dwellng estimates	Dwelling surplus/shortfall	Ha surplus/shorfall (unconstrained)	Dwelling surplus/shortfall	Ha surplus/shorfall (unconstrained)
Zone	Collinsville	Collinsville	Collinsville	Colinsville (Bowen Balance)	Collinsville (Bowen Balance)
Low Density Res	132.300	-85.390	-8.539	769.910	76.991
Low-Med Density Res	84.700	-84.700	-4.235	-84.700	-4.235
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000	0.000	0.000
Totals	217.000	-170.090	-12.774	685.210	72.756

Applicable Small Area Collinsville
Last Update 13/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Density Assumptions (Du/Ha)	
Zone	**Unconstrained**
Low Density Res	10.000
Low-Med Density Res	20.000
Mixed use	30.000
Rural Residential	2.000
Emerging Community	8.000

Total Area	
Low density residential	94.588
Low medium density residential	30.241
Medium density residential	0.000
Rural residential	0.000
Emerging community	0.000
Total	124.830

Future development capacity statistics

Zone	Total Undeveloped Area (ha)	Total estimated yield	Dwelling/land capacity statistics		
			Norling dwellng estimates	Dwelling surplus/shortfall	Ha surplus/shorfall (unconstrained)
Low Density Res	4.691	46.910	132.300	-85.390	-8.539
Low-Med Density Res	0.000	0.000	84.700	-84.700	-4.235
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000	0.000	0.000
Totals	4.691	46.910	217.000	-170.090	-12.774

Capabilities of land adjacent to Collinsville UGS Boundary

Zone	Area	Potential density yield	Initial dwelling shortfall/surplus	New dwelling shortfall/surplus	Ha Surplus/short fall
Low Density Res	85.530	855.300	-85.390	769.910	76.991
Low-Med Density Res	0.000	0.000	-84.700	-84.700	-4.235
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000	0.000	0.000
Total	85.530	855.300	-170.090	685.210	72.756

Collinsville

GIS Baselines	
Total residential area (ha)	124.830
Total developed residential area (2013) ha	120.139
Total undeveloped residential area (2036) ha	4.691

Norling Baseline data						
	Single Dwellings			Multiple Dwellings		
Projections	2013	2036	Difference	2013	2036	Difference
Norling total projected pop (not including 'other dwelling' types)	**1,142.000**	1,371.000	229.000	**685.000**	901.000	216.000
Norling total projected dwelling (not including 'other dwelling' types)	497.000	609.000	**112.000**	333.000	438.000	**105.000**

Population and dwelling asumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.900	0.300	0.000
Low-Med Density Res	0.100	0.700	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	1.000	1.000	0.000

Breakdown of Norling Population Projections - 2013			
	Single dwellings	Multiple Dwellings	Total Population
Low Density Res	1,027.800	205.500	1,233.300
Low-Med Density Res	114.200	479.500	593.700
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	**1,142.000**	**685.000**	1,827.000

Breakdown of Norling Additional Dwelling projections - 2036			
	Single dwellings	Multiple Dwellings	Total additional dwellings
Low Density Res	100.800	31.500	132.300
Low-Med Density Res	11.200	73.500	84.700
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	**112.000**	**105.000**	217.000

Population and dwelling % assumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.700	0.300	0.000
Low-Med Density Res	0.300	0.700	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	100.000	100.000	0.000

Background Calculations - Informing population and dwelling assumptions

Population and dwelling % assumptions			
Zone	**Single dwellings**	**Multiple dwellings**	**Other dwellings**
Low Density Res	0.900	0.300	0.000
Low-Med Density Res	0.100	0.700	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	100.000	100.000	0.000

Dwelling assumptions						
	Single dwellings 2036		Multiple Dwellings 2036			
Zone	All	Additional	All	Additional	Other dwellings	Total 2036
Low Density Res	548.100	100.800	131.400	31.500	0.000	679.500
Low-Med Density Res	60.900	11.200	306.600	73.500	0.000	367.500
Mixed use	0.000	0.000	0.000	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000	0.000	0.000	0.000

Small Area Summary Proserpine
Last Update 14/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Development capacity statistics				AS APPLICABLE - Adding capibilities of adjacent external land	
	Norling dwellng estimates (du)	Dwelling surplus/shortfall (du)	Ha surplus/shorfall (ha)	Dwelling surplus/shortfall	Ha surplus/shorfall (ha)
Zone	Proserpine	Proserpine	Proserpine	Proserpine (Whitsunday Balance)	Proserpine (Whitsunday Balance)
Low Density Res	174.800	-169.130	-16.913	-169.130	-16.913
Low-Med Density Res	174.200	-174.200	-8.710	-174.200	-8.710
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000	197.888	24.736
Totals	349.000	-343.330	-25.623	-145.442	-0.887

Proserpine

GIS Baselines	
Total residential area (ha)	119.136
Total developed residential area (2013) ha	118.569
Total undeveloped residential area (2036) ha	0.566

Norling Baseline data						
	Single Dwellings			Multiple Dwellings		
Projections	2013	2036	Difference	2013	2036	Difference
Norling total projected pop (not including 'other dwelling' types)	**2,932.000**	3,260.000	328.000	**612.000**	886.000	274.000
Norling total projected dwelling (not including 'other dwelling' types)	1,140.000	1,315.000	**175.000**	390.000	564.000	**174.000**

Population and dwelling asumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.800	0.200	0.000
Low-Med Density Res	0.200	0.800	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	1.000	1.000	0.000

Breakdown of Norling Population Projections - 2013			
	Single dwellings	Multiple Dwellings	Total Population in Zone
Low Density Res	2,345.600	122.400	2,468.000
Low-Med Density Res	586.400	489.600	1,076.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	**2,932.000**	**612.000**	3,544.000

Breakdown of Norling Additional Dwelling projections - 2036			
	Single dwellings	Multiple Dwellings	Total additional dwellings in Zone
Low Density Res	140.000	34.800	174.800
Low-Med Density Res	35.000	139.200	174.200
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	**175.000**	**174.000**	349.000

Background Calculations - Informing population and dwelling assumptions

Population and dwelling % assumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.800	0.200	0.000
Low-Med Density Res	0.200	0.800	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	100.000	100.000	0.000

Dwelling assumptions							
	Single dwellings 2036		Multiple Dwellings 2036				
Zone	All	Additional	All	Additional	Other dwellings	Total 2036	Total additional
Low Density Res	1,052.000	140.000	112.800	34.800	0.000	1,164.800	174.800
Low-Med Density Res	263.000	35.000	451.200	139.200	0.000	714.200	174.200
Mixed use	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	1,315.000	175.000	564.000	174.000	0.000	1,879.000	349.000

Applicable Small Area Proserpine
Last Update 14/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Density Assumptions (Du/Ha)	
Zone	**Density**
Low Density Res	10.000
Low-Med Density Res	20.000
Mixed use	30.000
Rural Residential	2.000
Emerging Community	8.000

Total Area	
Low density residential	101.346
Low medium density residential	17.790
Medium density residential	0.000
Rural residential	0.000
Emerging community	0.000
Total	119.135

Future development capacity statistics					
			Dwelling/land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated yield**	**Norling additional dwellng estimates (du)**	**Dwelling surplus/shortfall (du)**	**Ha surplus/shorfall (ha)**
Low Density Res	0.567	5.670	174.800	-169.130	-16.913
Low-Med Density Res	0.000	0.000	174.200	-174.200	-8.710
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000	0.000	0.000
Emerging Community	0.000	0.000	0.000	0.000	0.000
Totals	0.567	5.670	349.000	-343.330	-25.623

Capabilities of land adjacent to Proserpine UGS Boundary					
Zone	**Area**	**Potential density yield**	**Initial dwelling shortfall (du)**	**New dwelling shortfall/surplus (du)**	**Ha Surplus/short fall (ha)**
Low Density Res	0.000	0.000	-169.130	-169.130	-16.913
Low-Med Density Res	0.000	0.000	-174.200	-174.200	-8.710
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	0.000	0.000	0.000	0.000	0.000
Emerging Community	24.736	197.888	0.000	197.888	24.736
Total	24.736	197.888	-343.330	-145.442	-0.887

Small Area Summary

Last Update 13/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Development capacity statistics						
	Norling dwellng estimates		Dwelling surplus/shortfall		Ha surplus/shorfall	
Zone	CannonvaleAirlie	JubileeShute	CannonvaleAirlie	JubileeShute	CannonvaleAirlie	JubileeShute
Low Density Res	1,356.150	802.800	4,071.840	741.960	407.184	74.196
Low-Med Density Res	1,144.300	605.300	-1,104.980	-243.080	-55.249	-12.154
Mixed use	117.700	0.000	1,101.530	0.000	36.718	0.000
Rural Residential	75.850	40.900	-75.850	-2.230	-37.925	-1.115
Emerging Community	0.000	0.000	17.280	17.592	2.160	2.199
Totals	2,694.000	1,449.000	4,009.820	514.242	352.888	63.126
Study Area Total	4,143.000		4,524.062		416.014	

Applicable Small Area Cannonvale/Airlie Beach
Last Update 13/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Density Assumptions (Du/Ha)	
Zone	**Density**
Low Density Res	10.000
Low-Med Density Res	20.000
Mixed use	30.000
Rural Residential	2.000
Emerging Community	8.000

Total Areas (Developed & Undeveloped)	
Low density residential	821.886
Low medium density residential	83.647
Mixed use	40.641
Rural residential	242.569
Emerging community	2.160
Total	1,190.903

Future development capacity statistics					
			Dwelling/land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated yield**	**Norling dwellng estimates**	**Dwelling surplus/shortfall**	**Ha surplus/shorfall (unconstrained)**
Low Density Res	542.799	5,427.990	1,356.150	4,071.840	407.184
Low-Med Density Res	1.966	39.320	1,144.300	-1,104.980	-55.249
Mixed use	40.641	1,219.230	117.700	1,101.530	36.718
Rural Residential	0.000	0.000	75.850	-75.850	-37.925
Emerging Community	2.160	17.280	0.000	17.280	2.160
Totals	587.566	6,703.820	2,694.000	4,009.820	352.888

Capabilities of land adjacent to Cannonvale-Airlie Boundary					
Zone	**Area**	**Potential density yield**	**Initial dwelling shortfall/surplus**	**New dwelling shortfall/surplus**	**Ha Surplus/short fall**
Low Density Res	0.000	0.000	0.000	0.000	0.000
Low-Med Density Res	0.000	0.000	0.000	0.000	0.000
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	256.860	513.720	-75.850	437.870	218.935
Emerging Community	0.000	0.000	0.000	0.000	0.000
Total	256.860	513.720	-75.850	437.870	218.935

Cannonvale-Airlie

GIS Baselines	
Total residential area (ha)	1,190.903
Total developed residential area (2013) ha	#REF!
Total undeveloped residential area (2036) ha	587.566

Norling Baseline data						
	Single Dwellings			Multiple Dwellings		
Projections	2013	2036	Difference	2013	2036	Difference
Norling total projected pop (not including 'other dwelling' types)	**4,086.000**	7,702.000	3,616.000	**2,680.000**	4,965.000	2,285.000
Norling total projected dwelling (not including 'other dwelling' types)	1,589.000	3,106.000	**1,517.000**	1,382.000	2,559.000	**1,177.000**

Population and dwelling asumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.700	0.250	0.000
Low-Med Density Res	0.250	0.650	0.000
Mixed use	0.000	0.100	0.000
Rural Residential	0.050	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	1.000	1.000	0.000

Breakdown of Norling Population Projections - 2013			
	Single dwellings	Multiple Dwellings	Total Population in Zone
Low Density Res	2,860.200	670.000	3,530.200
Low-Med Density Res	1,021.500	1,742.000	2,763.500
Mixed use	0.000	268.000	268.000
Rural Residential	204.300	0.000	204.300
Emerging Community	0.000	0.000	0.000
Total	**4,086.000**	**2,680.000**	6,766.000

Breakdown of Norling Additional Dwelling projections - 2036			
	Single dwellings	Multiple Dwellings	Total additional dwellings in Zone
Low Density Res	1,061.900	294.250	1,356.150
Low-Med Density Res	379.250	765.050	1,144.300
Mixed use	0.000	117.700	117.700
Rural Residential	75.850	0.000	75.850
Emerging Community	0.000	0.000	0.000
Total	**1,517.000**	**1,177.000**	2,694.000

Background Calculations - Informing population and dwelling assumptions

Population and dwelling % assumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.700	0.250	0.000
Low-Med Density Res	0.250	0.650	0.000
Mixed use	0.000	0.100	0.000
Rural Residential	0.050	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	100.000	100.000	0.000

Dwelling assumptions							
	Single dwellings 2036		Multiple Dwellings 2036				
Zone	All	Additional	All	Additional	Other dwellings	Total 2036	Total additional
Low Density Res	2,174.200	1,061.900	639.750	294.250	0.000	2,813.950	1,356.150
Low-Med Density Res	776.500	379.250	1,663.350	765.050	0.000	2,439.850	1,144.300
Mixed use	0.000	0.000	255.900	117.700	0.000	255.900	117.700
Rural Residential	155.300	75.850	0.000	0.000	0.000	155.300	75.850
Emerging Community	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	3,106.000	1,517.000	2,559.000	1,177.000	0.000	5,665.000	2,694.000

Applicable Small Area Jubilee Pocket/Shute Harbour
Last Update 13/13/2014 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Density Assumptions (Dwellings/Ha)	
Zone	**Density**
Low Density Res	10.000
Low-Med Density Res	20.000
Mixed use	30.000
Rural Residential	2.000
Emerging Community	8.000

Total Area	
Low density residential	233.170
Low medium density residential	27.642
Mixed use	0.000
Rural residential	200.074
Emerging community	2.199
Total	463.085

Future development capacity statistics					
			Dwelling/land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated yield**	**Norling dwellng estimates**	**Dwelling surplus/shortfall**	**Ha surplus/shorfall (unconstrained)**
Low Density Res	154.476	1,544.760	802.800	741.960	74.196
Low-Med Density Res	18.111	362.220	605.300	-243.080	-12.154
Mixed use	0.000	0.000	0.000	0.000	0.000
Rural Residential	19.335	38.670	40.900	-2.230	-1.115
Emerging Community	2.199	17.592	0.000	17.592	2.199
Totals	194.121	1,963.242	1,449.000	514.242	63.126

Jubille Pocket - Shute Harbour

GIS Baselines	
Total residential area (ha)	458.965
Total developed residential area (2013) ha	284.183
Total undeveloped residential area (2036) ha	174.782

Norling Baseline data						
	Single Dwellings			Multiple Dwellings		
Projections	2013	2036	Difference	2013	2036	Difference
Norling total projected pop (not including 'other dwelling' types)	**1,603.000**	3,575.000	1,972.000	**689.000**	1,843.000	1,154.000
Norling total projected dwelling (not including 'other dwelling' types)	647.000	1,465.000	**818.000**	376.000	1,007.000	**631.000**

Population and dwelling asumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.750	0.300	0.000
Low-Med Density Res	0.200	0.700	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.050	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	1.000	1.000	0.000

Breakdown of Norling Population Projections - 2013			
	Single dwellings	Multiple Dwellings	Total Population in Zone
Low Density Res	1,202.250	206.700	1,408.950
Low-Med Density Res	320.600	482.300	802.900
Mixed use	0.000	0.000	0.000
Rural Residential	80.150	0.000	80.150
Emerging Community	0.000	0.000	0.000
Total	**1,603.000**	**689.000**	2,292.000

Breakdown of Norling Additional Dwelling projections - 2036			
	Single dwellings	Multiple Dwellings	Total additional dwellings in Zone
Low Density Res	613.500	189.300	802.800
Low-Med Density Res	163.600	441.700	605.300
Mixed use	0.000	0.000	0.000
Rural Residential	40.900	0.000	40.900
Emerging Community	0.000	0.000	0.000
Total	**818.000**	**631.000**	1,449.000

Background Calculations - Informing population and dwelling assumptions

Population and dwelling % assumptions			
Zone	Single dwellings	Multiple dwellings	Other dwellings
Low Density Res	0.750	0.300	0.000
Low-Med Density Res	0.200	0.700	0.000
Mixed use	0.000	0.000	0.000
Rural Residential	0.050	0.000	0.000
Emerging Community	0.000	0.000	0.000
Total	100.000	100.000	0.000

Dwelling assumptions							
	Single dwellings 2036		Multiple Dwellings 2036				
Zone	All	Additional	All	Additional	Other dwellings	Total 2036	tal additio
Low Density Res	1,098.750	613.500	302.100	189.300	0.000	1,400.850	802.800
Low-Med Density Res	293.000	163.600	704.900	441.700	0.000	997.900	605.300
Mixed use	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rural Residential	73.250	40.900	0.000	0.000	0.000	73.250	40.900
Emerging Community	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	1,465.000	818.000	1,007.000	631.000	0.000	2,472.000	1,449.000

Appendix E: Industrial capacity analysis calculations for the WRC area

Small Area Summary All Industry
Last Update 14/3/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Development capacity statistics				AS APPLICABLE - Adding capibilities of adjacent external land	
Zone	Norling floorspace estimates	Floorspace surplus/shortfall	Ha surplus/shorfall (unconstrained)	Dwelling surplus/shortfall	Ha surplus/shorfall (unconstrained)
Industrial - Merinda-Abbot Point	18,948.000	27,768.500	2.777	256,193.000	25.619
Industrial - Bowen North	9,936.000	-8,691.000	-0.869	-8,691.000	-0.869
Industrial - Bowen South	912.000	165,265.500	16.527	165,265.500	16.527
Study Area Total	29,796.000	184,343.000	18.434	412,767.500	41.277

Applicable Small Area Bowen Industrial UGS Area
Last Update 14/03/14 - Kat

Plot ratio (Area of building by area of site) ha	
Zone	**Plot ratio**
Industrial - Abbot Point	0.050
Industrial - Other	0.250

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Total Area	
Industrial - Merinda-Abbot Point	15,665.737
Industrial - Bowen North	11.632
Industrial - Bowen South	106.784

Removal of 15565.61ha in Abbot Point - Merinda = APSDA

Future development capacity statistics					
			Land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated floorspace**	**Additional floorspace estimates m2**	**Floorspace surplus/shortfall m2**	**Ha surplus/shorfall (unconstrained)**
Industrial - Merinda-Abbot Point	93.433	46,716.500	18,948.000	27,768.500	2.777
Industrial - Bowen North	0.498	1,245.000	9,936.000	-8,691.000	-0.869
Industrial - Bowen South	66.471	166,177.500	912.000	165,265.500	16.527
Totals	160.402	214,139.000	28,884.000	184,343.000	18.434

Capabilities of land adjacent to Abbot Point-Merinda UGS Boundary					
Zone	**Area**	**Potential density yield**	**Initial dwelling shortfall/surplus**	**New dwelling shortfall/surplus**	**Ha Surplus/short fall**
Industrial - Collinsville	28.740	71,850.000	184,343.000	256,193.000	25.619

Small Area Summary Collinsville
Last Update 12/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Development capacity statistics				AS APPLICABLE - Adding capibilities of adjacent external land	
Zone	**Norling dwellng estimates m2**	**Floorspace surplus/shortfall m2**	**Ha surplus/shorfall**	**Dwelling surplus/shortfall**	**Ha surplus/shorfall (unconstrained)**
Industrial - Collinsville	15516.00	-15516.00	-1.55	72,731.000	7.273

Applicable Small Area Collinsville
Last Update 12-03-2014 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Plot ratio (Area of building by area of site) ha	
Zone	**Plot ratio**
Industrial - Collinsville	0.100

Total Area	
Industrial - Collinsville	2.734

Future development capacity statistics					
			Land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated yield**	**Additional estimated floor space m2**	**Floorspace surplus/shortfall (m2)**	**Ha surplus/shorfall (ha)**
Industrial - Collinsville	0.000	0.000	15,516.000	-15,516.000	-1.552

Capabilities of land adjacent to Collinsville UGS Boundary					
Zone	**Area**	**Potential density yield**	**Initial dwelling shortfall/surplus**	**New dwelling shortfall/surplus**	**Ha Surplus/short fall**
Industrial - Collinsville	88.247	88,247.000	-15,516.000	72,731.000	7.273

Small Area Summary Proserpine
Last Update 03/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Development capacity statistics			
Zone	**Additonal floorspace estimates (m2)**	**Floorspace surplus/shortfall (m2)**	**Ha surplus/shorfall**
Industrial - Proserpine	6048.00	-6048.00	-0.60

Applicable Small Area Proserpine
Last Update 13/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Plot ratio (Area of building by area of site) ha	
Zone	**Plot ratio**
Industrial	0.250

Total Area	
Industrial - Proserpine	51.600

Future development capacity statistics					
			Land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated yield**	**Additional floorspace estimates (m2)**	**Floorspace surplus/shortfall (m2)**	**Ha surplus/shorfall**
Industrial - Proserpine	0.000	0.000	6,048.000	-6,048.000	-0.605

Small Area Summary Airlie UGS Area
Last Update 13/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Development capacity statistics			
Zone	**Norling floorspace estimates**	**Floorspace surplus/shortfall m2**	**Ha surplus/shorfall (unconstrained)**
Industrial - Cannonvale - Airlie	60,808.000	-60,808.000	-6.081
Industrial - Jubilee - Shute	912.000	-912.000	-0.091
Study Area Total	61,720.000	-61,720.000	-6.172

Applicable Small Area Airlie UGS Area
Last Update 13/03/14 - Kat

Legend
Inputs from GIS
Inputs from Norling
Baseline Assumption
Key calculations (outputs)

Plot ratio (Area of building by area of site) ha	
Zone	**Plot ratio**
Industrial	0.250

Total Area	
Industrial - Cannonvale - Airlie	31.395
Industrial - Jubilee - Shute	7.651

Future development capacity statistics					
			Land capacity statistics		
Zone	**Total Undeveloped Area (ha)**	**Total estimated yield**	**Additional floorspace estimates (m2)**	**Floorspace surplus/shortfall (m2)**	**Ha surplus/shorfall (ha)**
Industrial - Cannonvale - Airlie	0.000	0.000	60,808.000	-60,808.000	-6.081
Industrial - Jubilee - Shute	0.000	0.000	912.000	-912.000	-0.091
Totals	0.000	0.000	61,720.000	-61,720.000	-6.172