

Kimberley Region Land Capacity Analysis

Shire of Wyndham-East Kimberley

November 2020

November 2020

Executive Summary

The Regional North Land Capacity Analysis provides an overview of existing and future land capacity based on forecast population growth for the settlements in the Shire of Wyndham-East Kimberley. In particular, it examines the land identified for residential, rural residential, commercial and industrial use that is capable of substantial further development.

This study categorises current and future land uses according to broad land-use types. The land use types are effectively a rationalisation of existing zones and reserves of the local planning scheme. The 'future' land use types have been identified through consideration of a number of strategic documents, including local planning strategies and structure plans and growth plans where relevant.

For this report the following planning instruments that have informed the settlement land-use mapping:

- Shire of Wyndham-East Kimberley Local Planning Scheme No.9
- Shire of Wyndham-East Kimberley Local Planning Strategy 2019.

When these planning instruments are reviewed, it is anticipated that the land capacity analysis will be used to guide and inform their future preparation.

Ultimately this analysis establishes the potential population yield of current and future residential lands for each relevant settlement, and then considers possible implications for the local government area's land supply situation in the context of the *Western Australia Tomorrow 2031* population forecasts.

Based on the current extents of zoned residential land and land identified for future residential purposes, this analysis suggests that there is a sufficient amount of land capable of substantial further development to cater for the population growth anticipated in the *Western Australia Tomorrow 2031* population forecasts for the Shire of Wyndham-East Kimberley.

November 2020

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The Department of Planning, Lands and Heritage acknowledges the traditional owners and custodians of this land. We pay our respect to Elders past and present, their descendants who are with us today, and those who will follow in their footsteps.

Disclaimer

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of Planning, Lands and Heritage Communications Branch.

1. Introduction

The Regional North Land Capacity Analysis provides a broad overview of the existing and future land capacity of the settlements in the Shire of Wyndham-East Kimberley with respect to forecast population growth. In particular, it examines land identified for residential, rural residential, commercial and industrial use that is capable of substantial further development.

This document presents the analysis as it relates to the applicable settlements in the Shire of Wyndham-East Kimberley local government area.

Notably, the analysis suggests there is sufficient land capable of further development (based on the current extents of zoned residential land and land identified for future residential purposes) to cater for the population growth anticipated in the *Western Australia Tomorrow* 2031 population forecasts for the Shire of Wyndham-East Kimberley.

The information presented in this document may provide a basis for a range of strategic planning including:

- assisting regional planning and providing direction for strategic infrastructure coordination;
- informing the preparation and/or review of local planning strategies, schemes and structure plans; and more detailed land supply analysis,
- such as further investigation into the infrastructure requirements to service potential development of the future land supply.

Given the dynamic nature of planning and development, it is intended that this paper will be amended periodically to reflect future updates to local planning instruments as relevant.

Notwithstanding this, the information contained in this document has been prepared for guidance purposes only.

2. Settlement land use mapping

The Department of Planning, Lands and Heritage (DPLH) has prepared mapping that captures the spatial extents of current and future land use in applicable settlements. Within the Shire of Wyndham-East Kimberley, this includes:

- Kununurra (**Map 1**)
- Kununurra Townsite (Map 2)
- Wyndham (Map 3)
- Wyndham Townsite (Map 4)

2.1 Current and future land use

For the purpose of this study, the mapping categorises current and future land uses according to broad landuse types. It effectively rationalises and consolidates existing zones and reserves of the local planning scheme, along with the intended future land uses identified in a number of strategic documents, including local planning strategies and structure plans.

The areas identified on the maps are based on general consideration of:

- current zonings and reservations within applicable local planning schemes
- other strategic planning documents including local planning strategies, structure plans, layout plans and/or growth plans where relevant.

The extent of current land uses generally reflects that of applicable existing zones and reserves in current local planning schemes; and future land uses generally reflect where land has been identified in other documents for a different (typically more intensive) land use than that identified in the current scheme.

Planning instruments that have informed the preparation of the settlement land-use mapping within the Shire of **Wyndham-East Kimberley** include the:

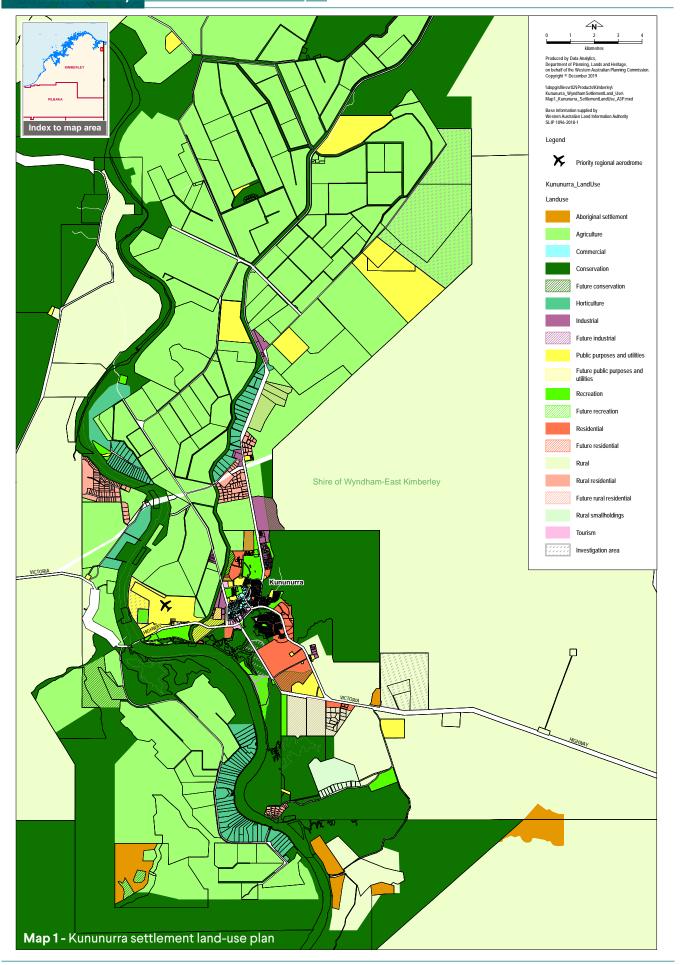
- Shire of Wyndham-East Kimberley Local Planning Scheme No.9
- Shire of Wyndham-East Kimberley Local Planning Strategy 2019.

As a general guide, a broad description of each land-use category is provided below:

Residential	Areas that are predominantly zoned in relevant local planning schemes for residential land uses
Future residential	Areas that have been identified predominantly for future residential land uses through relevant strategic planning processes
Rural residential	Areas that are predominantly zoned in relevant local planning schemes for rural residential land uses
Future rural residential	Areas that have been identified predominantly for future rural residential land uses through relevant strategic planning processes
Rural smallholdings	Areas that are predominantly zoned in relevant local planning schemes for rural smallholdings land uses
Commercial	Areas that are predominantly zoned in relevant local planning schemes for commercial land uses
Future commercial	Areas that have been identified predominantly for future commercial land uses through relevant strategic planning processes
Industrial	Areas that are predominantly zoned in relevant local planning schemes for industrial land uses
Future industrial	Areas that have been identified predominantly for future industrial land uses through relevant strategic planning processes
Tourism	Areas that are predominantly zoned in relevant local planning schemes for tourist purposes
Rural	Areas that are predominantly zoned in relevant local planning schemes for rural land uses
Public purposes and utilities	Areas that are predominantly reserved in relevant local planning schemes for public purposes and/or utilities
Future public purposes and utilities	Areas that have been identified predominantly for future public purposes and/or through relevant strategic planning processes
Recreation	Areas that are predominantly reserved in relevant local planning schemes for recreation purposes
Future recreation	Areas that have been identified predominantly for future recreation purposes through relevant strategic planning processes
Conservation	Areas that are predominantly reserved in relevant local planning schemes for conservation purposes
Future conservation	Areas that are predominantly zoned or reserved in relevant local planning schemes for port operations
Horticulture	Areas that are predominately currently zoned in relevant local planning schemes for horticultural land uses
Aboriginal settlement	Areas that are predominantly identified as a recommended settlement zone in relevant layout plans, and/or are zoned in relevant
Investigation Area	Areas that have been identified through relevant strategic planning processes where alternative future land uses may be considered subject to further investigation. This may include areas from plans in preparation or in draft form

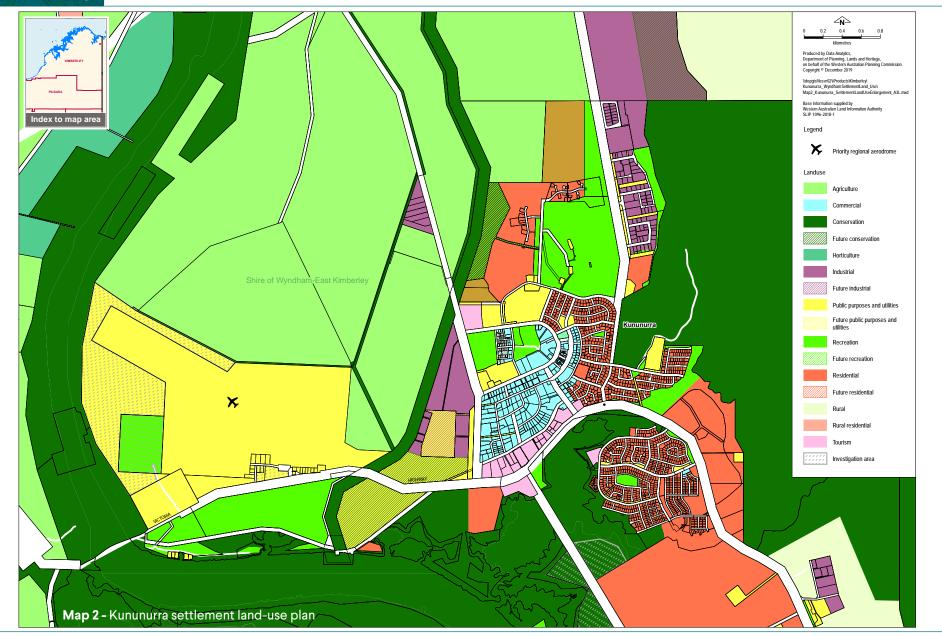
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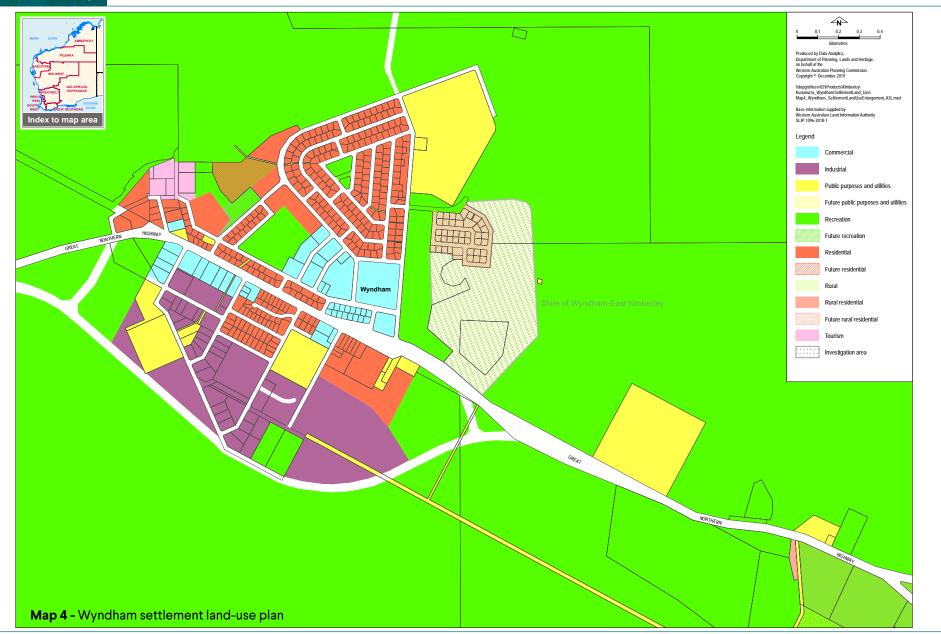




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2.2 Development status

To gain a general understanding of the potential capacity of zoned and potential future- zoned land within each settlement, a broad assessment has been undertaken of the development status of applicable land identified for **residential**, **tourist**, **commercial**, **industrial**, **rural residential** and **rural small holdings** purposes. Generally, the assessment involved a visual interpretation of aerial photography and cadastral information.

This assessment has been undertaken for those settlements where the applicable land uses occur within the map extents.

Applicable areas within the **Wyndham and Kununurra** maps extent have been assessed and considered as being 'developed' or 'capable of substantial further development' as described below.

Developed: broadly considered as land where development exists or where the necessary infrastructure and services to accommodate development exist. Subdivision is generally consistent with its zoning, however existing urban areas that could potentially accommodate increases in density through urban infill are considered to be 'developed.'

Capable of substantial further development:

land 'capable of substantial further development' consists of undeveloped or underdeveloped land on greenfield sites, where subdivision reflective of its zoning is yet to exist. In some instances however, land may have conditional subdivision approval or be part of a broader structure planning process that still needs to be finalised. It is important to note that the development of areas that are currently considered to be capable of substantial further development may be subject to a number of constraints; including scheme amendments, structure planning, infrastructure provision, environmental and heritage issues. **Table 1** summarises the development status ofeach applicable land-use category for all relevantsettlements, representing a set of total figures for theentire local government area. It consolidates all datafrom tables 2 and 3, which summarise the developmentstatus of each applicable land-use category for theindividual settlements.

Table 1: Shire of Wyndham-East Kimberley – development status of land in relevant settlements

	Total (ha)	Developed (ha)	Capable of substantial further development (ha)
Residential	598	183	414
Future Residential	9	0	9
Residential and Future Residential	607	183	423
Rural Residential	598	598	0
Future Rural Residential	536	0	536
Rural Residential and Future Rural Residential	1,134	598	536
Rural Smallholdings	240	46	194
Future Rural Smallholdings	0	0	0
Rural Smallholdings and Future Rural Smallholdings	240	46	194
Commercial	91	85	6
Future Commercial	0	0	0
Commercial and Future Commercial	91	85	6
Industrial	599	368	231
Future Industrial	32	0	32
Industrial and Future Industrial	631	368	263

Table 2: Kununurra - development status of land

	Total (ha)	Developed (ha)	Capable of substantial further development (ha)
Residential	512	121	391
Future Residential	2	0	0
Residential and Future Residential	514	121	393
Rural Residential	426	426	0
Future Rural Residential	513	0	513
Rural Residential and Future Rural Residential	939	426	513
Rural Smallholdings	240	46	194
Future Rural Smallholdings	0	0	0
Rural Smallholdings and Future Rural Smallholdings	240	46	194
Commercial	63	63	0
Future Commercial	0	0	0
Commercial and Future Commercial	63	63	0
Industrial	228	135	93
Future Industrial	16	0	16
Industrial and Future Industrial	244	135	109

	Total (ha)	Developed (ha)	Capable of substantial further development (ha)
Residential	86	63	23
Future Residential	7	0	7
Residential and Future Residential	93	63	30
Rural Residential	171	171	0
Future Rural Residential	23	0	23
Rural Residential and Future Rural Residential	194	171	23
Rural Smallholdings	0	0	0
Future Rural Smallholdings	0	0	0
Rural Smallholdings and Future Rural Smallholdings	0	0	0
Commercial	27	22	5
Future Commercial	0	0	0
Commercial and Future Commercial	27	22	5
Industrial	372	234	138
Future Industrial	16	0	16
Industrial and Future Industrial	388	234	154

Table 3: Wyndham - development status of land

3. Capacity analysis

The assessment of the development status of current and future land use areas enables a broad-level capacity analysis of the residential development potential of land within the Wyndham-East Kimberley. The Department of Planning, Lands and Heritage has prepared such an analysis that:

- estimates the potential additional population yield of current and future residential lands for each relevant settlement;
- considers possible implications for the local government area's land supply situation in the context of the *Western Australia Tomorrow 2031* population forecasts.

Tables in section 3.1 summarises the estimated additional capacity of residential land for the relevant settlements within the Shire of Wyndham-East Kimberley. Further analysis is presented in section 3.2 that relates this information to *Western Australia Tomorrow 2031* population forecasts.

When considering the outputs of the analysis, it is important to note that additional capacity is assumed to be accommodated exclusively in areas that are identified as being capable of substantial further development. This means that the estimates generally do not account for possible land capacity increases due to infill and/or redevelopment of existing developed areas, and from this perspective are considered broad in nature and likely underestimate the potential overall capacity.

A capacity analysis for commercial and industrial lands necessarily requires assumptions to be made on employment density. There are currently limitations in the available data required in order to make reasonable assumptions in this regard. In particular, relatively small statistical sample sizes – something that is prevalent in regional and remote areas – compromise the reliability of using the available data for such an application. It is considered that further investigation is required to ascertain representative rates of employment density for commercial and industrial lands in regional areas, and accordingly such an analysis is not included in this paper at this stage.

3.1 Potential capacity of residential, rural residential and rural smallholdings lands

For residential land use, potential capacity has been calculated according to scenarios that assume different average development densities that are applicable to each of those land uses. Potential additional lot and population yields have been estimated for each respective current and future land use category as they relate to each relevant settlement in the Shire of Wyndham-East Kimberley.

Table 4 presents the total potential additional lot andpopulation yields for all relevant settlements across thelocal government area.

Tables 5 and **6** present the potential additional lot and population yields for individual settlements relevant to this analysis.

(Note: **Table 4** consolidates all data from **tables 5** and **6**, and represents a set of total figures for the entire local government area.)

 Table 4: Shire of Wyndham-East Kimberley – estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development

Estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development

Relevant land-use category Area (ha) Average density / average lot size Potential lot yield 1 from additional lots 2 Residential 414 R10 2.692 7,807 Residential 414 R20 5,383 15,611 R30 8,075 23,418 Rure Residential 9 R10 59 171 Race Residential 9 R20 118 342 R30 177 513 153 Residential and Future Residential 423 R10 2,751 7,978 Race Race Residential 423 R20 5,501 15,953 Race Race Race Race Race Race Race Race	deemed capable of substantial furth	Estimated potential population yield			
Residential414R205,38315,611R308,07523,418Future Residential9R1059171Future Residential9R20118342R83017751315953R8402,7517,97810R8408,25223,93110R102,16100R11000R122,16600R14000R14000R14000R14000R14000R14000R14000R14000R14000R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R14101293R1410120R1410120R1410110 <th>Relevant land-use category</th> <th>Area (ha)</th> <th>/ average lot</th> <th></th> <th></th>	Relevant land-use category	Area (ha)	/ average lot		
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and Future Rural Residential 536 2 ha 201 583 4 ha 101 293 Rural Smallholdings 194 20 ha 18 52 40 ha 4 12 20 ha 7 20 40 ha 4 12 8 ha 0 0 0 20 ha 0 0 20 ha 0 0 40 ha 0 0 20 ha 0 52 8 ha 18 52 194 20 ha 7 20 20 ha 7 20 194 20 ha 7 20 20 ha 7 20			1 ha	402	1,166
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Rural Smallholdings19420 ha72040 ha41240 ha400Puture Rural Smallholdings19420 ha019420 ha720			4 ha	101	293
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Future Rural Smallholdings 194 20 na 7 20			8 ha	18	52
40 ha 4 12	-	194	20 ha	7	20
	r atare itara omannoitaings		40 ha	4	12

¹ For residential land, the 35 per cent of land necessary to support land requirements for public open space and streets (Liveable Neighbourhoods, 2007) has been factored into these figures.

² The population yield per dwelling is calculated at 2.9 people per dwelling unit (Average people per household for the Wyndham-East Kimberley LGA Australian Bureau of Statistics, 2016 Census).

Table 5: Kununurra – estimated capacity of residential, rural residential and rural smallholdings lands

 deemed capable of substantial further development

Estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development

Relevant land-use category sizeArea (ha) / average density vaverage lot sizePotential lot vield 1from additional lots 2Residential391R102,5427,372Residential391R205,08314,741R307,62522,11314Future Residential2R203087Residential and Future Residential393R101544Residential and Future Residential393R205,11314,828Rural Residential393R205,11314,828Rural Residential00004 ha00004 ha0000Rural Residential5132 ha192557and Future Rural Residential5132 ha192557A ha9627811ha3851,117Rural Residential5132 ha192557A ha9627814ha96278Rural Residential5132 ha192557A ha9627814ha96278Rural Smallholdings19430720A bha185220 ha7204 0 ha4128 ha00	deemed capable of substantial furth	Estimated potential population yield			
Residential391R205.08314,741R307,62522,113Future Residential2R203.087Residential and Future Residential393R102.5577.416Residential and Future Residential393R205.11314.828Ratio2.5577.4167.67122.246Rural Residential02.ha00Atha00004 ha000Future Rural Residential5132.ha1925574 ha962781117Rural Residential5132.ha1925574 ha962781117Rural Residential5132.ha1925574 ha962781117Rural Smallholdings19438ha1852Atha962783610Rural Smallholdings and Future Rural Smallholdings and Future Rural Smallholdings and Future Rural Smallholdings0019420 ha700020 ha000020 ha000020 ha000020 ha000020 ha000020 ha000020 ha72030020 ha72030020 ha720 </th <th>Relevant land-use category</th> <th>Area (ha)</th> <th>/ average lot</th> <th></th> <th></th>	Relevant land-use category	Area (ha)	/ average lot		
Rural Residential and Future Rural ResidentialRR			R10	2,542	7,372
Rural Residential2Ri01544Rural Residential393R102,5577,416Rural Residential393R205,11314,828Rural Residential3937,67122,246Rural Residential0004 ha0004 ha0001 ha3851,117Future Rural Residential5132 ha1925574 ha9627811ha3851,117Rural Residential5132 ha1925574 ha9627811ha3851,117Rural Residential5132 ha192557A ha9627811ha3851,117Rural Smallholdings19420 ha72040 ha4121214ha96278Rural Smallholdings and Future Rural Smallholdings19420 ha0019420 ha00014ha1420 ha00014ha1219420 ha72014ha141219419420 ha72014ha1419420 ha72014ha141419419430030141419419419430143014195194194301414 </td <td>Residential</td> <td>391</td> <td>R20</td> <td>5,083</td> <td>14,741</td>	Residential	391	R20	5,083	14,741
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Rural ResidentialR307,67122,246Rural Residential000 $2ha$ 00 $4ha$ 00 $4ha$ 00 $4ha$ 00 $4ha$ 96278 $2ha$ 192557 $4ha$ 96278 $and Future Rural Residential$ 5132 ha192 $and Future Rural Residential5132 ha192and Future Rural Residential5220 ha7and Future Rural Smallholdings000and Smallholdings and Future Rural Smallholdings00and Smallholdings19420 ha7and Smallholdings19420 ha7and Smallholdings19420 ha7and Smallholdings19420 ha7and Smallholdings19420 ha7and Smallholdings19420 ha7$			R10	2,557	7,416
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4 ha 0 0 Future Rural Residential 513 1 ha 385 1,117 2 ha 192 557 4 ha 96 278 Rural Residential and Future Rural Residential and Future Rural Residential 513 2 ha 192 557 4 ha 96 278 557 557 557 4 ha 96 278 557 557 and Future Rural Residential 513 2 ha 192 557 A ha 96 278 557 557 A ha 96 278 557 557 Atha 96 20 52 557 Atha 96 20 0 0 Future Rural Smallholdings 0 0 0 0 Rural Smallholdings and Future Rural Smallholdings 194 20 ha 7 20 </td <td></td> <td></td> <td>1 ha</td> <td>0</td> <td>0</td>			1 ha	0	0
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and Future Rural Residential 513 2 ha 192 557 4 ha 96 278 Rural Smallholdings 194 8 ha 18 52 20 ha 7 20 40 ha 4 12 8 ha 0 0 0 20 ha 0 0 20 ha 0 0 20 ha 0 0 40 ha 0 0 20 ha 0 557 8 ha 18 52 8 ha 0 0 20 ha 557 20 ha 557			1 ha	385	1,117
4 ha962788 ha18528 ha185220 ha72040 ha41240 ha4128 ha0020 ha0020 ha0040 ha0040 ha008 ha0040 ha0040 ha008 ha1852Rural Smallholdings and Future Rural Smallholdings19420 ha720		513	2 ha	192	557
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Rural Smallholdings and 194 20 ha 7 20 Future Rural Smallholdings			40 ha	0	0
Future Rural Smallholdings 194 20 na 7 20			8 ha	18	52
40 ha 4 12		194	20 ha	7	20
			40 ha	4	12

¹ For residential land, the 35 per cent of land necessary to support land requirements for public open space and streets (Liveable Neighbourhoods, 2007) has been factored into these figures.

² The population yield per dwelling is calculated at 2.9 people per dwelling unit (Average people per household for the Wyndham-East Kimberley LGA Australian Bureau of Statistics, 2016 Census).

 Table 6: Wyndham – estimated capacity of residential, rural residential and rural smallholdings lands

 deemed capable of substantial further development

Estimated capacity of residential, rural residential and rural smallholdings lands deemed capable of substantial further development

deemed capable of substantial furtr	Estimated potential population yield			
Relevant land-use category	Area (ha)	Average density / average lot size	Potential lot yield ¹	from additional lots ²
		R10	150	435
Residential	23	R20	300	870
		R30	450	1,305
		R10	44	128
Future Residential	7	R20	88	255
		R30	132	383
		R10	194	563
Residential and Future Residential	30	R20	388	1,125
		R30	582	1,688
		1 ha	0	0
Rural Residential	0	2 ha	0	0
		4 ha	0	0
		1 ha	17	49
Future Rural Residential	23	2 ha	9	26
		4 ha	4	12
		1 ha	17	49
Rural Residential and Future Rural Residential	23	2 ha	9	26
		4 ha	4	12
		8 ha	0	0
Rural Smallholdings	0	20 ha	0	0
		40 ha	0	0
		8 ha	0	0
Future Rural Smallholdings	0	20 ha	0	0
		40 ha	0	0
		8 ha	0	0
Rural Smallholdings and	0	20 ha	0	0
Future Rural Smallholdings		40 ha	0	0

¹ For residential land, the 35 per cent of land necessary to support land requirements for public open space and streets (Liveable Neighbourhoods, 2007) has been factored into these figures.

² The population yield per dwelling is calculated at 2.8 people per dwelling unit (Average people per household for the Wyndham-East Kimberley LGA Australian Bureau of Statistics, 2016 Census).

Based on the potential population yield calculations in **tables 4, 5** and **6**, estimated total population figures for the Shire of Wyndham-East Kimberley are provided for low, medium and high-density development scenarios, as presented in **Table 7**. Two subsets are considered within each scenario;

- 'A' considers the potential additional population yield of all residential, rural residential and rural smallholdings land capable of further development at the average density or lot sizes attributable to that particular scenario; and
- 'B' considers the potential additional population yield of all residential, future residential, rural residential, future rural residential, rural smallholdings and future rural smallholdings land capable of further development at the average density or lot sizes attributable to that particular scenario.

These figures assume that all additional population in the local government area is accommodated on residential, rural residential and rural smallholdings lands deemed capable of substantial further development within the settlements considered.

3.2 Comparison of potential capacity estimates with the *Western Australia Tomorrow 2031* population forecasts

Western Australia Tomorrow 2031 (Western Australian Planning Commission, 2018) contains population forecasts produced by the State Demographer, which are considered to be the State's official population forecasts.

Table 8 presents the Western Australia Tomorrow 2031population forecasts for the Shire of Wyndham-EastKimberley.

The figures in the 'additional population' column show the difference between the 2031 forecast population and the Australian Bureau of Statistics 2017 Preliminary Estimated Residential Population for the Shire of Wyndham-East Kimberley (7,317).

Significantly, these forecasts provide a point of comparison for interpreting the potential capacities of residential land as determined through this analysis.

For further information on these forecasts, please refer to www.dplh.wa.gov.au/information-and-services/ land-supply-and-demography/western-australiatomorrow-population-forecasts

Scenario ¹ (average density of residential land / average lot size of rural r land / average lot size for rural smallholdings land)	Current population ²	Estimated potential population yield from additional lots ³	Estimated total population ⁴	
1 Low density economic (P10 / 4 hz / 40 hz)	1A	7,317	7,819	15,136
1. Low-density scenario (R10 / 4 ha / 40 ha)	1B	7,317	8,283	15,600
2 Madium dansity secondia (D20 / 2 ha / 20 ha)	2A	7,317	15,631	22,948
2. Medium-density scenario (R20 / 2 ha / 20 ha)	2B	7,317	16,556	23,873
3. High-density scenario (R30 / 1 ha / 8 ha)	3A	7,317	23,470	30,787
	3B	7,317	25,149	32,466

Table 7: Shire of Broome - estimated potential population capacity

¹ Scenarios consider the estimated potential population capacity of the Shire of Wyndham-East Kimberley through estimating the potential additional population capacity of land within all relevant settlements with a residential land use that has been deemed capable of substantial further development.

² Shire of Wyndham-East Kimberley Local Government Area, 2018 Preliminary Estimated Residential Population (Australian Bureau of Statistics, 3218.0 – Regional Population Growth 2017-18).

³ As per the relevant assumptions as described for **Table 4**.

⁴ The 'estimated total population' is the sum of the 'current population' and the 'estimated potential population yield from additional lots' columns.

Table 8: Shire of Wyndham-East Kimberley- Western Australia Tomorrow 2031 populationforecasts (WAPC, 2018)

WA Tomorrow forecast bands	2031 forecast population	Additional population
WA Tomorrow – Band A	6,805	-512
WA Tomorrow – Band B	7,620	303
WA Tomorrow – Band C	8,000	683
WA Tomorrow – Band D	8,345	1,028
WA Tomorrow – Band E	9,240	1,923

3.2.1 Estimated additional residential land requirements to accommodate population forecasts

Table 9 presents estimates for the amountof residential land that would be required toaccommodate the additional population for each ofthe population forecasts.

Estimates are presented according to three different average densities of residential development, being R10, R20 and R30.

These estimates are compared to the total of all current residential and future residential land identified in the relevant Shire of Wyndham East-Kimberley settlements as being capable of substantial further development. The figures under the 'surplus' column indicate the magnitude of the potential surplus of residential land from the extents currently identified once the additional forecast population has been allowed for. A negative figure in this column indicates a shortfall in the identified areas of residential lands relating to that required to accommodate the additional population from the relevant forecasts.

The estimates in Table 9 assume:

 all population growth occurs on residential and future residential land that has been identified as being capable of substantial future development in this analysis. To keep the calculations relatively straightforward, they do not consider additional population being accommodated on rural residential or rural smallholdings lands, nor do they take into account potential increases in population occurring due to infill development. They therefore likely overestimate residential land requirements

- a 35 per cent allowance from gross land areas for various requirements to support development (e.g. public open space, streets, other infrastructure); and
- the number of people per dwelling remains constant

Based on the current extents of zoned residential land and land identified for future residential purposes, this analysis suggests that there is a sufficient amount of land capable of substantial further development to cater for the population growth anticipated in the *Western Australia Tomorrow 2031* population forecasts for the Shire of Wyndham-East Kimberley.

Please note this component of the analysis only considers the local government as a whole rather than each individual settlement. This is mainly due to the alignment of available data inputs at this geographic scale. **Table 9:** Shire of Wyndham-East Kimberley – estimated additional residential land requirements to accommodate population forecasts

	Residential ¹								
		Current and	R10 average den	sity	R20 average der	nsity	R30 average der	R30 average density	
WA Tomorrow forecast bands	Additional population	future land capable of substantial further development (ha) ²	Estimated land required to accommodate additional population (ha) ³	Surplus (ha) ⁴	Estimated land required to accommodate additional population (ha) ³	Surplus (ha) ⁴	Estimated land required to accommodate additional population (ha) ³	Surplus (ha) 4	
WA Tomorrow – Band A	-512	423	-27	450	-14	437	-9	432	
WA Tomorrow – Band B	303	423	16	407	8	415	5	418	
WA Tomorrow – Band C	683	423	36	387	18	405	12	411	
WA Tomorrow – Band D	1,028	423	55	369	27	396	18	405	
WA Tomorrow – Band E	1,923	423	102	321	51	372	34	389	

¹ These estimates assume that all population growth occurs on residential and future residential land that has been identified as being capable of substantial future development in this analysis. To keep the calculations relatively straightforward, they do not consider additional population being accommodated on rural residential or rural smallholdings lands, nor do they take into account potential increases in population occurring due to infill development. They therefore likely overestimate residential land requirements.

² Total area of current and future residential lands capable of substantial further development for entire local government area.

³ A 35 per cent allowance from gross land areas to support land requirements for public open space and streets (Liveable Neighbourhoods, 2007) and a population yield per dwelling of 2.9 people per dwelling unit (average people per household for the Average people per household for the Wyndham-East Kimberley LGA – Australian Bureau of Statistics, 2016 Census) have been factored into the estimated areas of residential land required to accommodate forecast additional populations.

⁴ A positive figure in this column indicates that the additional population under the relevant population forecast should be able to be accommodated within the areas of residential and future residential land currently identified, without additional residential land being required. A negative figure represents the shortfall in the identified areas of residential lands with respect to that required to accommodate the additional population.