



Government of **Western Australia**
Department of **Agriculture and Food**



Chief Executive Officer
City of Greater Geraldton
PO Box 101
GERALDTON WA 6531

Your Ref: LP/9/0037
Our Ref: GE100170V1
Enquiries: Angela Stuart-Street
Date: 25 March 2015

Dear Sir,

RE: CITY OF GREATER GERALDTON LOCAL PLANNING STRATEGY AND LOCAL PLANNING SCHEME NO. 1

The Department of Agriculture and Food (DAFWA) welcomes the opportunity to provide feedback on the draft Local Planning Scheme No. 1 and draft Local Planning Strategy for the City of Greater Geraldton (CGG).

The agricultural industry in the CGG makes an important contribution to the state's economy, producing over \$170 million of agricultural products in 2008-09. It also employs approximately 4% of the residents across the CGG.

In 2010-2013 the CGG participated in a DAFWA project which identified areas of High Quality Agricultural Land (HQAL) for the Geraldton planning region. This project was a detailed investigation and documentation of land and water resources which are important to the agricultural industry.

DAFWA is pleased to see such a strong reference to the HQAL work in the draft Local Planning Strategy and Local Planning Scheme and commends CGG for its adoption as part of the city's overall rural strategy. Rural land, where soil and water resources support current and future horticultural production within Western Australia, is a finite resource. The predicted growth in WA's population to 3.5 million people by 2050 will require food supplies to double, making strategically important areas such as those identified in the CGG even more valuable.

More specific comments and suggestions on the City of Greater Geraldton's Local Planning Strategy and Local Profile and Context Report are included in Appendix 1. We support many of the objectives and strategies outlined in these documents.

Additionally, the CGG has requested DAFWA to compile updated Base Stocking Rate Guidelines for the Rural Residential areas at the city's urban hinterland. These are presented in Appendix 2¹.

I trust that you will find this advice useful. If you have queries regarding these comments, please contact Angela Stuart-Street on (08) 9780 6124 or email Angela.Stuart-Street@agric.wa.gov.au.

Yours Sincerely

Pam l'Anson
Regional Director
Central Region

¹ An example of a Fast Track Planning Application for Keeping of Horses, prepared by the City of Swan, is found on their website at:

http://www.swan.wa.gov.au/Residents/Planning_Building_Engineering/Planning/Checklists_Questionnaires/Fast_Track_Application_Checklists_Questionnaires

20 Gregory Street, Geraldton Western Australia 6530
Postal address: PO Box 110, GERALDTON WA 6531

Telephone: (+61 8) 9956 8555 Fax: (+61 8) 9921 8016 Email: geraldtondo@agric.wa.gov.au

Website: agric.wa.gov.au



Appendix 2: Base stocking rate guidelines for the City of Greater Geraldton

The standard measure for stocking rates is called Dry Sheep Equivalents (DSE) which is the number of adult dry sheep (wethers) that can be carried on each grazed hectare without causing degradation to the land.

A DSE measure is a 50 kg dry sheep. Equivalents for other animals have been estimated. For example, a 15 hand horse would weigh between 450 and 500 kg, which is equivalent to 10 DSE. Ponies would have a lower DSE rating and draught horses and horses with foals are higher.

The **base stocking rate** is the number of DSE that would apply to a rural small holding with **the most basic level of pasture management in an average year**. It presents stocking rates on properties where it is **not irrigated** and there has been **no approved land/pasture management plan** drawn up for the property and submitted to council. Consequently, these areas are **assumed to be more susceptible to degradation** and receive lower stocking rates. The base stocking rate should:

- Provide enough feed to maintain animals in good condition – animal welfare is a key objective. Consideration must be given to the welfare of any grazed animal to ensure minimal body condition is maintained and this may require feed supplementation at times of the year.
- Avoid soil erosion by providing enough pasture cover (>50%) to protect the soil throughout the year (to achieve this in some areas, this may require resting paddocks, i.e. removing stock, from time to time to ensure minimal ground cover is achieved and maintained).

Assumptions for the base stocking rate are:

- Rain fed annual pastures and minimal supplementary feeding
- A basic level of pasture management, such as resting paddocks from time to time, particularly over the summer months
- Remnant vegetation and wetlands are fenced
- Aimed at small lots (1-20ha) as they have fewer pasture management options, including resting pastures to maintain cover during the critical summer months

2.1 Stocking rate land units for the Geraldton area:

These land units are identified on the mapping "Soil types of Geraldton, Mullewa and Walkaway" provided to the City of Greater Geraldton by DAFWA in 2013 (Figure A).

Coastal dunes: these are generally the western-most dunes along the coast with little agricultural value, poor suitability for pastures and low productivity due to high alkalinity, extremely rapid drainage and nutrient deficiencies. This area is subject to intense coastal winds so wind erosion risk is also a major constraint.

Limestone hills: Low sandy hills and rises with brown, yellow, grey and sometimes red deep sands over limestone. In an unimproved state, this country is not ideal for grazing stock in summer and is easily eroded if pasture is not carefully maintained and soil is loosened by stock movement. Areas of shallow sand with limestone outcrop are most vulnerable. This area is also subject to intense coastal winds so wind erosion risk is a major constraint.

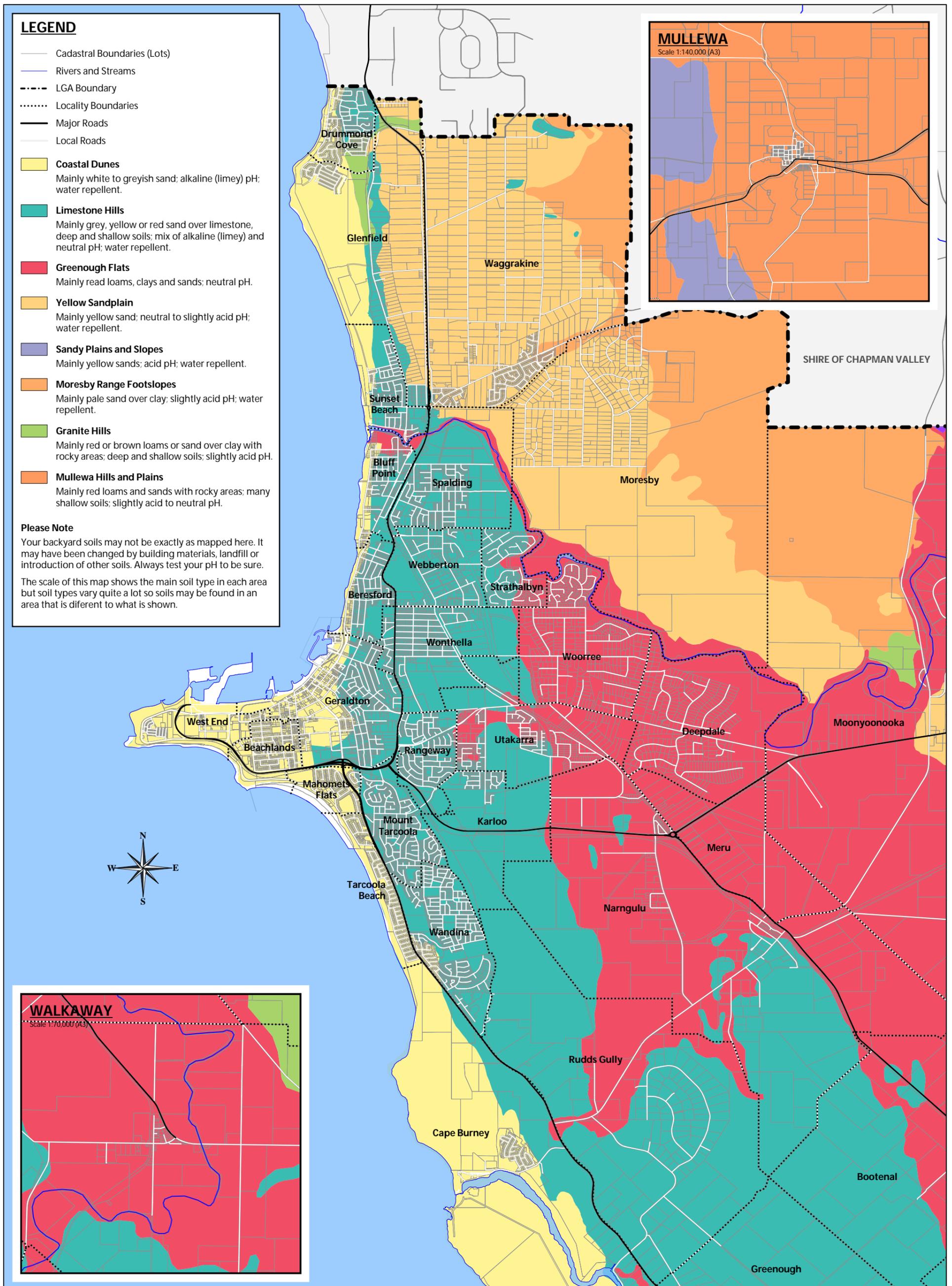
Yellow sandplain: Level to undulating yellow sandplain mainly to the north of the Chapman River. These deep yellow sandy soils are similar to the yellow sands in the limestone hills, but they have slightly better water and nutrient holding capacity. These sands are not ideal for grazing stock in summer and are easily eroded if pasture is not carefully maintained and soil is loosened by stock movement. This area is also subject to intense coastal winds so wind erosion risk is a major constraint.

Greenough flats: This level to very gently undulating land unit is the alluvial plain associated with the Greenough and Chapman Rivers. Soils are generally red-brown alluvial sands, loams and clays. It is fertile soil which is valuable for agriculture. Some of these areas may be subject to waterlogging and flooding. Soil structure can decline with stock movement when soil is moist. High runoff may increase nutrient export risk. This area is also subject to intense coastal winds so wind erosion risk may be a constraint.

Moresby Range foothills: These are the gently inclined footslopes of the Moresby Range. Soils are mainly brown or red sands over red or yellow clays. Water erosion is a risk here as there are long slopes and areas can receive considerable run-on of water from steep sideslopes of the range. The subsoils are highly dispersible and susceptible to gullying. Subdivision in this unit must be careful as small lot sizes greatly restrict implementation of soil conservation works to manage water erosion. This area is also subject to intense coastal winds so wind erosion risk may be a constraint for unprotected sandy topsoils.

Granite hills: Gently sloping and hilly land over granite. Soils range from shallow and stony to sand over clay. They are usually well drained. Generally reasonable grazing but this can be highly variable due to differences in slopes, soils and rock outcrop. Water erosion is a risk especially under heavy grazing pressure, and there is a risk of nutrient export. This area is also subject to intense coastal winds so wind erosion risk may be a constraint for unprotected sandy topsoils.

Note: The map in Figure A is a general picture showing the most likely land units of any location. Some land units will occur in other areas. If this is the case, select the most appropriate land unit for the property from descriptions provided above.



Major Geraldton rural residential development areas and associated land units covered by these guidelines:

- **Deepdale** – Greenough flats
- **Woorree**- Greenough flats
- **Rudd's Gully** – Limestone hills
- **Moresby** – Yellow sandplain and Moresby Range foothills
- **Waggrakine** – Yellow sandplain and Moresby Range foothills
- **Walkaway** – Greenough flats

2.2 Base stocking rate calculations for small landholdings in the City of Greater Geraldton

Base stocking rate calculation for non-irrigated, unimproved pasture paddocks with no management plan					
Stocking Rate Land unit	Recommended stocking rate DSE/ha	Equivalent sheep	Cows	Goats	Horses
Coastal dunes	0	0	0	0	0
Limestone hills*	2	2	0	0	0
Greenough flats	6	6	0.5	4	0.5
Yellow sandplain*	3	3	0	2	0
Moresby Range footslopes	5	5	0.5	3	0.5
Granite hills	5	5	0.5	3	0.5

* In an unimproved state this land unit is not suited to grazing in the hotter months (November – March).

Further information:

DAFWA Small Landholder Information Service for general advice on small landholdings:
https://www.agric.wa.gov.au/small_landholder

Smolinski H and Scholz G 1997. *Soil Assessment of the west Gingin Area*. Land Resources Series No. 15. Department of Agriculture, Perth.

van Gool D, Angell K and Stephens L 2000. *Stocking rate guidelines for rural smallholdings – Swan Coastal Plain and Darling Scarp, Western Australia*. Miscellaneous Publication 02/2000, Department of Agriculture, Perth.

2.3 Increasing stocking capacity

A stock management plan should be prepared when stocking a property in excess of the recommended base stocking rates. Proposals to carry stock in excess of the base stocking rate should outline how the increase can be sustained without causing degradation. This should be subject to approval from local government.

Different stock management systems are possible, depending on the level of pasture improvement, irrigation, type of animal, feeding regimes and management practices.

Sites considered for higher stocking rates should:

- Preferably be confined to the better soils with higher base stocking rates;
- Not be located on slopes of greater than 10%
- Not be located in areas of shallow groundwater
- Have yards, pens or trough areas sheeted with material to reduce erosion risk

An example of a planning application for increasing stocking capacity from the base stocking rate is provided by the City of Swan at:

http://www.swan.wa.gov.au/Residents/Planning_Building_Engineering/Planning/Checklists_Questionnaires/Fast_Track_Application_Checklists_Questionnaires

Further information:

van Gool D, Angell K and Stephens L 2000. *Stocking rate guidelines for rural smallholdings – Swan Coastal Plain and Darling Scarp, Western Australia*. Miscellaneous Publication 02/2000, Department of Agriculture, Perth.

DAFWA Small Landholder Information Service for general advice on small landholdings:

https://www.agric.wa.gov.au/small_landholder

Including information sheets on:

- Equine management plans for small landholdings
<https://www.agric.wa.gov.au/horses/equine-management-plans-small-landholdings>
- Keeping horses on small properties
<https://www.agric.wa.gov.au/horses/keeping-horses-small-properties>
- Supplementary feeding
<https://www.agric.wa.gov.au/supplementary-feeding-livestock-your-small-property>