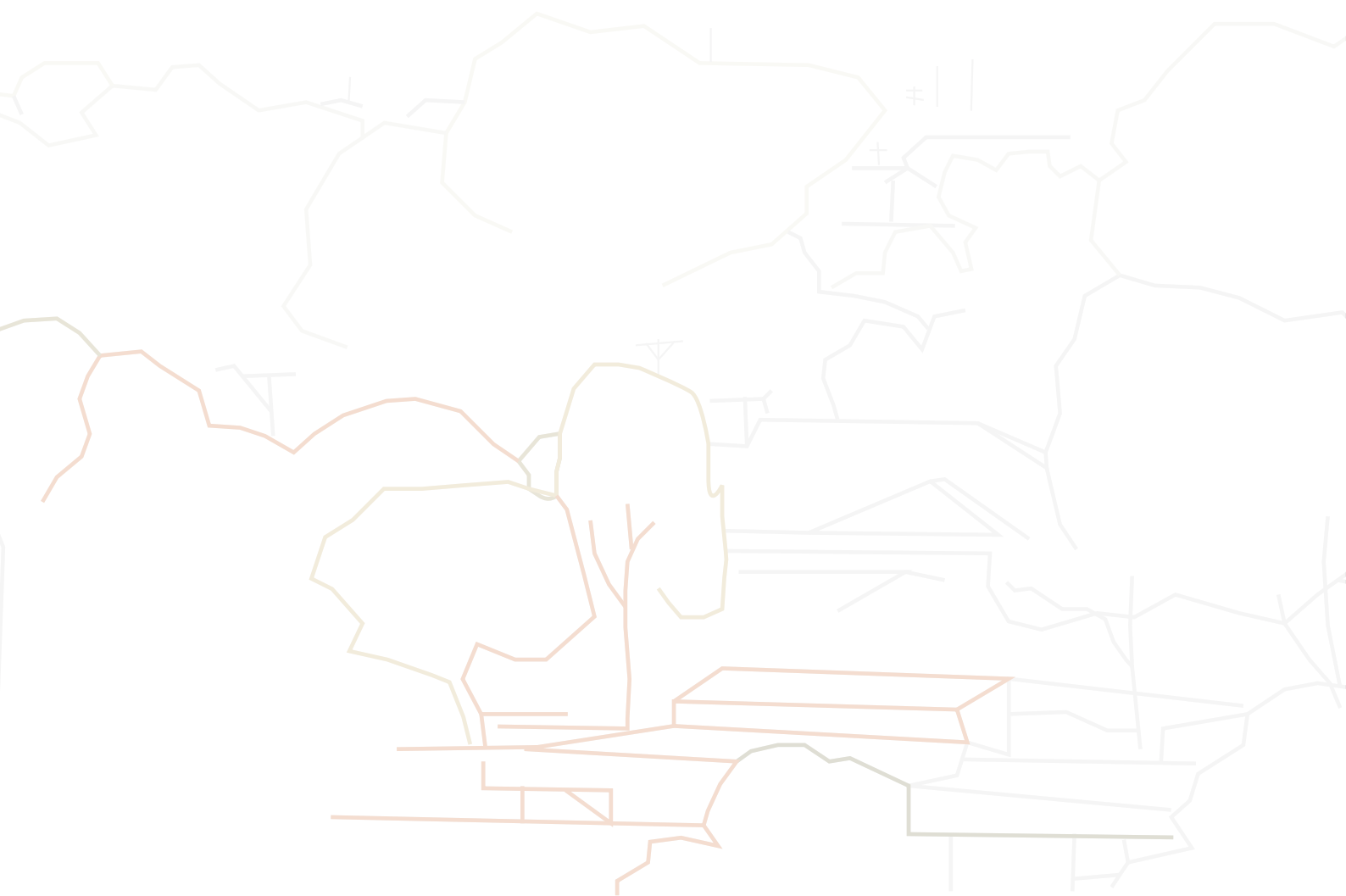


# MORESBY Range MANAGEMENT PLAN 2010



June 2010

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Shire of Chapman Valley, City of Geraldton-Greenough

Western Australia

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# Executive Summary

This Management Plan presents a new vision for the section of the Moresby Range immediately south of White Peak Road and east of Geraldton. It has been strongly informed by extensive community consultation that asked the people of the Mid West - *What future did they want to see for the Range and how did they want to engage with the Range into the future?*. The major finding was that the community wanted the Range to be turned into a unique and iconic Park that would become an asset and a resource for the regional, Western Australian and international communities. This concept has underpinned the work by the Steering Committee that lead to this report. The Vision for the Park is:

## People finding new ways to be in the Landscape

Three priority activities have come out of the community consultation that explain this vision:

- Creating new and different landscapes
- Giving access for people
- Living the transitions

The land in the Range is currently all privately owned, with the exception of a parcel of land on the western side of Wokatherra Hill that is managed by the Department of Environment and Conservation as a Nature Reserve. Because of the length and complexity of the process to acquire land and develop a Park, the Steering Committee has set a nominal 20 year time frame for its creation. The Committee also recognises that the final outcome may differ from what is proposed in this Plan and consequently the geographic area that may form the basis of a Park has been identified as “the Range Precinct” in this document. Appendix 1 and 2 provide a summary of the proposed changes to the area.

The Steering Committee considered that the current landowners should receive a fair and reasonable exchange if they choose to place their land into the Park. This exchange, which may involve a mix of purchase, land swaps or development opportunities, would be determined on a case-by-case basis. In most cases land would not be acquired ahead of landowner agreement as it is considered inappropriate for State acquisition to occur before land-owners are ready for such action.

Funding the establishment and development of the Range Precinct, and ultimately a Park, could come from a number of sources including budget allocations by Federal, State and Local Government, grants, legacies and bequests. The Implementation and Governance structure (see Section 13) also provides opportunities for business to be involved in the Park and to contribute to its ongoing operational costs.

The Steering Committee is also aware of the considerable resource and infrastructure projects that are occurring in the Mid West and consider that establishing a Park would provide significant opportunities for such developments to make a real and long lasting contribution to the common good of the Mid West, and provide a direct and real benefit to all the people of the region.

The Western Australian Planning Commission’s Moresby Range Management Strategy (MRMS) provided the over-arching planning framework for this plan. The MRMS recognised that there were particular issues relating to the southern section of the Range that were of particular importance to the regional community, and recommended that a Management Plan be prepared for this area, specifically<sup>1</sup>:



Figure 01.1

The study area, indicative routes of the Oakajee Narngulu Infrastructure Corridor and major landscape features

- Study boundary
 — Oakajee Narngulu Infrastructure Corridor at June 2010
 — Range Precinct boundary
- ... Walk Trail
 ... Access Trail
 - - Foothills Road

*A key recommendation of this Strategy was the development of a Management Plan for the Detailed Investigation Area... [inter alia]. The intent of developing a Management Plan is to more clearly define the objectives and recommendations of this strategy as they relate to the portion of the Range identified as having the most development pressure.*

*The Management Plan will include an implementation strategy for achieving key objectives for the detailed investigation area, particularly in relating to providing for public access and recreation. It should define areas targeted for future public access and set out means to achieve this, including any necessary land acquisition.*

The boundary of the Range Precinct was selected according to a number of criteria including topography, cadastral boundaries, biogeographical and biodiversity features, and existing developments. The Plan also makes recommendations for land uses around the Range Precinct, particularly on the western side of the Range. Here the objective is to allow limited urban development to occur in the foothills, subject to development conditions, that will create smooth and gradual visual transitions from the obviously urban centre of the City to the bush and green appearance of the Range.

The ecologically degraded condition of the Range Precinct presents a challenge to the traditional concept of parks as the Precinct is a large geographic area with generally low ecological merit. Land management decisions by past landowners of the central and southern sections of the Precinct have very significantly diminished the ecological quality of the landscape and greatly accelerated erosion processes. In the northern areas, however, the long term landowners have preserved significant areas of bush land that are in reasonable ecological condition. Consequently, the approach taken in this Plan was to identify areas that may be suitable to return back to an approximation of their original species distribution, and identifying other areas, particularly in the Centre and South of the Precinct, where the objective would be to stabilise the landscape, improve visual amenity and to create new models of how people can live in the landscape.

An additional objective for a Park is to provide extensive, low key recreation opportunities that utilise the Range's natural assets. It is proposed to create a Central Facility on the southern side of Chapman Valley Road as the focus for this activity. The Facility will locate many varied, easily accessible, activities in one location thus keeping intensive uses contained which will also assist with the financial viability of the Facility. The Central Facility will serve as a "hub" from which people would move out into other parts of the Range.

The Steering Committee considered a governance structure that would support the creation and operation of a Park. The final governance structure still has to be determined however the Steering Committee sees considerable merit in the idea of an independent, statutory body similar to that used for Rottnest Island or Kings Park. For the establishment phase the Committee reviewed a number of different management models that may be appropriate. Local Government was the most appropriate agency identified to provide executive support for the establishment process, with a *Supervision Committee* made up of representatives of government, business and the community to guide its creation. The Steering Committee also considered that this *Supervision Committee* should be supported by three action groups:

*Ecological Management Group* – a Natural Resource Management style group of landowners and community members to facilitate the ecological repair of the Range.

*Business Development Alliance* – a Not-for-Profit business structure to oversee the development of commercial businesses within the Range.

*Landowner Group* - providing a forum for discussions of common concerns with, and interests in, the future of the Precinct. Organise negotiation frameworks, and to provide an information conduit between the Supervision Committee and the community.

# 01 Introduction

## 01.1 ORIGINS OF THIS PLAN

The framework for preparing this Management Plan came from the Western Australian Planning Commission's *Moresby Range Management Strategy*<sup>1</sup> (MRMS). The MRMS is a comprehensive strategic document that covers all of the Moresby Range. The MRMS recognised that there were issues relating to the southern section of the Range that were important to the regional community, and recommended that a Management Plan be prepared for this area, specifically:

*A key recommendation of this strategy is the development of a Management Plan for the Detailed Investigation Area - refer to map 7. The intent of developing a Management Plan is to more clearly define the objectives and recommendations of this strategy as they relate to the portion of the Range identified as having the most development pressure.*

*The Management Plan will include an implementation strategy for achieving key objectives for the detailed investigation area, particularly in relating to providing for public access and recreation. It should define areas targeted for future public access and set out means to achieve this, including any necessary land acquisition<sup>2</sup>.*

Where the MRMS made specific recommendations about the future development of the Range that has been addressed in this Plan it has been recognised as a footnote.

This Plan was funded by the Shire of Chapman Valley, the City of Geraldton-Greenough, Enviroplanning/WAPC and the Mid West Development Commission. The development of the Plan was overseen by a Steering Committee chaired by the Shire of Chapman Valley and consisted of representatives of:

- Shire of Chapman Valley
- City of Geraldton-Greenough
- Local Government Staff
- Community Representatives
- Landowner Representatives
- Yamatji Land and Sea Council
- Department of Planning
- Department of Environment and Conservation
- Department of Agriculture and Food
- Northern Agricultural Catchments Council
- Mid West Development Commission

This Plan was strongly informed by an extensive community consultation process of which the major finding was that the community wanted the Range to be turned into a unique and iconic area that would become an asset and a resource for the regional, Western Australian and international community. This concept has underpinned all the work by the Steering Committee and the planning that lead up to this report.

1  
2

Western Australian Planning Authority's Moresby Range Management Strategy August 2009  
MRMS Section 5.1 pg. 31

This Plan is a subset of the larger Moresby Range Management Strategy but is only concerned with the southern portion of the Moresby Range. To resolve the potential conflicts between references to the geographic area and names of various planning studies the following definitions are used in this Management Plan.

*Biodiversity* – a general description of the interrelated species and landscape complexes found across the region. There are more formal and precise definitions of biodiversity but in this case it is used in a general descriptive sense to provide a rough indicator of the ecological and geological richness of different areas.

*Community* – the groups of people that were contacted during the community consultation process, see Section 01.4. The consultation process was sufficiently comprehensive to assume that its findings reasonably reflect the attitudes of the wider Mid West community.

*Community Park (Park)* – a concept presented in this Plan to turn the Range Precinct into an iconic regional resource. “Community Park” is not a formal planning description, rather a statement of aspiration and intent. Ideally, when the Park eventuates it will be formally recognised under an appropriate planning framework. This is discussed further in Section 13.

*Local Government* – there are a number of Local Governments in the region that are involved in amalgamation arrangements. Consequently the Plan identifies “Local Government” as a decision making authority rather than specifically identifying any one Local Government

*Mid West* – the area generally covered by the Mid West regional administration boundary<sup>3</sup>

*Plan* – this Management Plan.

*Range* – the geographic area within the study boundary that forms the southern extension of the Moresby Range

*Range Precinct* – an area defined that includes the flat tops and major slopes of the section of the Moresby Range in the Study area but excludes the flatter areas of land that surrounds the Range.

*Study boundary* – the area covered by this Plan as shown in Figure 01.1. This area is smaller than that used for the MRMS.

*Urban development* – a generic term for rural residential living, low and high density housing, in contrast to areas devoted to agricultural, industrial or other activity.

## 01.2 STRUCTURE OF THE DOCUMENT

This Plan recognises that a considerable amount of research and studies have already been undertaken as part of the MRMS and other planning activities<sup>4</sup>. The Steering Committee directed that this project should not seek to duplicate this work, but rather focus on carrying out extensive consultation to gauge the community’s desires and aspirations for the Range and combine this with the pre-existing studies to produce this Plan. The Plan falls into the following Sections:

Section 01	Origins of the Plan – linkages back to the WAPC Moresby Range Management Strategy
	Contexts of the Plan – landscape, regional growth, local government administration, sustainability, creating the Park
	Community Consultation – who was consulted and a summary of the findings
Section 02	Presents the Vision for the Range Precinct
Section 03	Defines the boundaries used for, and within, this Plan
Sections 04 – 06	Describes land uses around the Range Precinct

<sup>3</sup> Western Australian Government, Department of Regional Development and Land

<sup>4</sup> The MRMS contains a comprehensive list of previous planning and other studies of the Moresby Range, see pg... 2 – 4 and pg. 36 - 37

Sections 07 – 09	Describes land uses within the Range Precinct
Section 10	Gives an overview of the proposed central facility that will provide a hub and focus for the activities in the Range
Section 11	Identifies Natural Resource Management priorities
Section 12	Provides guidance on the appearance of development around the Range
Section 13	Discusses the issues around the possible Implementation and Governance of the establishment and long term operation of a Park in the Range Precinct .

### 01.3 CONTEXTS

**Landscape** – the Range is the southern 13km of the larger Moresby Range that starts near the Chapman River then follows the coast northward for approximately 33km. The area covered by this Plan is immediately adjacent to, and provides the backdrop for, the City of Geraldton. The features of the Range are shown in Figure 01.1.

The Moresby Range was once a seabed built up from sediment deposits over millions of years. Fossils from this ancient seabed can be found in various places in the Range. Over geological time the sea level has changed a number of times leaving the old seabed as an elevated rocky plateau bordered by the sand plain and dune systems to the west of the Range. This plateau has been eroded by streams following fault lines in the rock, creating the characteristic mesa style, flat top hills. These streams carried the eroded materials from the Range and spread them out across the landscape creating the fertile, undulating, landscape to the east of the Range. The prevailing southerly winds carried coastal sands up against the southern end of the Range forming the expansive sand plains between the Chapman River and Mt Fairfax.

The Moresby Range originally would have had a Range vegetation cover varying across stream zones, faces of the Range and the flat tops. Today the remnant vegetation is described as predominantly being mixed *Hakea* and *Melaluca* thicket with occasional patches of jam scrub and scattered York Gum<sup>5</sup>. In the north there are significant amounts of remnant vegetation cover, in the centre and south native vegetation has been nearly totally removed.

**Regional Growth** - The Midwest Region is on the cusp of major change. Historically the region has focussed on farming and fishing; now mining, tourism and science, through the Square Kilometre Array, are being added to the mix. The City of Geraldton-Greenough has the vision of becoming the State's second major city with the capacity to sustain a population of 80 000 - 100 000. This vision represents dramatic change for the whole region.

The Mid West has been identified for major growth driven by increases in the mining industry in the hinterland. Unlike the Pilbara towns, Geraldton has a significant supply of residential land. This Plan identifies a number of locations to the west of the Range that may be appropriate for further urban development which assist accommodating the growth of the City.

**Local Government Administration** - Historically the administration of the region occurred through a number of small local government authorities. In 2007 the Shire of Greenough merged with the City of Geraldton to become the City of Geraldton-Greenough. There are on-going initiatives at both a State and Federal level to continue to merge small local authorities into larger administrative units. This Plan identifies "Local Government" as a decision making authority rather than specifically identifying the Shire of Chapman Valley or City of Geraldton-Greenough.

**Sustainability vs. Environmentalism** – in Western Australia parks have generally been defined by their conservation values and recreational opportunities. The Range is, except for some areas of high quality biodiversity in the north, significantly ecologically degraded and presents a unique opportunity to take a sustainability approach rather than a narrower environmental orientation. This reflects the opinions and attitudes that emerged during the community consultation

<sup>5</sup> Information from DAFWA database (the map) and "Biodiversity assessment and vegetation mapping in the Northern Agricultural Region Western Australia" by Richardson, J., Langley, M., Meissner, R., and Hopkins, A. Produced by DEC and NACC, updated 2008 supplied from DAFWA in digital form 2009

and will require new and innovative approaches to the establishment, implementation and governance of a possible Park, as is discussed in Sections 2, 10 and 13.

*Creating a Park*<sup>6</sup> – With the exception of the Wokatharra Nature Reserve the land in the Range is all privately owned. The current landowners should receive a fair and reasonable exchange if they choose to place their land into a Park. This exchange, which may involve a mix of purchase, land swaps or development opportunities, would be determined on a case-by-case basis. Land should not be acquired ahead of landowner agreement as it is considered inappropriate for Local or State Government acquisition to be done before landowners are ready for such action.

Funding the establishment and development of a Park may come from a number of sources including budget allocations by State and Local Government, grants, legacies and bequests. The Implementation and Governance structure (see Section 13) also provides for opportunities for business to get involved in a Park and to contribute to ongoing operational costs.

The Steering Committee is also aware of the considerable resource and infrastructure projects that are occurring in the Mid West and consider that the possible establishment of a Park would provide significant opportunities for such developments to make a real and long lasting contribution to the common good of the Mid West, providing a direct and real benefit to all the people of the region.

*Liability* – during the consultation process all of the landowners of the Range had significant concerns about public access and liability. They considered that the liability and management issues associated with allowing public access were too high to support a hybrid farming/public recreation approach to land use in the Range. This was one additional factor that prompted the Steering Committee to support the long-term objective of converting all the Range Precinct into a Park.

#### 01.4 COMMUNITY CONSULTATION

This Plan has been strongly informed by an extensive community consultation process that included:

- ☐ Discussions with the owners of the major landholdings that make up the Range.
- ☐ Discussions and meetings with a range of community and interest groups.
- ☐ A public meeting at the Waggrakine Hall that attracted over fifty people.
- ☐ Surveys in shopping centres that collected over two hundred surveys.
- ☐ A day and a half Inquiry-by-Design Workshop during which approximately forty community, industry and government representatives prepared four conceptual plans for the Park.
- ☐ Press releases in the local media.
- ☐ Individual and informal discussions with interested community members.
- ☐ Review of the progress of the project by the Steering Committee which had both community and landowner representation.
- ☐ Review of the draft Plan by the community over a six week period during which thirty submissions were received.

## DEVELOPMENTS ON TOP OF THE RANGES

I don't want to see development on top of the Ranges	Seeing a bit of development on top is OK but it should not be really obvious	It's OK to see housing/other uses on top from the City
--	--	--

## DEVELOPMENTS ON SIDES OF THE RANGES

The sides should not have any development on them	Some development on the sides is OK provided it is not really obvious	It is OK to see development on the sides all the way to the top
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## LARGE STRUCTURES (MASTS/WIND GENERATORS)

Great, we need things like TV masts and wind generators	OK, provided they are not really obvious	Not OK, get rid of the existing TV masts
---	--	--

## BUSH/GREEN AND DEVELOPMENT ON THE FOOTHILLS OF THE RANGES

The foothills should be completely covered with bush and green development	Mixture of some bush and green with some development	No change, leave the foothills as they are now
--	--	--

## HOW IMPORTANT IS IT TO STOP EROSION?

Don't worry about it, it's a natural process	Only do something if it's really bad	Try and stop as much as possible	Do anything you can to stop it
--	--------------------------------------	----------------------------------	--------------------------------

## HOW IMPORTANT IS IT TO IMPROVE THE NATURAL ENVIRONMENT OF THE RANGES ?

Leave it alone, it will look after itself	Do enough to make it look better	Do strategic work to get significant improvements	Improving nature conservation should have the highest priority
---	----------------------------------	---	--

Figure 01.2 - 6 Range of opinions from the public consultation based on the format of the survey. The centre of the red shaded area shows the mean (average) opinion and the extent of the shading shows the Range of opinions

A number of major themes were investigated in the consultation including:

- ☐ The community vision for the long term future of the Range.
- ☐ The acceptability of urban or other built development on the tops, sides and foot-slopes of the Range.
- ☐ The acceptability of large structures (telecommunications masts, wind turbines etc.) on top of the Range.
- ☐ To what extent, and with what objective, should the Range be revegetated and erosion repaired.
- ☐ The range of activities considered desirable for the Range and those that were not supported.
- ☐ How much, and what kind, of access should be provided throughout the Range.

*General Observations* - The most consistent theme to emerge from the community consultation was that the Range was an iconic resource that should be easily accessible for the regional community and the visitors to the region. To achieve this, the Range should ultimately become some form of publicly owned Park. The emphasis of this Park was that it should have a living, changing, interactive quality and not just be a museum that people visited to look at and not do much else. There was also a sincere and profound concern that the Range was significantly ecologically degraded which should be repaired, but this was tempered with the feeling that agriculture that had occurred on the Range provided an historical and cultural identity to the region and should also be recognised. This is discussed further in Section 2.

*Urban development and the Range* - There was a near uniform consensus that the community did not want to see urban development or significant buildings on the side slopes, along the skyline or on the top of the Range, see Figure 01.2 and 01.3. While the tops of the Range slope down to the east, and it could be possible to locate housing and urban development out of the view of the City, the general community feeling was that placing private freehold land in the middle of a Park would compromise the intent that the Range become a community asset.

The foothills presented a different story. The community considered that some urban development should occur in these areas, however urban development should not dominate the foothills landscape. It was considered that the existing buildings that could be seen at the higher elevations around Chapman Valley Road, were too visually dominant and this level of development should not be allowed to spread, at this elevation, along the faces of the Range. This Plan recognises this concern and provides a framework for urban development with high quality design and adequate tree screening to present the appearance of a well-vegetated foothills landscape spreading up into the Range.

*Large structures* - The telecommunications towers on the Range are a long term fixture and part of the back drop to the City. Some people believe that if this were to be a “natural” landscape the towers would have to be removed. Similarly there was considerable debate about the merit of wind turbines. The need to reduce carbon emissions and use the funding from energy sales for the Park was set against the visual impact of turbines. There was a significant proportion of the community, see Figure 01.3 who considered that the benefits to the community from telecommunications and renewable energy outweighed any negative response to the appearance of these structures, provided the structures were not the dominant feature on the Range.

*Revegetation and erosion repair* - As is discussed later, the Range is generally in poor ecological condition with significant erosion processes operating at many locations. Given the extent of degradation the effort to restore the Range to original pre-European vegetation assemblages would be huge. Consequently the community was asked to what extent it considered the Range should be revegetated, see Figure 01.4, 01.5 and 01.6. This was used to inform a strategy to stabilise the landscape, preserve and enhance the existing remnant vegetation, and revegetate new areas.

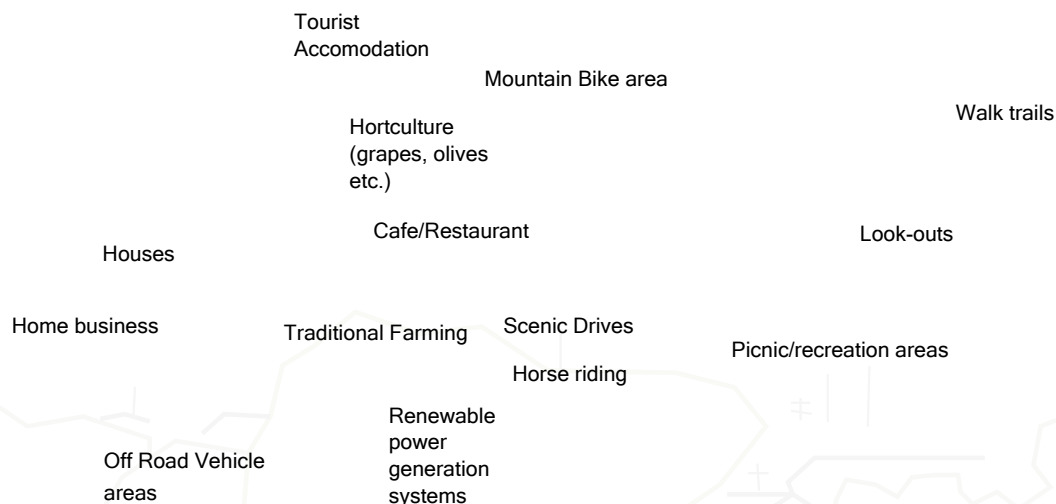


Figure 01.7 Range of opinions from the public consultation of things that are wanted in the Range based on a prepared list of options

## ACCESS AND RECREATION

	Not at all	A few short routes off the major roads that pass through the Ranges	A spread of routes at different locations throughout the Ranges	Put routes throughout the Ranges
Conventional Car				
Four Wheel Drive				
Walking				
Bicycle/ Mountain Bike				
Trail/Quad Bike				
Horse				

Figure 01.8 Range of opinions from the public consultation about the amount of access for different methods of transport. The centre of the red shaded area shows the mean (average) opinion and the extent of the shading shows the range of opinions

*Activities in the Range* - Community opinion about activities in the Range was determined from three sources - responses to a list of potential activities provided in the community survey, see Figure 01.7, written comments in the surveys and informal comments at various community and individual meetings.

The community wanted to see activities that built on the natural assets of the Range including the views, the spaciousness, the rugged isolated feel, their naturalness, and the variety of topography. They also wanted opportunities to be active in the landscape<sup>7</sup> and be actively engaged in changing it; including - repairing the ecosystems, to try out and demonstrate different land uses<sup>8</sup> and to have activities and structures<sup>9</sup> that interpret the history and biogeography. There was also support for socialising locations such as barbeque areas, amphitheatre, café, restaurant, and microbrewery.

It appears that the community attitude of wanting the Park to be something “different” reflected the desire to see the Range as having their own identity as “The Range”, not purely a geographical structure to support human infrastructure such as housing, masts and wind turbines.

*Access through the Range* – the amount and type of vehicle access that was considered appropriate was tested with the community during the consultation, see Figure 01.8. The consensus was that walking and cycling were appropriate to move throughout the Park, however motorised vehicles of any kind should be limited to providing access to the centre, north and south of the Park. Horses were not wanted on the tops of the Range but trails along the foothills were well supported, hence the proposed multi-use Foothills Road described in Section 4.

## 01.5 VISUAL LANDSCAPE ASSESSMENT - THE RANGE AND ITS SURROUNDING LANDSCAPE

The WAPC’s publication, *Visual Landscape Planning in Western Australia – a manual for evaluation, assessment, siting and design*, provides concepts and processes for developing guidelines for managing changes to be made in the Range and surrounding landscape. The manual spells out three broad visual management objectives:

- ☐ protection and maintenance of valued landscape character;
- ☐ restoration and enhancement of degraded visual landscape character, or opportunities for enhancement;
- ☐ best practice siting and design, where either a combination of the first two objectives may be appropriate, and for all other areas.

In working to achieve these broad level objectives, the following more specific objectives are relevant:

- ☐ “not evident”, where development may be hidden, screened or not visible from specified viewing locations;
- ☐ “blending” where development may be evident, but generally not “prominent” in the landscape;
- ☐ “prominent” where development may intentionally be a dominant feature in the landscape.

The fundamental visual management concept for the Range and its surrounds is that they should have their own identity in the landscape and not be an extension of the city or farmland.

The overall visual management objectives for the Range, subject to the comments below about large structures, would be to “protect and maintain” the existing valued character and to “restore and enhance” degraded bush land areas while, in response to community desires, also preserving some of the agricultural character of certain parts of the Range. Figure 11.5 and 11.6 shows areas that have been identified for restoration and revegetation and includes faces

7 Camping, walks, bike rides, rock climbing, hang gliding, running etc.

8 Wind turbines, farm stay, wildlife park, tree crops, carbon sequestration Plantations etc

9 Interpretation centre, art works, sculpture park, signage

of the Range particularly those that are seen from the City, ridges and edges of elevated areas, linking and enhancing blocks of remnant vegetation and water courses. There are no major developments planned for the Range Precinct except for the Central Facility that will serve as a hub for activities in the rest of the Range Precinct. The visual landscape objective for the majority of the Range Precinct is that developments should be “not evident” and for the Central Facility that it should generally be “blending” with occasional “prominent” structures where their prominence can be used to promote the existence and identity of the Range Precinct. This is reflected in the intention not to create any new roads into the Range Precinct other than using existing tracks or cleared areas, and design structures in an architectural character that interprets the landscape and the history of human activity in the Range.

The areas of land around the Range Precinct can be broadly divided into two categories - the urban areas west of the Range, see Section 4, and the other, non-urban, areas that surround the Range Precinct to the north, east and south. The visual landscape objectives for the lands around the Range Precinct are broadly determined from the MRMS Map 3 - Landscape Classes and Map 5<sup>10</sup> as it highlights visually sensitive areas located adjacent to the Range.

#### *01.5.1 Visual Management Objective urban areas west of the Range Precinct*

There should be “best practice siting and design” with the specific objectives that close to the highly urbanised centre of the City buildings and other developments should be “prominent”, and closer to the Range urban development should become “blending”. Measures to be implemented to achieve this appearance of “blending” are discussed in Sections 4 and 11 and include:

- Preventing development up the faces of the Range.
- Limiting the density of urban development on the foothills.
- Making extensive provisions to improve the visual amenity of urban development in the foothills through planting of tree screens, revegetation of creek lines etc.

#### *01.5.2 Visual Management Objective north - northwest of the Range Precinct*

The area outside the Range Precinct around the Buller River, Wokatherra Pass and Wokatherra Hill will be significantly impacted by the Oakajee Narngulu Infrastructure Corridor. Issues associated with the visual impact of the Corridor will be managed under a separate planning and development process. As Section 5 indicates the complexity of this landscape and its inherent biodiversity best suits it to become an ecologically orientated, rural-residential lifestyle area using innovative cluster/hamlet/survey strata approaches to subdivision rather than the roll-out of typical urban/semi-urban development lots seen in other parts of Geraldton. In this context the broad visual management objective for this area is “best practice siting and design” with the intent that development should be seen as “blending”.

#### *01.5.3 Visual Management Objective east and south of the Range Precinct*

The objective for these areas are that they should retain their agricultural uses but stabilise the landscape and be revegetated to produce better visual integration between the agricultural areas and the Range Precinct. In this context the visual management objective is to ‘restore and enhance’ the lower side slopes of the Range, the cleared watercourses and road verges. While it is anticipated that there will be no urban development and minimal new built structures in this area the visual management objective for these areas should be “blending”.

<sup>10</sup> Western Australian Planning Commission's *Draft Moresby Range Management Strategy* (2008), material from the Department of Planning and Infrastructure's *Moresby Range Landscape Assessment Study* (1998)

#### 01.5.4 Visual Management Objective Tall Structures

Telecommunications towers have been located on the Range for many years and in recent times the Range has been discussed as a possible location for wind turbines. In this context the Moresby Range Management Strategy<sup>11</sup> makes the following statement about wind turbines:

*In recent years there has been increased interest in the potential establishment of wind farms in the study area. It should be recognised that opportunities for wind farms and other developments are not limited to the study area. The primary focus of the strategy is towards preserving landscape values, and any proposals for wind farms should be considered in this context.*

*Importantly, the broader community's views on wind farm development has not been determined on this issue. Wind farms in the study area should not be located in visually significant areas, including the detailed investigation area, however, in the advent of an application for such development being received at the local government level the following should be considered:*

- ☐ *Any development proposals for wind farms should ensure comprehensive public consultation occurs to capture community views, understand local issues, and allow public participation in decision-making at the earliest stages. Public consultation should include visual props.*
- ☐ *Any development proposal for a wind farm should be accompanied by a visual landscape assessment as outlined in the Visual Landscape Planning in Western Australia manual (WAPC 2008), where wind farms are specifically addressed on page 129. This assessment should focus on any potential changes to landscape character and should be used to provide the basis for determining whether a proposal is appropriate.*
- ☐ *Issues to be considered are also detailed in Planning Bulletin 67. Guidelines for Wind Farm Development (WAPC 2004), and include siting, design, number of turbines, height, visibility, ancillary development, and access points. Proposals should aim to minimise environmental disturbance, including visual impact and loss of public amenity.*

This statement indicates that while the WAPC does not consider that wind turbines should be located on the Range in the study area, it is also cognizant that there is community and commercial interest in such developments.

The community consultation informing this Plan included discussion with the community on the acceptability of wind turbines. A series of photomontages of wind turbines on the Range were presented to members of the public and their opinions noted in the survey, the results are shown in Figure 01.2 - 6. A significant proportion of the community considered that it may be appropriate to locate further structures on the Range. This preliminary work will need to be followed up with more detailed assessments as indicated in the above statement from the MRMS.

There is considerable debate about how to minimise the visual impact of turbines. Some opinions are that visual impacts could be minimised by:

- ☐ Specification of setback distances from the westward edge of the flat tops.
- ☐ Minimising impact on key views, especially avoiding location of towers at focal points.
- ☐ Clustering structures together, probably in the vicinity of existing telecommunications towers.
- ☐ Avoid locating structures in straight lines or other regimented layouts.
- ☐ Avoid placing towers on, or near visually dominating, iconic locations such as Mt Fairfax, Wokatherra Hill or Mt Sommer.

These opinions, however, would need to be tested by further design input and community consultation because:

- ☐ There are many options relating to size, height and design of turbines which would affect specification of setback distances.
- ☐ The views from the east should also be considered and consequently western setback distances may impinge on these views.
- ☐ Clustering of towers could increase their visual impact.
- ☐ Random placement of towers can create a visually disjointed landscape.
- ☐ Siting the towers to interpret and define the shape and form of the Range may help integrate them into the landscape.
- ☐ Towers can be sited to provide a visually engaging layout with an inherent legibility and symmetry.
- ☐ Careful placement of the towers can help to define transitions between “natural” e.g. the northern Park area, and “human affected” e.g. central and southern Park, areas.

As noted above these disparate views point towards more design input and community consultation in the event of a proposal to place turbines on the Range.

## 02 Vision

The Mid West Region is on the cusp of major change. Historically the region has been about farming and fishing; now mining, tourism and science, through the Square Kilometre Array, are being added to the mix. The City of Geraldton-Greenough has the vision of becoming the State's second major city capable of sustaining a population of 80 000 – 100 000. This is a huge vision and represents dramatic change for the whole region. The Moresby Range provides a backdrop and context for the City. They are a marker point for travel into and out of the region in which these changes are occurring. This Plan seeks to reflect these dynamic times through tangible and significant changes to the Range that will produce, in the long term, an iconic asset for the community in the form of a publicly owned Park.

Today the Range is significantly different to what the ancestors of the region's Aboriginal community would have seen. After 150 years of European priorities for the landscape there is ample evidence that humans have an almost infinite capacity to change the environment to suit themselves. The original vegetation that covered the Range has been changed into the mosaic of vegetation, farmland and housing that we see today. In the south this change is almost total; in the north there are still significant stands of original vegetation.

Previous generations of landowners/managers wanted to change the landscape into one that was suitable for grain growing and feeding stock, and they were largely successful. However the cost of this landscape modification was increased erosion, loss of bush land areas, a decrease in biodiversity and very limited community access. At the start of the new millennium there are different expectations about how the Range should look and what type of landscape is desirable. There is a general sense in the Geraldton and regional community that farming and housing has a place around the Range, albeit that it needs to become more sustainable and rebuild the landscape. There is also the expectation that the Range and particularly the side slopes should have more vegetation cover, look more bushy and "natural"<sup>12</sup> and not be covered by housing.

Geographically, the Range marks the most western extension of an old plateau that has been eroded to create the mesa-form landscape. The Range is the transition point between the ocean and coastal dune systems, and the mesas and rolling plains of the Mid West. This presents many opportunities for activities that give access to, and benefit from, being on the transition point.

Culturally the Range marks the transition and the gateway between the coastal city dwellers and the rural farming communities. Geraldton has generally been an ocean-orientated community and people want to experience a different range of landscapes, however getting access to bush and farmland close to the City is difficult. With the exception of a nature reserve on the western side of Wokatherra Hill, the Range is privately owned and public access into it varies. Some of the landowners have allowed and encouraged responsible visitation, others guard their privacy and limit access. In addition, landowners have real and significant concerns about legal liabilities associated with public use of their land for recreation.

A number of different management options were considered for the Range Precinct including leaving the lands in private ownership and assisting landowners with improving their ecological management of the landscape. Such measures may be appropriate in the short term, however there was a general consensus<sup>13</sup> that in the long term the Range Precinct should be in public ownership to allow the landscape to be developed in different directions and give more access for a diverse range of activities.

The community also recognised that the current landowners should receive a fair and reasonable exchange for giving up control of their land and placing it into a Park. This process of exchange should occur at a pace that suits the landowners and they should not be coerced into giving up their land through legislatively enforced acquisition measures. In this context the creation of a Park may take many years.

<sup>12</sup> This is discussed in Section 01.4

<sup>13</sup> This is discussed in Section 01.4

## 02.1 THE VISION

Based on the feedback from the community consultation the vision for the Moresby Range is to create a Park that is underpinned by the idea of:

### People finding new ways to be in the Landscape

Three priority activities have come out of the community consultation that explains this vision:

*Creating new and different landscapes*

*Giving access for people*

*Living the transitions*

## 02.2 NEW AND DIFFERENT LANDSCAPES

The community consultation showed that people want the Range to look more “green<sup>14</sup>” and “natural<sup>15</sup>”, erosion to be controlled and have a wide range of recreational and activities occurring that benefitted all the community. Some urban development on the foot slopes was considered acceptable provided it did not impact negatively on the appearance of the Range, but urban development on the side slopes or tops of the Range was not acceptable.

Except for a few areas in the north the Range has very significant ecological problems brought about by the clearing of bush land. This has removed wildlife habitat and greatly accelerated erosion that in turn pollutes the Chapman River and other waterways with sediment and nutrient. Many people in the community consultation felt that the “soul” of the Range was sick and unhealthy and they wanted to see this change.

At the same time people recognised that humans have been actively farming in this landscape and there were examples of constructively blending European agriculture with preserving bush land. There was also considerable discussion about alternative productive land uses<sup>16</sup> that could occur in the Range. In this context there is a great opportunity to go beyond the rehabilitation objective of “return the bush land” and for people to become actively engaged in creating new landscapes that are working examples of how people can recreate the landscape and create new ecological and economic systems.

Based on the information from the community consultation the general criteria used for selecting areas to be included in a Park were:

- ☐ Was the area part of the main body of the Range, and particularly the side slopes and flat tops?
- ☐ Did the area provide opportunities for development for a range of recreation activities, working examples of new economic systems or examples of ecological repair?
- ☐ Was the area an important part of the visual landscape?
- ☐ Did it contain particular stands of vegetation and waterways that needed protection, enhancement and/or repair?
- ☐ Were there any features e.g. cadastral boundaries, that provided an easy long term management boundary?

<sup>14</sup> in the community consultation “greenness” was a metaphor for a range of concepts including - more vegetation cover, not looking brown in summer and having more bush land particularly on the areas of the Range that can be seen

<sup>15</sup> the concepts that underlie the community’s use of “natural” are discussed in Section 12

<sup>16</sup> these included renewable energy generation (e.g. wind turbines, solar thermal), tree crops, carbon sequestration, wild flowers, game park, tourist farm, native seed generation areas, sandalwood, olives etc

## 02.3 ACCESS FOR PEOPLE

The community consultation identified that a Park should be a public asset and this should not be compromised by private, freehold land within it. People want to be able to access the Range and any developments in a Park should enhance the natural features of the Range. It is desirable that people can visit and experience moving through the changing landscapes and directly engage in the social, economic and ecological changes that are occurring.

The local Aboriginal communities<sup>17</sup>, through the Yamatji Land and Sea Council, were invited to be part of the process of formulating this Plan. At this stage they have not yet chosen to take up this opportunity to be significantly involved however it is believed that the ultimate objective of moving the Range into public ownership will give the Aboriginal community more opportunity to be involved in a Park should they wish to have a higher level of engagement in the future.

The consultation showed people wanted easy access and to feel a personal identification and ownership of the landscape, in opposition to a remotely controlled, museum style, look-but-don't-touch environment. The only major caveat on access was that it was not considered appropriate for motorised vehicles to have access to the Range, apart from a few specific, well controlled locations.

## 02.4 LIVING THE TRANSITIONS

Living the Transitions implied that the community wanted the Range to be a canvas on which the future relationships between people and the landscape could be worked out. These transitions are about how the landscape is managed, where we get our energy, water and food, how we recreate and where we go for spiritual solace. It also is seen as a place where new models of administration can evolve and alliances can be formed between the community, business, government and individuals to work out how to live out these transitions.



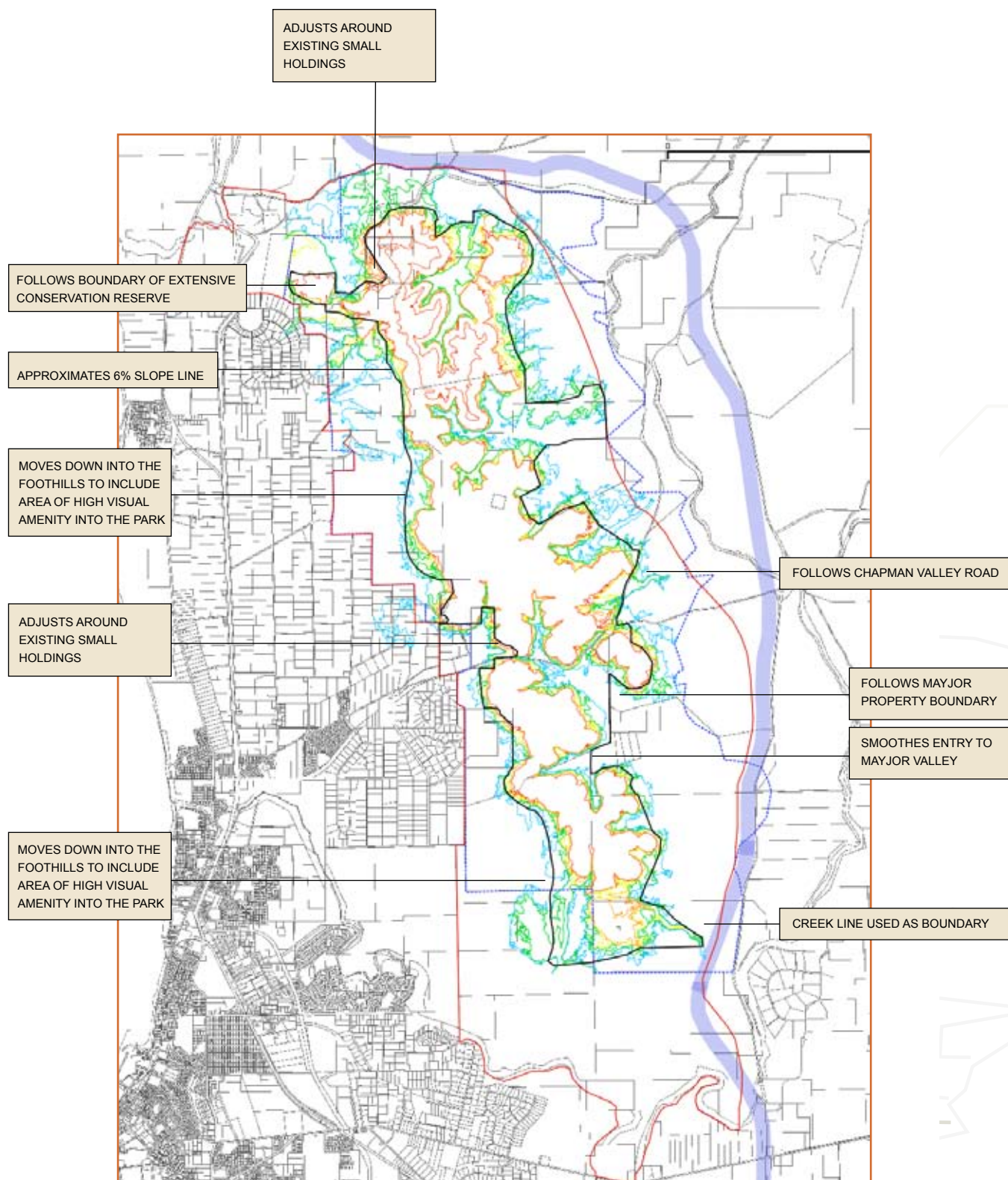
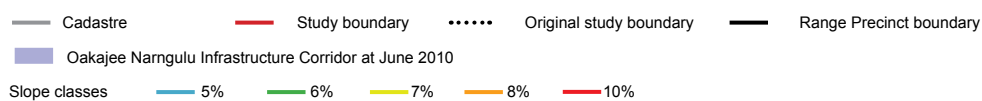


Figure 03.1

The Range Precinct boundary with examples of how the criteria in Section 3.2 were applied to identify the boundary.



## 03 Boundaries

This Section<sup>18</sup> discusses issues relating to the Study Area and how the boundary of the Range Precinct was determined and the impact that the creation of a Park may have on the landowners in the area.

### 03.1 STUDY BOUNDARY

Since the original study boundary, see Figure 03.1, was selected there have been major planning projects driven by regional development initiatives. The most significant of these was the options for the route of the Oakajee Narngulu Infrastructure Corridor, east of the Moresby Range. Others included the Woorree New Town urban development, the Oakajee Industrial Special Control Area, the City of Geraldton-Greenough and Shire of Chapman Valleys' new Local Planning Schemes.

The Department of Conservation and Environment is managing significant areas of land in the larger Moresby Range to the north of the study area. Ideally any plans for a Park should integrate with DEC's planning, however the route of the Oakajee Narngulu Infrastructure Corridor presents major challenges for this integration process. This should be investigated by DEC as it proceeds with its planning for the reserve areas it is managing. As a consequence of this the Infrastructure Corridor was used as the northern boundary to the study area.

The original study boundary crossed many landscape features e.g. streams, creek lines and blocks of vegetation, that were integral to the management of the foothills and the Range consequently the study area boundary was modified as shown in Figure 03.1.

### 03.2 RANGE PRECINCT BOUNDARY

The boundary<sup>19</sup> for the Range Precinct, see Figure 03.1, was determined by balancing the criteria listed below for different parts of the landscape. These criteria included:

- ☐ Include all of the geologic block that forms the main part of the Range
- ☐ Separate the foothills from the main part of the Range. This was taken as the 6% slope line where Range begin to slope up out of the foothills, see Figure 03.1
- ☐ On the western side of the Range include certain areas of the foothills that are high in the landscape and very visible from the City, see Section 04
- ☐ Include existing Crown Lands such as the Wokatherra Nature Reserve that have purposes compatible with the broad objectives of a Park. It should be noted however that this will require following the processes set down within the relevant legislation and DEC administrative policies to address this objective
- ☐ Recognise that landscape features such as significant vegetation stands, creek lines, roads etc. can be used to form convenient boundaries
- ☐ In certain places, particularly across the valley entrances on the eastern side, "smooth" the boundary to make it more workable for administration and management
- ☐ Utilise boundaries of the main properties mooted for possible inclusion in a Park, see Figure 03.2

18 MRMS Rec 1

19 MRMS Rec 1, 24, 51

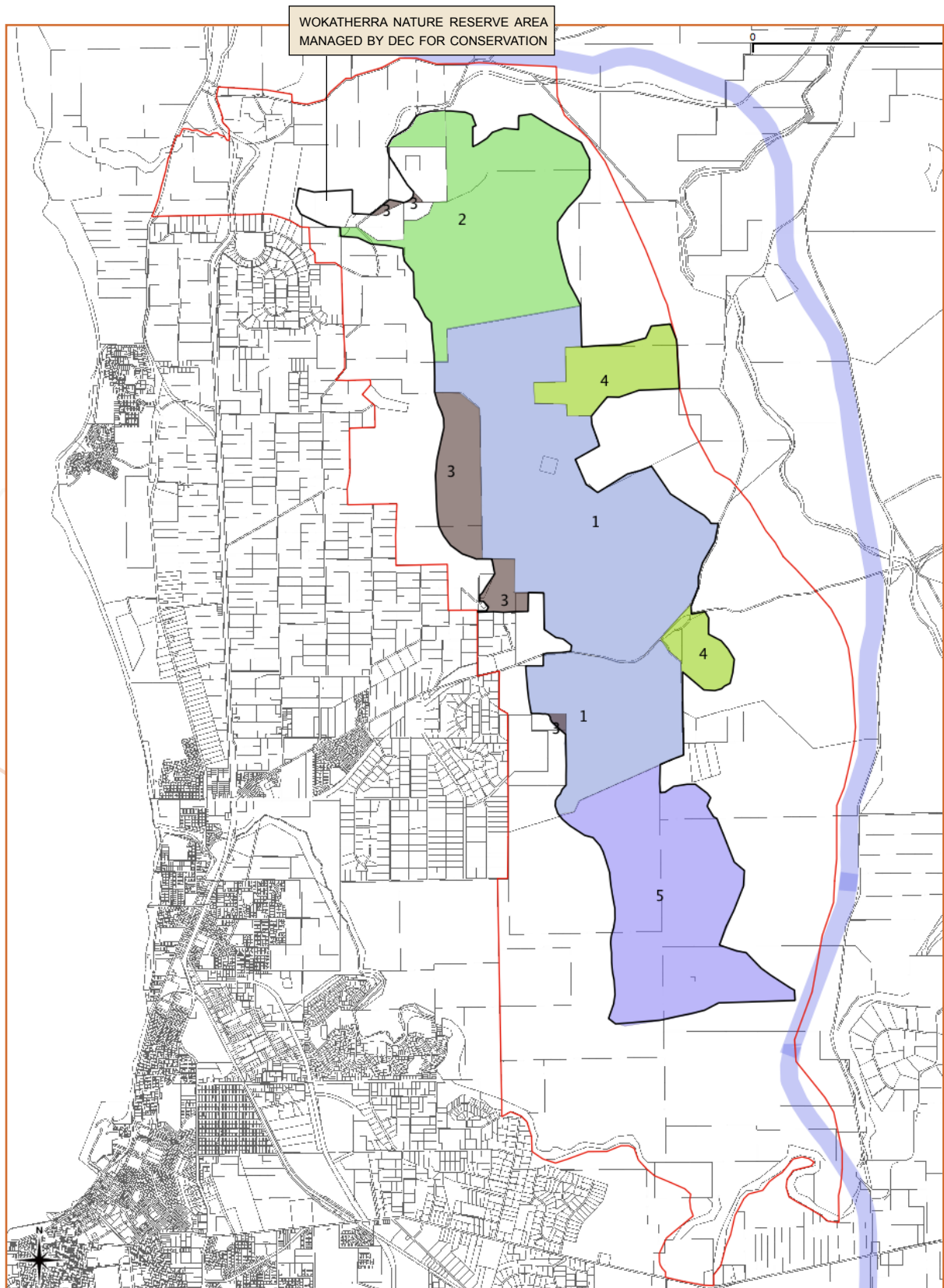


Figure 03.2 Priorities for adding land areas to the Park, numbering only an indicative order of addition

— Range Precinct boundary — Study boundary — Oakajee Namgulu Infrastructure Corridor at June 2010

### 03.4 ADDING LAND TO A PARK

As is shown in Figure 03.2 the boundary of the Range Precinct includes a number of large private land holdings and crosses the boundaries of a number of small land holdings, particularly on the western side of the Range. It is anticipated that there may be a number of site specific issues associated with forming a Park exactly as shown by the proposed boundary, and consequently there may be minor changes to the boundary shown in this Plan.

*Recommendation 03.1 Fair and equitable exchange for land included in a future Park*

*Any private land added to a Park will be obtained using fair and reasonable business arrangements that may involve combinations of purchase, land exchanges, development opportunities etc., determined on a case-by-case basis. There may be some minor adjustment to the Park boundary to suit specific circumstances.*

### 03.5 PRIORITIES FOR ADDING LAND

The creation of a Park will undoubtedly represent a major investment of both time and resources. The process is likely to extend over many years. In this context, indicative priorities for adding land, as shown in Figure 03.2, are as follows:

- Area 1 - The large land holding that makes up the centre of the Range, south and north of the Chapman Valley Road. This area is the most easily accessible from the Chapman Valley Road, already has a significant recreational use and has been identified (see Section 10) as the site for a central facility to serve as a hub for activities in the Range.
- Area 2 - The large land holdings that make up the northern section of the Range covering the areas of high biodiversity. These land holdings contain the highest quality stands of vegetation and some of the most dramatic landscapes in the Range.
- Area 3 - The large land holdings that cover the remaining western faces of the Range. Revegetating this area will improve its visual amenity as a backdrop to the City.
- Area 4 - Large land holdings on the eastern side of the Range that include the alternate land use areas discussed above.
- Area 5 - The land holdings in the south of the Range including Mt Fairfax. The bare faces and colouration of Mt Fairfax present one of the iconic landscapes in the region and, while parts of this area have some significant vegetation stands, the greater majority is ecologically degraded. While restoration of the landscape is possible this can be done over time through supporting the landowner to undertake restoration works as described in Section 11. In addition the area has relatively low recreational use in comparison with areas to the north.

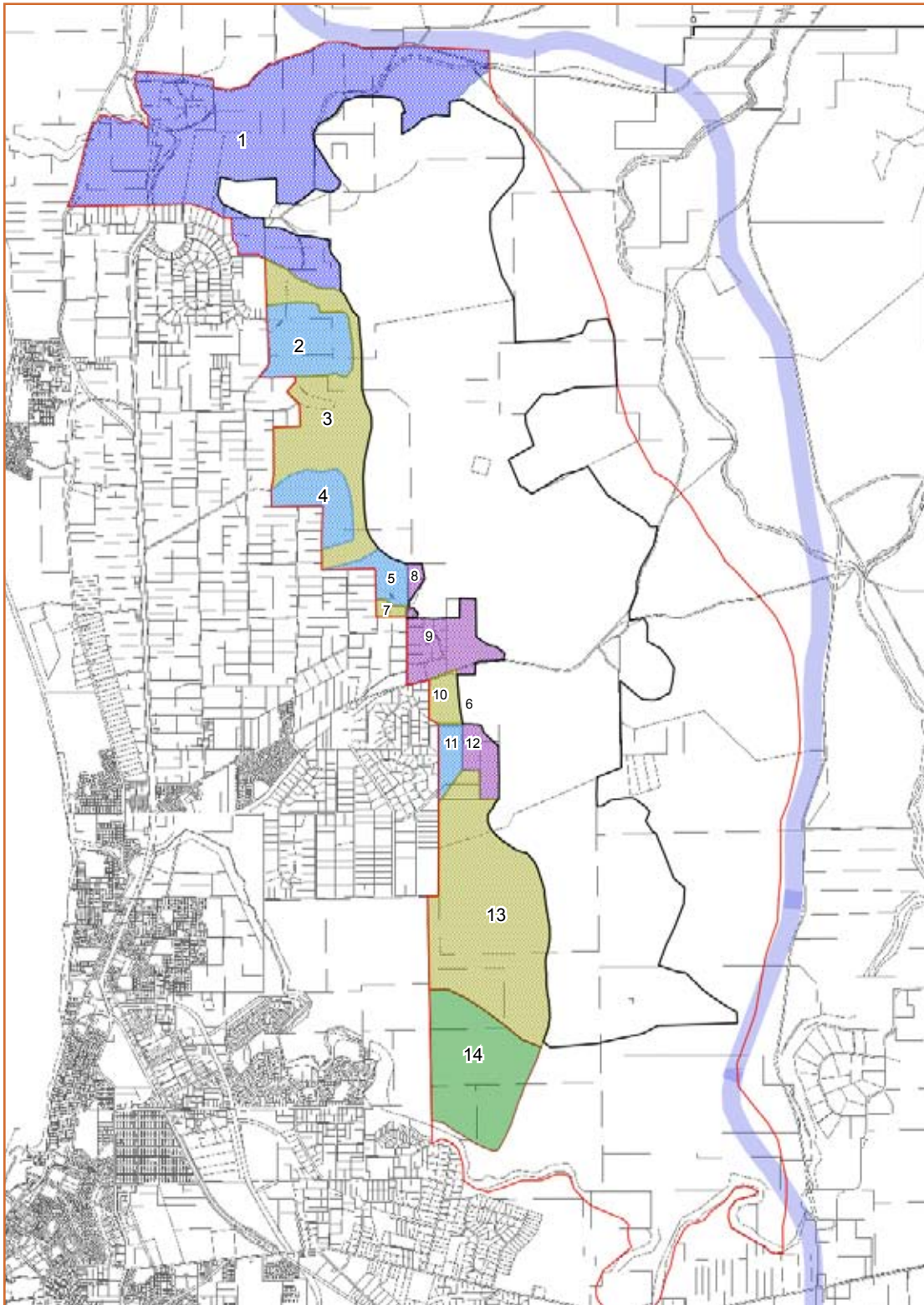


Figure 04.1 Land on the western side of the Range divided into Precincts shown numbered. See also Appendix 2

<span style="color: red;">—</span>	Study boundary	<span style="color: black;">—</span>	Range Precinct boundary	<span style="background-color: #ccccff; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	innovative subdivision to protect landscape feature
<span style="background-color: #ffff00; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	high visibility area, larger lots typically 2 - 4 ha	<span style="background-color: #ccccff; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	lower visibility area, lots typically larger than 1ha	<span style="background-color: #ccccff; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	
<span style="background-color: #ccccff; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	lots on a major landscape feature around Chapman Valley Road, no further subdivision				
<span style="background-color: #ccccff; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	low density urban, adjacent to the Woorree New Town				

## 04 West Of The Range Precinct

The Range is the backdrop to the City. For this Plan it is considered that the urban expansion of the City will be bounded in the north by the “Park Falls Estate” and the Oakajee Industrial Estate boundary, in the east by the Range Precinct and to the south, the rural land south of the Range Precinct and the Chapman River. It is considered appropriate that in the longer term the urban areas of the City will continue to expand to these limits. This is consistent with the general intent of other planning documentation<sup>20 21</sup> however it is recognised that planning documentation for these areas will have to be reviewed in the light of the information contained within this Plan.

The community wants to see urban development that enhances the quality of the foothills landscape but does not create an urban sprawl that creeps up the face of the Range as is seen in many other cities. While the visual impact of urban development in the foothills can be controlled by careful design and clear management controls over land uses, there is a culture within certain sections of the Geraldton community that wants to have a very high degree of autonomy over what happens on private land - even to the point of creating ongoing land degradation and continuing to build unattractive and obtrusive buildings in inappropriate locations. While State and local government seeks to control these excesses through planning and building codes, these are somewhat “blunt instruments” which only control extreme situations. The people of Geraldton have a special and unique town and landscape and it is important that they develop a pride in the look of the region and contribute individually to its overall appearance.

Parts of the western foothill areas, particularly around Mt Fairfax and south of the Park Falls Estate, sit high in the landscape and are visible from many parts of the City. Placing poorly designed urban development on these areas would severely compromise the visual amenity of the Range. This Plan uses a combination of landform, elevation, visibility and appearance to determine the limit of urban development up the foothills. It then divides the area west of the Range into a number of precincts, see Figure 04.1, and provides design guidelines to produce smooth transitions from the highly urbanised form of the existing City, through the urban developments in the foothills, to the future desired green and bushy faces of the Range.

Section 4.6.4 and 12 provide design guidelines to inform and support more detailed planning processes that will guide urban developments between the existing City Centre and the Range.

### 04.1 LANDFORM

North of the Park Falls Estate the creek lines and ridges created by the tributaries of the Buller River cut through weathered granites and clay/loams and creating geographically complex areas of high biodiversity potential. In this Plan these areas were considered to be unsuitable for typical urban development, consequently Park Falls Estate should form the northern boundary of City expansion. However the land south of Wokatherra Hill is of a similar topography to the Buller River area but because it is in immediate proximity to the westward expansion of the City has been included in this Section.

The area south of the Wokatherra Hill, from the Park Falls Estate to the Chapman River, is generally made up of rolling sand plains interspersed by creek lines, vegetation blocks, and rocky outcrops. Closer to the Range, material washed down from the Range has created loamy soils in the foot-slopes. At the southern end of this area, near the Chapman River, are large sand plains that are particularly unstable and prone to wind erosion. A major creek that runs off Mt Fairfax into the River forms a logical south-eastern boundary for urban development precincts of this Plan.

<sup>20</sup> MRMS Red 11, 12, 13, 14, 44, 46, 47, 48, 49

<sup>21</sup> including the Waggrakine Structure Plan currently under review, the Geraldton Region Plan, which identifies the Moresby Range in a 'landscape protection zone, the Greater Geraldton SP (page 89, Section 9.9 and page 90 Section 9.95), the Shire of Chapman Valley Local Planning Strategy and City of Geraldton-Greenough Town Planning Scheme

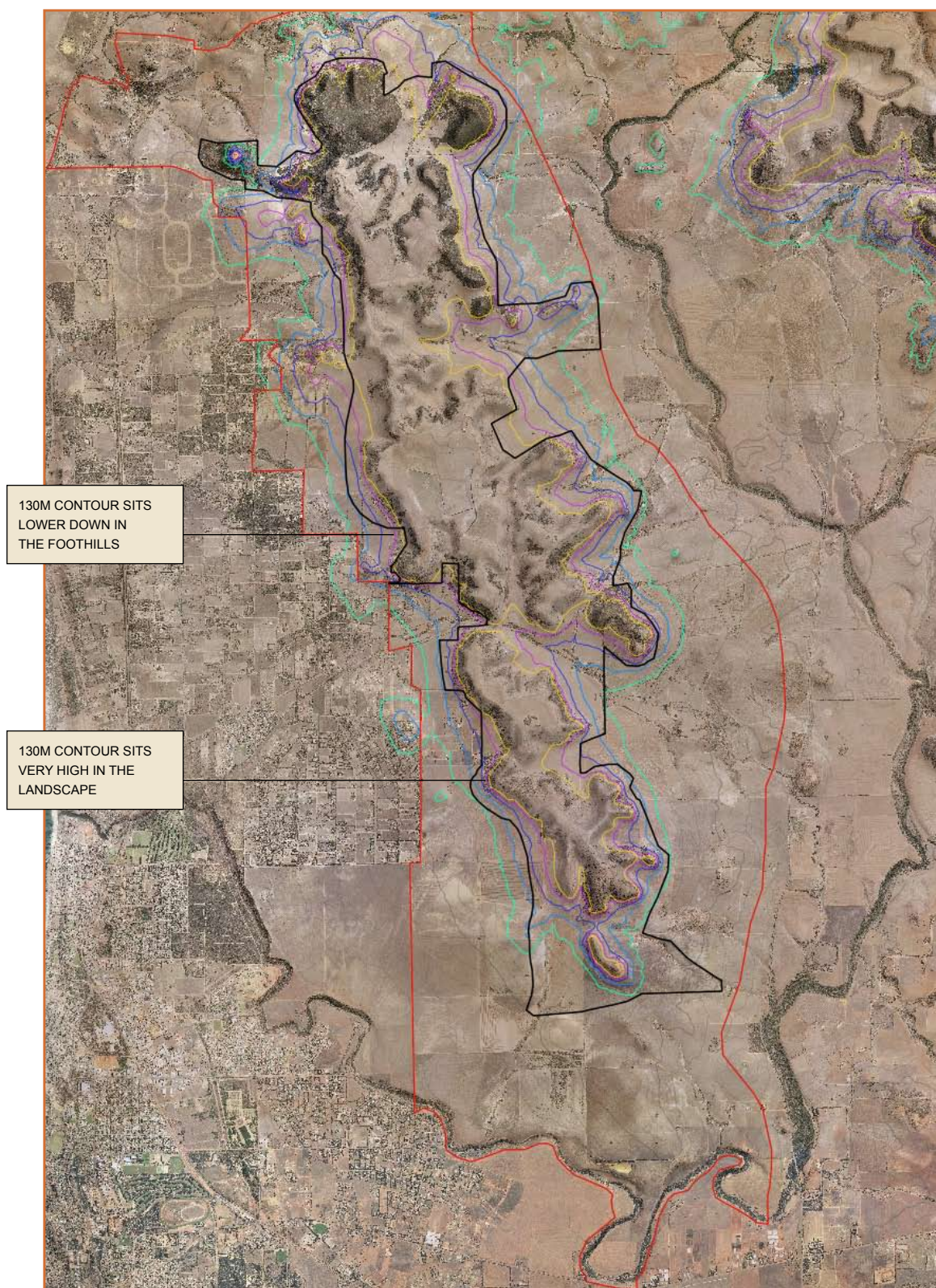


Figure 04.2

Elevation in relation to the Range

100m 110m 120m 130m 140m Study boundary

## 04.2 ELEVATION

Previous planning studies<sup>22</sup> affecting the Moresby Range selected nominal elevations of 100 to 140m to control development up the faces of the Range. It has been assumed that development above these heights is considered too high in the landscape. This approach is relatively simple to understand and implement however it is limited in its applicability as Figure 04.2 shows.

Most of the area along the western side of the Range has no urban development but there are some existing small lots around Chapman Valley Road. Based on the community consultation, 120m has been used as the upper limit of new urban development on the faces of the Range around the Chapman Valley Road. This limit was determined by presenting images of the existing houses in this area to community members during the consultation and asking them which houses, if there were more of them spread across the faces of the Range, would look too high in the landscape.

## 04.3 VISIBILITY

Visibility is determined by whether a feature can be seen or not. Line-of-site modelling<sup>23</sup> was used to show how much of the Range could be seen from five high points within the City<sup>24</sup>. As Figure 04.3 shows most locations on the western faces of the Range are visible from the City. Conversely most of the tops of the Range, because they slope down towards the east, are not visible. There are low lying areas between the sand ridges west of the Range and the Range, that sit low in the landscape, and are not visible from the main parts of the City. These areas provide opportunity for concentrating development while not compromising the overall appearance of the Range when viewed from the City.

## 04.4 APPEARANCE

Appearance is related to visibility but brings in subjective criteria about what humans think looks “sublime”, “good”, “interesting” or “merit worthy” etc<sup>25</sup>. Consequently there are certain locations, such as views of Mt Fairfax, which are generally considered to be unique or interesting and worthy of being preserved. Similarly the community consultation showed that people generally wanted the faces of the Range to look more vegetated and “natural”. The Department of Planning provided considerable information about landscape values, coupled with additional unpublished information<sup>26</sup> that has been incorporated into this study. This information has been combined into a composite image, Figure 04.4, that provides three classifications of visual information – *visually sensitive areas*, e.g. views of the eastern foothills of the Range from Morrell Road; *broad landscape features that should be preserved and enhanced* e.g. the views along Chapman Valley Road as it passes through the Range and the slopes of the Range and parts of the foothills; and *specific landscape features of significance* e.g. Mt Fairfax.

## 04.5 SOUTHERN FOOTHILLS OF WOKATHERRA HILL

The landform and biodiversity of this area as shown in Figure 04.1 (Precinct 1) does not lend itself to a “business-as-usual” roll-out of typical traditional urban/semi-urban housing lots and access roads that is common around Geraldton. Consequently it was proposed that increased rural-residential development could occur in this area but using highly sensitive ecological and sustainability design approaches to carefully place residential development into the landscape<sup>27</sup> rather than on top of it. It is possible to utilize innovative subdivision approaches based around survey

22 Shire of Chapman Valley TPS No1 Appendix 5 and 5A June 2009, The Shire of Greenough Town Planning Scheme No. 4 (1984)

23 Using a computer model to determine how much of the Range can be seen from a number of locations around the City.

24 These locations were the Rangeway Shops, Sydney Memorial, Nazareth House in Bluff Point and the eastern end of Park Falls Estate, and Drummonds

25 Noh, W *Sustainable landscape use and aesthetic perception—preliminary reflections on future landscape aesthetics* Landscape and Urban Planning Volume 54, Issues 1-4, 25 May 2001, Pages 223-237

26 These sources included Maps 5 and 6 from the WAPC's *Draft Moresby Range Management Strategy* (2008), material from the Department of Planning and Infrastructure's *Moresby Range Landscape Assessment Study* (1998) and additional unpublished notes and images provided by Ms S Clegg of the Department of Planning in May 2009.

27 This reflects the general character of the District Zoning Scheme that the area remain with a rural character but be used for residential purposes, however it may require rezoning to accommodate this specific proposed use

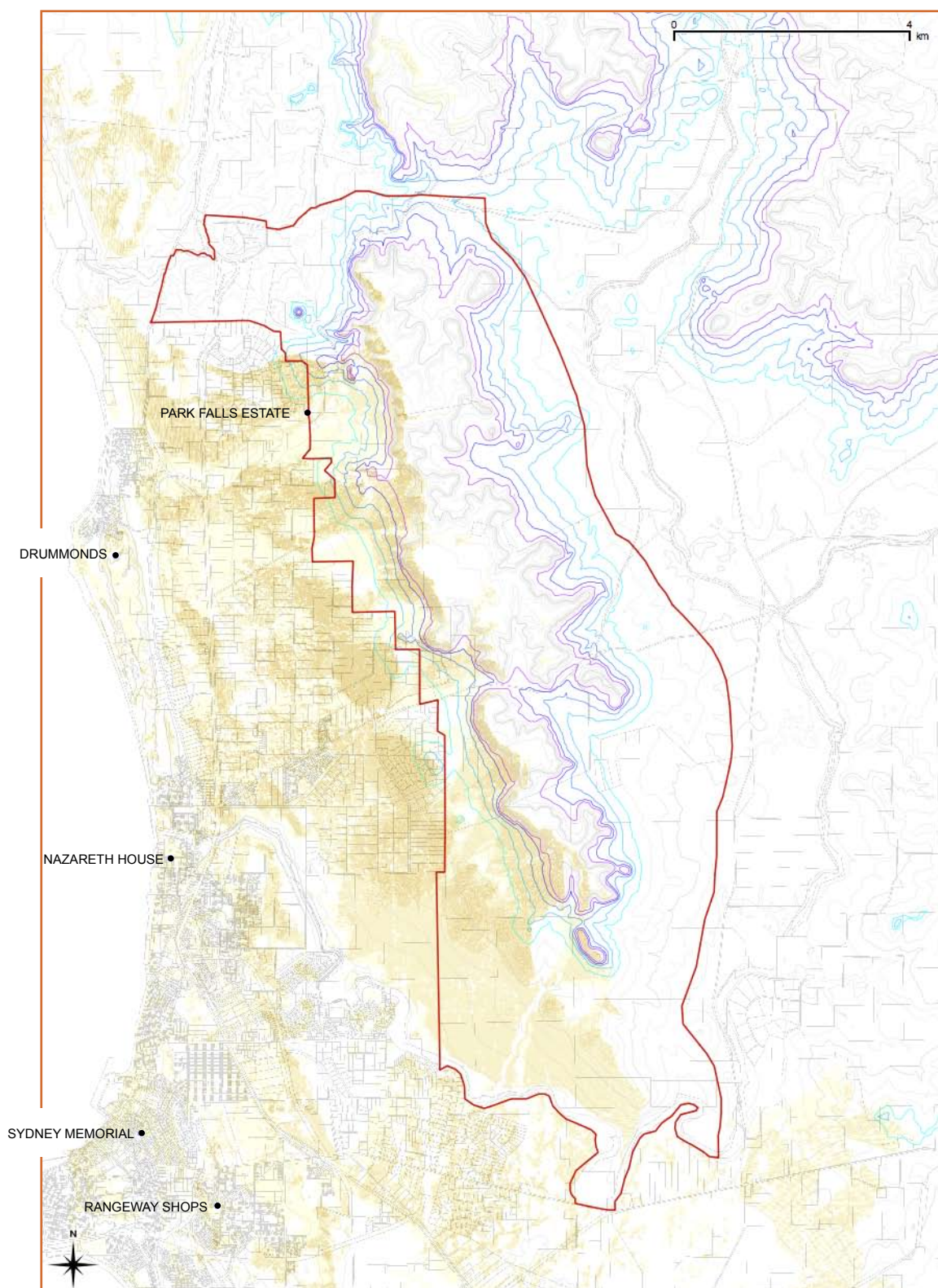


Figure 04.3 Areas of the Range and foothills visible from selected high points in the city. The darker the colour the more visible the location.

— Study boundary

strata approach or similar approaches that allow landscape and ecological character to be reflected in the structure of the subdivision. Density of development should be in the order of one dwelling per 4 hectares.

This generally reflects the intent of the Shire of Chapman Valley's Local Planning Strategy for the area north of the Wokatherra Hill, however the area identified in Figure 04.1 shows a minor extension of this subdivision area eastward to a geographic boundary, a creek line at a "pinch point" between the Oakajee Narngulu Infrastructure Corridor and the Range Precinct, rather than a cadastral boundary as shown in the LPS.

#### *Recommendation 04.1 Prepare a Master Plan for the area*

*The Local Authority will require that any future subdivision and/or rezoning be subject to the preparation of a Master Plan for Precinct 1 that allows survey strata/cluster/hamlet styles of development with strategic and sensitive placement of lifestyle housing into the landscape. The Master Plan should respond to, and ecologically enhance the landform, biodiversity, water movement, vegetation cover and other landscape and visual attributes.*

*Development should also emphasise Ecologically Sustainable Design approaches including buildings with renewable power supplies, owner supply of water, locality based disposal of waste water and sustainable/recycled building materials.*

*The preparation of a Master Plan may take a considerable amount of time and will depend on the level of engagement and interest of the various landowners. It is important that the positive environmental initiatives already done by the existing landowners be continued while a Master Plan is being prepared.*

#### *Recommendation 04.2 Assist landowners with sustainable management of the area*

*The Local Authority will work with NACC<sup>28</sup> to assist and coordinate the existing residents to form a Natural Resource Management (NRM) group to prepare a detailed natural resource management plan for the area that addresses:*

- ☐ *Protection of creek lines with development control buffers.*
- ☐ *Fencing bush land and creek lines.*
- ☐ *Limiting grazing and cropping.*
- ☐ *Linking areas of vegetation and restoring existing vegetation.*
- ☐ *Covenanted sections of property to protect bush land and creek line areas. The landowners will be assisted to access grant funding to meet the costs of these activities.*

### **04.6 NEW URBAN DEVELOPMENT WEST OF THE RANGE**

This Section addresses how the long term future urban areas between the City and the Range Precinct, (Precincts 2, 3, 4, 5, 7, 10, 11, 13), should be designed to ensure a smooth transition between the dense, urban form of the City and what will ultimately be the green and bushy landscape of the faces of the Range.

Urban development in this area will be of a more urban character than that described above for the area around Wokatherra Hill and will Range from what is typically referred to as rural-residential with lots ranging between 1 and 4ha in size depending on the location. In higher visibility locations (Precincts 3, 7, 10 and 13), larger lots in the range of 2 - 4 ha should be developed. For areas of lower visibility (Precincts 2, 4, 5 and 11), smaller lots of 1 ha or above should be developed. It should be noted however that Precinct 2 contains significant associations of stream zones with stands of remnant vegetation. While lots of 1ha and above may be appropriate here because the area sits lower in the landscape this will have to be balanced with better quality of design that respects and enhances the ecological quality of the area.

28 Northern Agricultural Catchments Council. At the time of writing 2009 NACC was the peak regional body for Natural Resource Management coordination in the region. It may be in future that another group may take over this role. The intent of this recommendation is that the Local Authority works with a community based organisation to facilitate natural resource management

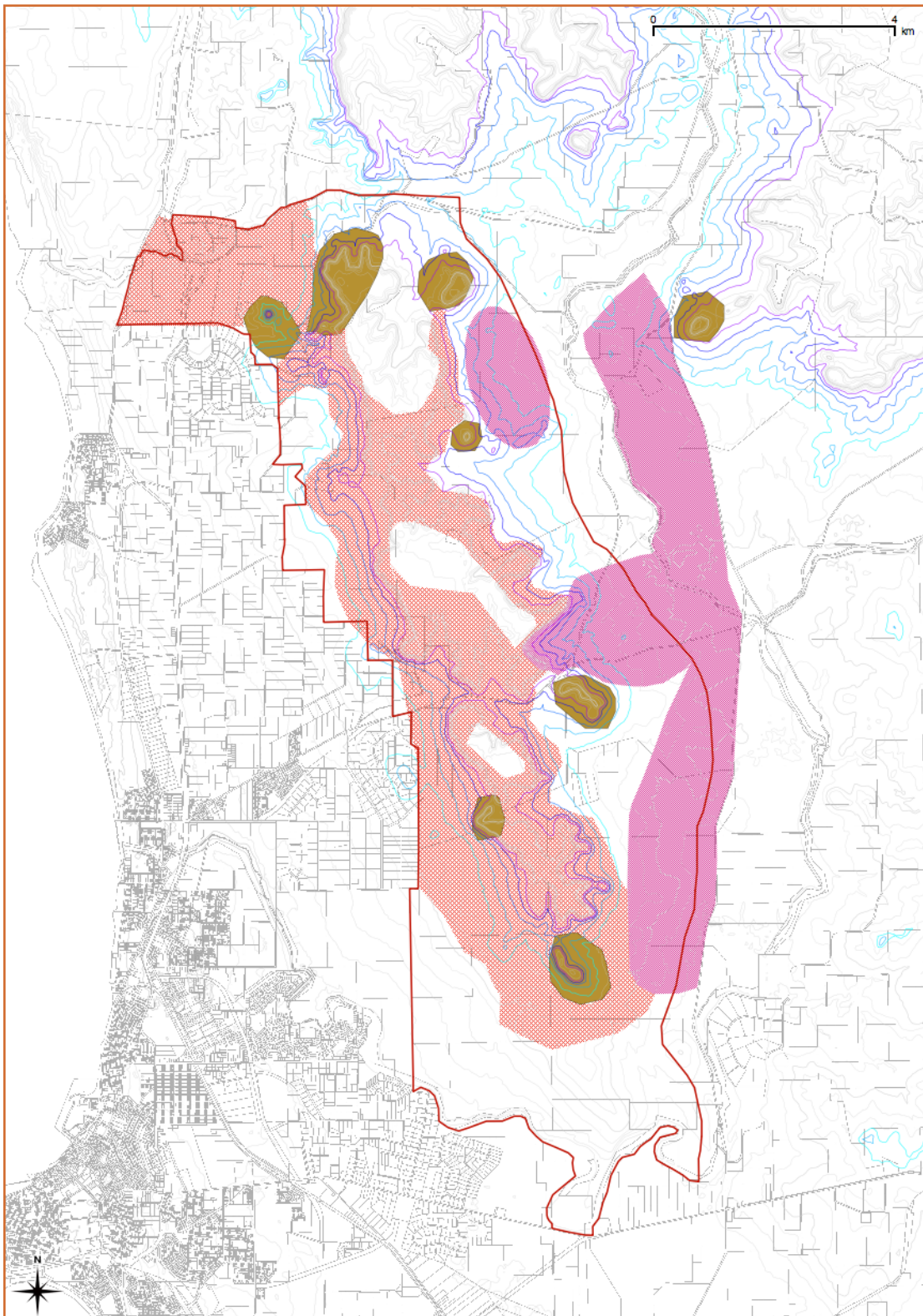


Figure 04.4 Image of visually important areas synthesised from information developed by the Department of Planning between 1998 - 2009

features of visual significance
  visually sensitive areas
  broad landscape features that should be preserved and enhanced

Some of the more innovative forms of subdivision design as described in Section 04.5 may be appropriate for this Precinct.

Five broad objectives have been defined for managing the transition in urban form between the City and the Range:

- Ensuring that the ecological dynamics<sup>29</sup> of the landscape are protected and enhanced.
- Placing larger lots closer to the Range Precinct and in areas of high visibility.
- Ensuring that the transport network minimises trip distances; allows for walking, bicycling and other forms of transport, provides easy linkages to commonly used facilities and the Range, and provides the basis for strategic tree plantings and ecological linkages between the foothills and the Range.
- Creating a visually smooth transition from the obvious dominance of buildings in the centre of the City to the bushy and green appearance of the Range.
- Ensuring that buildings fit in with the landscape and create the overall impression that buildings become more sensitive and integrated into the landscape the closer the observer is to the Range.

#### 04.6.1 Ecological Dynamics

While the majority of the faces of the Range are cleared there are a number of small creek lines that cross the foothills. It is important that the ecological character of these areas is preserved and enhanced. Maintaining such linkages between the Range, the bush land areas in the foothills and the coastal plain will improve the biodiversity of the region and provide an environment with more tree and bush cover that is appreciated by the community.

#### *Recommendation 04.3 - Improving ecological quality*

*The ecological quality of the foothills landscape will be improved by requiring, as a condition of subdivision:*

- *the design of urban developments to recognise the need for state of the art Urban Water Management<sup>30</sup> that incorporates protection, repair and enhancement of creek lines, control of urban and road run off etc. and generally environmentally sensitive design.*
- *walk-trail links are provided from within the developments to the Foothills Road (see below) and then into appropriate locations within the Range Precinct.*
- *that designs identify and avoid development of existing native vegetation stands and provide landscape plantings that protect creek lines, join up existing vegetation areas and provide shelter for walk trails to a Park.*

#### 04.6.2 Transport Networks

There is currently no underlying transport strategy for the area between the existing urban areas and the Range. This Section seeks to create the basis for a logical access network through the creation of a "Foothills Road", providing guidelines relating to the orientation of roads, and other recommendations about access.

#### *Recommendation 04.4 – Transport Networks*

*To preserve the visual amenity of the foothills, improve access and facilitate development it is proposed that a multiple use Foothills Road will be constructed along the western foothills linking Woorree with Park Falls Estate.*

<sup>29</sup> how water moves across and below the ground; the quality of, and links between, bush land areas

<sup>30</sup> State of Western Australia, Better Urban Water Management, Western Australian Planning Commission 2008

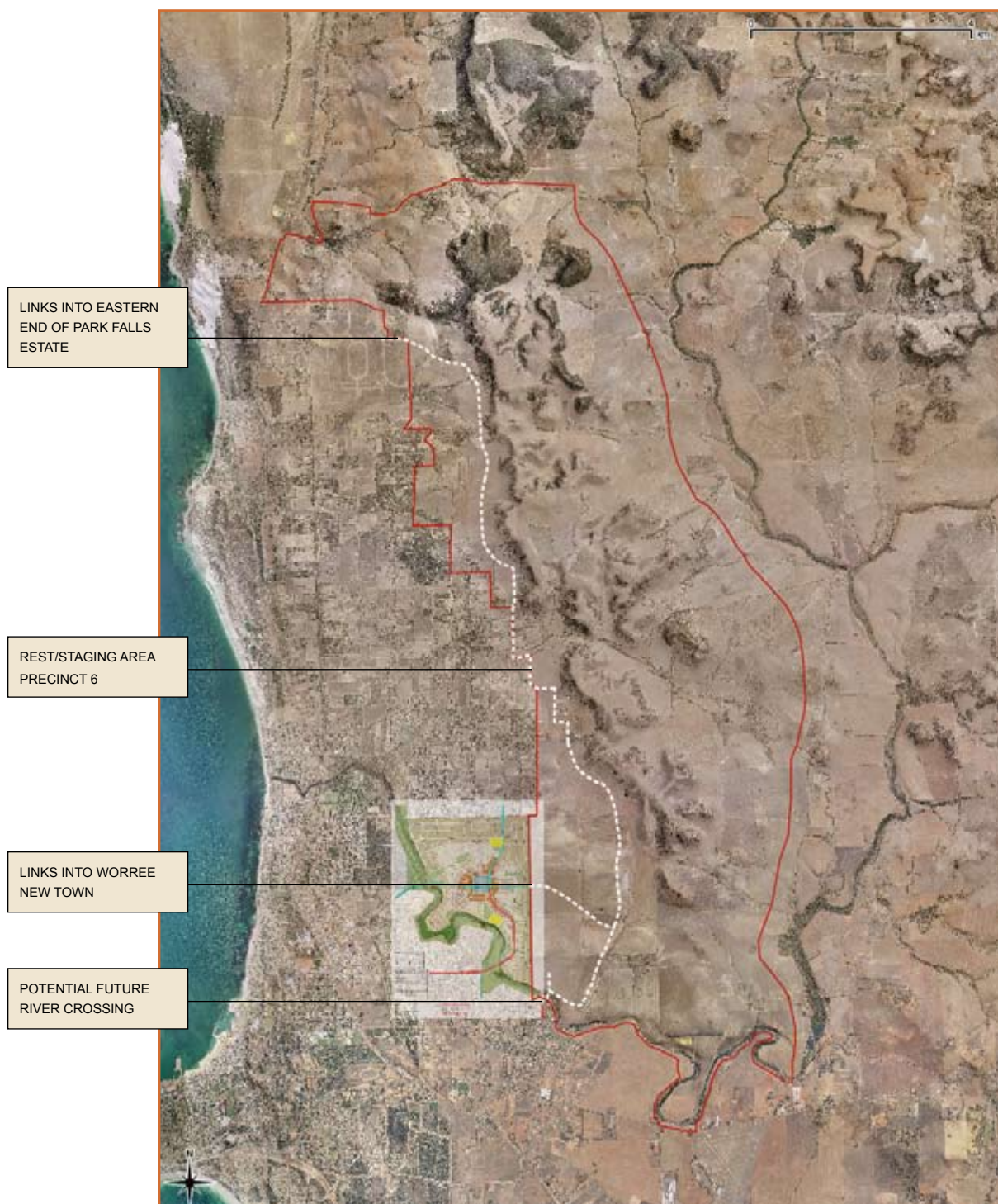


Figure 04.5 Indicative route of the Foothills Road, and possible linkages to the Worree New Town and other destinations

Foothills Road
  Study boundary

This road will also serve as the western boundary of a Park for a significant amount of the western side of the Range, as shown in Figure 04.5, and provide a clearly defined boundary that avoids the usual problems associated with having private land backing onto public Park areas<sup>31</sup>. Around the well established, smaller lots, north and south of the Chapman Valley Road it is proposed to use existing road reserves wherever possible to minimise the disruption to these established areas.

The Foothills Road will require a sufficiently sized reserve to allow for vehicle traffic, a separate bike and walking trail and a horse trail. It will also link with vehicle access tracks to parking areas on the top of the Range at the southern, centre and northern end of Range. A staging area, see Figure 04.1 Precinct 6, is proposed on the southern side of the Chapman Valley Road and will be available for parking for people who are setting off from this location to walk, ride or cycle along the Foothills Road, and for other recreational pursuits such as landing hang gliders (see Section 12).

In the south, the Foothills Road will link into the Woorree New Town development and potentially may also cross the Chapman River at an appropriate location. These connections will provide easy access from the major parts of the City to the foothills and the Range. It is proposed that urban developments in the foothills will be able to link eastward into the Foothills Road and westward into the existing road network to provide the basis of a coherent, grid based transport network. The urban developments in the foothills area should maximise connectivity, and when ever possible, avoid curvilinear designs and battle-axe blocks that would restrict future subdivision and development options.

#### 04.6.3 Visually Smooth Transitions

Moving out from the centre of the City it is desirable that there be no visually jarring boundary lines between the obvious urban buildings in the centre of the City and the long term, future, green bushy appearance of the Range. A number of factors that affect this outcome are shown in the table below and are linked with design responses to achieve these criteria.

#### *Recommendation 04.5 - Visual Transitions*

*The Local Authority will require that any subdivision of land west of the Range will address visual transitions between the City and the Range using the guidelines in Table 04.1.*

<sup>31</sup> Such as access by domestic animals and stock, dumping rubbish into the park, access by horses and recreational ORV's, fire management concerns, invasive weed species etc

Table 04.1 Design responses to improve visual transitions across the foothills

Criteria affecting visual transitions	Nature of effect	Design response
Housing density and lot sizes	Number of roof tops seen in a specific area	In urban areas close to the city it is proposed that lots down to 1ha will present roughly the same density of housing as is currently found in existing outer urban areas. Close to the Foothills road and the possible Park lots should typically be 4ha in size decreasing to 2ha in size in the mid zone between the Foothills Road and the existing urban areas
Stream lines and bush land areas revegetated	Fingers of green reaching from the Range down into urban areas linking to urban bush land areas	See Recommendation 04.3
Orientation of roads and blocks	Views across the road network can either open up the landscape or help provide screens to hide buildings	Generally orientate the roads and blocks of future urban developments on the north-south/contour line axis to create the opportunity for tree plantings along the boundaries and access roads. This will provide a staggered series of tree lines across the foothills which, from distant vantage points, will merge and create the appearance of extensive tree cover spreading across the foot hills.  Curvilinear suburb design is not supported because it creates visual gaps in tree screens due to the random alignment of the roads and lots
Location	Certain locations are more visible than others when viewed from high points in the City	Figure 04.1 provides a general summary of areas of high visibility compared to areas of lower visibility, based on the information shown in Figure 04.3. Areas shown as low visibility could typically have lots with a minimum size of 1ha, those shown as high visibility would have lots starting at 2ha and going up to 4ha next to the proposed Park boundary
Amount of vegetation cover	The greater the amount of vegetation cover the more it appears that the area is well vegetated and bushy	Ensure there is at least 30% vegetation cover on lots with the plantings along boundaries, roads, building envelopes and high points in the landscape with the overall objective of creating the impression that the landscape is continuously well vegetated when viewed from distant locations
Siting of buildings in the landscape	Buildings that sit high in the landscape, on ridge lines and unique features, or appear to be spreading across an area are more visually dominant	Cluster buildings on larger lots within strategically located building envelopes situated as far as possible down the side-slopes of the Range  Ensure buildings are low in the local landscape to minimise visual impact on sky-lines  Avoid siting buildings on, or immediately adjacent to, unique landforms e.g. rocky outcrops, stream lines, saddle points, ridge lines
Type of vegetation	Different types of vegetation can be used to improve the appearance of the landscape	Enhancing and recreating bush land areas are important particularly where there is an underlying ecological asset, e.g. creek lines or remnant bush, that can be built upon  However on lots with little underlying ecological values there are opportunities for creating tree crops and other sustainable land use activities that stabilise the landscape and improve the appearance of the region
Location of recreation areas	Recreation areas can be used to improve the appearance of an area	Strategically locate urban parkland areas to link in with other vegetated features in the landscape

#### 04.6.4 Buildings and Appearance

This is discussed more fully in Section 12 however the general principle is that the closer buildings are to the Range and the higher they are in the landscape the more they should seek to blend in and be camouflaged through appropriate colouration, design, siting and screening.

#### 04.7 ESTABLISHED SMALL LOTS AROUND CHAPMAN VALLEY ROAD

There are a number of established small lots immediately south and north of the Chapman Valley Road (Precincts 8, 9, 10 and 12) Figure 04.1, between the proposed Foothills Road and the Range Precinct. The Chapman Valley Road has been identified<sup>32</sup> by the Department of Planning as an important scenic route with key views and recommended that measures should be taken to improve and enhance its appearance.

##### *Recommendation 04.6 No subdivision of small lots in Precincts 8 and 12 between the Foothills Road and the Range Precinct*

*The high visibility areas between the Foothills Road and the Range Precinct shown in Figure 04.1 should not be subdivided, however given their proximity to the proposed central facility they should be able to develop businesses that are compatible with a Park, such as low impact tourism<sup>33</sup>.*

##### *Recommendation 04.7 Improving the appearance of the northern side of the Chapman Valley Road where it passes through the Range in Precinct 9*

*The Local Government should encourage existing land owners to join a Natural Resource Management Group and work together to improve the appearance of the Chapman Valley Road by revegetating the Ego Creek and the sides and faces of the Range and introduce screening planting for houses in the area.*

##### *Recommendation 04.8 Provide for limited subdivision immediately south of Chapman Valley Road in Precinct 10*

*The area of lower visibility immediately on the southern side of the Chapman Valley Road, shown in Figure 04.1, is appropriate for subdivision into lots ranging between 2 – 4ha, with larger lots close to the Chapman Valley and Foothills Road, and smaller lots closer to the existing urban development. Development of this area will require close attention to the landscaping so that it creates the appearance of presenting a well vegetated, and low key entrance to the pass through the Range along the Chapman Valley Road. The issues raised in Recommendations 04.3 and 04.5 also apply to these developments.*

#### 04.8 LOW DENSITY URBAN DEVELOPMENT IN THE SOUTH

There is a large area of land south west of the Range (Precinct 14), adjacent to the proposed Woorree New Town development. The area is nearly completely cleared for agriculture, however the sandy soils make it of low productivity and prone to wind erosion. The absence of any creek lines or natural bush land make it of low ecological value.

In keeping with the concept of extending the urban parts of the City out to the Foothills Road this area is appropriate for future urban development of a similar nature to the eastern edges of Woorree New Town grading out to Rural Residential.

##### *Recommendation 04.9 Extend low density urban development out from the edge of Woorree New Town in Precinct 14*

*It is recommended that the area shown in Figure 04.1 be identified for long term low density urban development on the edge of Woorree New Town.*

<sup>32</sup> see Maps 5 and 6 from the WAPC's *Draft Moresby Range Management Strategy* (2008), and the Department of Planning and Infrastructure's *Moresby Range Landscape Assessment Study* (1998)

<sup>33</sup> City of Geraldton-Greenough LOW IMPACT RURAL TOURISM Local Planning Policy 2007



Figure 05.1

North of the Range, stream zones shown with blue line 30m each side of stream centre

— Study boundary      - - Area boundary      Oakajee Narngulu Infrastructure Corridor at June 2010

## 05 North Of The Range Precinct

This area sits at the north of the Park, see Figure 05.1 and is bounded by the Proposed Oakajee Narngulu Infrastructure Corridor, the Range Precinct, the North West Coastal Highway and Park Falls Estate. The complexity of this landscape and its inherent biodiversity best suits it to become an ecologically orientated, rural-residential lifestyle area that sits above the northern boundary of the more intensive urban development of Park Falls Estate and the rest of the City. This concept is similar to that described for the land south of the Wokatherra Hill in Section 4 and similarly density of development should be in the order of one dwelling per 4 hectares.

### 05.1 LANDFORM

The landscape is complex, with a number of creek lines cutting the foothills that rise towards the main part of the Range. These creek lines have also created a number of small peaks around the Wokatherra Gap and the Buller River. This landscape, particularly when viewed from the North West Coastal Highway, looks highly textured and visually interesting with the Range forming a majestic backdrop. There are numerous areas of significant biodiversity provided by both the remnant vegetation and the landform that add to the tapestry of the landscape. This Plan seeks to increase the number of people living in this area while preserving and enhancing the visual and ecological quality of the landscape.

### 05.2 CURRENT USE

Currently, the majority of the area is zoned Special Rural<sup>34</sup> with some portions remaining zoned General Farming. It is comprised mainly of small holdings up to 40ha, predominantly used for lifestyle/hobby farm blocks. A significant number of landowners have undertaken environmental restoration projects such as fencing out stock or replanting which has improved the amenity of the area.

### 05.3 IMPETUS FOR CHANGE

Many of the landowners want to retain the quiet, semi-isolated feel of the area and resent the presence of “outsiders” or proposals to install walk-trails through the area. Despite this, nearly all of the landowners want to be able to subdivide at some time in the future and realise any economic benefits that would come from this subdivision. They also strongly resist any interest that Department of Environment and Conservation may have in future land acquisitions in the area for conservation purposes.

### 05.4 OAKAJEE NARNGULU INFRASTRUCTURE CORRIDOR

The final alignments and width of the infrastructure corridor are being finalised. Despite this, it is considered that the land uses proposed below are compatible with the infrastructure corridor, however there will be issues of visual impact and noise that will have to be resolved as part of the corridor design and master plan.

### 05.5 RECOMMENDED USE

The landform and biodiversity of this area does not lend itself to “roll-out” subdivision of typical urban/semi-urban development lots and access roads. It is proposed that increased rural small holding development should occur in this area but use highly sensitive ecological and sustainability design approaches.

34 Shire of Chapman Valley TOWN PLANNING SCHEME NO. 1 DISTRICT ZONING SCHEME

#### 05.5.1 Long term Management and Development Option

To capture and preserve the character of the area while providing development options it is proposed that this area be developed using ecologically orientated, innovative, sustainable subdivision approaches based around a survey strata/cluster/hamlet designs.

##### *Recommendation 05.1 Prepare a Master Plan for the area*

*Any future subdivision will require the preparation of a Master Plan for the area that allows survey strata/cluster/hamlet styles of development with strategic and sensitive placement of lifestyle housing into the landscape complexes and that responds to the landform, biodiversity, water movement, vegetation cover, corridor alignment and other attributes.*

*This Master Plan should create the framework for rezoning of the General Farming areas to bring them into alignment with the Special Rural areas.*

*Development should also emphasise Ecologically Sustainable Design approaches including buildings with renewable powersupplies, ownersupplyofwater, localitybaseddisposalofwastewaterandsustainable/recycledbuildingmaterials.*

*The preparation of a Master Plan will take a considerable amount of time and will depend on the level of engagement and interest of the various landowners. It is important that the positive environmental initiatives already done by the existing land owners be continued while the Master Plan is being prepared.*

##### *Recommendation 05.2 Assisting landowners with sustainable management of the area*

*The Local Authority will work with NACC<sup>35</sup> to assist and coordinate the existing residents to form a Natural Resource Management (NRM) group to prepare detailed natural resource management plan for the area that addresses:*

- ☐ *Protection of creek lines with development control buffers.*
- ☐ *Fencing bush land and creek lines.*
- ☐ *Limiting grazing and cropping.*
- ☐ *Linking areas of vegetation and restoring existing vegetation.*
- ☐ *Covenanted sections of property to protect bush land and creek line areas.*
- ☐ *The landowners will be assisted to access grant funding to meet the costs of these activities.*



Looking towards the Range from North West Coastal Highway

<sup>35</sup> Northern Agricultural Catchments Council. At the time of writing 2009 NACC was the peak regional body for Natural Resource Management coordination in the region. It may be in future that another group may take over this role. The intent of this recommendation is that the Local Authority works with a community based organisation to facilitate natural resource management

## 06 East And South Of The Range Precinct

This area sits on the eastern and southern side of the Range Precinct and is bounded by the study boundary, a pinch point between the Oakajee Infrastructure Corridor and the Range Precinct, and a major creek line in the south west. The main intent is for this area to remain as agricultural land but land owners will be provided with assistance to improve the management of areas prone to wind and water erosion, and to protect stream zones and the Chapman River<sup>36</sup>.

### 06.1 LANDFORM

The eastern area is made up of gently inclined foot slopes where the soil is dominated by sandy duplex formations, particularly in the south and east that gently slope up to the Moresby Range. Although the biodiversity of this area is generally very low as the majority of the land has been cleared for agriculture, there are a number of creek lines that lead down to the Chapman River containing some remnant vegetation. The Chapman River also has a number significant stands of trees.

The sand plains were created when the prevailing south-westerly winds blew coastal sands up against the Range. Consequently areas of this landscape are subject to wind erosion (see Section 11) that should be controlled. In the south there is a sand pit on the edge of the Chapman River that should be significantly rehabilitated and then continue with an ongoing rehabilitation program to reduce the size of the working face and to avoid leaving a legacy of an eroding destabilised area once operations have ceased.

Surface runoff from this area drains via creek lines into the Chapman River. Controlling sediment runoff into the Chapman River and stabilising the banks of the creeks and the River will assist in improving the quality of the River. Maintaining this area as rural land around the southern side of Mt Fairfax retains the natural feel of the landscape when viewed from the Geraldton-Mt Magnet Road.

#### *Recommendation 06.1*

*Ecological repair, visual amenity and the route of the Oakajee Narngulu Infrastructure Corridor.*

*The information in Section 11 relating to improving the ecological condition and visual amenity of this area should extend out to the Chapman River and the route of the Oakajee Narngulu Infrastructure Corridor.*

### 06.2 CURRENT USE

Currently the area is used for general farming that includes both cropping and grazing. There is an area that has been planted to trees in the south of this area, and an active sand pit on the banks of the Chapman River.

### 06.3 IMPETUS FOR CHANGE

There are no significant pressures to change the tenure of the land however the land management practices that have the potential to create problems with wind erosion and the degradation of creek lines and river should be addressed.

### 06.4 RECOMMENDED USE

The south-western boundary of this area will provide a limit to the urban expansion of the Geraldton City around the southern side of the Range.

<sup>36</sup> MRMS 17,18

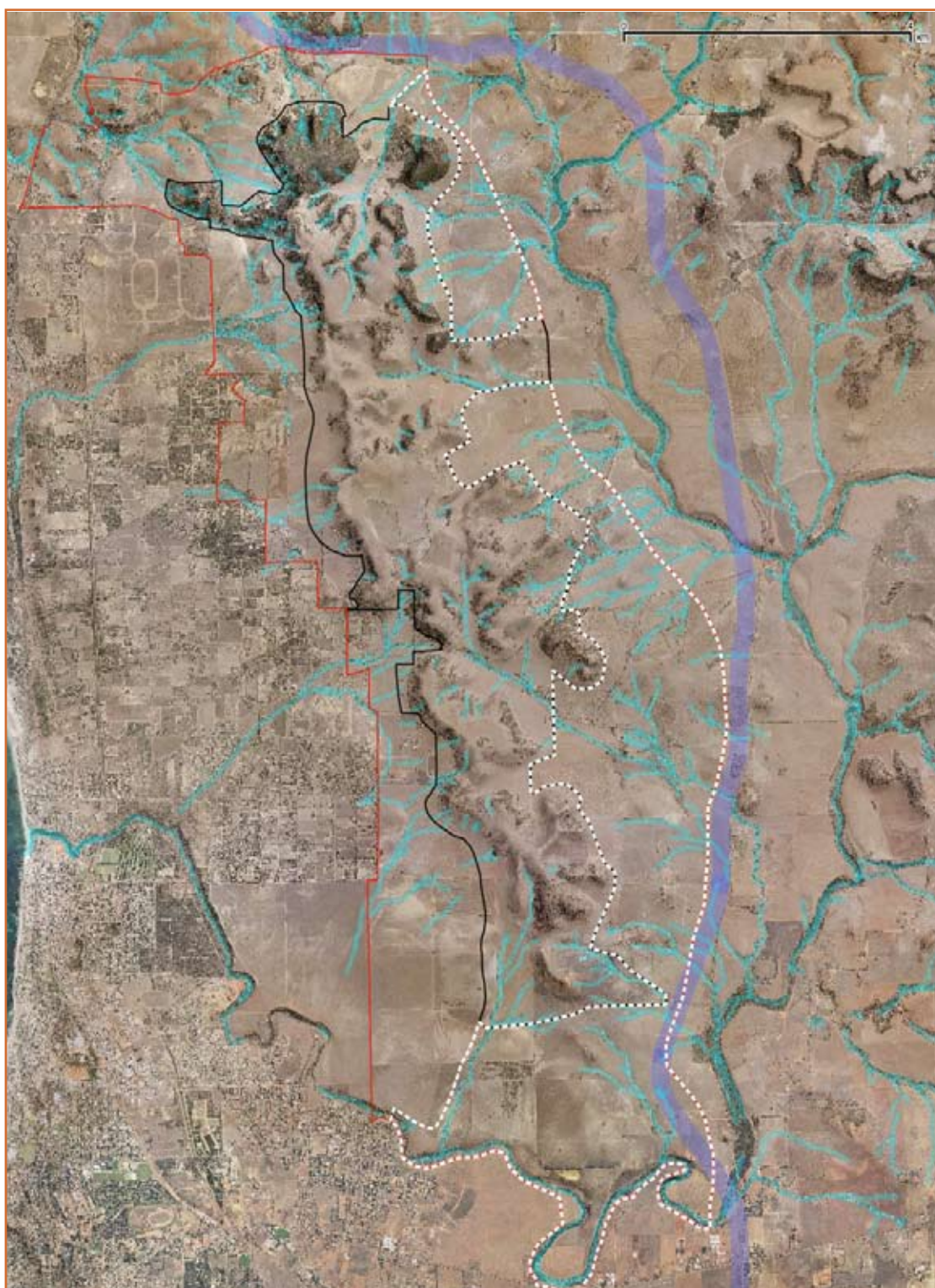


Figure 06.1 East and south of the Range, stream zones shown with blue line 30m each side of stream centre line

— Study Boundary   
 — — Area Boundary   
 — Range Precinct boundary  
 Oakajee Narngulu Infrastructure Corridor at June 2010

#### 06.4.1 Long term management and development

This area probably contains enough land to continue to be used as broadacre farming. There may be some management issues with the large number of small lots and disjointed titles across the area. This could be rationalised through normal market forces or may be able to be facilitated during the creation of a Park or the implementation of the Infrastructure Corridor.

A major objective should also be to improve the ecological character of the area by introducing land management practices into the general farming activities. There have been various suggestions from the public to create a Chapman River walk trail that links Geraldton City with the Buller River in an arc that follows the Chapman River along the eastern side of the Range then crosses to the Buller River around the northern end of the proposed Park. It is beyond the scope of this Plan to address this matter however it is considered that the river restoration measures should include a sufficient sized corridor to allow such a walk trail to be created in the future and to implement the recommendations of the Chapman River Foreshore Assessment Report<sup>37</sup>.

#### *Recommendation 06.2 Assist landowners with sustainable management of the area*

*The Local Authority and NACC, in liaison with DAFWA for advice on best agricultural practice, will assist and coordinate the existing landowners to form a Natural Resource Management group that will prepare and implement a detailed Natural Resource Management Plan for the area that addresses:*

- ☐ *Limiting grazing to reduce wind erosion.*
- ☐ *Increased planting of tree cover / perennial crops across the area particularly on the southern areas that are prone to wind erosion and in the foothill areas leading up to the Moresby Range.*
- ☐ *Rehabilitation of creek lines.*
- ☐ *Fencing bush land, the faces of the Range, creek lines and the Chapman River.*
- ☐ *Linking areas of vegetation and restoring existing vegetation.*
- ☐ *Covenanted Sections of property to protect bush land and creek line areas and areas that have been identified for inclusion in the Park.*

*The landowners will be assisted to access grant funding to meet the costs of these activities.*



Eastern edge of the Range



Figure 07.1

Park- North, stream zones shown with blue line 30m each side of stream centre line

- |                       |   |
|-----------------------|---|
| Park - North boundary | Oakajee Narngulu Infrastructure Corridor at June 2010 |
| Study boundary        | Range Precinct boundary                               |

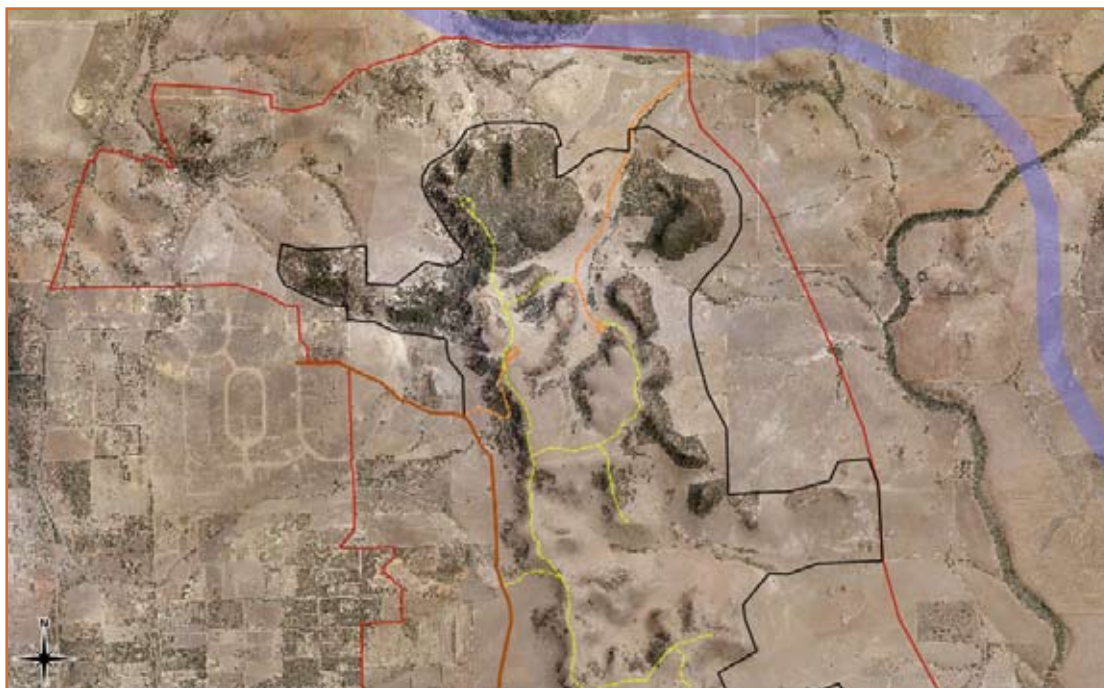


Figure 07.2

Access into Park - northern section

- |   |                |                         |
|---|----------------|-------------------------|
| Foothills Road  | Walk trails    | Vehicle access road     |
| Oakajee Narngulu Infrastructure Corridor at June 2010 | Study boundary | Range Precinct boundary |

## 07 Park - Northern Section

A significant amount of land in this area is still under natural vegetation and its interesting visual landscape makes this an important area for possible inclusion in a Park. It is envisaged that if a Park is established that this area would be developed as the primarily nature conservation area in the Park with access for low-key recreation<sup>38</sup>.

### 07.1 LANDFORM

The mesa style Range contain steep-sided valleys cut and eroded by a number of streams and creek lines. The tops of the Range are generally flat with a very gentle eastward slope. Where the valleys widen out away from the sides of the Range they form relatively flat areas cut by creek lines. The creeks mainly feed into the Buller River in the north and the Chapman River in the east.

The positive environmental management of the Range by the existing land owners has preserved significant stands of native bush land, particularly on the slopes of the Range. The flat tops are generally cleared for cropping and/or grazing. The flat parts of the valley floors have been generally cleared for agriculture although a number of the creek lines contain remnant vegetation.

### 07.2 CURRENT USE

The tops and foot slopes of the Range, and the flat parts of the valleys within the Range are used for cropping and/or grazing.

### 07.3 IMPETUS FOR CHANGE

The biodiversity of the area and the relative ease with which this area could be revegetated make it highly desirable for inclusion in a Park. The impetus for change varies across the landowners in the area pointing to the need for ongoing discussion about future land use options.

Both landowners are demonstrating sensitive management of the landscape and, given that this management is likely to continue, the freehold status of these lands can remain unchanged into the future pending the owners' desire to sell.

### 07.4 RECOMMENDED USE

#### 07.4.1 Long term management and development

*This portion should be managed primarily for its biodiversity potential and secondarily for its recreational opportunities. The southern boundary of this area has been selected to coincide with a narrow saddle which links the central Range with the northern Range. This saddle creates a point at which access to the area from the Central Park area can be easily controlled.*

*The Wokatherra Nature Reserve and the surrounding areas of high biodiversity should, in the long term, be added to a Park. However any proposal to add the Wokatherra Nature Reserve to a Park would require extensive negotiation and integrating of planning with the Department of Environment and Conservation and the approval of the Conservation Commission of Western Australia.*

38 MRMS Rec 1, 44, 45



Chapman Valley Road

Two access points into this area are proposed as shown in Figure 7.2 and include:

- a walk trail along the top of the Range linked to an access road that follows an existing track up the western side of the Range and joins with the Foothills Road
- a spur road off the White Peak Road, next to the Infrastructure Corridor, into the major valley leading into a picnic area in the valley in the centre of the zone. The relationship between the Corridor and White Peak Road will have to be examined during the planning of the Corridor. It may be appropriate to construct a local service road along the Corridor to replace White Peak Road and give access for local users and to the picnic area.

*Recommendation 07.1 Assist landowners with sustainable management of the area*

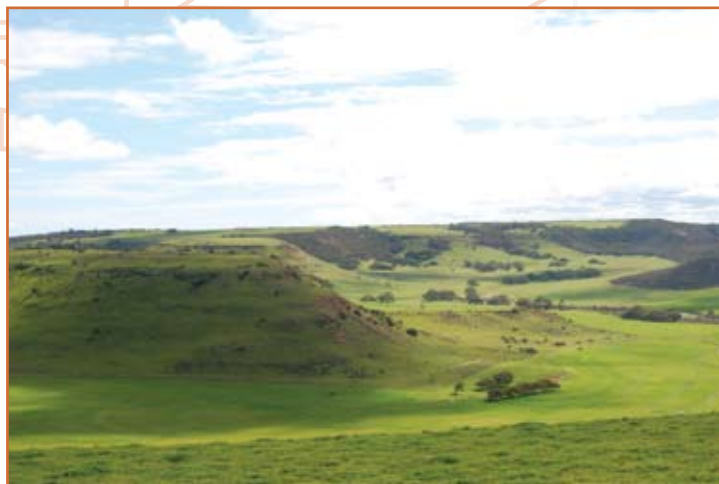
*The Local Authority will work with NACC to coordinate and assist the landowners form an NRM group in line with the general provisions of Recommendation 06.2. In addition given the specific characteristics of this area attention should be given to:*

- *Fencing the slopes of the Range at both the bottom and the tops to restrict grazing of the slopes.*
- *Revegetating selected faces of the Range with species endemic to the area, particularly in locations where areas of existing vegetation blocks can be linked with each other.*
- *Manage these areas for erosion control and cover maintenance, reducing fire risk and control of weeds and feral animals.*
- *Limiting grazing to the lower valley and cropping the tops of the hills with the objective of increasing soil humus and thereby improving water infiltration*



Figure 08.1 Park - Centre, stream zones shown with blue line 30m each side of stream centre line

□ □ Park - Centre boundary	— Range Precinct boundary
— Study boundary	— Oakajee Narngulu Infrastructure Corridor at June 2010



Looking north along the eastern side of the central area of the Range

## 08 Park - Central Section

The Central Park area, see Figure 08.1, and particularly the portion south of Chapman Valley Road, has been identified as the focus of human activity in the Range. It is proposed that a central facility that is orientated around the vision of *“People finding new ways to be in the Landscape”*, will be built on the Range immediately south of the Chapman Valley Road, see Section 10.

The remainder of the area will be available for human activity and selective restoration of the landscape to improve its visual amenity and to control current erosion.

### 08.1 LANDFORM

As with the northern Park area the mesa style Range contain steep-sided valleys cut and eroded by a number of streams and creek lines. The tops of the Range are generally flat with a very gentle eastward slope. Where the valleys widen out away from the sides of the Range they form relatively flat areas cut by creek lines. The creeks mainly feed eastwards into the Chapman River.

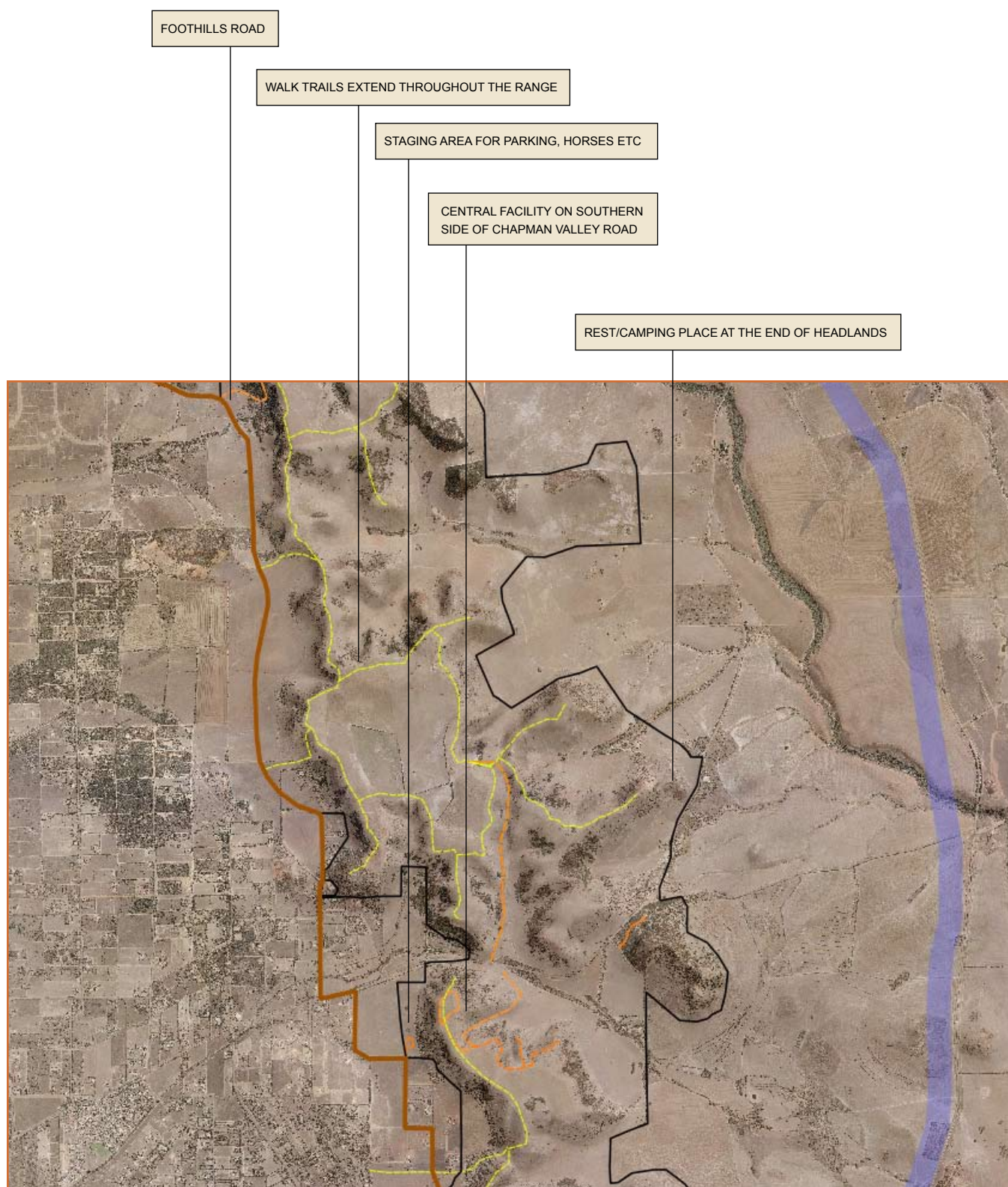
Past land management by previous owners has significantly compromised the biodiversity particularly in comparison with the condition of the northern Range. The area only has limited patches of remnant vegetation many of which consist of long lived species e.g. York Gums, but most of the understorey has been removed. The flat tops are generally cleared for cropping and/or grazing and many of the faces of the Range are denuded. The flat parts of the valley floors have been generally cleared for agriculture although a number of the creek lines contain remnant vegetation. There are a number of active erosion points (see Section 11) operating both at the head and floors of the valleys which need to be remediated as sediment from these areas is carried into the Chapman River, compromising its quality.

Despite this, there are significant stands of remnant vegetation and the current landowners have undertaken a number of vegetation rehabilitation projects. Given this situation it is considered that there is sufficient remnant vegetation to support efforts to rehabilitate some parts of this area back to ecosystems that reflect some elements of what was there originally. Other parts can be improved by planting tree and shrub cover to create a more green and vegetated appearance even if it is not possible, or affordable, within reasonable time frames to return it to the original vegetation condition.

Visually the Chapman Valley Road is an important route and efforts should be made to improve the vista on each side of the road as it passes through the Range.

### 08.2 CURRENT USE

The tops of the Range and the flat parts of the valleys are used for cropping and/or grazing. There are also access tracks from Chapman Valley Road that lead to the top of both the north and southern sides of the Range. The current landowner lets people visit the site for walking, biking, hang-gliding and other low-key pursuits. While the current owner is happy for selected individuals and groups to use this area for recreation in a responsible manner there are significant issues associated with liability and accountability if there is pressure for increased access by the general public.



### 08.3 IMPETUS FOR CHANGE

The current majority landowner is interested in selling their land and has a strong commitment to the idea of a Park. This area also has the greatest potential to be converted into a new recreational opportunity for the region. The minority landowners may be willing to sell if an acceptable price can be negotiated although, as is noted in Section 3, the addition of small land holdings on the western side of the Range to a Park is not a high priority.

### 08.4 RECOMMENDED USE

#### 08.4.1 Long term management and development

The Central Range will be the hub or core of the human activities in a Park. The part of the Range immediately south of the Chapman Valley Road will be the site of a compact, multi-function facility that will include commercial as well as community activities such as parking, viewing, picnic areas, interpretive centre, research activities and café/restaurant, as discussed further in Section 12. Walk trails and other activities will “hang-off” this central facility. The section of the Central Range to the north of Chapman Valley Road will be used for more wide ranging recreational activities and non-motorised sports such as walking, cross country running and various forms of off road cycling. Access to the Central Range is along existing tracks that spur off Chapman Valley Road.

#### *Recommendation 08.1 Assist landowners with sustainable management of the area*

*The intent of this recommendation is substantially the same as that for Recommendation 06.2 and 07.1, with a greater emphasis to be placed on rehabilitation for landscape stabilisation rather than immediate restoration of ecosystems because of the many active erosion points in the landscape*



Looking south west from the top of the Range towards the City of Geraldton

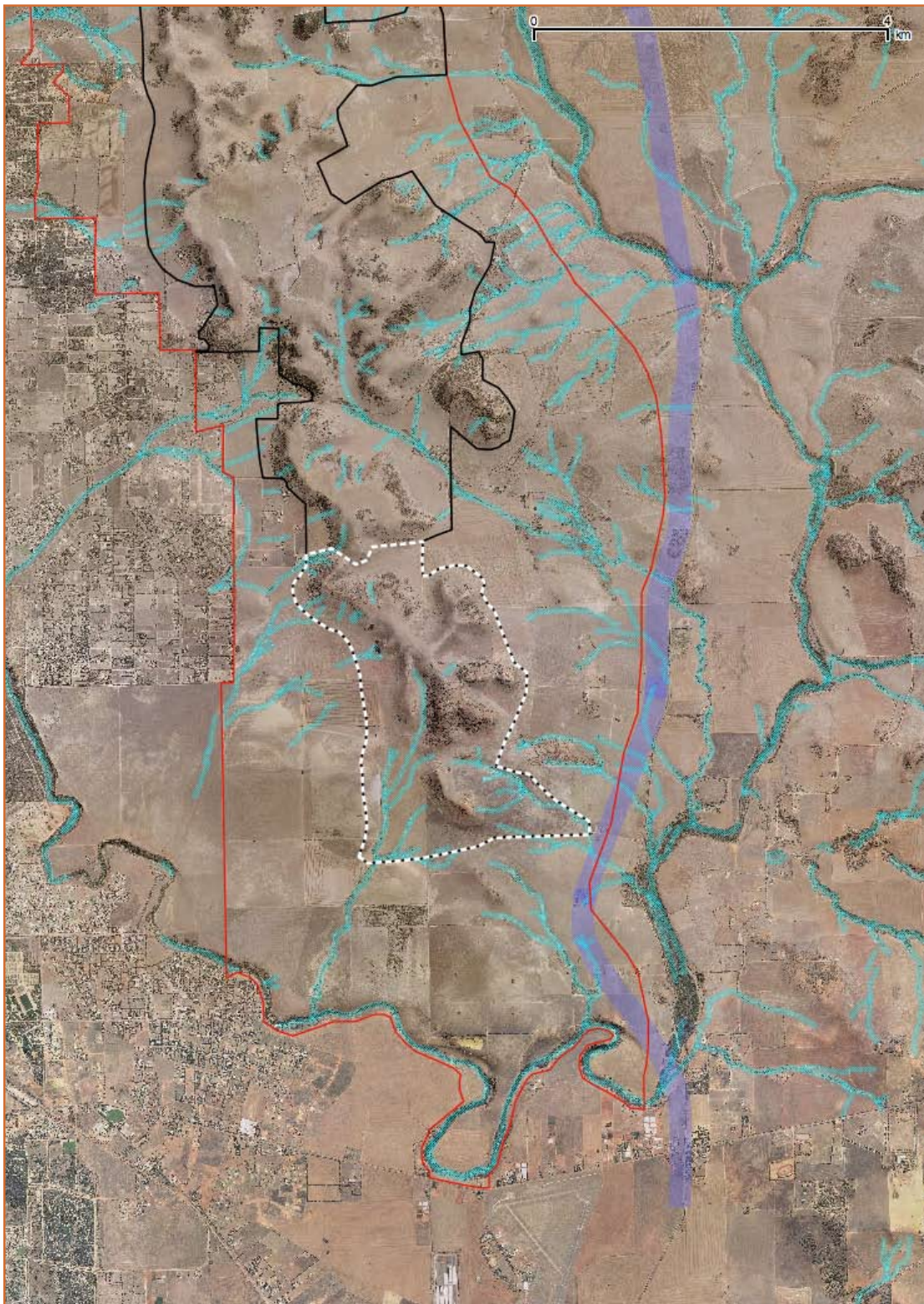


Figure 09.1

Park - South, stream zones shown with blue line 30m each side of stream centre line

Park - South boundary
  Range Precinct boundary
  Oakajee Narngulu Infrastructure Corridor at June 2010

## 09 Park - Southern Section

The Southern Range, including Mt Fairfax, are the parts of the Range that are closest to the City and the Geraldton-Mt Magnet and Horwood Roads. While its value for biodiversity conservation has been significantly compromised due to historic clearing, its role as a visual icon of the City has been recognised and the boundaries of a Park selected to incorporate Mt Fairfax.

### 09.1 LANDFORM

The Southern Range and Mt Fairfax are possibly the most visually dramatic parts of the Range because of their highly eroded form, they create a combination of peaks and valleys visible along the Geraldton-Mt Magnet and Horwood Roads and from the elevated parts of centre of the City. Past land management by previous owners has significantly compromised the biodiversity of the area and it is not in as good condition as the Northern and Central Range.

A track has been constructed to the top of the peak immediately north of Mt Fairfax that could serve as a future access to a walk trail along the tops of the Range.

### 09.2 CURRENT USE

The area is currently used for broadacre cropping and grazing.

### 09.3 IMPETUS FOR CHANGE

There is little desire for change, however the landowners may be willing to sell if an appropriate commercial arrangement could be negotiated.

### 09.4 RECOMMENDED USE

In the long term this area could be added to a Park for its landscape values and because it provides a southern entry point for the walk trails through a Park.

#### 09.4.1 Long term management and development

The extent of clearing of natural vegetation means much effort will be required to restore the original vegetation communities and, in the medium term, environmental repair efforts should be concentrated on stabilising the landscape and preserving its general amenity without expending significant amounts of resources to enhance its biodiversity. The area is generally suitable for low-key recreation and the existing track to the top of the Range, discussed above, may provide access to a Range walk trail. In the short term the management should be similar to that for Central Park.

#### *Recommendation 09.1 Assist landowners with sustainable management of the area*

*The intent of this recommendation is substantially the same as that for Recommendation 06.2, 07.1 and 08.1, however the main emphasis in this area is on landscape stabilisation rather than restoration of original ecosystems.*

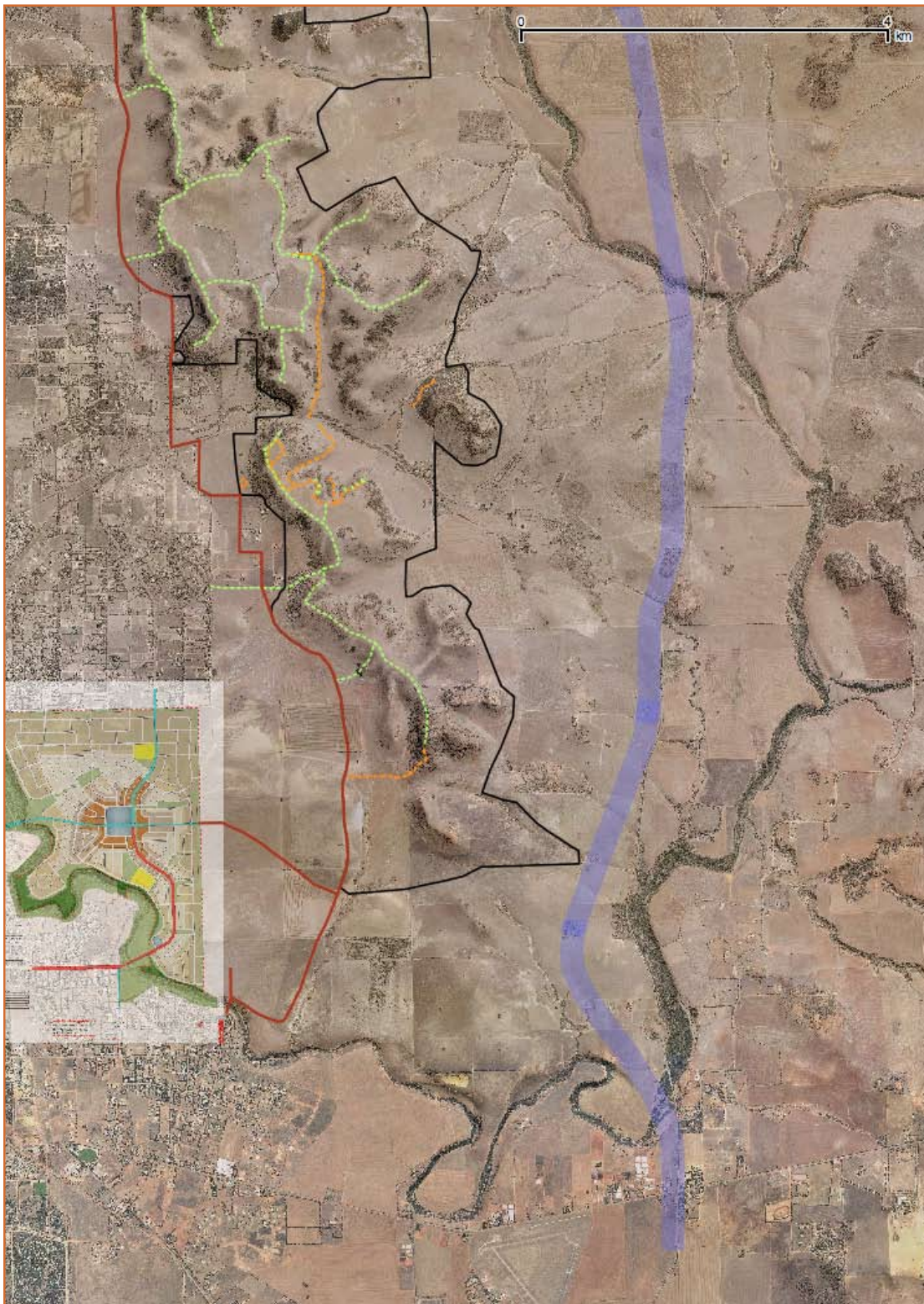


Figure 09.2

Access into Park - South Woorree New Town shown in insert map

- |  |   |  |
|--|---|--|
| <span style="color: red;">—</span> Foothills Road    | <span style="color: orange;">- - -</span> Vehicle access road |  |
| <span style="color: green;">- - -</span> Walk trails | <span style="color: black;">—</span> Range Precinct boundary  | <span style="color: blue;">—</span> Oakajee Narnngulu Infrastructure Corridor at June 2010 |



Mt Fairfax from Rangeway



Figure 10.1 Concept of Central Facility

The western top of the Range will be used for viewing the city and ocean, however being exposed to strong winds makes it unsuitable for most of the activities of the Facility. These will be located in the shelter of the Range on the eastern side. It is proposed to create a body of water, coupled with extensive replanting of the landscape to create a bushy sheltered environment in which to locate the buildings. The accommodation and cafe are located just off top edges of the Range taking advantage of the views. Entry to these structures will be down the side or through the roofs. Overall the effect for the visitor to the top of the Range will still be one of a large flat expanse with low protective walls on the western side in between which there will be parking for short term visitors who come to look at the views. These walls will be sculptured out of materials that tell the story of human activity in the landscape - hedged native shrubland vegetation, dry stone, wooden fence posts, old farm machinery, compressed old star picket fences, rusty corrugated iron

# 10 Activities In A Park And The Central Facility

The activities in a Park will orientate around a Central Facility in the Range<sup>39</sup> on the southern side of Chapman Valley Road, see Figure 10.1. The activities and the facility will be a physical manifestation of the Vision for the Range:

## People finding new ways to be in the Landscape

Based on historical trends, the population of the region should reach 55,400 by 2016 and 68,100 by 2031<sup>40</sup>. Other projections place this figure higher due to accelerated mining and industrial development in the region. In addition current estimates are that there are 300,000 visitors passing through Geraldton every year. This Section develops the concept of a public facility based in the centre of the Range that would attract a significant proportion of these people to explore and enjoy the Range. The final design may be very different from this concept however the ideas presented here are intended to inspire further investigation.

Fundamental to this vision is that the Range is a public asset and will not be in private ownership nor be developed for private housing, however some of the proposed activities may involve commercial arrangements that will need to operate under long term, possibly leasehold agreements.

The facility should locate as many varied, easily accessible activities in one location thus keeping intensive uses contained within one easily managed area. This will also assist with the financial viability of any facility. Lower key activities will use this central facility as a “hub” and allow people to move out into other parts of the Range to engage with the activities. Some of the ideas for projects listed below that require large areas e.g. tree crops or environmental repair projects could be located on the larger areas of existing farm land to the east of the Range.

The proposed site has been selected because it is close to the City, has easy access off the Chapman Valley Road, has a short distance between the east and western side of the Range condensing the viewing experience into one location, and is close to an existing mains water and electrical energy supply.

Siting the Central Facility on the top of the Range is a challenging location because of its exposure to the wind and it is highly visible from the City. The views, however are world-class and with careful architectural design it is considered that parts of the public facility that are particularly dependent on views (car parking and viewing points, café, visitor accommodation) for their attractiveness, could be built on the tops of the Range without having a significant impact on the appearance of the Range from the City. A conceptual layout of the Central Facility is shown in Figure 10.1. The architecture of the central facility will be iconic and internationally recognised as an interesting and vibrant place to visit. Its character and style will be informed by the shape and colours of the Range and the surrounding landscape, however it will not be a recreation of a past historic period or a faux-colonial style.

It is proposed that walk trails will fan out from the Central Facility, see Figure 01.1, giving access along the tops of the Range and linking the vehicle access points to the tops of the Range proposed for the north and south ends of a Park. These trails will have spurs that take people to the headlands on the eastern side of the Range to rest/viewing/camping platforms that will provide panoramic views of the eastern landscape. The walk trails along the western top of the Range will include rest points with views of the City and ocean. The walk trail along the top of the Range will also be linked to the multiple use Foothills Road at various locations as discussed in Section 4.5.

39 MRMS Rec 23, 25, 26, 30, 31

40 Mid West Development Commission web site 2009



flat building with vertical tower borrows from, but exaggerates, the shape and form of the flat top Ranges and surrounding foot slopes

External veranda and meeting place

Side screen allows ventilation but screens the sun



Venturi at top of ventilation towers uses natural airflows to draw up air cooled by under floor pool

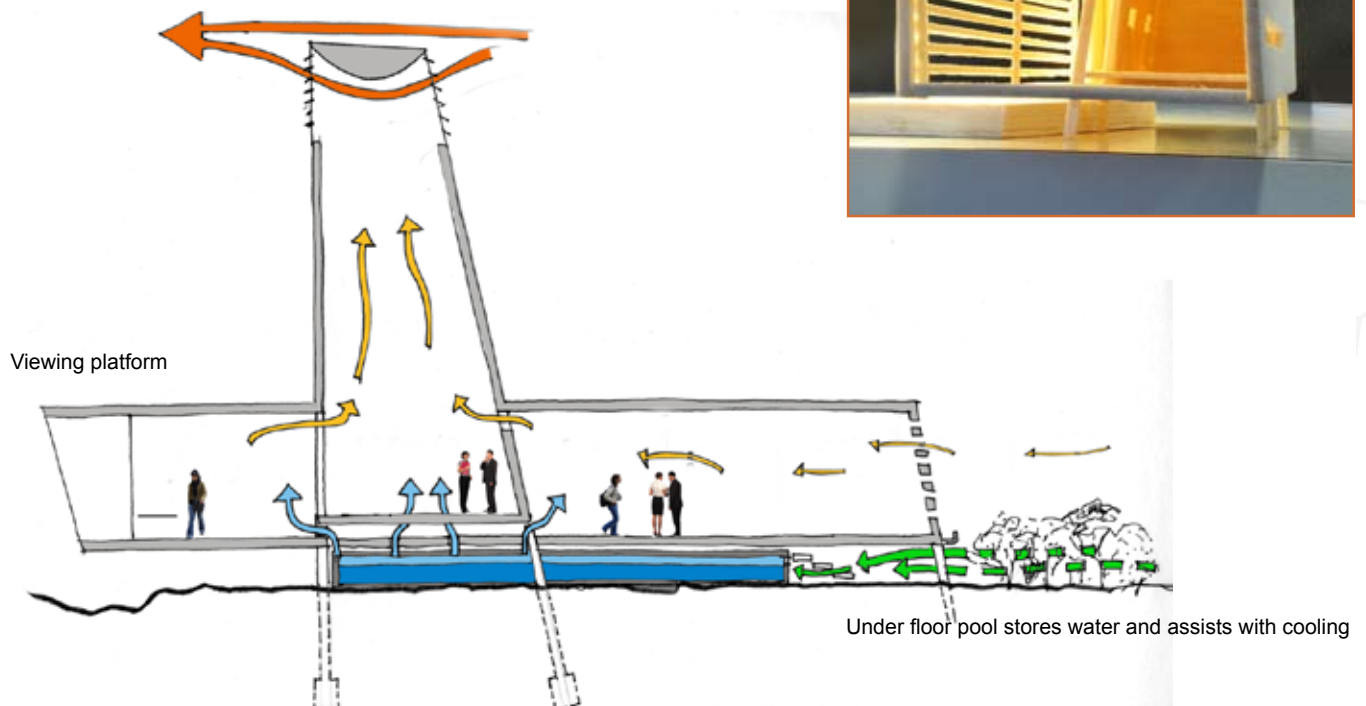
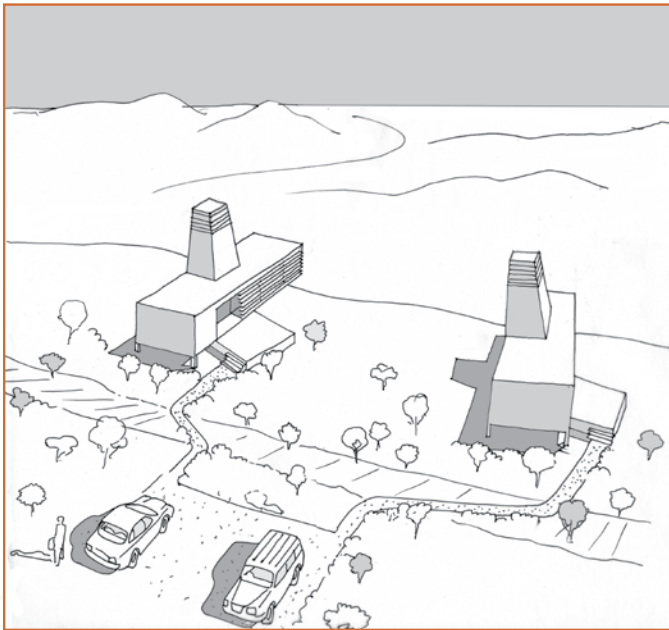


Figure 10.2 Architectural concept for the Interpretive Centre incorporating ecologically sustainable design principles and stylistic features that reflect the landscape



Accommodation located facing eastern views, but located off the edge of the Range. The shape of the accommodation reflects that of the Interpretive Centre

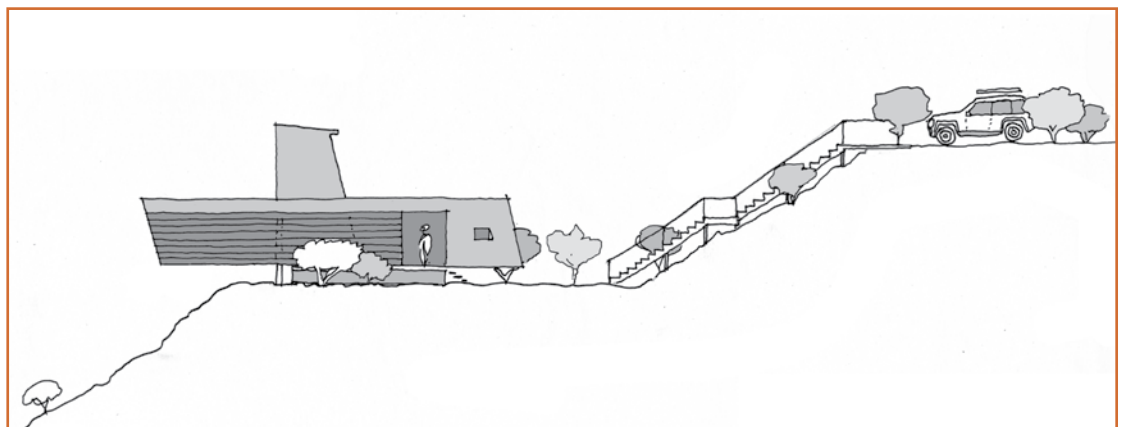
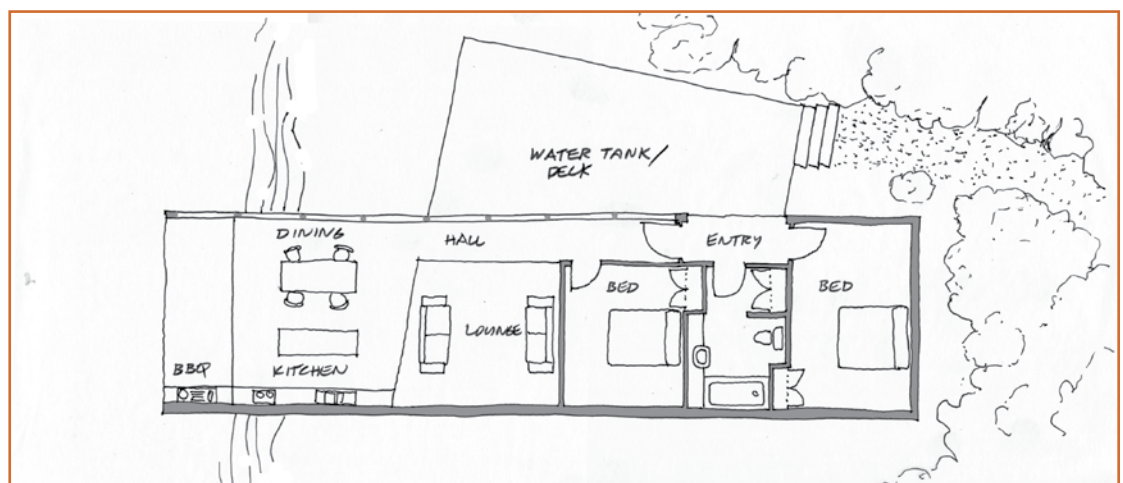


Figure 10.3 Architectural concept for the accommodation

A number of concepts for activities in a Park and the Central Facility are shown in the table below.

**Table 10.1 Possible activities in the Park and the Central Facility**

Concept	Theme	Possible Activities
Give access to views	The western "wow" factor	Provide opportunities for people to visit the Range for a view of the City but protect them from the southerly winds. The "wow" factor is what lures people to come to the Range
	The eastern "landscape vision"	Get people to cross the Range to take in the broad vision of the Australian Landscape which is the more interesting, complex and soulful experience than the immediacy of the coast and the City
People connecting with their humanity	Excitement	Extreme sports (bikes, hang gliding), assault course, cross country running, flying fox, adventure playground
	Solitude	Walking to remote locations, sitting, resting, sleeping in and above the landscape
	Rest	Camping locations in the valleys, camping platforms on the edges of ridges
	Different views of the world	Aboriginal people involved in the Park with the opportunity to explain a more comprehensive understanding of the landscape
People connecting with each other	Entertainment	Café, restaurant, microbrewery Amphitheatre Day spa Gallery Interpretation centre Shop selling local produce
	Contribution	Opportunities to work on land restoration projects Opportunities to support disabled/disadvantaged people to visit
	Recreation	Walk/bike trails, BBQ areas, campsites, viewing platforms etc
Caring for the landscape	Replanting and control of erosion	Explanation of what is involved in restoration planning and erosion control of the landscape Opportunities to be involved in restoration projects
	Protection of areas of high biodiversity	Limited access to the north of the Park
Supply renewable energy	Wind	Turbines spread along the Range and a display of amount of renewable energy supplied to the region included in the interpretative centre
	Solar	Power some remote buildings e.g. walk trail camping shelters with solar power

Concept	Theme	Possible Activities
Using water sustainably	Water sensitive building developments	Dual system water supply Water efficient fittings and design Compost toilets at remote locations Collection of rainwater for use in buildings
	Water sensitive site development	Interception of storm water Managing surface conditions and infiltration Creation of wetland areas
	Landscape scale management of water	Control of runoff from sub catchments Soil quality and water infiltration management Farm scale demonstration of water management Restoration of creek lines and wetland areas
Sustainable food supplies	Bush tucker	Plantings of bush tucker and interpretation and explanation
	Tree crops in dry environments	Demonstration plantings of tree crops that live in arid environments, using these crops to improve visual amenity
	Sustainable broad acre agriculture	Demonstration of sustainable farm land management practices e.g. Natural Sequence Farming, opportunities to interact with farm animals, see farm machinery in operation
	Shade/greenhouse based agriculture	Growing produce from other climatic regions using intensive technology, may be able to integrate with waste from visitor facilities
	Arid/dry Mediterranean zone permaculture	Demonstration of domestic food supplies grown in arid landscapes
Art	Intuitive interpretation of the landscape	Avoid compromising major landscape features e.g. keep buildings off the tops of the Range. Capitalise on the uniqueness of existing structures e.g. use alignment of the existing TV towers with new wind turbines to describe and orientate people in the landscape
	Public art and performance	Sculptures along walk trails Exhibitions, performances in an amphitheatre
Transport	Limited access for cars	Vehicle access to selected locations in north central and south of the Park only.
	Stop over for caravans	Provide a place where travellers with caravans can stop over, and get involved in the activities in the Range
	Promote walking and bikes	Opportunities for walk and bike trails

Concept	Theme	Possible Activities
	Using electric vehicles	Service vehicles operating in the central facility are electric powered charged from renewable sources
	Opportunity for biodiesel	Cropping for oil and production of biodiesel
Shelter	Car parks with wind breaks around the views from the Central Facility	Use windbreaks made of different materials to interpret the history of human involvement in the landscape e.g. stone (gabion boxes), hedged scrub vegetation, compacted old star pickets and fencing wire, wooden fence posts, farm machinery etc
	Major buildings	Use sustainable building technologies as demonstration projects
	Outbuildings e.g. camping shelters, toilets etc	Use local materials (stone, wood etc) for out buildings
Learning	Astronomy - Square Kilometre Array, optical telescope	Link into the SKA project as the major point of interpretation Provide access for star-gazers
	Landscape repair	Demonstrations and opportunities to be engaged
	Views	Telescopes for viewing the City
	Interpretation	Explanation of what is happening in the Park
	Renewable energy, food supply etc	Explanation of what is happening in the Park

These ideas for a Central Facility will need further development through the preparation of a Master Plan for the proposed site and business planning to ensure that the facility is commercially viable. Based on the experience from other facilities it is likely however that the Central Facility will need significant capital injection to assist with the initial construction of infrastructure and buildings.

#### **Recommendation 10.1 Master Plan and business plan for the Central Facility**

*It is recommended that, at the appropriate time, the relevant Authority commission a master plan and business plan for a proposed Central Facility that addresses:*

- ☐ *The range of activities, based on the list provided above, that could be undertaken in the Range and how these would link into the Central Facility.*
- ☐ *How and where these activities could be geographically located including opportunities for co-location of activities.*
- ☐ *The business cases for different activities and what incentives may be needed to attract investment in the facility.*
- ☐ *An architectural theme for the Central Facility and product branding for a Park.*



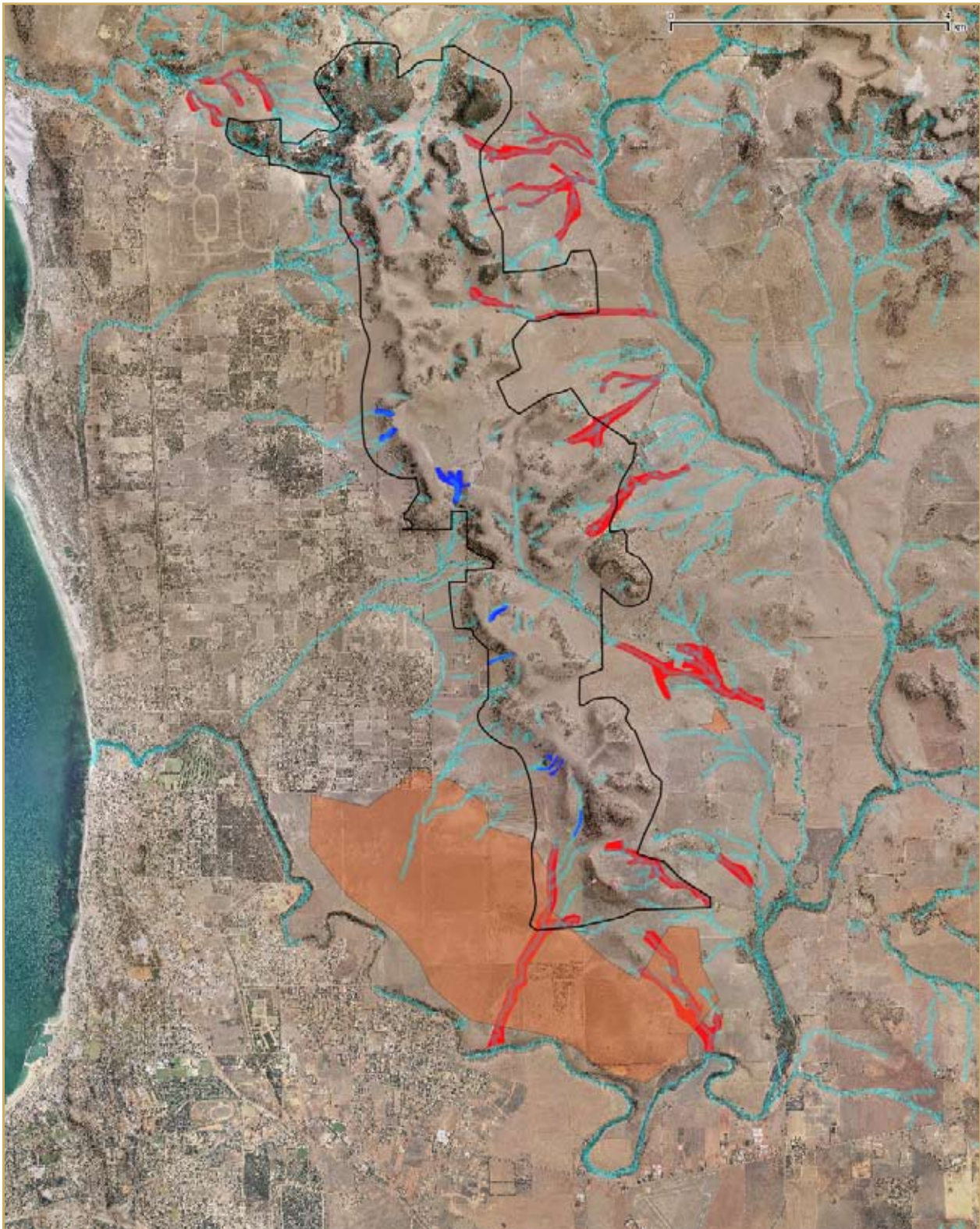


Figure 11.1

Major erosion points in and around the Range

- |                              |   |                                      |
|------------------------------|---|--------------------------------------|
| — Range Precinct boundary    | — stream / drainage zones as defined by a line 30m each side of the centre line |                                      |
| ■ area prone to wind erosion | ■ major valley gully erosion  | ■ major head of valley gully erosion |

# 11 Managing Natural Resources

The ecological character of the Moresby Range is significantly changed from what existed prior to the introduction of European agricultural systems. Some sections of the northern Range still have vegetation systems that are reasonably intact, however most of the Range have very little of the original ecosystems present. Changing land use has greatly accelerated the erosion processes operating in the Range. As has been discussed in earlier sections the amount of significant modification of the landscape provides a unique opportunity for the community to choose the type of landscape it wants to see created. This Section discusses the general ecological dynamics of the Range and recommends how much and where ecological repair should be undertaken<sup>41</sup>.

The community consultation identified a number of environmental objectives for the Range, which were:

- there was a strong desire to see the faces and foothills of the Range become more “green<sup>42</sup>” and “bushy” so that the Range looked more “natural” when viewed from the City.
- there was a mosaic of farm and bush land in the Range and this character should also be preserved.
- converting all the Range back to the original ecosystems was a very major undertaking and, given the resources available, was not a viable option at this time.
- there were however a number of locations particularly in the north that had good quality pre-existing vegetation and the protection, enhancement and linking of these areas should be a priority.
- there was also the expectation that the erosion processes should be greatly reduced, particularly because of the impact of sediment on the Chapman River.

Other ideas supported by the community<sup>43</sup> included

- there should be no urban development on the faces of the Range and, while urban development would occur on parts of the foothills, it should be designed in such a way that it was screened by vegetation and created the impression of a bushy landscape stretching up into the Range.
- on the northern, eastern and southern foothills it was considered desirable if the stark horizontal delineations between farm land in the foothills and the bush land of the Range was replaced with graduated planting of vegetation that followed streamlines, fences, or roads.
- It was recognised that the use of agricultural land for economic purposes would continue on the east and southern sides of the Range, however the uses should become more ecologically sensitive through using land regenerating farming practices, planting tree crops and other rehabilitation activities.

## 11.1 LANDSCAPE PROCESSES

The Moresby Range were once a seabed built up from sediment deposits over millions of years. Fossils from this ancient seabed can be found in various places in the Range. Over geological timeframes the sea level has changed a number of times leaving the old seabed as an elevated rocky plateau bordered by the sand plain and dune systems to the west of the Range. The plateau has been eroded by streams following fault lines in the rock, creating the characteristic flat top hills of the Range, and eroded valleys, see Figure 11.1. These streams carried the eroded materials from the Range and spread them out across the landscape creating the fertile, undulating, landscape to the east of the Range.

41 MRMS Rec 4, 5, 6, 7, 8, 9, 10, 15, 16, 19, 20, 28, 29, 35, 36, 37, 55

42 the use of the words “green”, “bushy” and “natural” were commonly used metaphors that emerged in the consultation. The meaning of these metaphors is discussed in Section 1

43 These sentiments were also reflected in the work done by the WAPC and DoP on visual amenity, see Section 4

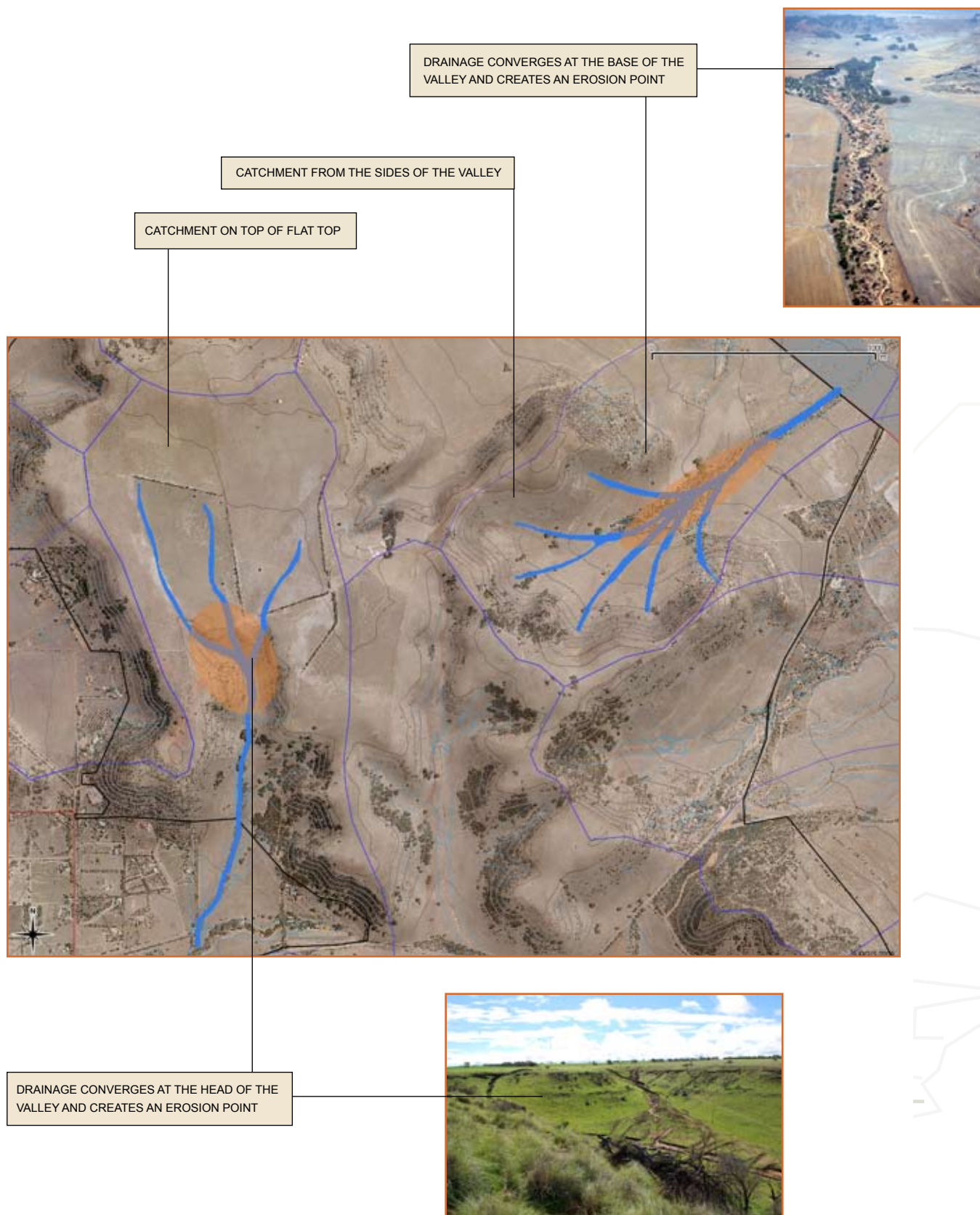


Figure 11.2

Examples of floor of valley erosion and head of valley erosion. Catchments defined by blue lines streams delineated by blue shading, major erosion area shaded in orange

The prevailing southerly winds carried coastal sands up against the southern end of the Range forming the expansive sand plains between the Chapman River and Mt Fairfax.

As with all natural ecological processes, the vegetation that originally covered the hillsides was adapted to the climatic, biological and geological conditions of the Range. The remnants of these biodiverse systems can be seen in the well vegetated hills in the north of the study area. In these original ecological systems the vegetation created a soil profile that absorbed rainfall and acted as a sponge that slowly released the water into the streams. These streams were mostly fresh, relatively free of sediment and flowed for a significant amount of the year. The dynamic balance between the erosion processes was generally in balance with the stabilising effects of the vegetation systems, consequently the rate of erosion was slow.

With the introduction of European style agriculture a significant amount of this perennial vegetation cover has been removed and replaced with annual crops and pastures. Hoofed European animals have continually removed most of the vegetation cover and created compacted walk trails that start drainage lines. On the flat tops and valleys of the Range the removal of vegetation and compaction of the soils has created hardened sub-catchments that produce massive amounts of surface run-off over a short time, particularly during early seasonal rains before soils have become wet. As a consequence where the vegetation has been cleared, and grazing has continued over time, the erosion processes have dramatically increased <sup>44</sup> and the quality of the water run-off has decreased significantly.

## 11.2 EROSION

From the north to the south the Range presents a history of these accelerated erosion processes. In the north where the Range is still largely vegetated and the landowners have kept grazing animals off the slopes and limited the use of the tops of the Range, the erosion processes are relatively minor. Further south previous landowners carried out extensive clearing producing major erosion activity. Major erosion points in the Range are shown in Figure 11.2.

Four general types of erosion can be seen in the Range:

*Sheet or surface erosion* - occurs where the vegetation has been removed and water running across the land removes the topsoil in a sheet. There is considerable evidence of this form of erosion on the flat tops where thin soils overlay rocky outcrops and on the steeply sloping sides of the Range. Sheet erosion is controlled by avoiding over-grazing and stopping fire removing vegetation.

*Wind erosion* – occurs particularly on the sand plains on the south and south-eastern sides of the Range. Wind erosion can result in whole scale loss of productive agricultural land and build-up of topsoil on fence lines and trees. Generally the areas prone to wind erosion can be controlled by maintaining protective cover or pasture, crop or stubble, seeding with perennial grasses, not allowing grazing or only careful controlled grazing. An alternative, on the western side of the Range, would be to use the urban expansion from the City to provide major, permanent stabilisation.

*Slumping* - is caused by water logging of surface soils that overlay a clay layer. As the clay layer becomes wet it becomes slippery. Under the influence of gravity these waterlogged soils, sitting on a sloping layer of wet, slippery clay break away and travel down hill as a land-slide. In the Moresby Range slumping is not a major contributor to the destabilisation of the landscape probably because the relatively dry climate reduces the amount of rainfall available to trigger slumping. Slumping can be controlled by revegetating the landscape and allowing the plant roots to bind the soil surface.

*Stream and gully erosion* - occurs when a large amount of water falls onto a catchment then flows along drainage lines. If the catchment is cleared, and there is no vegetation to hold the water in the soil profile, there is an

44 Kuruppuarachchi, T., and Wyrwoll, K.-H. 1992. The role of vegetation clearing in the mass failure of hill slopes: Moresby Range, Western Australia. Catena,



Wind erosion on sand plains



Stream and gully erosion following sheep trail off the flat top towards a dam. Water collects on the flat top and then runs down the trail eroding the landscape



Naturally occurring sheet erosion on well vegetated rocky face of the Range

increased amount of runoff in a short timeframe. At some point the flow increases in speed and volume to the point where it can pick up soil and move it with the water flow. The faster the flow, and greater the volume, the more material is transported. Over time these processes cut down into the landscape creating deep trenches that further concentrate the speed and volume of water cutting down into the landscape. Many locations in the Range show evidence of this “chainsaw” effect of stream and gully erosion. While most stream and gully erosion in the Range is found in the valleys, particularly on the eastern side of the Range, the catchments on the flat tops has produced very significant head-of-valley gully erosion. These erosion points dump large amounts of sediment into the Chapman River polluting it for down stream users. Examples of two significant erosion locations are shown in Figure 11.2.

### 11.3 CONTROLLING EROSION

DAFWA have prepared best practice surface water control guidelines<sup>45</sup>. In addition there are a number of approaches<sup>46</sup> that integrate similar principles that help control erosion. These principles are listed below.

*Increase the absorption of water* into the landscape by:

- ☐ increasing vegetation cover and introducing mulch to soil surfaces.
- ☐ ripping the compacted ground surfaces along contour lines.
- ☐ constructing interceptor banks along contour lines that hold back surface run-off.
- ☐ changing the chemistry of the soil by increasing the humus (biological material) in and over the soil and/or treating the soil with lime or other minerals.

*Keep water high in the landscape* for as long as possible by revegetating tops and upper slopes of hills and creating contour banks to spread runoff around the hills rather than running straight down drainage lines.

*Slow the rate of release and extend the time* over which water is released from the soil profile by increasing vegetation cover and soil humus.

*Spread the water over the landscape and avoid concentrating flows* by reforming the profile of stream lines (rock walls, fallen tree branches) flattening them out into basin rather than “V” shape, installing permeable weirs to slow the flow of water and trap sediment.

Each erosion location in the Range will require a particular mix of these principles to repair the landscape and it is anticipated that the most suitable approaches for the Range will be refined over time. Examples of these measures are shown in Figures 11.7 A and B.

As has been discussed above the whole of the Range are subject to accelerated erosion processes from both wind and water. Figure 11.1 shows most significant areas of erosion in the Range, although there are also many smaller, localised patches of erosion that are not shown in this map that will need to be rehabilitated as part of better land management. Controlling these erosion areas will significantly decrease sediment flow into the Chapman River.

### 11.4 VEGETATION

The Moresby Range originally would have had a very diverse Range vegetation cover varying across stream zones, faces of the Range and the flat tops. The lower creek lines would have been characterised by River Gums (*Eucalyptus camaldulensis*), and Freshwater Swamp Paperbark (*Melaleuca raphiophylla*) and *Melaleuca viminea* with an

45 Keen, M. Common Conservation earthworks used in WA, DAFWA, Resource Management Technical Report No 185

46 Natural Sequence Farming, Permaculture, Landcare etc



Slump erosion on hill side



Sheet erosion induced by over grazing



Head of valley gully erosion

Figures 11.3 D, E, F

Examples of slumping, creation of sheet erosion by over grazing and head of valley gully erosion

understorey of sedges (*Cyperus* sp.). The faces of the Range would be characterised by *Eucalyptus* sp. including *Isoxophleba* (York Gum) in the valleys with an annual herbaceous layer as understorey, and stands of *Melaleuca*, *Hakea* and *Hibbertia* sp.

Today most of the Moresby Range has been severely modified by European use, predominantly but not exclusively farming (grazing and cropping). Limited areas of the Moresby Range have been little modified by European use and patches of the pre-European vegetation remain where a diverse range of indigenous plant species is found. Typical vegetation associations are described briefly below. Note that only the dominant species have been included.

*Flat tops and top slopes:* Much of the flat top area is barren laterite outcrop but where there is adequate soil in the red brown laterite gravel the flat tops and top slopes support a mixed stunted shrubland of *Grevillea pinaster*, *Allocasuarina humilis*, *Melaleuca radula*, *Dodonea inaequifolia* (Hop bush), *Alyogyne huegelii*, *Dryandra fraseri*, with herbs and sedges.

*Midslope* where the slope becomes gentler and soils are a sandy loam there are thickets: *Allocasuarina campestris* thickets, or mixed shrub thickets of *Allocasuarina campestris* (Tamar) with *Melaleuca viminea*, *Dryandra fraseri*, *Hakea lissocarpa*, *Calothamnus sanguineus*, *C. homalophyllus* (one sided bottle brush), *Grevillea bitermata*, *G. pinaster* (Pine leaf grevillea), *Nuytsia floribunda* (WA Christmas tree) *Melaleuca radula*, *Hibbertia* spp (Buttercups), *Acacia ericifolia*, *Solanum* spp, *Ricinocarpus psilocladus*, *Lepidosperma* spp (sedges) and fine stands of *Themeda triandra* (kangaroo grass)

*On the lower slopes* and in sheltered valleys and hollows higher up there are York gum open woodlands: *Eucalyptus loxophleba* (York gum) with shrubs typically *Acacia tetragonophylla*, *Melaleuca uncinata* (Broom bush), *Grevillea bitermata*, *G. triloba*, *G. pinaster*, *Pimelea microcephala*, and herbs including *Ptilotus manglesii* (Mulla mulla), *Conostylis stylidioides*, and native grasses *Aristida* sp, *Themeda triandra* (kangaroo grass) and *Neurachne alopecuroides* (fox tail mulga grass)

On a rare butte (cone shaped hill) which was fenced early to exclude stock from poison pea there is an open mallee woodland over open shrubland over herbs: *Eucalyptus arachnaea*, *Eucalyptus blaxellii*, *Hakea preissii*, *Melaleuca radula*, *M. megacephala*, *Hibbertia hypericoides*, *Verticordia chrysantha* (feather flower), *Gastrolobium triangulare*, (one of the poison peas), *Santalum acuminatum* (Quandong).

*Creek flats* in the hills carry remnants of River gum woodland: *Eucalyptus camaldulensis* with *Melaleucas* and *Acacias* such as *M. viminea*, *A. rostellifera*, and *A. scirpifolia*.

## 11.5 REPAIR OF THE LANDSCAPE

Because much of the Range is in poor ecological condition and there are few, except in the north, vegetation associations intact, a simplified approach has been adopted to guide remediation. Figures 11.4 - 11.6 show three broad vegetation classifications:

- ☐ Existing vegetation as determined by existing survey work.
- ☐ Opportunities for linking and enhancing existing vegetation to approximate the pre-European vegetation complexes.
- ☐ Opportunities to create new blocks of vegetation with the objective of improving visual amenity and/or stabilising the landscape.

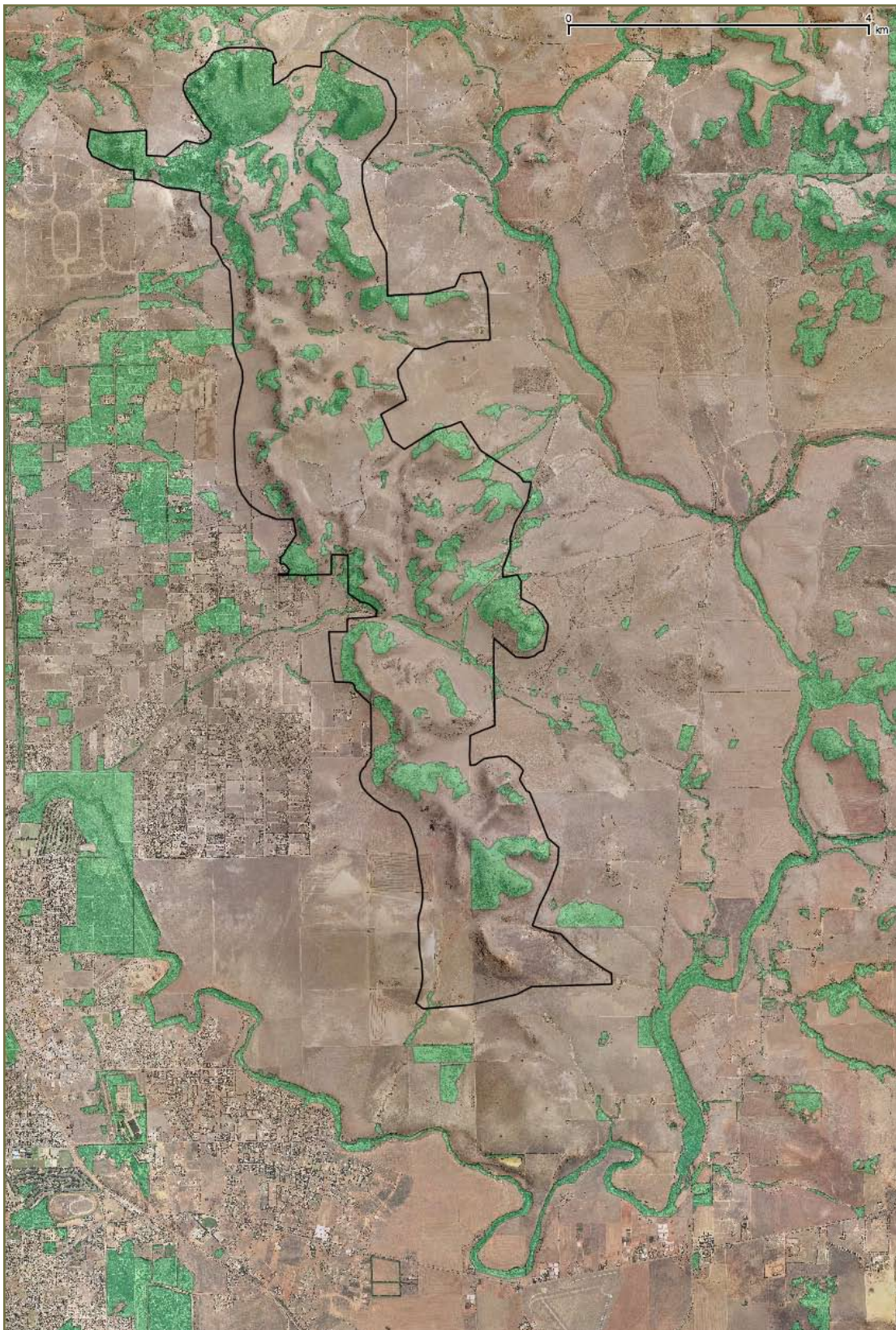


Figure 11.4      Existance vegetation as mapped from Department of Agriculture and Food WA database 2008 update

— Range Precinct boundary      Existing vegetation

### 11.5.1 Existing vegetation

Areas of existing vegetation are shown in Figure 11.4<sup>47</sup>, however it must be noted that this record gives no assessment of species distribution and/or quality. Based on ground-truthing undertaken as part of this Management Plan, many of the places that are recorded as existing vegetation have a greatly reduced number of species and often the only species present are long lived trees e.g. York Gums that have held out against fire, clearing and grazing, but are not being naturally replaced. Despite this, for this Plan it is assumed that areas identified as existing vegetation will have a reasonable chance of being brought back to their approximate pre-European species assemblage, or at least improving native vegetation cover, if grazing is removed, weeds are controlled and, in some cases, strategic seeding or replanting occurs.

### 11.5.2 Linking vegetation blocks

Areas shown in Figure 11.5 were identified as having potential for:

- ☐ providing linkages between existing vegetation blocks.
- ☐ helping control erosion.
- ☐ revegetating faces of the Range.

In these locations a considerable amount of effort will be needed to create an approximation of pre-European species assemblages but the long term ecological benefits are considered sufficient to warrant this effort.

### 11.5.3 Stabilising the landscape

Other areas have been identified in Figure 11.6 that seek to create vegetation corridors, control erosion and improve the appearance of urban development in the west, and agricultural activities in the east, of the Range. In these areas the effort required to recreate pre-European species assemblages would be too great within the foreseeable future.

General principles for enhancing vegetation cover are:

- ☐ Preserve existing blocks of vegetation even if they are in poor condition.
- ☐ Link up existing blocks of vegetation with strategic planting and seeding.
- ☐ Stop stock grazing the vegetation and fence off vegetation areas.
- ☐ Where possible, vegetation regeneration should support erosion control particularly planting in locations where there are water accumulation points e.g. along contour banks, or stability is needed e.g. stream zones or slumping areas.
- ☐ Use species that are found in the region.
- ☐ In some locations, for example where farm land backs onto the proposed Park, it may be appropriate to use tree crops to provide a productive use of the land and improve the visual amenity of the region.

47 Vegetation extent baseline (2008) - Western Australia, Department of Agriculture and Food Western Australia

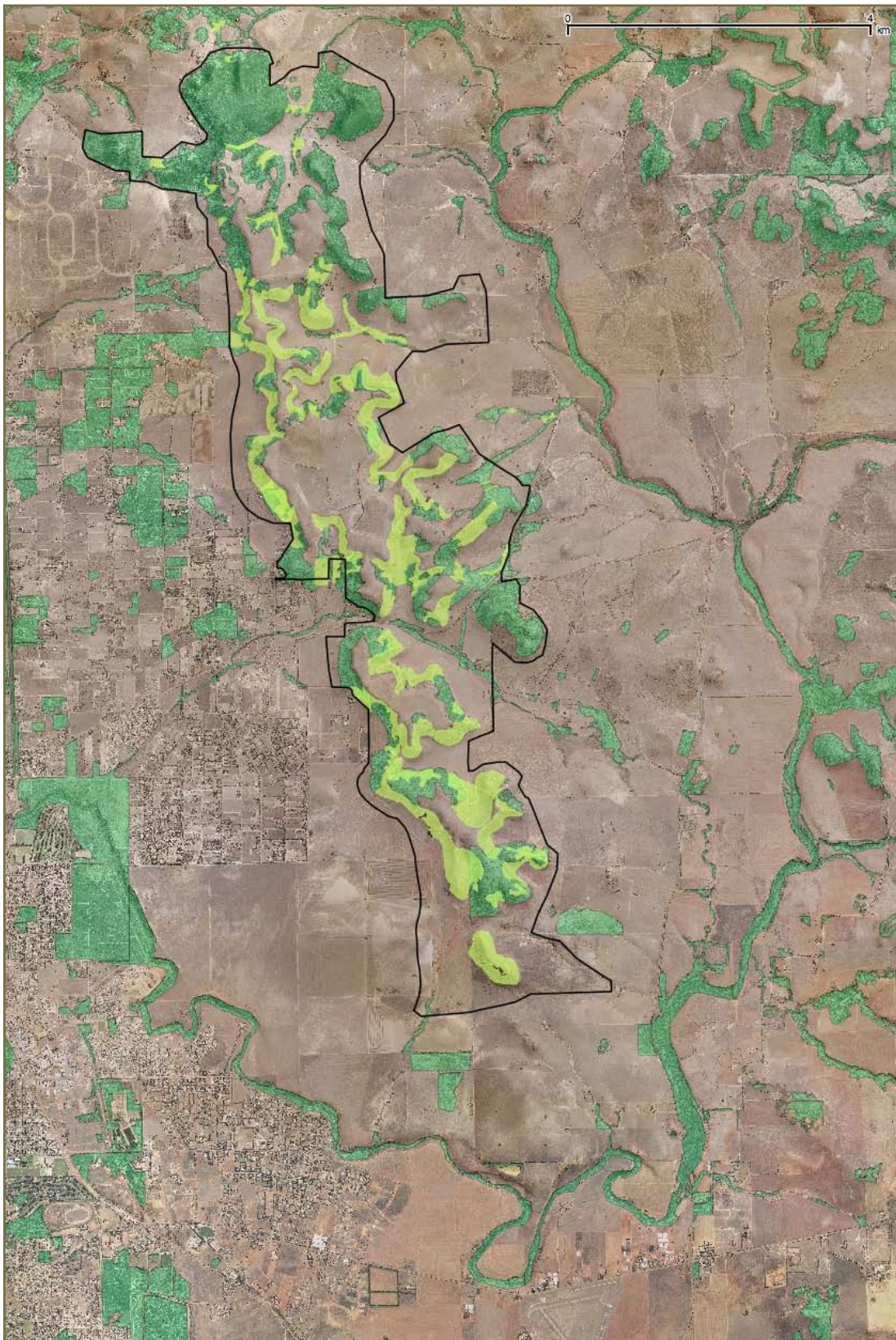


Figure 11.5

Possible blocks of vegetation to be added to the existing vegetation

- Range Precinct boundary
- Existing vegetation as mapped by Department of Agriculture and Food WA 2008
- Blocks of vegetation to enhance existing vegetation and add new blocks that approximate pre-European vegetation communities

#### 11.5.4 Threatened, Rare and Endangered Species

There are a few locations where populations of threatened, rare and/or endangered species have been identified, and it is possible that further searches would find more of these species within the future Park area. The management of a proposed Park will be compatible with protecting these populations and it is anticipated that by reducing/removing grazing and active regeneration these species may be able to be re-established throughout the Range Precinct.

#### 11.6 WATER QUALITY AND STREAM ZONES

Stabilising the landscape, replacing vegetation in stream zones and controlling erosion will produce cleaner water that flows for longer. Figure 11.1 has identified major erosion areas that need rehabilitation and areas where revegetation should occur. These actions and features represent major opportunities to change how the landscape is managed at large scales. There are also many smaller stream and drainage lines that flow during the winter and ultimately contribute to the water quality of the Chapman River and other rivers in the region that also need careful management. These are identified in Figure 11.1 as a zone delineated 30m each side of the stream zone centre line. In urban areas west of the Range the principles of “Better Urban Water Management<sup>48</sup>” should be applied in the design of urban developments incorporating these streamlines. In the non-urban areas the ongoing management of these small stream zones should ensure the stream zone is stable and any erosion that is present is repaired.

#### 11.7 PRIORITIES FOR ACTION

Based on the above general assessment of the condition of the landscape in the Range the priorities for action are:

- ☐ Fence off and stop stock grazing on slopes that have significant areas of vegetation as shown in Figure 11.5 and 11.6.
- ☐ Control surface water run-off into the major erosion points shown in Figure 11.1.
- ☐ Stabilise the major erosion points (e.g. batter the banks and construct interception weirs etc) on the major erosion points shown in Figure 11.1.
- ☐ Fence off, stop stock accessing and replant the major erosion points shown in Figure 11.1.
- ☐ Link up the high quality vegetation areas shown in Figure 11.4 with plantings as shown in Figure 11.5.
- ☐ Infill vegetation and continue to control erosion through the stabilisation and landscape plantings as shown in Figure 11.6.

#### 11.7 WORKING TOWARDS THE FUTURE PARK

As discussed in Section 13, the creation and development of a Park will take a considerable amount of time and will depend on resources being available to add land, install infrastructure and set up governing frameworks. It is important that while these resources are being accumulated the land management continues to improve and the whole region moves towards the common objective of creating a Park.

Existing landowners in and around the Range Precinct, and interested community members should be supported and resourced to improve and repair the landscape in accordance with this Plan. Factors that will need to be considered while working towards the creation of a Park will include:

- ☐ As resources become available deciding whether to invest in improving short term management or in long

48 WA Planning Commission Better Urban Water Management 2008

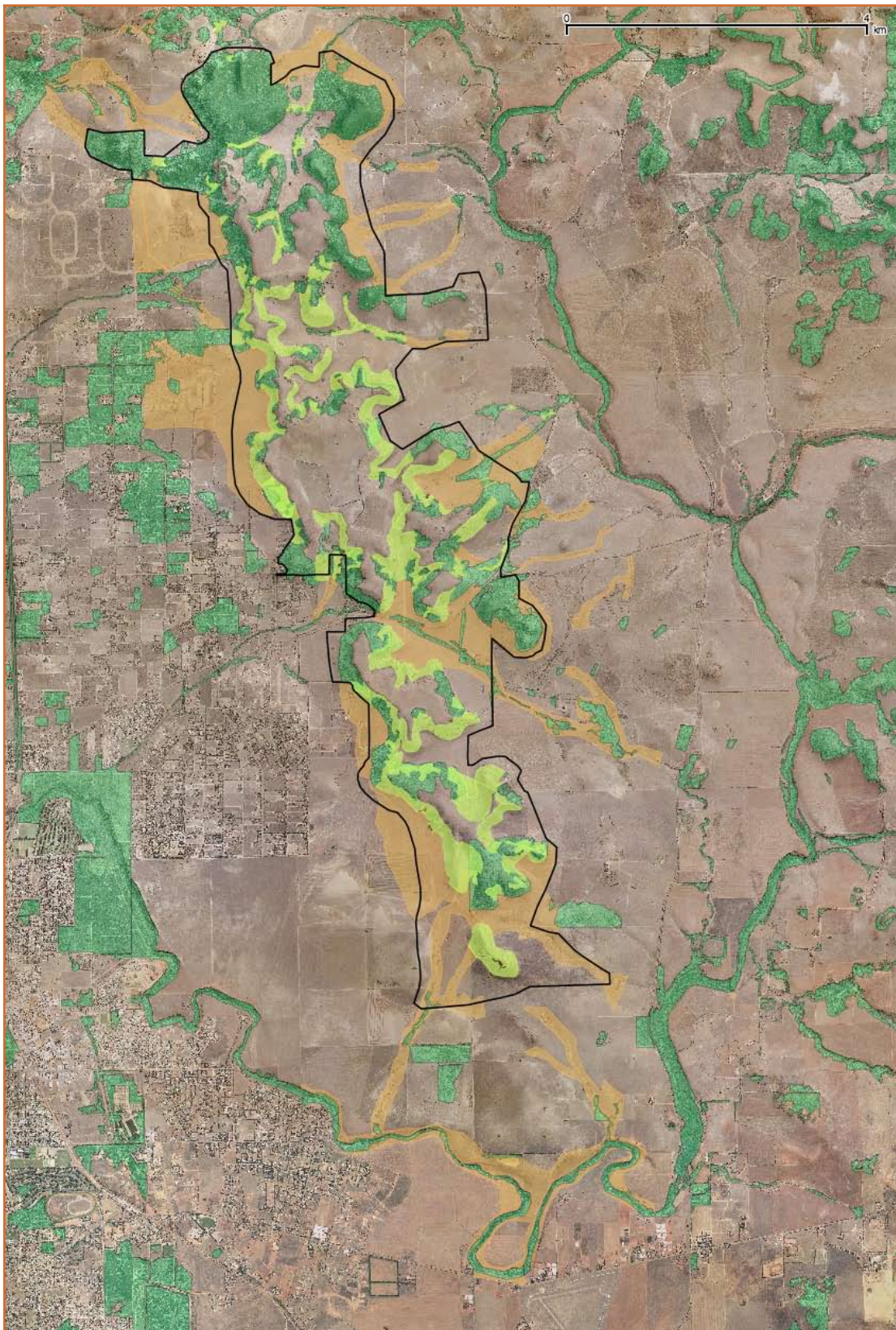


Figure 11.6 Areas of revegetation with the primary objective of improving visual amenity and stabilising the landscape

- Range Precinct boundary
- Existing vegetation updated mapping by Department of Agriculture and Food WA 2008
- Blocks of vegetation to enhance existing vegetation and add new blocks that approximate pre-European vegetation communities
- Areas of revegetation with the primary objective of improving visual amenity and stabilising the landscape

term addition.

- Prioritising the remediation works across the Range Precinct and balancing diverse demands, including the willingness of the land owners to be engaged in ongoing management, the ecological/stability value of particular parts of the landscape, the available resources etc.
- Using cost benefit analysis to determine real impact on existing owners from changes to land management practices on certain parts of their land, e.g. the real income loss that will be incurred by fencing off slopes.

#### *Recommendation 11.1 Create an NRM Group to repair the landscape*

*This Plan sets the objective that, over time, the landscape will be revegetated in line with the illustrations in Figures 11.4 – 11.6, erosion points as shown in Figure 11.1 will be stabilised and there will be overall better management of water in the landscape.*

As reflected in other recommendations the Local Authority and NACC<sup>49</sup> will assist the landowners in and around the Range, and interested community members, to form a Natural Resource Management group to implement the environmental restoration components of this Plan as described above. In creating this group the Local Authority and NACC will have to address issues relating to:

- Decision making structures and the interface with the Establishment Group described in Section 13 that will be overseeing the potential creation of the Park.
- Setting priorities and methodologies for restoration works.
- Costs and benefits of works.
- Sourcing and allocation of funds.
- Cost sharing arrangements.
- Level of engagement wanted by individual landowners in this process.
- Community involvement and assistance.

#### *Recommendation 11.2 Better Urban Water Management Adoption*

*The Local Authority will adopt the WAPC's Better Urban Water Management as a major design guideline for future subdivisions west of the Range to support better management of water in landscape in urban areas to the west of the Range*

#### *Recommendation 11.3 Increase amount of vegetation cover in future urban areas*

*The Local Authority will support increasing the amount of vegetation cover in future urban areas west of the Range by requiring that future urban development recognises and accommodates:*

- *the need to create public open space or restrictive covenants around stands of native vegetation at the subdivision stage.*
- *the need for new areas of native vegetation to link existing vegetation areas and particularly linking vegetation corridors back to the Range.*
- *vegetating stream lines particularly where they provide opportunity to produce the dual benefit of linking vegetation corridors and stabilising stream zones.*



Figure 11.7A Examples of erosion processes adjacent to Yanget Station east of the Moresby Range

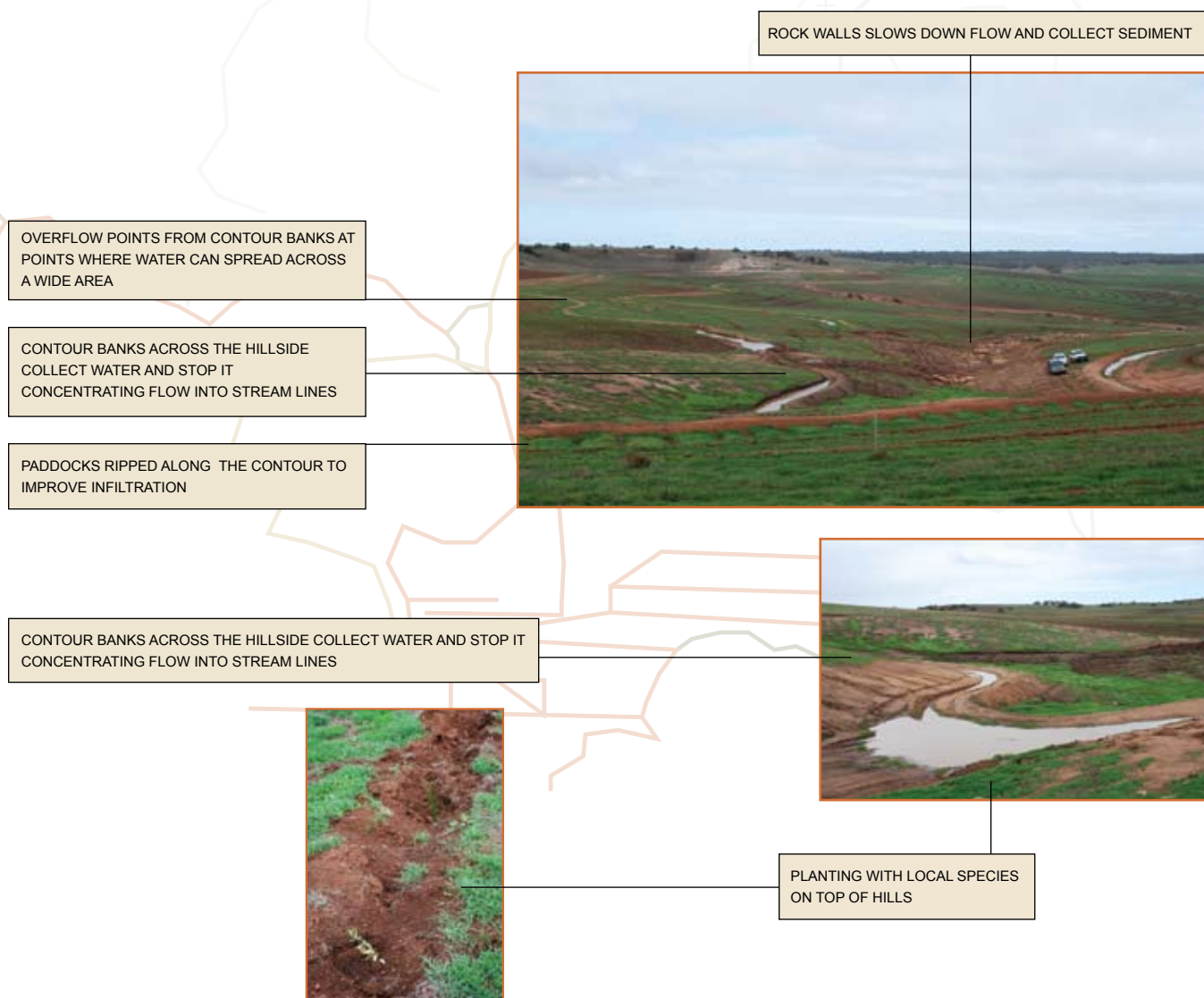


Figure 11.7B Examples of erosion repair at Yanget Station east of the Moresby Range



Creek line vegetation White Peak road



Well vegetated faces of the Range



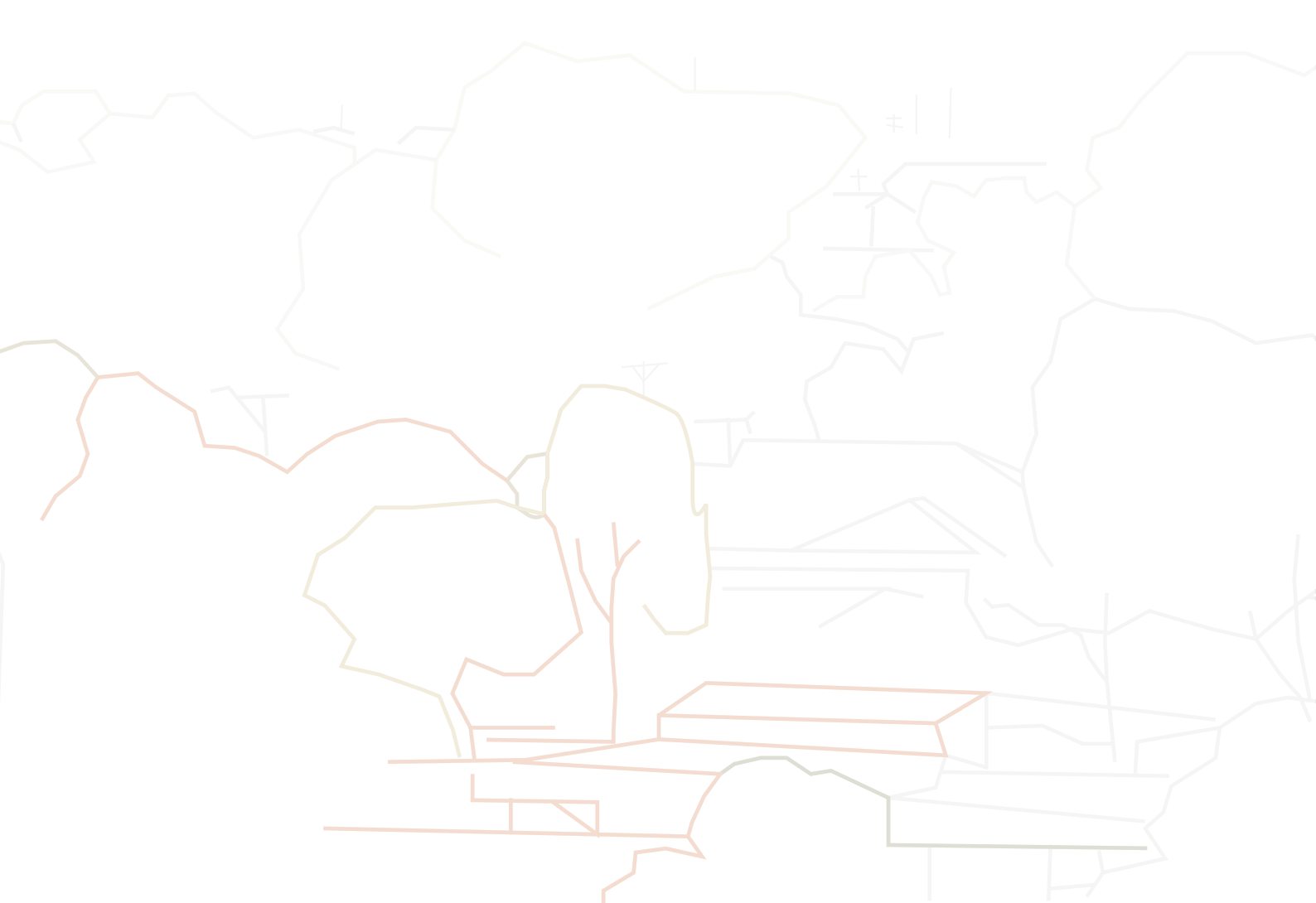
York Gum on the lower slope



Looking east from the North West Coastal  
Highway around Buller River

Figure 11.7C Examples of bush land in good condition in the northern parks of the Range

- *using roads as frontages to native vegetation areas rather than having property boundaries backing onto such areas.*
- *using innovative design of lots, road reserves and access to promote better protection and enhancement of bush land areas.*



## 12 Cultural Values, Appearance and a Park

The Vision for a Park and this Plan, **People finding new ways to be in the Landscape** is underpinned by the recognition that the Range is so significantly ecologically compromised that it presents a major opportunity for changing how the Range looks, how it operates ecologically, how people live around the Range, the style of buildings in the foothills, and how people visit and experience the Range. The community consultation identified that the Range should look “more natural” and “more green and bushy”, and indicated that appearance of human activity<sup>50</sup>, should be “improved”, “look more acceptable” and “fit in”. These concepts are strongly linked to cultural values but hard to define in practical circumstances.

This Section<sup>51</sup> maps how cultural values relating to the human activity in the landscape have changed over recent time and sets some broad criteria for determining the acceptability of the appearance of various parts of the landscape into the near future. It must also be acknowledge in as much as cultural appreciations of the landscape have changed over time they will continue to change into the future.

### 12.1 CULTURAL VALUES

Today's Australian culture has very little connection with how Aboriginal people appreciated or related to the landscape, other than recognition that the Aboriginal people had a far stronger merging of the boundaries between landscape ecology, economics, family structures and spirituality than is held by Australian people of European ancestry.

The European Australia story started with a strong intent to convert the Australian landscape into a form that resembled European landscapes and to accommodate European agriculture, economic and social values. As has been discussed in Section 11 this has produced major ecological consequences for the Moresby Range. This whole scale modification of the landscape into an approximation of Europe started almost immediately after the arrival of permanent European settlers in the Geraldton region and continued at an ever increasing pace until the 1980's. Up to the 1980's there was generally a cross-community assumption that there was no major problem with what was happening in the landscape other than in a few locations where some erosion was occurring. While the Soil Conservation Act was enacted in 1945<sup>52</sup> it was only in the late 1970's and early 1980's with the rise of the environmental and Landcare movement a new aesthetic appreciation of the landscape began to emerge.

This new aesthetic was influenced strongly by people such as Ian McHarg and others<sup>53</sup> who informed a whole generation of ecologists and landscape architects, many of whom trained in the 1970's and 80's. This 1980's landscape aesthetic highly valued the idea that “natural” equated, particularly when considering structures such as roads, buildings and powerlines, to not seeing evidence of human activity in the landscape. In this aesthetic, evidence of human presence was generally seen as being “bad” and “unnatural”. Consequently human built structures should be reduced in size, obscured, hidden and camouflaged so that they do not impact on the “naturalness” of a scene.

This 1980's landscape aesthetic considered landscapes dominated by pre-European ecosystems as being highly desirable and “natural”, but also considered some highly modified ecosystems to look “natural”. For example, a matrix of farmland with smooth transitions into bush land, reminiscent of English country estate landscapes designed by Lancelot Brown<sup>54</sup>, was considered to look “natural” even though the original Australian ecosystems were highly modified by European agriculture and were nothing like pre-European ecosystems.

50 Houses, agricultural land, masts, roads etc

51 MRMS Rec 43, 44

52 Government of Western Australia SOIL AND LAND CONSERVATION ACT 1945

53 Mc Harg's classic books include “*An ecological method*”, 1967 “*Design with Nature*” (1969). Other writers include Lawrence Halprin ‘*RSVP Cycles*’ and projects; Garret Eckbo *Landscape for Living*’ and his other projects; Rachel Carson “*A Silent Spring*”(1962) and Kevin Lynch “*Site Design*” (1984)

54 Also known as Capability Brown. For more information see Turner, R. *Capability Brown and the Eighteenth Century English Landscape*. New York: Rizzoli, 1985. ISBN 0-8478-0643-X, ISBN 0-297-78734-9, ISBN 1-86077-114-9; 2nd edition, Phillimore, Chichester, 1999

## 12.2 A NEW UNDERSTANDING OF THE LANDSCAPE

Even though this 1980's aesthetic is still very well supported, there is a new landscape aesthetic emerging that has its roots in sustainability. Today landscape architecture theorists<sup>55</sup> are presenting an understanding of landscapes that recognises that:

- ecosystem function underpins all of life. While having a comprehensive, representative and adequate reserve system preserves examples of ecosystems, this approach is inadequate to support the continuation of the earth's functions on which we all depend.
- most landscapes and ecosystems are extensively modified by human activity and therefore are not "natural".
- ecosystems are continually changing and ecosystem evolution will continue to change landscapes. As the changes in the world's climate accelerate landscapes will change dramatically.
- humans have, and will continue to, intervene in the landscape and can make active choices about ecosystem health and what landscapes should look like.
- human intervention does not necessarily equate to producing a negative impact they can choose to do good.
- human artefacts can enhance the aesthetic appreciation of a landscape and do not necessarily need to be hidden, camouflaged or obscured.
- form and function need to be blurred, often the most objectionable human structures are objectionable because they look ugly not because of their inherent function.
- there is a need for increased linkages and integrity between human activities and what occurs in the landscape. The NIMBY<sup>56</sup> and LULU<sup>57</sup> approach to human infrastructure by many individuals and communities is often selfish and hypocritical.
- humans will increasingly have to see themselves as intimately linked with their ecosystem context and with each other. The highly individualistic attitude of "I can do what I like in my own back yard" will have to change if humans are going to prosper into the future.
- most human actions in the landscape will have unforeseen outcomes, however this should not be a reason for not acting. At the same time the ability to easily reverse and take a new direction needs to be built into development projects wherever possible.
- aesthetic acceptability needs to be informed by both artists and designers and the community, not just the opinion of a bureaucratic or academic elite.

55 For example - Motloch, J.L. Introduction to landscape design Wiley 2000, Swaffield S.R. Theory in landscape architecture, University of Pennsylvania Press 2002, Treib, M. Modern Landscape Architecture MIT Press 1994, Carol Burns, Kristina Hill, Site Matters, James Corner (various), Ann Whinston-Spirm The Granite garden" (1984), Kaplan, R; Kaplan, S and Ryan. R.L With People in Mind". See also *Issues of preference and judgement Expert judgement versus public preference*, and *Review of Existing Methods of Landscape Assessment and Evaluation* ©2009 The Macaulay Land Use Research Institute. All rights reserved.

56 Not In My Back Yard

57 Locally Useful Locally Unwanted

## 12.3 MAKING THE CONCEPTS PRACTICAL

During the community consultation the cultural values about appearance and the landscape appeared to sit either with the 1980's landscape aesthetic, or with the new emerging aesthetic described above in Section 12.2. As a generalisation, the community considered that high quality examples of either the “natural”, “hidden” or “camouflaged” approach of the 1980's, or the new sustainability aesthetic were both acceptable. There was uniform concern with the area between these two aesthetics that was characterised by ugly and poorly designed and placed structures.

Examples of these two ways of appreciating the appearance of human activities in the landscape are shown in the table below.

Appreciated from a 1980's perspective	Problems with...	Appreciated from a sustainability perspective
<b>Large areas of pre-European bush land ecosystems</b>		
Untouched landscapes limited human access	Obvious buildings, roads, structures seen on sky lines, large bands of cleared bush along infrastructure routes, fire breaks, mine haul roads and survey lines	Untouched landscapes limited human access
Walking access, roads to provide vehicle access, power lines because of necessity	Massive vehicular access sealed roads straight lines, elevated power lines	Walking access, innovative access options but not based on the assumption that everybody has to drive a car to get there, renewable energy provides localised power supplies
No visible buildings	“Off the shelf” structures “been done before and works elsewhere” designs	Architecturally excellent buildings, skilfully sited facilities nestled into the landscape
<b>Large areas of mixed agricultural and bush land ecosystems</b>		
Rolling green plains of crops and pastures.	Completely cleared monoculture farm land, landscape crisscrossed by infrastructure	Broadacre agriculture, perennial pastures and tree crops. Infrastructure collocated allowing integration of service corridors
Well vegetated stream lines, wetlands and road verges linking back into large bush land areas	Bare paddocks, no shade cover, stressed stock, overgrazing, clear evidence of erosion processes, water points degraded with animal walk trails, cleared road verges	Large areas of good quality pasture, adequate shade, plantations of wind break trees, water points protected, evidence of good water management, wetland areas
Infrastructure (fences, tracks etc) in good condition but placed for ease of installation following straight lines across the landscape. Buildings settled into the landscape.	Infrastructure (fences, tracks etc) in disrepair, buildings on skylines and dominate the landscape, large cleared areas, evidence of erosion and salination	Farming infrastructure minimised but brings order to the landscape, buildings settled into the landscape

Appreciated from a 1980's perspective	Problems with...	Appreciated from a sustainability perspective
Buildings reflect historic character of the farming culture, nestle into the landscape	Suburban style buildings dropped into the landscape, colours do not match the landscape, buildings placed in prominent places in the landscape with no consideration of context or their impact on landscape, large cleared areas around buildings	Innovative architecture that explores and interprets the landscape, use of sustainable building materials
Evidence of well run agricultural businesses	Business activities push their negative activities onto the "commons" and neighbours e.g. allowing stock to stray into bush land, agricultural chemicals and/or erosion runoff allowed to enter creeks rivers, wind erosion blowing onto neighbours farms, smoke from burning stubble impacts on the region	Evidence of experimentation and innovation in agricultural activities, alternative economic land uses being developed, evidence of past mistakes being corrected
<b>Urban areas in the foothills</b>		
Road network designed to provide easy access for cars, extensive use of cul-de-sacs to create safe environments	Large subdivisions rolled out over areas using curvilinear styles of design to maximise lot yield, extensive use of cul-de-sacs to minimise construction costs, use of cars imperative for survival	Integrated transport networks emphasising access for all forms of transport bikes, walking, public transport
Work, schooling, commercial and community activities provided reasonable easily accessible by car	No services, long drives to service centres	Maximise locally available services, cars useful but not essential for daily living
Vegetation on verges, foot-paths provided	Roads dominate the landscape, cleared road verges, no foot paths	Safe multiple use transport networks merge into the vegetated landscape
Large blocks in bush land areas with sensitively located building envelopes, services provided through large infrastructure e.g. powerlines etc	Bush land rolled over and the landscape flattened and retained by limestone block walls	Cluster developments and site responsive designs, bush land retained and enhanced, urban agriculture and water management central to the design
<b>Housing and buildings</b>		
Blending, camouflaged, hidden, behind trees, neat gardens with lawns creating an English Park feeling	Obvious, does not relate to its context, constructed only to suit its owners opinions, houses located in prominent places, on ridges and hilltops	Houses in exposed locations are iconic, explain and interprets the landscape
Houses situated large on blocks surrounded by gardens, all blocks of similar size	McMansions – large houses built on small blocks with the objective of creating a large visible impression of wealth	Higher density housing clustered around local urban centres, lower density away from centres

Appreciated from a 1980's perspective	Problems with...	Appreciated from a sustainability perspective
Suburbs generally made up of similar design houses	No integration along streets between housing styles	Overall theme in housing design and colours but variations in style Integrated streetscapes
Colours reflect current tastes and orientate towards greens and browns	Colours selected on owners taste alone	Colours borrow from the palate seen in the landscape

#### *Recommendation 12.1 Developing design guidelines for the Range and foothills area*

*The Local Authority will require developments/subdivision to prepare design guidelines in consultation with the community and based on the above analysis of acceptability to guide developments in and around the Range.*

### 12.4 LARGE STRUCTURES IN THE LANDSCAPE

There has been considerable discussion as is reported in Section 1, within the community consultation about placing wind turbines on the Range and the ongoing presence of the existing communication towers. Within the 1980's landscape aesthetic these features would probably be considered an unnatural intrusion on the landscape because they were evidence of human activity despite them having minimal ecological impact where they are located. In a sustainability landscape aesthetic the acceptability of these large structures may be viewed neutrally or positively by the community, because the greater good provided by their presence (renewable energy, communications) outweighs any perceived impact on the visual quality of the area.

#### *Recommendation 12.2 Assess infrastructure projects taking into account community benefit*

*The assessment of the acceptability of wind turbines or new communications towers in the Range is considered to be primarily a matter of aesthetics rather than ecological impact. It is recommended that the assessment of such projects should take into account community benefit and the community understanding of aesthetics and be evaluated on a case-by-case basis.*



## 13 Implementation and Governance

It is anticipated that the potential creation of a Park will be a complex process occurring over a long time frame. Three major issues that arise from this process are, firstly the implications for the affected landowners, secondly the planning framework needed to create a Park, and thirdly, developing appropriate governance and implementation models. These models will have to recognise and accommodate some significant issues including:

- Managing the fragmented and alienated parcels of land created as a result of the implementation of this Plan and other planning and development processes affecting this area.
- Despite the anticipated long implementation process there is a strong likelihood that some opportunities to start the creation of a Park could emerge in the near future.
- Any land added to a Park must be through fair and equitable business arrangements with the landowners.
- Ensuring landowners and the community are actively engaged in a Park project and have ample opportunities to be involved.
- Managing the transition from private land to public land, and the negotiations that this will involve
- Gaining resources to create a Park and to operate it into the future.
- Be appropriate to the context of Western Australian culture.

### 13.1 IMPACT ON LANDOWNERS

The implementation of this Plan may, ultimately, bring changes to both the boundaries and tenure of land within and around the Range Precinct. The consultation process identified three main areas of concern by the affected land owners. These were:

*Clear process* – The community wanted to know how and when the changes would unfold

*Personal impact* – the plan provides for the orderly and coherent use of land in the Study area. Depending on how it is perceived, some of the landowners consider that they have “won” or “lost” as a result of the Plan either because they will not be able to develop land to the extent they hoped, or alternatively they consider their lifestyle will be diminished by the changes. The challenge will be to move beyond win/lose and find outcomes that are realistic and acceptable for all parties.

*Property Values* - in line with the above point there is concern that property values will be decreased.

In response to these issues the following points are made:

- Most of the land in the Range Precinct, except for the Wokatherra Nature Reserve, is privately owned and the landowners should receive a fair and reasonable exchange for placing their land into a Park if they choose to do so. This exchange may involve a mix of purchase, land swaps and development opportunities, and would be determined on a case-by-case basis. Land would not be acquired ahead of landowner agreement as it is considered inappropriate for State or Local Government acquisition to be done before landowners are ready for such action and legislative mechanisms in place.

- The vast proportion of the land proposed for a Park is zoned as General Farming and would be valued as such in any exchange negotiations. This Plan also provides a framework for realising development opportunities for some of the lands outside the Range Precinct. The added financial benefit that will result from development of land will become part of the exchange negotiations as described above.
- This Plan provides a broad framework in which the negotiations for possible acquisition of land for a Park can be worked through with the landowners. In some cases it may be better if landowners work together e.g. subdivision requiring coordination across multiple properties, in other cases they may choose to negotiate individually.
- Nearly all the land in the Range is privately owned, and in this context, private landowners can conduct themselves as they choose in accordance with common law and legislation.
- The landowners should be provided with support for Landcare activities (planning, fencing, planting), which would allow them to continue to manage these areas to improve their ecological condition and visual amenity with particular emphasis on restoring the vegetation on the Range and controlling erosion in the context of an agreed NRM plan. This is discussed further in Section 11.
- The landowners are encouraged to recognise that they are owners of a resource that has iconic value for the whole community and they can contribute to the greater good of the people of the region by managing their lands within the overall objective of making the faces of the Range looking more vegetated and natural.
- There may be opportunities for interim arrangements where landowners can be provided with technical and business advice to develop alternative businesses on their land to create income streams that could lead into ongoing businesses, see the discussion below.

### 13.2 THE PLANNING FRAMEWORK

This Plan creates a resource for all the community that is unique, inclusive and innovative in its scope and extent. Creating a Park is a long term project that needs both a legal and administrative framework in which to occur. The administrative framework is discussed in the next section.

This Plan has been prepared within the overarching Moresby Range Management Strategy that has been endorsed by the Western Australian Planning Commission. The Management Plan makes numerous recommendations about future land uses and strategies, which will, in turn be placed within more detailed planning documentation, such as local planning strategies, local planning policies, Master Plans etc. There will be opportunity for the public to comment at each stage in process as it unfolds over time. In this context the protection of landowners' common law and legal rights have a long and detailed legal and legislative precedent.

### 13.3 ESTABLISHMENT AND OPERATIONAL STRUCTURES

There are two distinct but overlapping development phases that will be needed to bring a Park to full operation. These phases are:

*Establishment Phase* – setting up a Park, organising arrangements with land owners, changing tenure of the land, modifying Planning Schemes and Strategies, creating new titles, planning and creating the Park management structure, finding funding streams, identifying and developing business opportunities, building Natural Resource Management activities and engaging the community in the Park.

*Operational Phase* – running and developing a Park so that it is continually improved over time and responds to the

community's needs and requirements.

A range of characteristics needed for an organisation that could oversee the Establishment and Operational Phases, are listed below:

- ☐ *Understand the Vision* – able to keep a focus on the long term vision of what a Park could become.
- ☐ *Independent* – not subject to one political or bureaucratic agenda.
- ☐ *Representative* – incorporates the interests of the community, State and Local Government and users in its organisation.
- ☐ *Transparent* – its operations are open to public scrutiny.
- ☐ *Engage the Community* – the community is involved in the ongoing day to day operations and have positive input to the future of the organisation.
- ☐ *Able to hold (organise) titles / vestings* – as land is transferred between private and public ownership there will be occasions when land will have to be held pending future developments e.g. if one landowner wants to sell but an adjacent landowner does not.
- ☐ *Able to raise and manage capital* – in the event that major capital is available from various sources it is foreseeable that land could be purchased, the part identified for the Park excised and the remainder allocated for future development once planning changes have occurred and the market conditions are right. This will require that the organisation is able to manage capital.
- ☐ *Organise / undertake planning and development* – while this Plan sets a framework for the future development of the area there is another, more detailed level of planning and development that will be needed to make a Park operational. As in the example above if the organisation/agency purchases parcels of land not required for a Park it may be appropriate that it is able to organise the necessary planning and development processes to generate an income stream from subdivision.
- ☐ *Organise / undertake management of the landscape* – in the long term a Park will need management and it is likely to contract out part or all of its management.
- ☐ *Business focus in its operations* – the organisation needs to understand economic realities and be able to respond to market needs, recognise opportunities and operate flexibly.
- ☐ *Capacity for enterprise development* – part of the consideration of generating income streams is that the organisation/agency could be involved in enterprise development. For example, if wind turbines were seen as being an appropriate use of the Range then the organisation/agency could enter into an enterprise agreement with a renewable energy supplier to allow siting of the turbines on the Range.
- ☐ *Established organisational structures* – must have management policies, organisational structures and administrative processes in place, or be able to create them.
- ☐ *Track record* – a track record in projects such as this.
- ☐ *Creative and Intuitive* – should be able to introduce a sense of wonder and spiritual connection into the activities and appearance of a Park and its surrounds.
- ☐ *Dynamic* – should be innovative, and shape the future of the community.

## 13.4 POSSIBLE IMPLEMENTATION AND GOVERNANCE STRUCTURES

Six possible structures, or combinations of these that could change over time as the Park developed, were considered. These were:

*Local Government* – the Shire of Chapman Valley in combination with the City of Geraldton-Greenough or whatever local government structure may emerge into the future

*Western Australian Planning Commission/Department of Planning*<sup>58</sup>

*Department of Environment and Conservation*<sup>59</sup>

*An Independent Authority* e.g. Botanic Gardens and Parks Authority, Rottnest Island Authority<sup>60</sup>

*Representative Community Coordinating Management Group/Board* – a combined community stakeholders management committee that develops and implements management plans. Each stakeholder group brings its resources to the project of creating the Park, the role of the Group/Board is to coordinate activities. Many Landcare/NRM groups operate on this model.<sup>61</sup>

*A Not-for-Profit Business Alliance* – a structure tailor-made for the specific circumstance at the Moresby Range. An example of this is the Gondwana Link Project, an alliance of Greening Australia, Bush Heritage Australia, Green Skills, The Nature Conservancy, Fitzgerald Biosphere Group and the Wilderness Society, volunteer groups and corporate sponsorship, which has been created to link provide a biodiversity corridor across the South West of WA that crosses a wide range of land tenures.<sup>62</sup>

## 13.5 COMPARISON OF ORGANISATIONAL STRUCTURES AGAINST CRITERIA

Each of the structures identified above were examined against the criteria listed in Section 13.1. A summary of this assessment is provided below.

*Local Government* - theoretically, local government has the capacity to set up a Park similar to the existing recreational reserves for which they have management orders and manage the transitions and manage a Park over the long term. It has the capacity, and is probably best placed, to manage the transition of land uses around a Park and long term cross boundary issues. Local Government is also highly democratic, has high levels of community representation and the ability to easily consult with the community. Unfortunately Local Government has a record of doing a poorly coordinated and haphazard job of managing natural/parkland areas, not resourcing or following management plans and allowing ongoing degradation of bush land areas. It also has a mixed record for interacting with its community.

The main challenge in the Establishment Phase for Local Government would be to maintain the continuity of vision and the focus of the day-to-day operations to see a Park through to its final creation. The risk is that the project will flounder if the vision is lost and funds for a Park become allocated to other projects that have higher, short-term priorities. The long-term success of a Park will be dependent on it becoming a vibrant, dynamic and continually improving place. Local Government may not have the capacity to produce this level of focused management and planning with this size of natural resource.

*Department of Planning / WAPC* - DoP's strengths lie in its capacity to provide a land use planning framework, i.e. Region Scheme, in which a Regional Park can be established. However, the WAPC/DoP are only interim

58 <http://www.dpi.wa.gov.au/>

59 <http://www.dec.wa.gov.au/>

60 <http://www.bgpa.wa.gov.au/> <http://www.rottnestisland.com/en/default.htm>

61 <http://www.nrm.wa.gov.au/>

62 <http://www.gondwanalink.org/>

administrators pending transfer to an end manager such as DEC or Local Government. The WAPC/DoP role is to plan and acquire land for regional open space within Regional Planning Scheme areas, which are currently Metropolitan Perth, Peel and Greater Bunbury. A Regional Planning Scheme does not exist for the Geraldton/Mid West Region at this time. While DoP has skills in overseeing the creation of a Park and administering the arrangements with land owners during the Establishment Phase, the absence of the legislative and administrative structure provided by a Regional Planning Scheme will reduce the capacity of WAPC/DoP to facilitate this process.

*Department of Environment and Conservation* - DEC's interests are biodiversity conservation, linking recreational opportunities and managing tourism icons such as the Pinnacles, Kalbarri and Shark Bay. DEC does not want governance of a Park and, overall, the DEC role is not well understood or appreciated by the local community. During the Establishment Phase DEC's major contribution could be in providing technical assistance in the detailed planning for a Park however the Department's legislative and policy focus on nature conservation and recreation would mean that it would be significantly constrained in supporting the Vision for a Park. In the long-term operational phase DEC may be an appropriate organisation to be contracted to manage some sections of the day-to-day operation of a Park.

*Independent Authority e.g. Botanic Gardens and Parks Authority, Rottnest Island Authority* - the concept of an Independent Authority has many attractive characteristics and synergies with the proposed Park particularly as its structure can be tailored to its specific requirements. The Steering Committee considered that an Independent Authority is probably the most appropriate model for the Operational phase of a Park however the major impediment to this is that it needs a considerable amount of time to develop the structure of the model and to prepare a legislative framework in which it can be created, as well as resources.

*Representative Community Coordinating Management Group/Board* – A community driven approach generally produces very good engagement of the community particularly in the early stages of a project, however these structures are often not good at the administrative changes required to bring a Park into existence or manage the business side of its long term development. Consequently such a structure was not considered appropriate for creating a Park. The recommendation in Section 11 that an NRM group be created to progress the management of ecological repair of the landscape is an appropriate part of the transition strategy.

*Not-for-Profit Business Alliance* - A NFP business alliance approach generally produces very good engagement of participants with great flexibility to develop creative approaches and solve problems. Where participants can bring strong linkages from their organisations into the project, major initiatives can be created very quickly. The major challenge is finding people who can share a detailed vision of what the project is about over long time frames, without the supporting institutional framework provided by, for example Local or State Government. There are also challenges associated with meshing the interests of agencies, community and business orientated organisations engaged in the one project.

## 13.6 MANAGING THE ESTABLISHMENT PHASE

The Steering Committee realised that creating a Park is a unique process in Western Australia and requires a number of major transitions including working with the landowners, designing and administering the changes, sourcing finances, developing detailed plans for specific areas and many other activities.

None of the models considered above fitted all the criteria and consequently the Steering Committee proposed to use a combination of these models during the Establishment Phase. The Establishment Phase will need to be supported and overseen by an appropriate body that is inclusive, representative of all sectors of the community and has established administrative, legal, planning and financial structures. The Steering Committee concluded that Local Government is best placed to provide this sort of executive and administrative support to facilitate the creation

of a possible Park during the Establishment Phase however it needs considerable support to undertake this role.

### *Recommendation 13.1 Oversee the Establishment Phase*

*The Establishment Phase will need general and inclusive oversight and it is recommended that the Local Authority:*

- ☐ *seeks endorsement of this Plan and its recommendations by the agencies and groups represented on the Steering Committee and*
- ☐ *create a new Supervisory Committee to oversee the establishment of a Park*

### *Recommendation 13.2 Local Government provides executive support*

*At the appropriate time Local Government will provide executive support for the creation of a Park through:*

- ☐ *providing the policy, administrative, and organisational support for the creation of a Park*
- ☐ *undertaking the necessary negotiations with land owners willing to create a Park*
- ☐ *working with State and Federal agencies, industry and other groups to source the funding to create and operate a Park*
- ☐ *encourage the creation of, and support, the NRM Group referred to in Recommendation 11.1*
- ☐ *supporting the Not-for-Profit Business Development Alliance to oversee business development within a Park*
- ☐ *creating and supporting the Landowners Group referred to in Recommendation 13.4*

### *Recommendation 13.3 Improving Local Government's capacity*

*Local Government will improve its capacity to undertake the creation of a Park by:*

- ☐ *incorporating the vision for the creation and management of a Park into its Strategic Plan and allocate resources accordingly*
- ☐ *translating the intent and recommendations of this Plan into its various planning strategies, planning scheme amendments, land use controls etc*
- ☐ *improving its capacity in sustainability planning and management by employing staff with skills in these areas and developing organisational/management policies to reflect this intent*
- ☐ *creating a specific position or allocating resources within its operational structure to provide executive support for the creation of a Park*
- ☐ *developing business cases and branding package to attract long term funding for the project*

The components of the Establishment Phase are shown in Figure 13.1 and Table 13.1 and are discussed below.

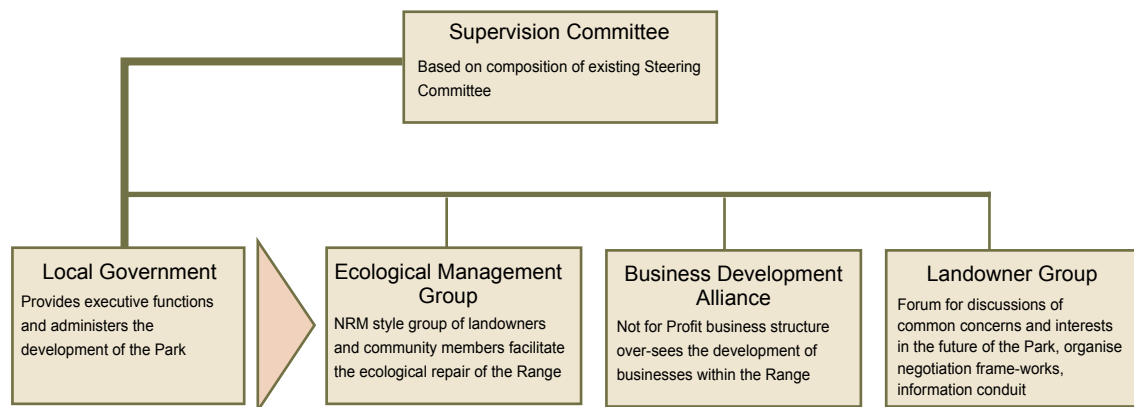


Figure 13.1 Operational Structure for the Establishment Phase

It should also be noted that the timing shown in Table 13.1 is purely indicative and activities may evolve at a different rate to those shown in the Table. The components of the Table are:

**Objectives** – identifies what will be achieved during each stage of the Establishment Phase

**Administration** – is proposed to be done by Local Government under the guidance of the Supervisory Committee

**Ecological Management** – will be managed by an NRM Group comprising landowners who wish to be involved and interested community members. It is anticipated that, over time, they will develop local projects that move the landscape towards the overall objectives described in this Plan.

**Business Development** – it important that business initiatives that could use the assets of a Park grow and develop with a Park and mesh with the other activities. These would also provide an income stream for the ongoing operation of a Park. Using this model requires that:

- a set of criteria will need to be developed to describe the characteristics of businesses that would be suited to a Park e.g. repair the environment, provide local employment, broad community benefit, fit the Vision of the Park, non-polluting. These characteristics however would not closely proscribe the *type* of business, leaving opportunity for the business community to identify innovative and creative initiatives that fit and support the Vision of the Park
- many of these businesses will be unique and be dependent on specific locations within the Range
- businesses may need support through a business incubation arrangement with organisations such as the Business Enterprise Centre
- businesses may need protection from competition while they are developing

- conversely creating monopoly situations should be avoided

It is proposed that these businesses would be overseen by a Not-for-Profit Business Alliance. While the businesses that operate in the Park would be run for profit by their owners, part of that profit would be passed through the NfP Alliance to fund the operation of a Park. A NfP business structure will bring the innovation and abilities of the business community to the business operations of a Park while at the same time firmly indicating that the Park exists for community benefit.

#### *Recommendation 13.4 Creation of a Landowner Group*

*To provide a forum where landowner concerns can be discussed and opportunities developed it is proposed that a Landowner group will be facilitated by Local Government to:*

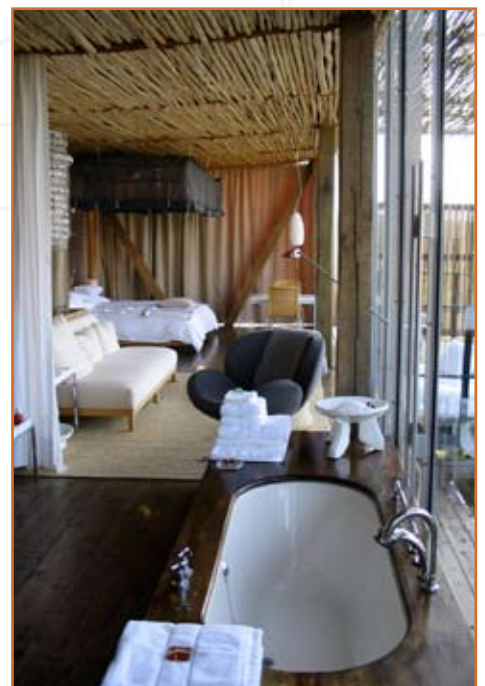
- *create a forum in which the many issues associated with creating a Park, and its impact on landowners, can be discussed*
- *develop an agreed framework in which negotiations over the addition of land to a Park can be considered*
- *provide opportunities for landowners to identify business opportunities that could be developed in a Park*
- *assist landowners to work together on land development options where this Plan requires cooperation of landowners to achieve a specific outcome*

### 13.5 COMMENCING OPERATIONS

As has been discussed previously there are many activities that have to come together to create a Park. There are a number of these that can be commenced immediately and do not require land to be available to proceed. These actions can include Local Government implementing recommendations to create the administrative framework for a Park, forming the NRM and Landowner Groups, beginning to identify potential funding sources and working with the business community to identify potential business opportunities that could be developed within the Range.

Table 13.1 Major Implementation Stages of the Park

	Objectives for each stage	Administration <i>Local Government</i>	Ecological Management  <i>NRM Group</i>	Business <i>Not-For-Profit</i>  <i>Alliance</i>	Landowners  <i>Landowners Group</i>
Establishment Phase  Creating Frameworks  Years 1 – 3  Overseen by Supervisory Committee	Create the forums for discussions between landowners, community groups, business interests over the future of the Park  Create administrative structures  Create policy  Source funding  Begin discussions about adding land for the Park with the landowners	Establish executive procedures and activities  Undertake detailed Planning  Begin discussions with landowners about what they want out of the Park project  Develop indicative budgets  Develop policy to guide the creation of the Park	Form landowners and community group for repairing the landscape  Review priorities for action  Decide and commence initial projects	Develop structure for Not-For-Profit Business coordination  Develop priority business criteria to guide business interest in the Park  Create a business incubation framework in association with Business Enterprise Centre	Form landowners group to work with Local Government to develop process for adding land to the Park and an agreed framework for negotiations.  Interested landowners begin negotiations with the Local Government
Establishment Phase  Development  Years 4 – 10  Overseen by Supervisory Committee	Finalise policy legal and administrative framework  Business models are established within working budgets  Grants stream developed  NFP business develops a cash flow  Ongoing repair of the landscape  Land addition negotiations are progressing  Land required for Central Facility now in public ownership, development of the Facility commences	Executive activities are continuing  Detailed planning of Central Facility  Ongoing negotiations over land  Research on Operational Phase administrative structure commences  Contracts to deliver services are being developed	Landowners and community repairing the landscape  Larger projects undertaken  Significant partnerships formed with industry	Businesses initiated  NFP oversight is operational  Details of Central Facility resolved  Expressions of Interest determined  Development of Central Facility begins	Landowners have a clear understanding of how the development of the Park will unfold. Negotiation framework well established and understood. Issues relating specific landowners are clearly identified  Some of the land has passed into public ownership
Establishment Phase  Maturing  Years 10 – 15  Overseen by Supervisory Committee	Establishment Phase begins to wind down  Most of the Park land is now in public ownership  Legislative framework for Independent Authority is developed  Significant landscape repair has been achieved  Business streams are well established and delivering a return to the Park	Executive activities are continuing  Central Facility operational  Legislative and administrative framework in place for Independent Authority	Major rehabilitation projects underway  Significant changes to the appearance of the Range are evident  Maintenance of the landscape begins to be contracted out	Ongoing business development  NFP structure mature	Majority of negotiations with landowners now complete  Landowner group becomes a cross-boundary liaison group
Operational Phase  Years 15>  Overseen by Independent Authority Board	Independent Authority is now created and operational  Control of the Park passes from Local Government to the Independent Authority	Becomes a member of the Board of the Independent Authority	Major rehabilitation objectives are achieved  Main focus is now on improving diversity and fine detail	Business operations overseen by the Independent Authority on a contractual basis	All negotiations with landowners complete  Landowner group becomes a cross-boundary liaison group



## APPENDIX 1 and 2

