Town Planning Management Engineering

EXMOUTH SOUTH
Structure Plan

FINAL

12009
October 2013

EXMOUTH SOUTH STRUCTURE PLAN

Prepared for

Shire of Exmouth

Prepared by

TME Town Planning Management Engineering Pty Ltd

In conjunction with

Bodhi Alliance

MP Rogers & Associates

REVISION TABLE

No.	Purpose	Date
A	Draft for Shire comment	6.12.2012
B	Draft for Council adoption for public comment	18.02.2013
C	Following assessment of submissions	06.06.2013
D	As required for WAPC Approval	08.10.2013

CERTIFIED THAT THIS STRUCTURE PLAN
WAS ADOPTED BY RESOLUTION OF THE
WESTERN AUSTRALIAN PLANNING COMMISSION ON

27 August 2013 Date

Signed for and on behalf of the Western Australian Planning Commission

.....

An officer of the Commission duly authorized by the Commission pursuant to section ~~16~~ 24 of the *Planning and Development Act 2005* for that purpose, in the presence of:

M. Wieclaw Witness

30 October 2013 Date

And by

RESOLUTION OF THE COUNCIL OF THE SHIRE OF EXMOUTH ON

20 June 2013 Date

And

PURSUANT TO THE COUNCIL'S RESOLUTION HEREUNTO AFFIXED IN THE PRESENCE OF:

..... Date 6-11-13

Shire President, Shire of Exmouth

..... Date 6.11.13.

Chief Executive Officer, Shire of Exmouth

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TABLES

PLANS

APPENDICES (SEPARATE DOCUMENT)

1. INTRODUCTION

1.1 Introduction and Purpose

In early 2012, the Shire of Exmouth assisted by funding from the Department of Planning commissioned preparation of a structure plan for the area extending from south of Exmouth townsite to south of Learmonth.

The Exmouth South Structure Plan is a high-level district structure plan providing a framework for the coordinated provision and arrangements of future land use. Being strategic in nature, the Structure Plan identifies the key issues and actions required to progress the subject land through the required more detailed planning and development processes.

It also complements previous planning including the *Exmouth-Learmonth (North West Cape) Structure Plan (*1998), the *Ningaloo coast regional strategy Carnarvon to Exmouth* (2004), the *draft Gascoyne Regional Planning and Infrastructure Framework* (2012), and the *Exmouth Townsite Structure Plan* (2011).

Once adopted by Council and endorsed by the Western Australian Planning Commission (WAPC), the Exmouth South Structure Plan will provide guidance for the proposed local planning strategy, amending the Shire's town planning scheme, preparing local structure planning (where necessary), assessing subdivision and development proposals, and implementing infrastructure initiatives.

In accordance with the Shire's adopted strategic directions, it is intended that the structure plan contribute to a sustainable and welcoming Exmouth.

Previous land use planning in the Shire of Exmouth has mainly focused on Exmouth townsite, the northern and western portions of the North West Cape and on the Cape Range National Park. In recent times, the need for updated strategic planning for the Exmouth-Learmonth area has become apparent, with increasing and potentially competing demands for various forms of land use, development and conservation.

Highlighting this is the extent to which Exmouth should engage with the oil and gas sector, which is expanding within the region. The Shire and the State Government have received industry requests for Exmouth Shire to have greater involvement in the oil and gas sector through development of a marine support facility(s).

In late 2011, Council received a request to amend Town Planning Scheme No 3 (TPS 3) to facilitate development of a marine supply base and lay-down area at a site on the west coast of Exmouth Gulf north of Learmonth. Council decided to take a strategic approach to planning for the Exmouth South area as there is no strategic document that covers the area at a district level. Council was also seeking confidence that additional engagement with the oil and gas sector would not be solely proponent-driven.

Council resolved to carry out a comprehensive study/risk analysis with the assistance of the WAPC that engaged the community and industry to fully understand the demand and impact of any potential supply base(s). The resulting study scope of works was framed to prepare an Exmouth South Structure Plan.

1.2 Background

Council is adopting a more strategic and sustainable approach to planning for the Exmouth-Learmonth area. In simple terms, sustainable planning is striving for simultaneous attainment of environmental protection, social advancement and economic prosperity objectives to meet the needs of the current generation without compromising the needs of future generations.

Exmouth Shire exhibits strong social capital through an active, self-help community reflecting its relative isolation and common interests. It also exists within a world class environment, as evidenced by the Ningaloo Coast being included on the World Heritage List in 2011.

However, the economic base of the Shire is relatively narrow, being heavily reliant on tourism which is subject to seasonal variations and vulnerable to rapid changes in market conditions. Other industries include fishing, defence, oil and gas, pastoralism, retail and consumer services, building and construction, transport, limestone resources, and various community and business services.

Existing engagement with the oil and gas sector and other resource industries is mainly through the provision of marine services from the Exmouth Boat Harbour and helicopter and fixed wing air services from the Exmouth aerodrome and Learmonth Airport. There are some fly-in/fly-out and drive-in/drive-out workers (although the Shire prefers to refer to them as fly-out/fly-in and drive-out/drive-in, reflecting a preference for local residency).

Economic studies and community consultation in recent years have shown that diversifying the economic base of the Shire is necessary to provide a more balanced economy, greater employment opportunities and improved social infrastructure. This is reflected in the *Shire of Exmouth Strategic Plan 2007-2012, Strategic Community Plan 2011* and the Gascoyne Development Commission's *Economic Development Opportunities for the Gascoyne Region Associated with Resource Sector Investment and Expansion 2011.*

However, a consistent theme throughout the studies and especially through community consultation has been "diversifying the economy while protecting the fragile environment".

The environmental objective of the *Strategic Community Plan 2011* is "to have a balanced respect for our environment and heritage, both natural and built". As one of the community contributors to that plan said, *"Development and growth is necessary and unavoidable however it must be balanced and well managed to be sustainable and acceptable to all the stakeholders that have made commitments to the area".*

2. PLANNING BACKGROUND

2.1 Land Description

2.1.1 Location

The structure plan area is shown in *Plan 1* which includes a location plan and annotated aerial photograph. The structure plan area is bounded by the Exmouth Townsite Structure Plan boundary in the north (Preston Street locality), the near-shore waters of Exmouth Gulf south into Gales Bay, the Commonwealth Land (Defence) communications tower area south of the Learmonth RAAF Base and Airport, and the 'zigzag' boundary of the Cape Range National Park to the west. The adjoining areas of the North West Cape and Exmouth Gulf provide the study area context, as does the wider regional area.

View north from Krait Memorial

2.1.2 Land Tenure and Land Use

Land tenure (ownership) is shown in *Plan 2*. In the northern part of the structure plan area there are several Crown Reserves (variously vested) and Unallocated Crown Land (UCL).

The majority of the area is Pastoral Lease (Exmouth Gulf Station). Near the coast, the boundary of the Pastoral Lease is 40m landward of the High Water Mark. Substantial portions of this lease are proposed for exclusion in 2015 when the existing lease is up for renewal, with the majority of the exclusion area destined for addition to the public conservation estate (National Park). Portion of this area is further proposed as a conservation and limestone resource management reserve under section 5(1)(h) of the CALM Act. A smaller strip of the existing pastoral lease straddling a section of the Minilya-Exmouth Road near the coast is intended for exclusion to the Department of Regional Development and Lands.

Commonwealth Land (Defence), Crown reserve and UCL make up most of the balance land within the structure plan area.

There are limited parcels of private freehold property ownership within the structure plan area, mainly in the Mowbowra 'precinct' and the Badjirrajirra 'precinct' (see *Plan 2*).

In the Mowbowra precinct, private land comprises the strategic industrial area located some 7km south of Exmouth townsite. Although much of the UCL is vacant, the Shire's rubbish tip site exists to the south-west of the strategic industry area. Further south is the Shire's aerodrome which has a 1400m unsealed runway for light aircraft. Helicopters, principally servicing the off-shore oil and gas industry, also use the aerodrome on a daily basis.

East of the aerodrome in a strip of land between the Minilya-Exmouth Road and Pebble Beach on the Exmouth Gulf coast lies the Wilderness Estate special rural area with lots of mainly 4-7ha in size.

The Badjirrajirra precinct has some private land opposite the intersection of Charles Knife Road and the Minilya-Exmouth Road. This private land, plus a Crown lease (together referred to as the 'Kailis site') has comprised a seafood processing factory for several decades, but the activity is now significantly reduced due to recent structural changes and processing of the catch at sea.

2.2 Methodology

In accordance with the strategic approach, preparation of the Exmouth South Structure Plan has been undertaken at a high-level. The project brief and budget have not allowed for detailed description of the environmental, economic and social context or comprehensive analysis of all aspects of the study area. Rather, the focus has been on targeted evaluation and stakeholder engagement to develop an issues-based 'strategic' structure plan.

2.2.1 Preparation Stages

In accordance with the scope of works, preparing the Exmouth South Structure Plan follows a three stage process:

- **Stage 1:** Issues Paper (community survey, literature review, identification of opportunities and constraints) and recommendations for the preferred site(s) for a marine support facility
- **Stage 2:** draft Exmouth South Structure Plan (for public comment)
- **Stage 3:** final Exmouth South Structure Plan (adopted by Council and the WAPC)

Location Plan

LEGEND

- Structure plan boundary
- Commonwealth Land (Defence)
- 2 wd sealed road
- 2 wd unsealed road

PLAN 1

Date:
June 2013

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EXMOUTH TOWNSITE

Low Point

CAPE RANGE NATIONAL PARK

Tulki Beach

Sandy Bay

Exmouth Gulf

LEARMONTH

Learmonth RAAF Base and Airport

Heron Pt

Bay of Rest

Pt Lefroy

Gales Bay

SHOTHOLE CANYON ROAD

CHARLES KNIFE ROAD

EXMOUTH ROAD

MINILYA

Mowbowra Creek

Badjirrajirra Creek

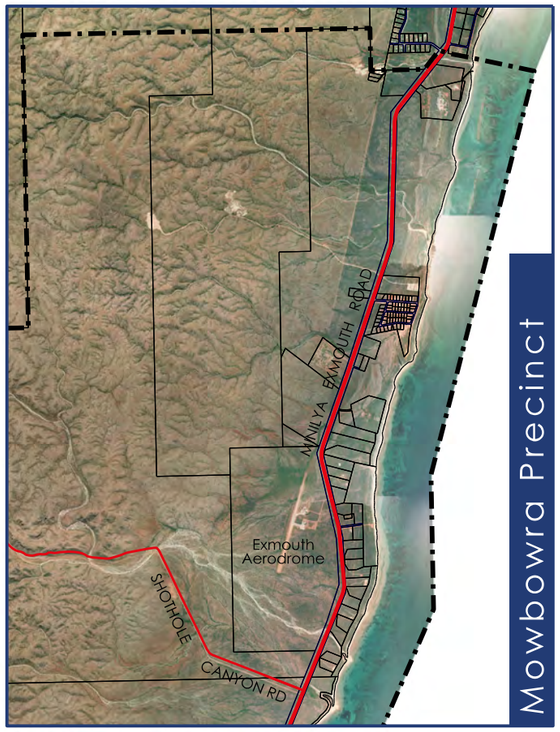
Wapet Creek

Sandy Bay Track

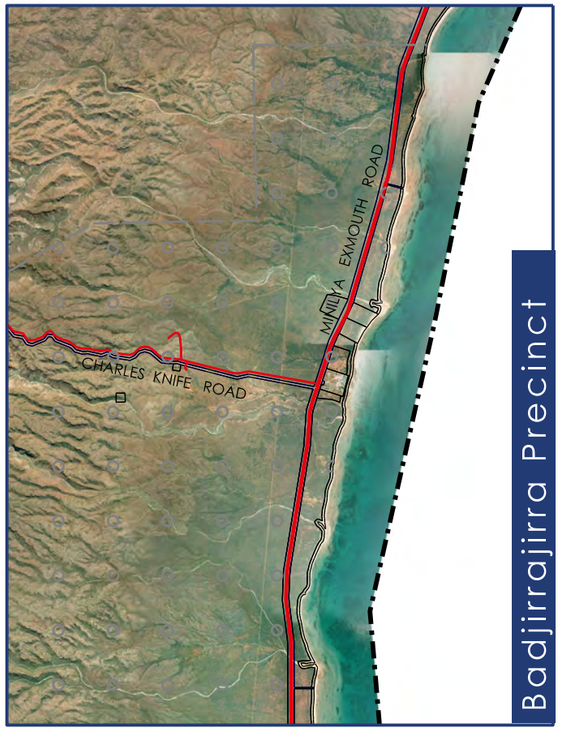
Exmouth Aerodrome

Mowbowra Precinct

Badjirrajirra Precinct



Mowbowra Precinct (Enlargement)



Badjirrajirra Precinct (Enlargement)

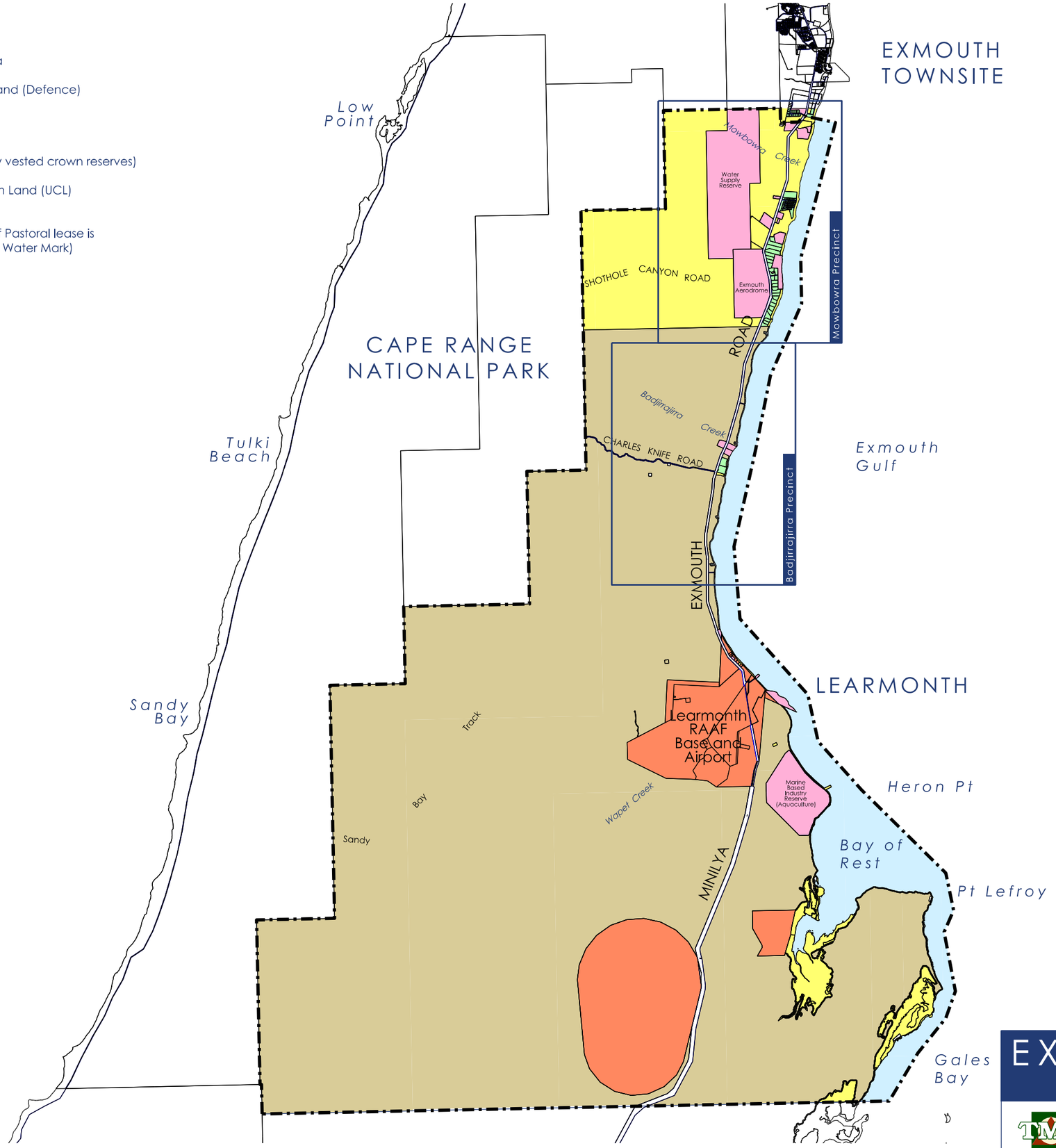
EXMOUTH SOUTH
Structure Plan

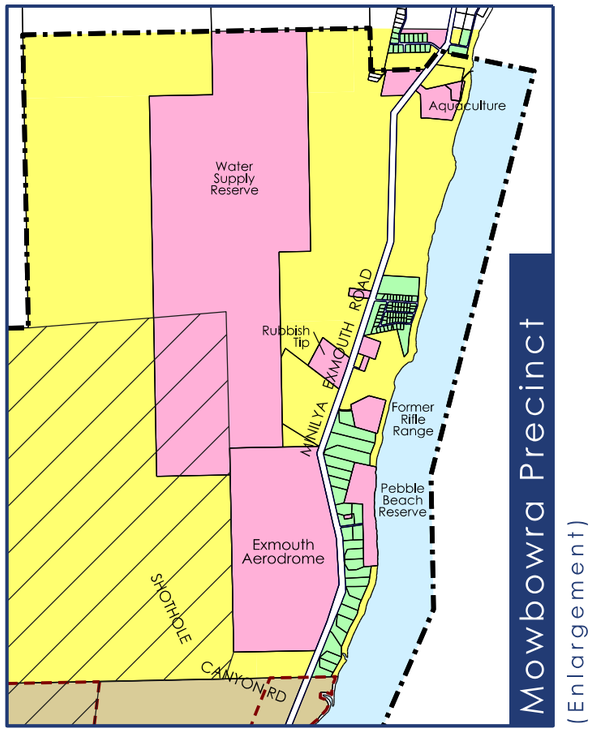
TME

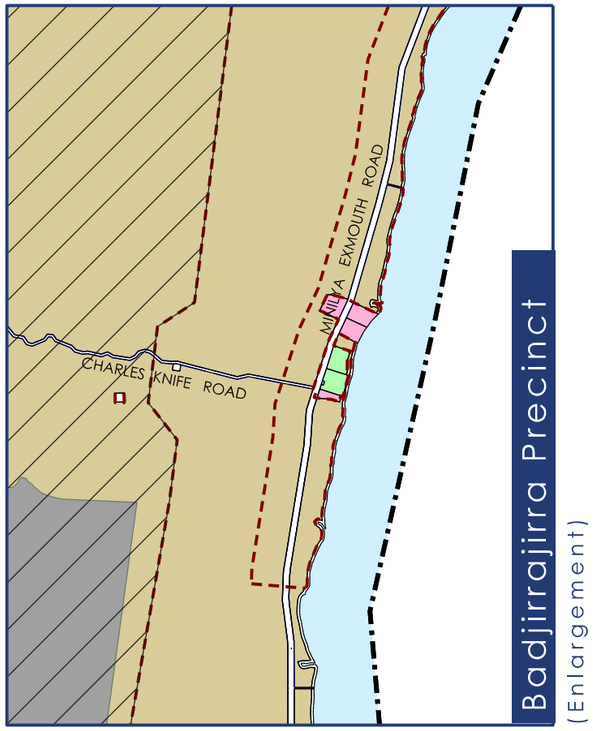
Structure Plan Area

LEGEND

- Structure Plan Area
- Commonwealth Land (Defence)
- Freehold land
- Crown Reserves (Including variously vested crown reserves)
- Unallocated Crown Land (UCL)
- Pastoral lease (Note: Boundary of Pastoral lease is 40m inland of High Water Mark)
- Ocean







PLAN 2

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June 2013

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EXMOUTH SOUTH
Structure Plan

TME

Land Tenure

2.2.2 Stakeholder Engagement

The Exmouth Shire regards community involvement in the development of the Exmouth South Structure Plan as vitally important. In early 2012, prior to the commencement of the planning and design work for Exmouth South Structure Plan, community views on future use, issues and opportunities were sought through stakeholder interviews and a community survey.

Although the proposed TPS 3 amendment meant there was some urgency in addressing the matter of a potential marine supply base to provide marine support facilities (particularly for the oil and gas sector), the Shire and the consultant team also saw the need to survey the community over the broader range of issues affecting the future of Exmouth South.

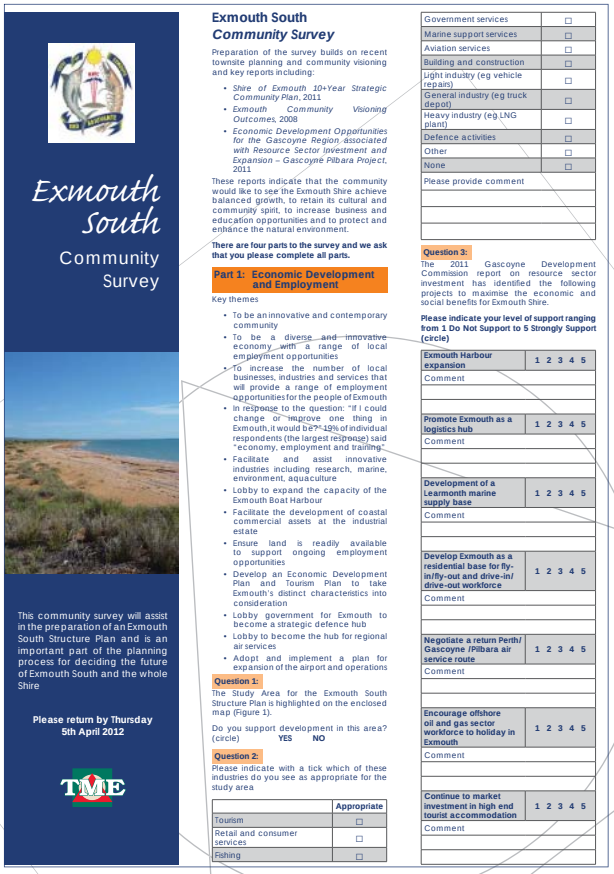
The consultant team investigated site options for the potential marine supply base as well as broadly considering other land use opportunities and constraints over the entire study area. These were discussed in an Issues Paper which was presented to Council in April 2012 and subsequently made available to the community via the Shire website.

2.2.3 Community Survey

The *Exmouth South Community Survey* was prepared and conducted by Bodhi Alliance (independent community engagement and social planners) in conjunction with TME. The purpose of the Community Survey was:

- To gain community input on issues and opportunities for the Exmouth South Structure Plan area; and,
- To seek community views on Exmouth's engagement with the oil and gas sector including logistical and marine support services.

Although engagement with the oil and gas sector already occurs through the provision of some services from the existing Exmouth Boat Harbour (plus air services), the Council and the State Government have received proposals for a marine support facility (supply base) to be developed outside of the town, primarily to service this sector. Accordingly, the survey specifically sought community opinion on the merits of developing such additional facilities and, if so, the matters to be taken into account.



Exmouth South
Community Survey

This community survey will assist in the preparation of an Exmouth South Structure Plan and is an important part of the planning process for deciding the future of Exmouth South and the whole Shire

Please return by Thursday 5th April 2012

TME

Exmouth South
Community Survey

Preparation of the survey builds on recent townsite planning and community visioning and key reports including:

- *Shire of Exmouth 10+Year Strategic Community Plan*, 2011
- *Exmouth Community Visioning Outcomes*, 2008
- *Economic Development Opportunities for the Gascoyne Region, associated with Resource Sector Investment and Expansion – Gascoyne Pilbara Project*, 2011

These reports indicate that the community would like to see the Exmouth Shire achieve balanced growth, to retain its cultural and community spirit, to increase business and education opportunities and to protect and enhance the natural environment.

There are four parts to the survey and we ask that you please complete all parts.

Part 1: Economic Development and Employment

Key themes

- To be an innovative and contemporary community
- To be a diverse and innovative economy with a range of local employment opportunities
- To increase the number of local businesses, industries and services that will provide a range of employment opportunities for the people of Exmouth
- In response to the question: "If I could change or improve one thing in Exmouth, it would be" 19% of individual respondents (the largest response) said "economy, employment and training"
- Facilitate and assist innovative industries including research, marine, environment, aquaculture
- Lobby to expand the capacity of the Exmouth Boat Harbour
- Facilitate the development of coastal commercial assets at the industrial estate
- Ensure land is readily available to support ongoing employment opportunities
- Develop an Economic Development Plan and Tourism Plan to take Exmouth's distinct characteristics into consideration
- Lobby government for Exmouth to become a strategic defence hub
- Lobby to become the hub for regional air services
- Adopt and implement a plan for expansion of the airport and operations

Question 1:
The Study Area for the Exmouth South Structure Plan is highlighted on the enclosed map (Figure 1).

Do you support development in this area? (circle) **YES NO**

Question 2:
Please indicate with a tick which of these industries do you see as appropriate for the study area

	Appropriate
Tourism	☐
Retail and consumer services	☐
Fishing	☐
Government services	☐
Marine support services	☐
Aviation services	☐
Building and construction	☐
Light industry (eg vehicle repairs)	☐
General industry (eg truck depot)	☐
Heavy industry (eg LNG plant)	☐
Defence activities	☐
Other	☐
None	☐
Please provide comment	

Question 3:
The 2011 Gascoyne Development Commission report on resource sector investment has identified the following projects to maximise the economic and social benefits for Exmouth Shire.

Please indicate your level of support ranging from 1 Do Not Support to 5 Strongly Support (circle)

Exmouth Harbour expansion	1 2 3 4 5
Comment	
Promote Exmouth as a logistics hub	1 2 3 4 5
Comment	
Development of a Learmonth marine supply base	1 2 3 4 5
Comment	
Develop Exmouth as a residential base for fly-in/fly-out and drive-in/drive-out workforce	1 2 3 4 5
Comment	
Negotiate a return Perth/Gascoyne /Pilbara air service route	1 2 3 4 5
Comment	
Encourage offshore oil and gas sector workforce to holiday in Exmouth	1 2 3 4 5
Comment	
Continue to market investment in high end tourist accommodation	1 2 3 4 5
Comment	

There were four parts to the survey, as follows:

Part 1: Economic Development and Employment;

Part 2: Marine Support Services;

Part 3: Lifestyle, Community and Services; and,

Part 4: Environment and Heritage

(plus General Comments).

2.2.3.1 Survey Methodology

The survey methodology can be summarized as follows:

- 1,815 surveys distributed to households, businesses and absentee landowners via mailboxes and direct mail;
- Survey commenced 22 March 2012 and closed 13 April 2012 (the time was extended beyond the original closing date to accommodate those who did not initially receive surveys and subsequently requested them);
- Surveys were returned in sealed envelopes to Bodhi Alliance to ensure confidentiality; and,
- 347 surveys were returned (which is regarded as a valid sample).

The majority of respondents were residents of Exmouth. Business owners and absentee landowners also responded, as follows:

- 56.7% residents;
- 27.1 % absentee landowners;
- 1.7% business owners;
- 12.1% said they were residents and business owners; and,
- 2.3% did not specify.

2.2.3.2 Survey Questions

The survey had eight questions, supported by background information drawn from previous community consultation documents:

1) *Do you support development in this (study) area?*

2) *Which industries are appropriate for the study area?*

3) *Please indicate the level of support ranging from 1 "Do not Support" to 5 "Strongly Support" for seven projects identified in the Gascoyne Development Commission report as projects that would maximize the economic and social benefits for the Exmouth Shire.*

4) *Do you support additional engagement with the oil and gas sector?*

5) *Do you support a more purpose-built marine support facility?*

6) *What factors do you think should be taken into account when considering a more purpose-built marine support facility?*

7) *Which of these (range of uses and services listed) do you see as appropriate for the study area?*

8) *What environmental and heritage factors (listed) are important in planning for Exmouth South?*

In addition, an invitation for any general or further comments was provided.

2.2.3.3 Key themes

Following are some of the key themes to emerge from the survey analysis:

- *Exmouth needs additional economic development*
- *Exmouth needs to take advantage of the oil and gas industry*
- *Exmouth needs additional employment opportunities*
- *Fly In/ Fly Out only welcome if they live in and contribute to the town*
- *Collectively, we must protect and conserve:*
  - *the environment*
  - *the tourism industry*
  - *the character and community of Exmouth*

The *Exmouth South Community Survey Report* prepared by Bodhi Alliance can be found at *Appendix 1*.

2.2.4 Other Stakeholder Engagement

Further stakeholder input to formulation of the draft Structure Plan has occurred through interviews held with a range of key stakeholders representing government agencies, community groups, business and landowners. The list of 'pre-lodgement' stakeholders consulted is included in *Table 1*.

A desktop review of previous community consultation carried out in the Shire was also carried out, including *Exmouth Harbour Development Community Consultation Report* (2008), *Strategic Community Plan* (*2011)* and *Exmouth Townsite Structure Plan* (2011).

2.2.5 Issues Paper

In addition to the community survey and stakeholder engagement, the consultant team carried out a preliminary investigation of site options for the potential marine supply base as well as broadly considering other land use opportunities and constraints over the entire Exmouth South study area.

The results of the community survey, the consultant team's preliminary findings in relation to marine support facilities, and identification of opportunities and constraints in planning for Exmouth South were discussed in an Issues Paper. This was presented to the Exmouth Shire Council in April 2012 and subsequently made available to the community via the Shire website.

The report *Exmouth South Structure Planning - Marine Support Facilities* (MP Rogers and Associates, 2012) can be found at Appendix 2. A matrix showing a *Comparative Assessment of Marine Support Facility Site Options* (TME and MP Rogers and Associates, 2012) can be found at Appendix

2.2.6 Draft Structure Plan

A draft Exmouth South Structure Plan was advertised for stakeholder and public submissions from 27 February 2013 until 8 May 2013. At the close of advertising, 15 submissions were received from agencies, organisations and individuals. A short list of submitters can be found in *Table 2*.

The Exmouth Shire Council considered an assessment of submissions and a number of resultant modifications to the draft prior to adoption of the final Structure Plan.

3. PLANNING FRAMEWORK

Preparation of the Exmouth South Structure Plan has occurred in the context of the existing planning framework for the area including statutory (legal) documents and adopted policy.

Under the *Planning and Development Act,* 2005 local governments must have due regard to a State Planning Policy (SPP) in the preparation or amendment of town planning schemes, strategies and policies. The Structure Plan seeks to comply with all relevant SPP, strategies and policies and the associated policy measures.

3.1 Town Planning Scheme No. 3

As shown in *Plan 3* (Existing Zoning) the bulk of the area comprises 'Pastoral' zoning, and 'Recreation and Open Space' and 'Public Purposes' reservations under the Shire of Exmouth TPS 3. Lot 50 forming part of the Strategic Industry Area is zoned 'Industrial'.

There are six (6) existing 'Special Use Areas':

Special Use 1 (SU1) covers the site of the former Kailis seafood processing plant

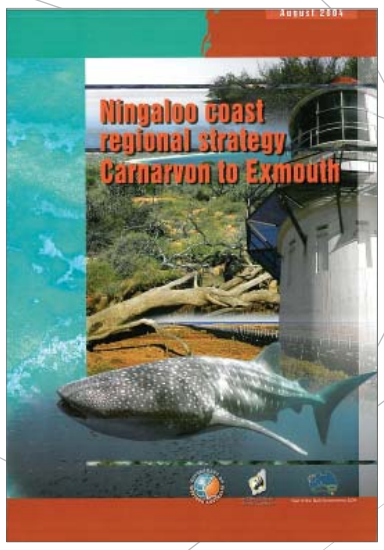
SU2 is the site of the former Kailis pearl hatchery

SU3 contains the Wilderness Estate special rural subdivision

SU4 designated for Aquaculture contains an existing aquaculture business

SU5 is designated for Strategic Industry, Composite Development (industrial and single dwelling on each lot), Home Occupation, Public Open Space, and Development Investigation Area

SU6 adjacent to the northern boundary of the area of interest (close to the Exmouth Townsite Structure Plan area) is designated for a Concrete Batching Plant and Limestone Block Plant and contains an existing quarry products business.



3.2 Relevant Regional Strategies

3.2.1 Ningaloo Coast Regional Strategy Carnarvon to Exmouth (2004)

The Ningaloo coast regional strategy Carnarvon to Exmouth (WAPC, 2004) is a 30 year strategic land use plan that sets the framework for planning and sustainable tourism on the Ningaloo coast. Key elements of the strategy are given a legal framework through State Planning Policy 6.3 Ningaloo Coast.

The regional strategy includes a regional land uses plan. Elements of the plan most relevant to the Exmouth South Structure Plan are:

- Exmouth (townsite) structure plan
- Exmouth groundwater catchment
- proposed conservation and recreation areas (expansion of the National Park)
- classifying the Exmouth Gulf coast into 'semi-remote' and 'remote' areas
- nominated day use coastal tourism sites
- recommended marine protection area (south of Learmonth)

The regional strategy recommends preparation of a visual amenity policy to control landscaping and building development on the land on either side of the Minilya-Exmouth Road between the Learmonth airport and Exmouth townsite. An area approximately 100m wide on each side of the road is recommended in the regional strategy.

3.2.2 Exmouth-Learmonth (North West Cape) Structure Plan (1998)

The *Exmouth-Learmonth (North West Cape) Structure Plan* is a progression of the *Gascoyne Coast Regional Strategy* and interpreted the strategic goals in terms of the physical arrangements of land uses.

The primary focus of the structure plan is:

To promote sustainable uses that enable diversification of the economy while protecting the fragile environment of the North West Cape.

The structure plan recommends that all major urban, tourism and commercial development should be confined to the east coast of the North West Cape and more specifically to within the Exmouth townsite boundary.

Other recommendations reflected in preparation of the Exmouth South Structure Plan are:

- Proposed eastward extensions to Cape Range National Park;
- Support for the proposed conservation and limestone resources area as a section 5(g) reserve under the CALM Act;
- Recommended marine reserve in the southern and eastern portion of Exmouth Gulf, from south of Wapet Creek, Learmonth;
- Undertake detailed investigations for the proposed strategic industrial site at Lot 51 Lyndon Location 221 (some 7 km south of Exmouth);
- Promote the development of aquaculture projects in the area;
- Promote the diversification of uses on pastoral land such as small-sale/low-impact tourism and recreation development, in keeping with local environmental constraints; and,
- Prepare a visual amenity plan to control landscaping and building development on the land each side of the Minilya-Exmouth Road between Learmonth Airport and Exmouth townsite.

LEGEND

Structure Plan Area

LOCAL SCHEME RESERVES

Public Purposes

Recreation and Open Space

ZONES

Industrial

Pastoral

OTHER

Special Use Area (SU)

SU1 Fish processing, fish shop, cafe, caravan park, residential, aquaculture

SU2 Fish processing, residential, aquaculture

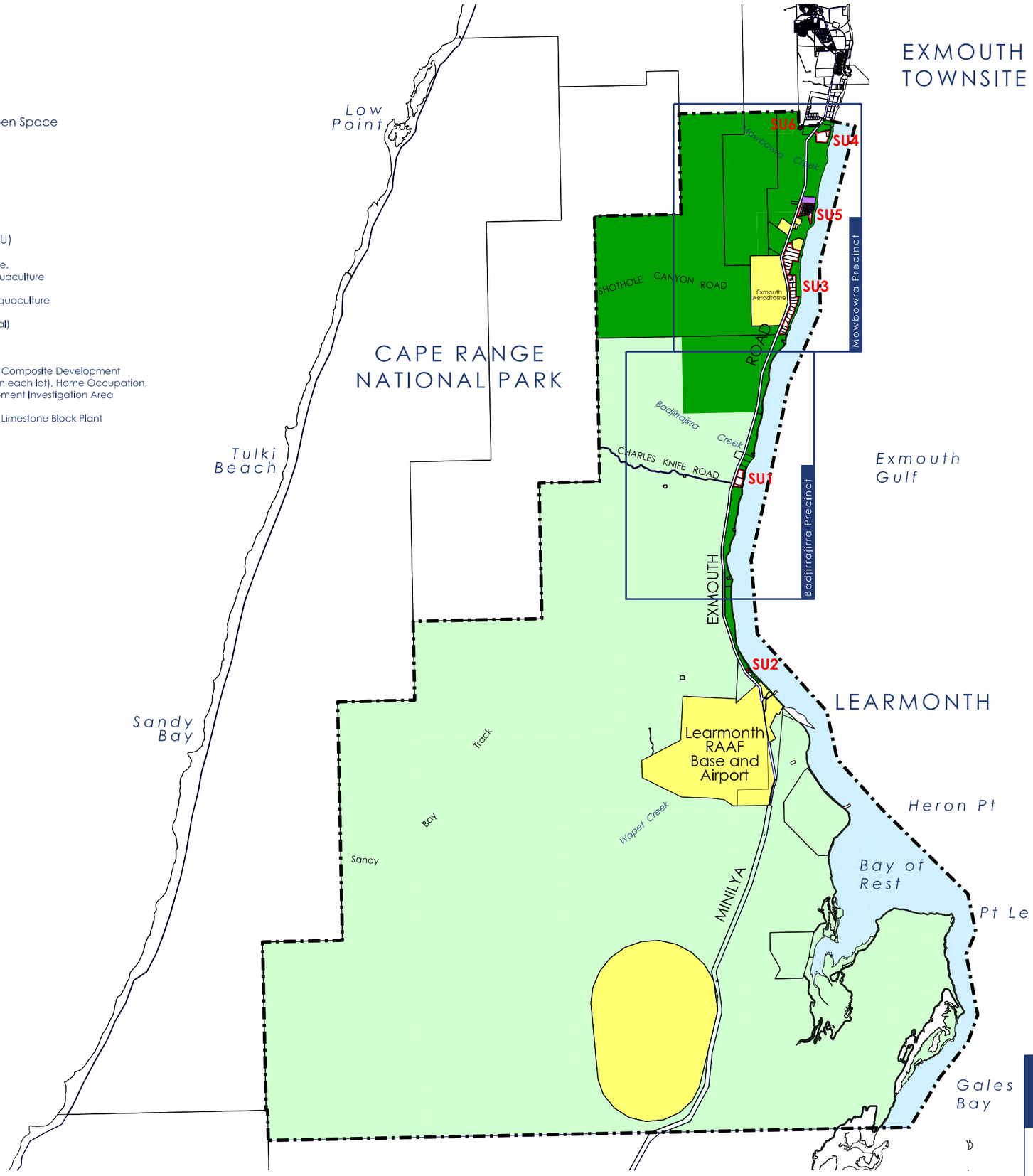
SU3 Wilderness Estate (special rural)

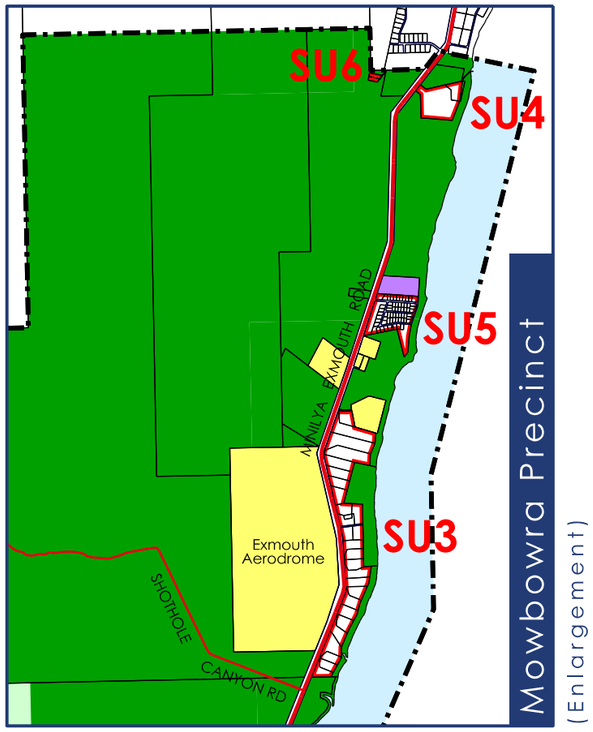
SU4 Aquaculture

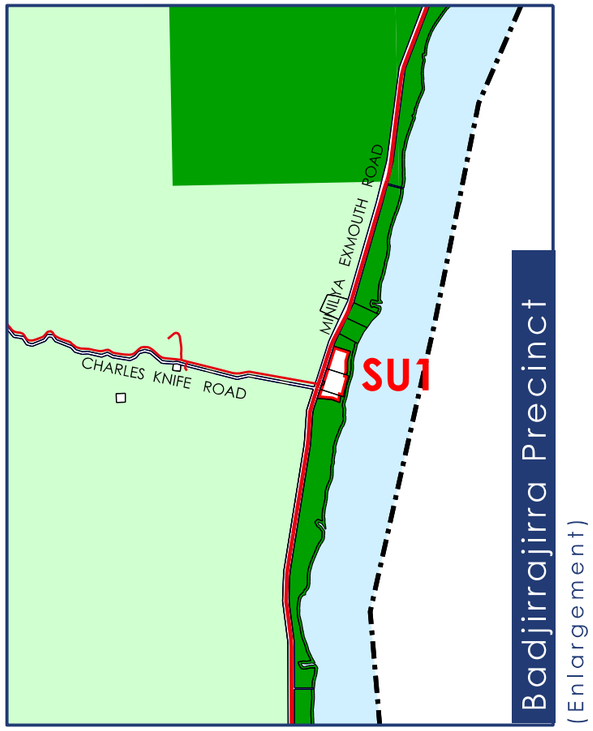
SU5 Strategic Industrial, Industrial, Composite Development (industrial and single house on each lot), Home Occupation, Public Open Space, Development Investigation Area

SU6 Concrete Batching Plan and Limestone Block Plant

Ocean







PLAN 3

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Date:
June 2013

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EXMOUTH SOUTH
Structure Plan

TME

Existing Zoning

3.2.3 Draft Gascoyne Regional Planning and Infrastructure Framework (July 2012)

The *Draft Gascoyne Regional Planning and Infrastructure Framework* proposed an integrated and prioritized approach to regional planning and infrastructure across the entire Gascoyne region.

Prioritised Gascoyne Regional Infrastructure Projects most relevant to preparation of the Exmouth South Structure Plan are:

High priority projects

- Minilya-Exmouth Road upgrades; including upgrades to existing causeway crossings
- Gascoyne regional energy strategy
- Learmonth Airport capacity review – including consideration of the airport's capacity to accommodate international aircraft emergency landings, growth in regular passenger transit traffic and potential expansion of the oil and gas industry

Medium priority projects

- Exmouth (water supply) borefield – new bores in southern legs 7 and 8
- Upgrades to existing electricity transmission and distribution network; including upgrades to Exmouth borefield high voltage power lines
- Identification of priorities and review of all Gascoyne airstrips

Low priority projects

- Minilya-Exmouth Road upgrades; including new bridge at Lyndon River

Other identified opportunities identified in the Regional Framework most relevant to, and acknowledged in, preparation of the Exmouth South Structure Plan include:

- Facilitating local industry and services through the provision of adequate industrial and commercial land within Gascoyne townsites
- Expanding and diversifying aquaculture pursuits in the region
- Diversifying economic activity on pastoral properties (e.g. tourist accommodation, horticulture)
- Expanding and diversifying the tourism sector including pastoral station stay accommodation, nature-based caravanning and camping
- Further exploration of petroleum, oil and gas on and off-shore near Exmouth
- Developing ancillary industries to support and service mining activity in the region and adjoining regions
- Promoting Gascoyne as sources of labour and bases for fly-in fly-out mining operations
- Investigation of future Defence Force requirements in the Gascoyne, particularly with respect to the existing RAAF base at Learmonth
- Undertake flood management and mitigation works

3.3 State Policies

There is an array of adopted policy documents that contribute to the strategic planning framework for Exmouth South. The following key policies are mostly directly relevant to the Exmouth South Structure Plan.

3.3.1 SPP 6.3: Ningaloo Coast

State Planning Policy SPP 6.3 Ningaloo Coast effectively formalizes the key policy elements of the *Ningaloo coast regional strategy Carnarvon to Exmouth* (2004) by adopting the policy objectives, guiding principles and other policy measures as a State Planning Policy.

3.3.2 SPP 2: Environment and Natural Resources

State Planning Policy (SPP) 2 – Environment and Natural Resources has the following objectives:

- To integrate environment and natural resource management with broader land use planning and decision-making;
- To protect, conserve and enhance the natural environment; and
- To promote and assist in the wise and sustainable use and management of natural resources.

3.3.3 SPP 2.6: State Coastal Planning Policy

The objectives of *State Planning Policy (SPP) 2.6 – State Coastal Planning Policy* are:

- Protect, conserve and enhance coastal values, particularly in areas of landscape, nature and cultural significance;
- Provide for public foreshore areas and access to these on the coast;
- Ensure the identification of appropriate areas for the sustainable use of the coast for housing, tourism, recreation, ocean access, maritime industry, commercial and other activities; and
- Ensure that the location of coastal facilities and development takes into account coastal processes including erosion, accretion, storm surge, tides, wave conditions, sea level change and biophysical criteria.

3.3.4 SPP 2.9: Water Resources

The objectives of *State Planning Policy (SPP) 2.9 – Water Resources* are to:

1. Protect, conserve and enhance water resources that are identified as having significant economic, social, cultural and/or environmental values;
2. Assist in ensuring the availability of suitable water resources to maintain essential requirements for human and all other biological life with attention to maintaining or improving the quality and quantity of water resources; and
3. Promote and assist in the management and sustainable use of water resources.

3.3.5 SPP 2.7 Public Drinking Water Source Policy

The objective of *State Planning Policy 2.7 Public Drinking Water Source Policy* is to ensure that land use and development within Public Drinking Water Source Areas (PDWSAs) is compatible with the protection and long-term management of water resources for public water supply.

SPP 2.7 acknowledges that the Water and Rivers Commission (now Department of Water – DoW) is responsible for managing and protecting water resources. Existing and future drinking water sources are protected by the declaration of Underground Water Pollution Control Areas (UWPCAs), Water Reserves and Catchment Areas under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947*. These are collectively known as PDWSAs. The legislation enables the DoW to control potentially polluting activities, regulate land use, inspect premises and take steps to prevent or clean up pollution within these areas.

The DoW has identified three priority classifications for PDWSAs – Priority 1 (P1), Priority 2 (P2) and Priority 3 (P3). SPP 2.7 states that Priority 1 (P1) source protection areas are defined and managed to ensure there is no degradation of the water resource in these areas. This is the highest level of protection for the water source and normally will apply to land owned by the State, and that is characterized by low-intensity and low-risk land use, such as forestry. Protection of the public water supply outweighs virtually all other considerations in respect to the use of this land. P1 source protection areas are managed in accordance with the principle of risk avoidance.

SPP 2.7 policy measures most relevant in a regional context such as the Exmouth South Structure Plan include:

- Local and regional planning strategies should identify PDWSAs based on advice from the Waters and Rivers Commission (now DoW).
- Planning schemes and decisions on land use and development should have regard for any adopted region scheme policy or relevant environmental protection policy on public drinking water supply.

3.3.6 SPP 3.4: Natural Hazards and Disasters

State Planning Policy 3.4 Natural Hazards and Disasters is based upon the principles contained in the report *Planning Safer Communities* (Emergency Management Australia, 2002). It applies the principles of emergency risk management to land use planning.

At Exmouth South, the greatest risks from natural hazards are likely to be from tropical cyclone events including flash flooding, storm surges and building and infrastructure damage from severe winds; sea level rise associated with climate change; karst risk (subterranean collapse) and bush fires.

The Structure Plan seeks to comply with the SPP 3.4 objectives and the associated policy measures through:

- Providing for coastal development setbacks and avoiding development in low-lying areas
- Acknowledging natural creeks and drainage lines and providing for drainage and multiple uses corridors to accommodate floodways and flood fringe areas

- Avoiding development over known subterranean waterway and karst rich areas and recommending geotechnical investigations as part of detailed planning and development
- Complying with the *Planning for Bush Fire Protection Guidelines* including avoiding development in steep, high fuel areas and providing for emergency vehicle access.

3.4 Approved Strategic Documents

3.4.1 Cape Range National Park Management Plan (2010)

The *Cape Range National Park Management Plan No 65 2010* applies to the existing Cape Range National Park and adjoining areas, including proposed additions to the conservation estate arising from pastoral lease exclusions due to occur in 2015. The connectivity of natural systems and the importance of other elements such as landscape and cultural values, means that land use planning both within and outside the National Park needs to be taken into account in the Exmouth South Structure Plan.

3.4.2 Exmouth Townsite Structure Plan (2011)

An updated *Exmouth Townsite Structure Plan* was adopted by Council and the WAPC in 2011. It updated the 1998 and 2004 Exmouth structure plans and is a forward-planning document intended to address broad land use and infrastructure matters, and to establish the general design layout and principles to guide the unfolding development of the town. It is the main reference for future local structure planning, subdivision and development within the townsite, as well as guiding proposed Local Planning Strategy formulation and translation into a new Local Planning Scheme.

The northern boundary of the Exmouth South Structure Plan deliberately coincides with the southern boundary of the Exmouth Townsite Structure Plan to ensure compatibility and integration of planning. Due regard has been given to the townsite structure plan during preparation of the Exmouth South Structure Plan.

4. SITE CONTEXT

This section describes the main physical and environmental site context of the Exmouth South Structure Plan area. Reference should be made to the accompanying plans, especially *Plan 4* and *Plan 5* The description is high-level reflecting the strategic nature of the study and the key elements helping inform the Structure Plan.

4.1 Geology and Mineral Deposits

The Exmouth South Structure Plan area is in the Northern Carnarvon Basin and is underlain by sedimentary rocks. The bedrock comprises mainly exposed Tulki Limestone, of Middle Miocene age (approximately 15 million years old). There is also minor Exmouth Sandstone, of Pleistocene age (about 2 million years old) in the central south of the plan area. Sandplain, alluvium, colluvium, and tidal deposits of more recent times overlie the bedrock mainly along the eastern coast.

The Tulki Limestone contains sections of high-grade limestone. The younger surficial sediments provide a source of additional basic raw materials such as aggregate, gravel, sand and clay (*Plan 4*).

4.2 Geoheritage Sites

The Cape Range Designated Geoheritage Site (National Estate listed) covers a roughly square area of National Park extending from the west coast of North West Cape to the eastern boundary of the Park encompassing the eastern portions of the Charles Knife and Shothole Canyon gorges. The National Geoheritage site also extends further eastwards to the north of Charles Knife Road, as shown in *Plan 5.*

Portion of the National-listed Geoheritage site covering the Charles Knife gorge coincides with a State Geoheritage Site which is a register maintained by the Geological Survey of WA. The site provides excellent views of the canyons of Cape Range and Exmouth Gulf which show the shape of the anticline geology, gross colour variations in the limestone units and overall morphology of the range and fringing coastal plain.

A similar site extends along portion of the Shothole Canyon, which has excellent rock exposures of the major units of the Cape Range Group, the Trealla, Tulki and Mandu Limestones.

The third geoheritage site within the Exmouth South area is a Pleistocene fossil coral reef exposed near sea level at the mouth of Mowbowra Creek. This is overlain by a limestone cobble and boulder conglomerate similar to, but older than, those that infill the present-day creek beds.

Limestone cobble and boulder conglomerate

4.3 Cape Range and National Park

The natural environment of the North West Cape is of extraordinary quality, as acknowledged by part of the area being on the National Heritage List and a World Heritage site.

Cape Range is a significant landform from a regional perspective. It is an anticline structure with the surface expression being some 80km in length, approximately 10-20km wide and up to 300m high comprising an ancient weathered range with multiple gorges that fan out to coastal plains dissected with creeks and drainage channels. The Cape Range Peninsula and associated fringing reef constitutes an extensive karst system of national and international significance.

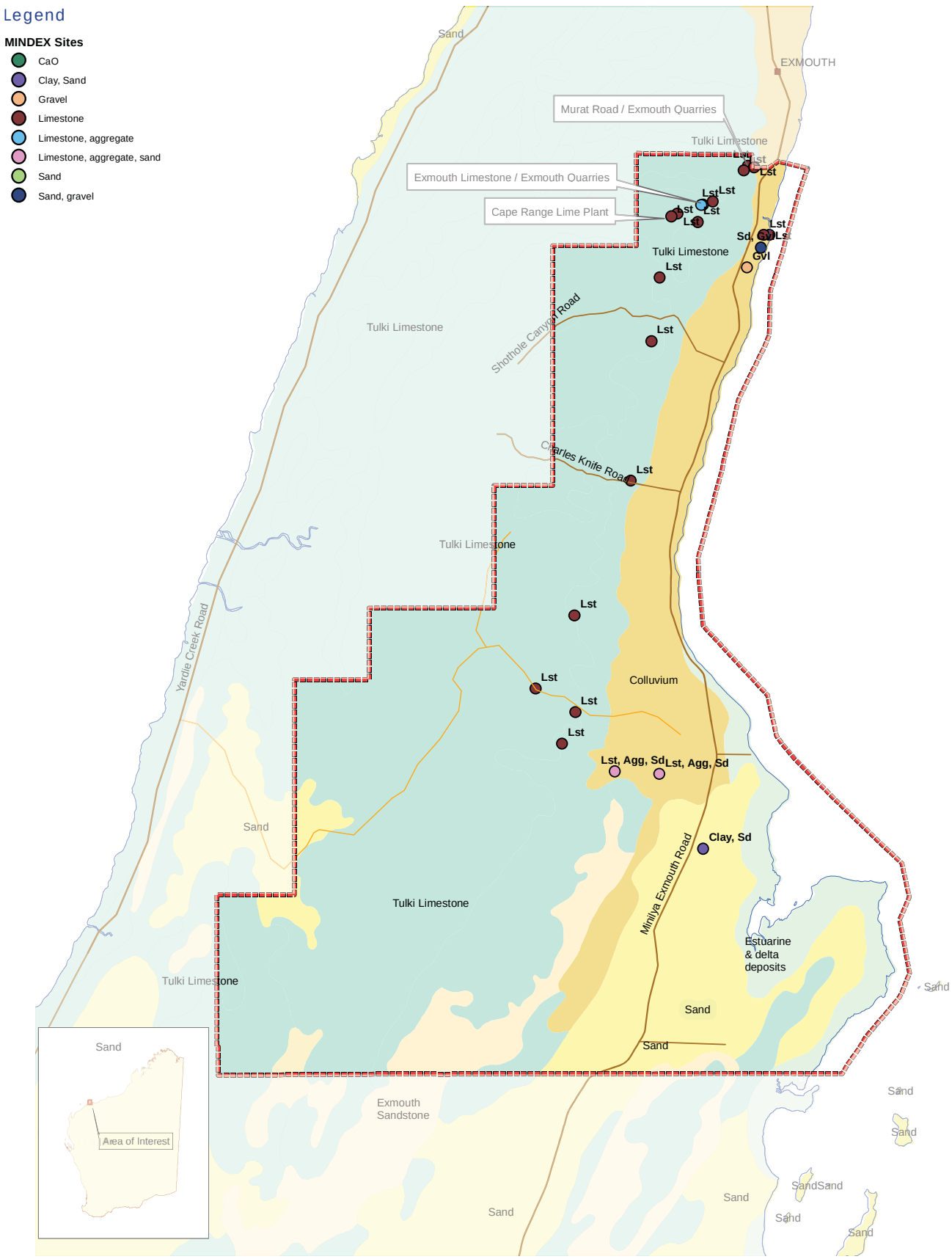
A significant proportion of the Cape Range is encompassed within the Cape Range National Park but various studies and policy documents have proposed expansion of the National Park, including by the addition of a substantial area to be excluded from the Exmouth Gulf Station Pastoral Lease in 2015.

Natural beauty of Cape Range

Cape Range provides a prominent backdrop to the coastal plain portion of the Exmouth South area and its elevated lookouts provide spectacular views down gorges and across the dissected plain and Exmouth Gulf. Its important karst geological system contains a complex groundwater hydrology that includes multiple partially filled caves, some of which have a direct connection to the sea and are subject to tidal fluctuations. The sub-surface geological hydro-geological system supports subterranean fauna of national and international significance, including stygofauna (aquatic) and troglofauna (air-breathing).

Flora of the Cape Range peninsula is particularly rich for an arid limestone environment, with 630 taxa recorded. This represents just over 46% of the taxa known for the Carnarvon Botanical District. Although no declared rare species have been recorded in the park, various Priority Species under the Department of Conservation and Environment's Priority Flora List are present within the park and on surrounding lands.

Areas proposed for addition to the public conservation estate (including additions to the National Park) are shown in *Plan 5*.



PLAN 4

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Date: June 2013

Source information: Department of Mines and Petroleum
Geological Survey of WA

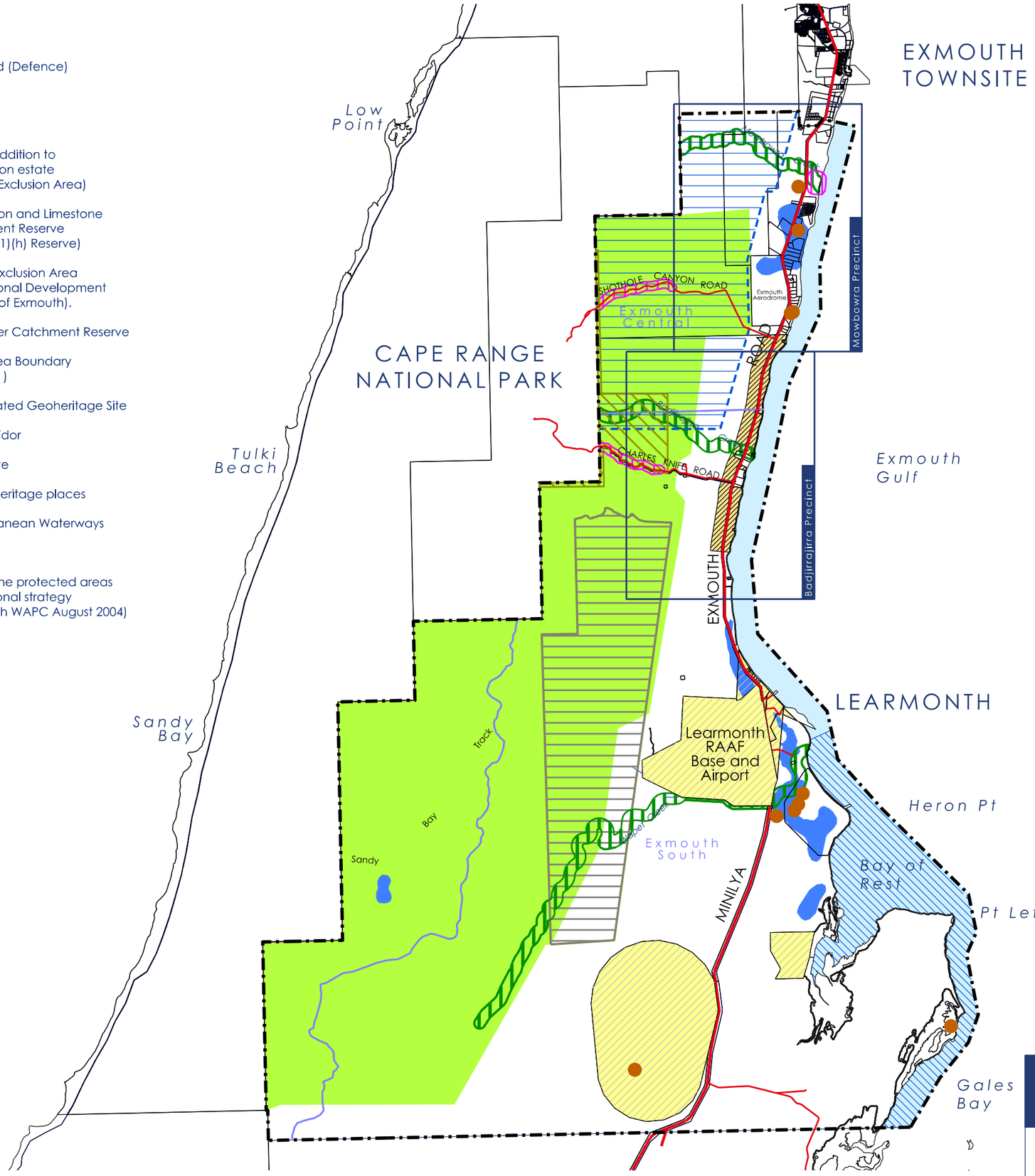
EXMOUTH SOUTH
Structure Plan

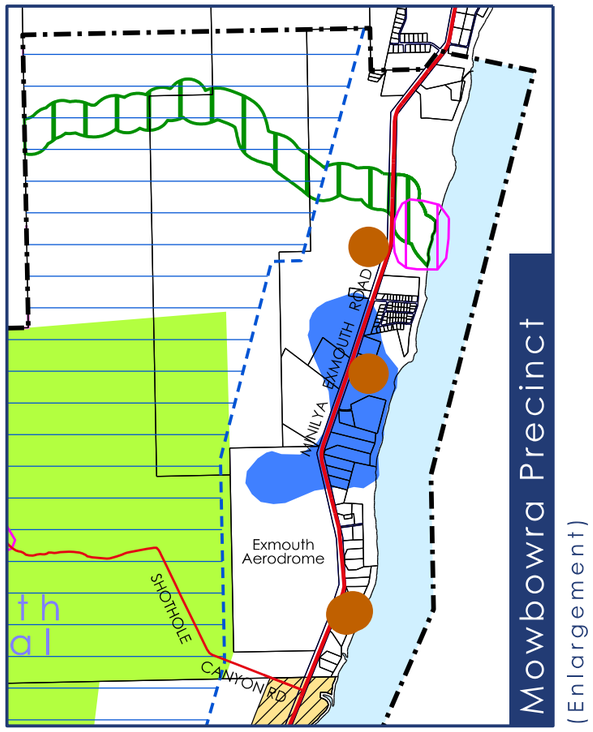
TME

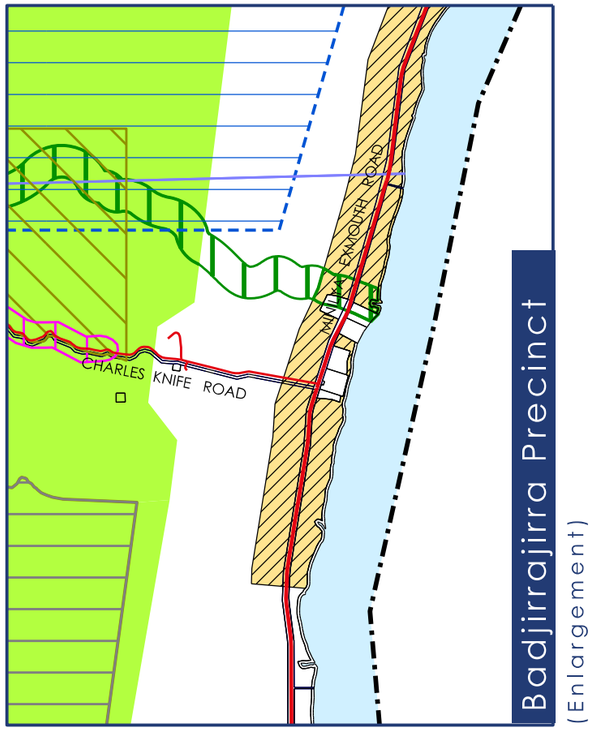
Geology and Mineral Deposits

LEGEND

- Structure Plan Area
- Commonwealth Land (Defence)
- 2 wd sealed road
- 2 wd unsealed road
- Areas proposed for addition to the public conservation estate (2015 Pastoral Lease Exclusion Area)
- Proposed Conservation and Limestone Resource Management Reserve (CALM Act section 5(1)(h) Reserve)
- 2015 Pastoral Lease Exclusion Area (Department of Regional Development and Lands and Shire of Exmouth).
- Exmouth Groundwater Catchment Reserve
- Groundwater Sub Area Boundary (e.g. Exmouth Central)
- Cape Range Designated Geoheritage Site
- Significant creek corridor
- State Geoheritage Site
- Aboriginal sites and heritage places
- Cape Range Subterranean Waterways
- Ocean
- Recommended marine protected areas (Ningaloo coast regional strategy Carnarvon to Exmouth WAPC August 2004)







PLAN 5

Date:
June 2013

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EXMOUTH SOUTH
Structure Plan
Environmental/ conservation Features

4.4 Groundwater Resources

Streams and creeks drain through the ridgelines of the Cape Range and across the coastal plain during heavy rainfall. Although pools may form after heavy rainfall events, most are ephemeral and rapidly infiltrate through the ground and into the karst. There are no surface water sources within or near the study area available for public water supplies.

There are two identified groundwater aquifers in the area – the confined Birdrong Sandstone Aquifer and an unconfined aquifer. The Birdrong Aquifer extends over a wide area of the Gascoyne, contains saline water and reaches depths of approximately 1000m. It has historically been used by the pastoral industry for stock watering purposes but is unsuited to human consumption without significant treatment.

The unconfined aquifer comprises a lens of freshwater overlying saline water; the freshwater layer being much thinner near the coast than it is further inland. Tidal fluctuations have been noted in this aquifer several kilometers inland on the eastern side of the peninsula, indicating karstic development in the coastal plain allowing direct connection of the aquifer and the sea. Maintenance of water quality, natural hydrological regimes and the mixing of freshwater and seawater is thought to be particularly important for the conservation of stygofauna and other groundwater dependent or reliant species.

4.5 Exmouth Groundwater Catchment Reserve

In a low rainfall area, the groundwater resources of the Cape Range area are vital to the natural systems of the area and to human activities. The Exmouth Groundwater Catchment Reserve in the Exmouth Central Sub Area in the northern part of the structure plan area is fully allocated. The Exmouth South sub area has unallocated potential and is likely to come under consideration for additional water supply both within the Exmouth South area and for the Exmouth townsite. Allocation plans and water management strategies at the district level will be required to demonstrate sustainability of the resource and the ecosystems dependant on it.

Exmouth Water Reserve

The Exmouth Water Reserve is declared and managed as a Priority 1 (P1) Water Source Protection Area under the *Rights in Water Irrigation Act 1914*. Land uses and development proposals within the Water Reserve are required to comply with the Department of Water's Water Quality Protection Policy Note for P1 areas to ensure protection of, and compatibility with, a declared public drinking water catchment. This is also consistent with the WAPC's SPP 2.7 *Public drinking water source protection*.

4.6 Cape Range Subterranean Waterways

The North West Cape karst geological system contains a complex groundwater hydrology that includes multiple partially filled caves, some of which have a direct connection to the sea and are subject to tidal fluctuations. The sub-surface geological hydro-geological system supports subterranean fauna of national and international significance, including stygofauna (aquatic) and troglofauna (air-breathing).

Plan 5 identifies Cape Range Subterranean Waterways occurring in the Structure Plan area. These comprise the wider Qualing Pool area, coastal areas from north of Learmonth to the Bay of Rest, and a smaller site to the west close to the existing National Park. Scientific knowledge of the biology, environmental requirements and impacts on subterranean waterways is not yet well understood, but the EPA and the Commonwealth Government have identified them as significant environmental factors. Indeed, one of the key reasons for Cape Range and Ningaloo Reef's inscription on the World Heritage list was its biodiversity values, including the subterranean fauna.

4.7 Coast and Foreshore

The coast and foreshore within the area is characterized by lengthy beaches separated intermittently by low and exposed limestone bedrock along the western gulf shoreline, and by low beaches and mangrove tidal flats in the southern portion. The beaches are typically backed by low vegetated sand dunes which are occasionally broken by creek mouths. Landward of the dunes contains some low-lying areas where the flood fringe spreads during high rainfall events or periods of inundation from storm surge events. Development in these areas should generally be avoided.

Exmouth Gulf coast

Storm surge is the result of the combination of strong onshore winds and/or low atmospheric pressure and may result in elevated water levels at the shoreline. Tropical cyclones have the potential to cause storm surge events.

Cyclone Vance (category 5) crossed the WA coast at Exmouth on 22 March 1999 and produced the highest recorded wind speed on the Australian mainland of 267 km/hr. The storm surge measured at Exmouth during Cyclone Vance was +3.6 m CD (chart datum). When wave run-up is added to storm surge, water levels can be further increased.

Tsunamis may occur on the northern WA coast every 10 to 20 years due to earthquakes in the Indonesian region. In June 1994, a tsunami caused temporary inundation of some near-shore facilities in Exmouth. At North West Cape (in the lee of a gap in the Ningaloo Reef), this tsunami resulted in a +3.5 m CD water level rise and inundation of areas within 300m of the shoreline.

Taking into account predicted sea level rise over the next 100 years, it is necessary for land use planning and development near the coast to consider all coastal processes and to comply with relevant policies in respect to setbacks and development standards.

In addition, management of the coast and foreshore should take into consideration the proliferation of recreational and management tracks and off-road vehicle use, with consideration being given to rationalisation of tracks and management of off-road activity.

4.8 Bay of Rest and Gales Bay

The Bay of Rest and Gales Bay are part of the 'Mangrove coast' extending from Wapet Creek at Learmonth into the southern part of Exmouth Gulf. It is characterised by the predominance of mangroves (up to 16 different species) that form a fringing forest along much of the shoreline and are typically backed by wide tidal flats with areas of algal mats.

Sections of the coastal lands fall within Unallocated Crown Land (including substantial portions of the mangroves) however much of the Bay of Rest and Gales Bay area is subject to pastoral lease, commencing 40m landward from high water mark.

Recommended marine protected area - south of Wapet Creek

The waters in these areas are known as highly productive fisheries including prawn nurseries. The Bay of Rest is a popular resting place for whales seasonally migrating along the Western Australian coast. Dugongs, manta rays and other significant marine species also inhabit the area.

Under the *Ningaloo Coast Regional Strategy Carnarvon to Exmouth* (WAPC, 2004) the Gulf waters from Wapet Creek mouth southward are classified as 'Remote' in terms of landscape, recreation and tourism values and are included in a recommended marine protected area, as shown in *Plan 5*.

5. PLANNING ISSUES

This section identifies the main site conditions, opportunities and constraints of the Exmouth South Structure Plan area. In preparing this section, TME has undertaken a literature review, site visits, stakeholder consultation and preliminary planning and engineering investigations. Similar to Section 4 (Site Context), the description and analysis in this section is high-level reflecting the strategic nature of the study and the key elements helping inform the structure plan.

Reference should be made to the accompanying plans, especially *Plan 4, Plan 5* and *Plan 6* which illustrate many of the multi-layered uses and the often competing demands for land use in the structure plan area.

5.1 Crown Land

5.1.1 Exmouth Gulf Station Pastoral Lease and 2015 Exclusion Area

The Exmouth Gulf Station pastoral lease occupies the vast majority of the Exmouth South Structure Plan area and extends from near Shothole Canyon Road in the north to Bullara Station in the South, the Cape Range National Park and RAAF bombing range to the west, and Exmouth Gulf to the East. The station represents one of the pioneering pastoral stations in the Gascoyne and is the northern-most station on the North West Cape peninsula still operating primarily as a sheep grazing property. Grazing is largely limited to the coastal plain due to the steep and rugged nature of the Cape Range. The homestead is located between Minilya-Exmouth Road and Gales Bay.

In common with other pastoral leases in Western Australia, the current Exmouth Gulf Station pastoral lease expires in 2015. The current lease owners have sought a renewed lease. Negotiations with State Government agencies have occurred over a number of years regarding intentions under the *Land Administration Act 1997* to exclude certain lands from the new lease area. These exclusion areas will take effect in 2015. The areas affected by the exclusions are:

- Areas proposed for inclusion in the public conservation estate (for addition to the Cape Range National Park);
- Proposed Conservation and Limestone Resource Management Reserve under section 5(1)(h) of the CALM Act; and,
- A strip of land straddling a section of Minilya-Exmouth Road bounded on the east by Exmouth Gulf and extending 500m to the west of the main road.

These areas are shown in *Plan 5*.

5.1.2 Learmonth Solar Observatory

Located between Learmonth Airport and the coast overlooking Exmouth Gulf, the Learmonth Solar Observatory (Site 20 on *Plan 6*) is part of a world-wide network which monitors solar activity 24 hours a day at optical and radio wavelengths. It has operated since 1979 and is jointly managed by IPS Radio and Space Services which is part of the Australian Bureau of Meteorology, and the United States Air Force Weather Agency.

There is a wide range of activities and systems which are affected by solar activity. Examples include short-wave broadcasting, high frequency communications, satellite operations, manned space flights, geophysical exploration, electricity distribution, long pipeline corrosions and bird migration.

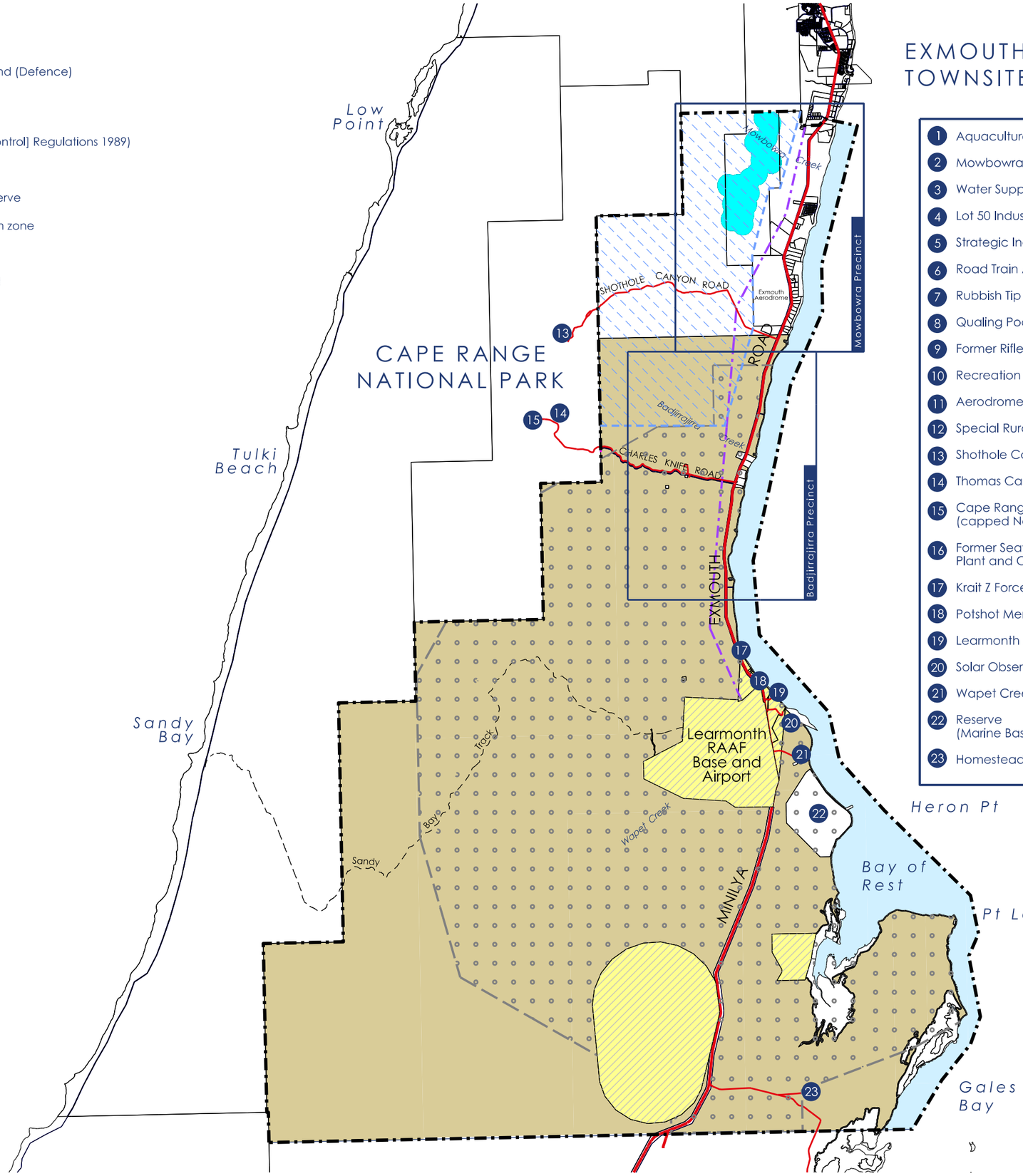
Learmonth was selected for the Solar Observatory because of the large amounts of sunshine available (in excess of 3,500 hours per year), near horizon to horizon views of the sun throughout the day, and because of relatively little radio frequency interference which might affect the sensitive receiving equipment.

Learmonth Solar Observatory is a strategically important facility that is subject to inter-governmental agreements and makes a vital contribution to global science. It is important that potential encroachments or impacts from surrounding land uses are taken into account when considering land use plans and development proposals, particularly uses that have the potential to generate radio frequency interference.

Learmonth Solar Observatory

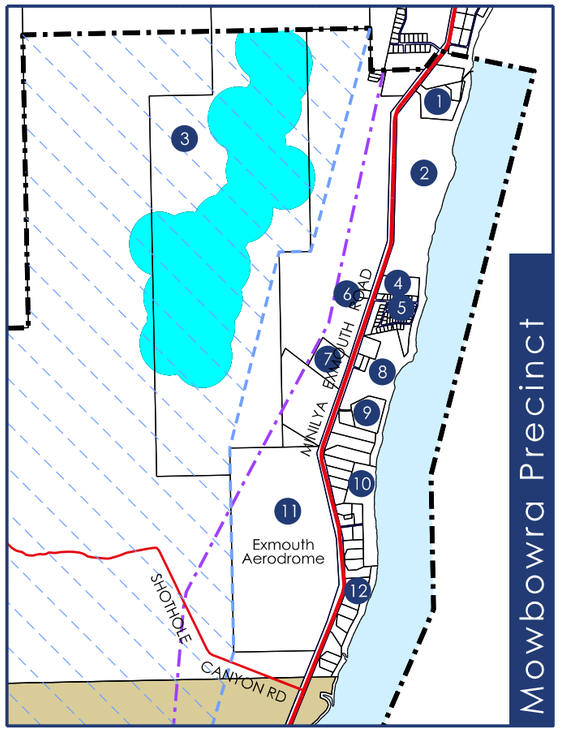
LEGEND

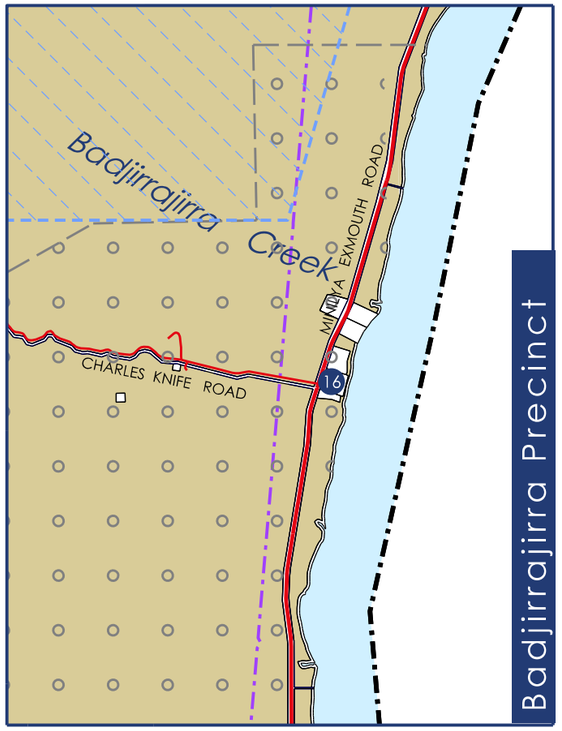
- Structure Plan Area
- Commonwealth Land (Defence)
- Pastoral lease
- Height limits apply (Defence [Areas Control] Regulations 1989)
- Power line
- Exmouth Water Reserve
- Wellhead protection zone
- 2 wd sealed road
- 2 wd unsealed road
- Ocean



EXMOUTH TOWNSITE

1. Aquaculture
2. Mowbowra Creek
3. Water Supply Reserve
4. Lot 50 Industrial
5. Strategic Industrial Area
6. Road Train Assembly Area
7. Rubbish Tip Site
8. Qualing Pool
9. Former Rifle Range Reserve
10. Recreation Reserve
11. Aerodrome
12. Special Rural
13. Shothole Canyon
14. Thomas Carter Lookout
15. Cape Range Oil Well (capped No. 2)
16. Former Seafood Processing Plant and Caravan Park
17. Krait Z Force Memorial
18. Potshot Memorial
19. Learmonth Jetty
20. Solar Observatory
21. Wapet Creek
22. Reserve (Marine Based Industry)
23. Homestead





PLAN 6

Date:
June 2013

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EXMOUTH SOUTH
Structure Plan
Context and Constraints

5.1.3 Unallocated Crown Land

Unallocated Crown Land (UCL) is shown in *Plan 2*. Areas of UCL near the Bay of Rest and Gales Bay have high conservation and recreational values and should be set aside for these purposes. In the northern part of the Exmouth South Structure Plan area, ULC located between the Water Corporation reserve, the Exmouth aerodrome reserve and the National Park is subject to mining leases and portion proposed for addition to the public conservation estate. It also forms part of the Exmouth Water Reserve and is located within an area of high landscape amenity, hence future land use should carefully balance these interests.

Between the Water Corporation reserve and Minilya-Exmouth Road the UCL is also part affected by the Exmouth Water Reserve and comprises thin, rocky soils and an open landscape of low vegetation overlying limestone. In the long term there could be some potential for future townsite expansion into the land east of the Exmouth Water Reserve, subject to detailed study including geo-technical, hydrology, flora and fauna and servicing. For the foreseeable future, the Structure Plan proposes maintaining the rural and landscape values of the land.

East of the Minilya-Exmouth Road through to the coast lies a vacant area of UCL, with the aquaculture reserve to the north (Site 1 on *Plan 6*) and Mowbowra Creek (Site 2) and the Strategic Industrial Area (Site 5) to the south. The land is mostly gently sloping and generally well covered with remnant vegetation, although there are numerous tracks and some degraded portions. Much of the land has views to Exmouth Gulf and is an attractive landscape. In addition to Mowbowra Creek, there are some drainage lines passing through the area. The land is much closer to the townsite than the existing Wilderness Estate special rural area. Existing power, scheme water and telecom services already pass by, although some upgrading may be required if development was proposed.

Conventional residential-scale development in the area would require substantial clearing, earthworks and servicing, with consequential visual impacts. However, an 'eco' style special rural subdivision with large lots, carefully selected building envelopes, building design guidelines and sustainable servicing initiatives is worthy of investigation. The area of investigation should be restricted to north of the proposed Mowbowra Creek conservation area and maintain a minimum 1000m separation to the Strategic Industrial Area, a suitable visual amenity setback from the Minilya-Exmouth Road, and an appropriate coastal setback.

UCL between Preston St and Mowbowra Creek

5.2 Cape Wilderness Estate Special Rural Area

The Cape Wilderness Estate special rural area exists at Pebble Beach south of the Lot 51 industrial area and located between the Minilya-Exmouth Road and the coast (Site 10 on *Plan 6*). Lots of mostly 4-7 ha in size are serviced with town water, power and telecom services, with on-site effluent disposal. The lots retain the majority of native vegetation on site, and building envelopes have substantial setbacks from the main road. Nonetheless, in flatter areas with relatively low vegetation, some prominent dwellings and outbuildings on developed lots are visually evident from the main road. Some lots remain vacant. The area has some bush fire risk, although the relatively flat topography, low coastal vegetation and fire breaks tend to limit this risk.

Cape Wilderness Estate special rural zone

Development of additional special rural lots to the south of the existing estate is not recommended due to:

- potential landscape impacts;
- proliferation of dwellings in the rural area with potential incompatibility with aircraft noise, safety buffers and other uses of land identified for public purposes;
- reduced public access to the coast; and
- inefficient servicing

5.3 Transport

5.3.1 Learmonth RAAF Base and Airport

The Royal Australian Air Force (RAAF) Base at Learmonth approximately 40 km south of Exmouth was opened during World War II and has since been upgraded from time to time as required. Although serviced by a relatively small number of military personnel and local contractors, it is capable of becoming fully operational in 24 hours and is strategically important to the RAAF and the Australian Government. Together with nearby communications and navigation facilities and the Learmonth Solar Observatory, the base occupies extensive land holdings. Consideration also needs to be given to the airport's flight path, aircraft noise and safety buffer requirements. Any potential encroachment of other land uses and associated activities needs to be carefully considered to avoid incompatible uses.

Civil aircraft operations are licensed at Learmonth Civil Airport, operated by the Shire of Exmouth under a lease with the Commonwealth (Defence) to 2033. All civil flights operate on a permit basis from the RAAF. These require 24 hours prior notice and movement approval, together with limits on the numbers of flights when Learmonth is declared 'Military In-use' (a frequent event during periods of flight training) and limitations to night operations.

Learmonth Airport terminal

Aviation is a significant economic driver for the Shire. Learmonth airport handled some 90,000 Regular Passenger Transit (RPT) passengers in 2011/12 and over the past five years has experienced an average annual growth of 13% per annum. It is a hub airport for offshore and hinterland air transport services with approximately 25% of all passengers continuing with helicopter charter flights to oil and gas facilities offshore or to the hinterland by fixed wing charter. It is important to the tourism and business sectors as well as providing vital services to residents travelling for medical, family, leisure and other purposes.

Plan 6 shows an extensive area around Learmonth where building and structural height limits apply under the Defence [Areas Control] Regulations 1989. The limits are quite detailed and vary across the affected area from the requirement for approval of structures more than 7.5m, 15m, 45m and 90m high in particular locations, and all structures in specific locations. Further land use planning in the area needs to take account of the Regulations and the appropriate standards.

In the event of RAAF operational needs, especially should the RAAF Base and Learmonth Airport be declared 'Military Active', there is the potential for civil aircraft operations to be further restricted or completely excluded from the airport for periods of time. It would therefore be prudent for the Shire to investigate prospects for upgrading the existing Exmouth aerodrome to provide greater flexibility in aviation services that are vital to the shire.

The Australian Noise Exposure Forecast (ANEF) system is a scientific measure of forecast aircraft noise exposure levels. The forecasts take into account a range of factors including frequency of aircraft movements, allocation of these movements to flight paths, aircraft noise signatures (intensity, duration and tonal content), together with detailed performance characteristics specific to each aircraft type. Following detailed analysis, ANEF maps are produced showing noise contour units around the airfield which are affected by the ANEF, which may be 20, 25, 30, 35 and 40 ANEF, for example. The higher the ANEF value the greater the exposure to aircraft noise in that area.

ANEF maps are generally for the ensuing 10 years and are based on future projections of operational activities.

The RAAF previously prepared ANEF maps for Learmonth airport, however these are some decades old and of limited currency. For the purposes of the Exmouth South Structure Plan, TME has examined recent ANEF mapping for airports at Geraldton, Gold Coast (Queensland), Launceston (Tasmania),

Darwin (a joint Civil and Military airport) and RAAF bases at Edinburgh (South Australia) and Williamtown (Victoria). An indicative aircraft noise buffer area has been derived and shown in *Plan 9* (the Structure Plan). This indicative buffer should be regarded as an interim measure only to assist in land use decision-making and avoiding encroachment of incompatible (noise sensitive) uses pending preparation of ANEF mapping and more detailed planning.

5.3.2 Exmouth Aerodrome

The Shire of Exmouth operates the Exmouth aerodrome which is situated on Crown land vested for aerodrome purposes with the Shire and is located 15 km south of Exmouth (Site 11 on *Plan 6*). It is home to five operators (Bristow Helicopters Australia, CHC Helicopters, Birds Eye View, Norwest Airwork and Ningaloo High).

With the increase in general aviation activity at Exmouth and the constraints imposed by the Department of Defence on general aviation to both operate and base at Learmonth, it is vital that the Exmouth aerodrome be able to meet the demands of this sector.

The relocation of all civil aviation activities currently undertaken at Learmonth Airport to Exmouth Aerodrome is not envisaged to occur provided that the Shire's lease at Learmonth Airport can be continued with the Department of Defence beyond the current lease term which expires in 2033. Should the lease not be renewed, Council needs to plan for a viable option for the continuation of Regular Passenger Transit (RPT) services. There is no indication from Defence at this time that a new lease will not be offered beyond 2033.

Helicopter and fixed wing aircraft, Exmouth aerodrome

In terms of general aviation, the Shire is preparing an Exmouth Aerodrome Master Plan to provide strategic direction for development of the aerodrome. The initial need is the provision of a longer, sealed runway, with night capability and apron areas suited to turboprop aircraft. In the longer term, provision should be made for Exmouth aerodrome to accommodate narrow bodied jet aircraft.

A site inspection indicates that although extending the existing runway is feasible, for the long term a new, longer, wider runway should be considered to the west of the existing 1400m unsealed runway. Some drainage works would be required; however significant creeks can be avoided.

An indicative aircraft noise buffer area for the aerodrome has been derived and is shown in *Plan 9.* This indicative buffer should be regarded as an interim measure only to assist in land use decision-making and avoiding encroachment of incompatible (noise sensitive) uses pending preparation of ANEF mapping and more detailed planning.

It is also important that land uses decisions have regard for potential impacts on existing and future aerodrome flight paths and airspace. Being located generally in the flight path north of the aerodrome, the existing rubbish tip potentially increases the risk of aircraft bird strike. This matter is addressed below.

5.3.3 Road Access

Principal road access in Exmouth South is via the Minilya-Exmouth Road controlled by Main Roads WA. This is a two lane sealed road. Short sections of other sealed roads include access to Learmonth Airport and the eastern section of Charles Knife Road. Other roads are unsealed. There are many local tracks including through parts of the pastoral lands and Crown land. As recommended in the *Exmouth Gulf Coastal Plan* (2001) many of the informal tracks should be rationalized, closed and rehabilitated.

In terms of pavement widths, the portion of Minilya-Exmouth Road between Learmonth and Exmouth is wide enough to support any foreseeable development in the area. However, increased traffic, further development or concentration of heavy vehicles will require widening of "Area C" of Minilya-Exmouth Road (north of Exmouth Station Homestead to Exmouth) from 6.2m seal to 9.0m seal (7.0m plus 2 x 1.0m sealed shoulders) plus turning pockets and overtaking bulges.

South of Learmonth there are several sections of Minilya-Exmouth Road that currently have pavement widths only 5.6 metres wide. An increase in traffic associated with additional development would trigger the need for these sections of roadway to be widened to 7.4 metres.

The requirement for widening of existing narrow sections of Minilya-Exmouth Road in this instance is not triggered by total traffic volume, but rather by virtue of the mix of traffic. Additional road trains are likely to be generated by any service industries that might be developed. For safety reasons, the mix of additional road trains and recreational traffic (particularly car/caravan and car/boat combinations) cannot be sustained on narrow pavements.

Typical causeway with flood marker

There are a number of existing causeways along Minilya-Exmouth Road. As a result, the road is subject to closure due to flooding on a regular basis. The introduction of suitably sized culverts in place of the causeways is likely to be required if significant increases in traffic are anticipated. Given the hierarchical status of this road, it is likely that the culverts or optional structures would need to be designed to cater for rainfall associated with storms up to the 1 in 50 year ARI event.

5.3.4 Road Train Assembly Area

The road train assembly area west of the Strategic Industrial Area is a purpose-built facility with large hard-stand, power, lighting and sealed road access to the Minilya-Exmouth Road. The surrounding land extending westward to the existing power line is well suited to investigation as part of the potential marine supply base and laydown area.

Road train assembly area

5.3.5 Sandy Bay Track

Sandy Bay track is one of very few routes across the Cape Range. It commences in the vicinity of Learmonth Airport and negotiates the rugged terrain of the Cape Range before arriving at Sandy Bay. An opportunity exists to formalize the track as a 4WD tourism experience that showcases the National Park and wilderness values from reef to range across the peninsula. Under the Cape Range Management Plan No.65 2010, access to the top of the range in the short term should be from the western side only.

The management plan also recommends access to be subject to a permit or monitoring and management system that enables DEC to obtain information on the use levels and patterns and manage environmental impacts, visitor safety and visitor expectations. At its eastern end, the track currently passes through pastoral lease and part of Defence land. A revised alignment should be investigated outside the Defence boundary, following existing tracks and fence lines and providing a connection with Minilya-Exmouth Road. Consultation with the pastoral lease holders, DEC, Defence, Shire of Exmouth and other stakeholders would be required.

5.4 Economic Development

5.4.1 Marine Supply Base

5.4.1.1 Introduction

The terms 'Marine Support Facility', 'Marine Supply Base' and 'Marine Support Services' have a variety of meanings and perceptions for different people. Although technically they may be different, the terms are often used interchangeably. For the purposes of this Structure Plan, the term 'Marine Supply Base' is used.

Importantly, the Exmouth South Structure Plan is *not* considering the larger Common User Facilities (CUF) marine supply bases of the type existing or proposed at Port Hedland, Dampier and Onslow.

The Structure Plan is also *not* proposing heavy industry such as an LNG plant. Rather, the Structure Plan is considering a '2nd tier' or minor facility(s) intended to complement the CUF. The focus is on marine transport and logistics for the resources sector, but with uses, scale and operations compatible with the environment and other marine uses and land uses of the Exmouth Gulf.

Indicative uses of a Marine Supply Base are:

- Exports of bulk limestone and other bulk materials from the region
- Shipment of equipment, materials and supplies for different components of the offshore oil and gas industry:
  - exploration
  - development
  - production and ongoing operations
- Other marine servicing opportunities in the fishing and tourism industries.

5.4.1.2 Marine Component

The marine component of a marine supply base could comprise dedicated infrastructure such as a causeway, breakwater or jetties/wharves. Typically, vessels would transport materials from the shore-based infrastructure to a larger off-shore supply vessel (e.g. barge).

Alternatively, trans-shipment over the beach using landing barges (shallow draft vessels) could be used. Consequently, different proponents are likely to offer up different approaches to provide marine support services.

5.4.1.3 Land Component

The land areas for a minor marine supply base could vary from a modest 2 ha to a more generous and useful 10-20 ha. This area could be used for the following:

- Temporary storage of equipment, materials and supplies for the offshore oil and gas developments;
- Workshops and hardstand areas for minor fabrication works;
- Workshops for maintenance and repair of equipment;
- Areas for unloading road trains and other trucks;
- Access to the marine loading facility or trans-shipment areas;
- Warehousing and storage; and
- Fuel storage.

5.4.1.4 Site Investigations

As part of the consultant team, MP Rogers & Associates (Coastal Engineers) undertook a high-level desktop review of five (5) marine supply base site options (4 sites identified in the AMC report for

Department of Commerce, 2011) plus Point Murat (which had been identified in earlier proposals).

MP Rogers & Associates undertook preliminary desktop analysis of five sites (*Plan 7*):

- Site 1: Point Murat – good marine infrastructure in place, but severely restricted by Council's desire to avoid significant truck traffic through the town, and the Department of Defence is unlikely to enable securing land for such a facility.

- Site 2: Exmouth Boat Harbour – suitable for vessels up to about 35 metres in length. Department of Transport has expansion plans, but these are limited in respect to a purpose-built marine supply base to service the offshore oil and gas industry due to proximity to tourist and residential areas.

- Site 3: Strategic Industry Area – already zoned for strategic industry and marine supply base uses. Several approvals exist (including environmental) for constructing a causeway and wharf (for loading of limestone). This infrastructure would provide a valuable first stage for a marine support facility.

- Site 4: Kailis – this site has a long history of industrial uses, with closure of seafood processing operations leaving significant infrastructure available. Minor marine supply base proposed using trans-shipment. This is technically a proven method and would provide a low capital cost option.

- Site 5: Learmonth South (Heron Point) – desktop assessment suggests the nearby coast could be developed as a marine supply base. Conventional infrastructure is likely to be expensive. An innovative approach such as trans-shipment could be an attractive option.

5.4.1.5 Comparative Assessment of Site Options

TME incorporated the MP Rogers' desktop review into a Comparative Assessment matrix (*Appendix 3*) using 11 assessment criteria drawn from literature review, the community survey and land use planning investigations.

The assessment criteria used to compare site options was:

1. Suitable access and road transport;

2. Available servicing infrastructure;

3. Proximity to workforce and business services;

4. Compatible marine and coastal management;

5. Buffers to sensitive land uses;

6. Available land and tenure;

Location Plan

LEGEND

- Structure plan boundary
- Commonwealth Land (Defence)
- 2 wd sealed road
- 2 wd unsealed road
- Marine Supply Base site options

PLAN 7

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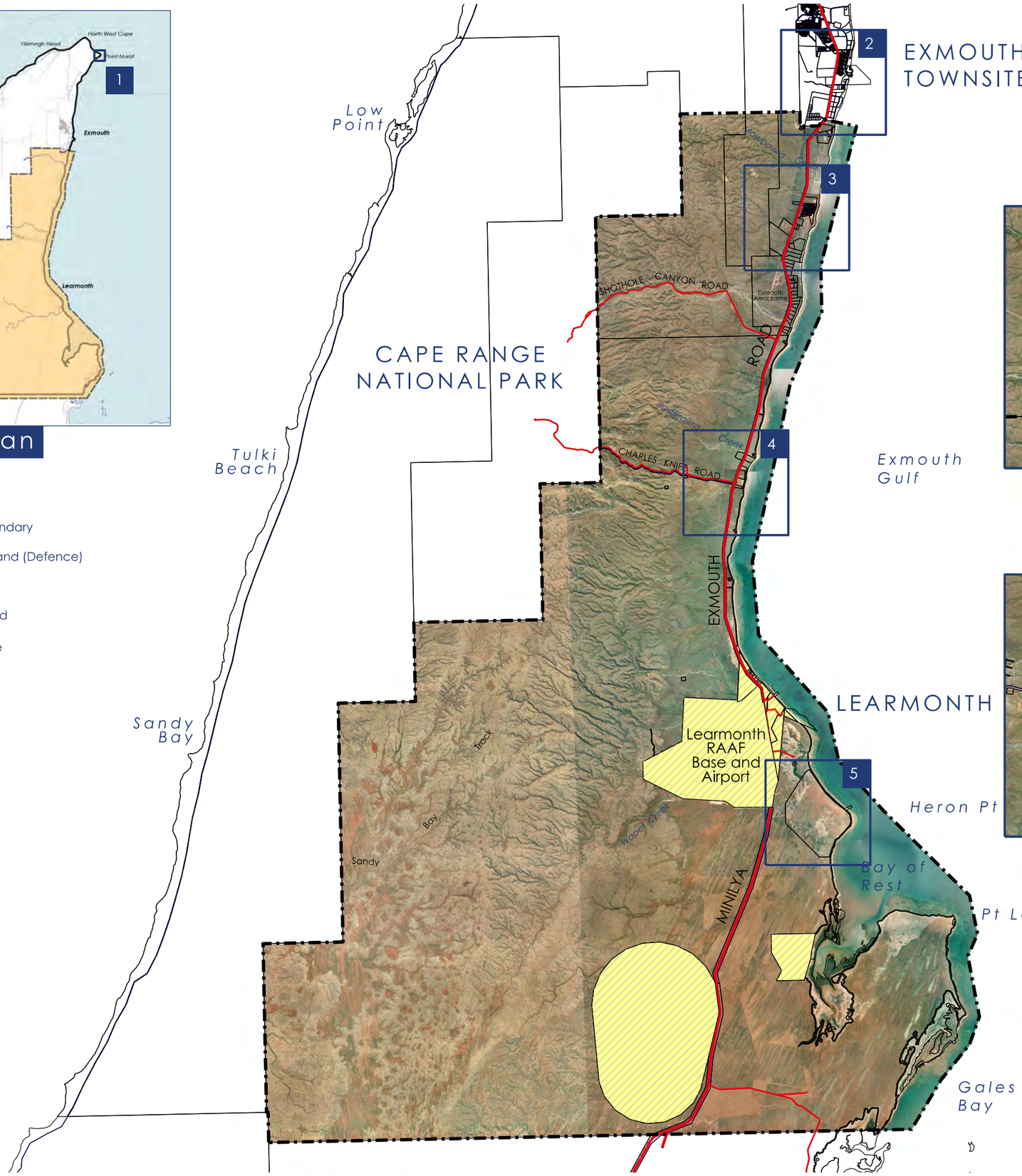
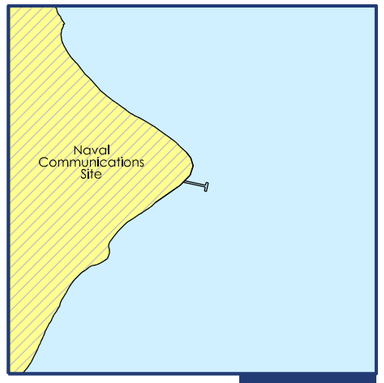
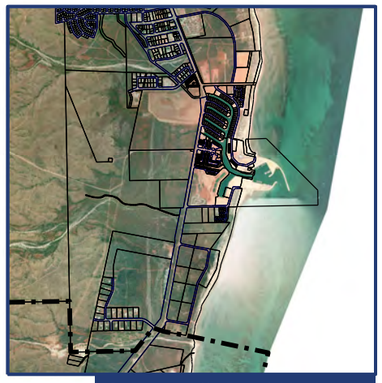
Date:
June 2013

Scale:
1:20 000 @ A3
1:10 000 @ A1

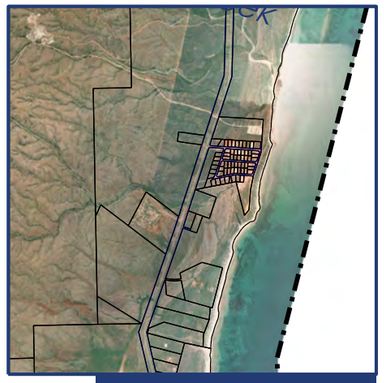




1. Pt. Murat

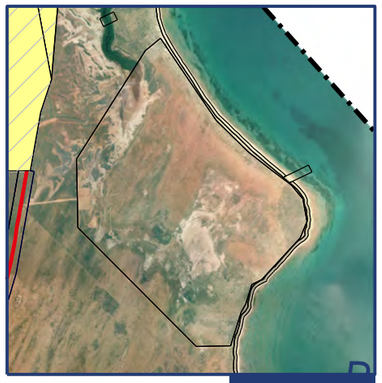


2. Exmouth Boat Harbour



3. Strategic Industry Site

4. Kailis Site



5. Heron Pt.

EXMOUTH SOUTH
Structure Plan
Marine Supply Base Site Options

TME

7. Manageable environmental impact;
8. Compatible with visual landscape impact and tourism values;
9. Travel distance to oil and gas fields;
10. Native Title and heritage issues; and,
11. Land owner and/or proponent support.

Exmouth Boat Harbour

Please refer to the matrix in *Appendix 3* for further information.

5.4.1.6 Overall Marine Supply Base Conclusions

Overall conclusions by MP Rogers and TME in respect to a potential marine supply base were:

- Subject to environmental assessment and approvals, development of a Marine Supply Base(s) would have overall benefits to the Shire and the region;
- Site 1 (Pt Murat) and Site 2 (Exmouth Boat Harbour) have significant constraints and do not warrant further investigations;
- Site 3 (Strategic Industry) and Site 4 (Kailis) both have sufficient merit to warrant detailed investigations; and,
- Site 5 (South Learmonth – Heron Point) may have sufficient merit to warrant detailed investigations but is less prospective than Site 3 and Site 4.

5.4.2 Strategic Industrial Area

As shown in *Plan 3* (Existing Zoning) , the Strategic Industrial Area comprises Industry and Special Use Area (SU 5) Strategic Industrial, Composite Development, Home Occupation, Public Open Space and Development Investigation Area.

Under TPS 3, the strategic industrial area *"is to be developed progressively for increased development such as limestone quarrying, oil and gas, fin/shellfish processing, and energy generation, as well as to accommodate relocation of existing industrial uses from the Exmouth townsite which generate nuisance (noise, dust, vibration, and fumes.smoke) and/or which need a larger area of land".*

Lot 50 (Site 4 in *Plan 6*) is owned by Exmouth Limestone and is subject to mining lease and environmental approvals for limestone stockpiling and development of a breakwater and barge load-out facility.

Part of land zoned for strategic industry

TPS 3 provides for a range of uses in the Strategic industrial estate including gas-fired power station, heavy transport deport, concrete batching plant and off-shore facilities for the hydrocarbon industry (pipes etc). The decision to allowing development of Caretaker Dwellings on Lot 51 in the Composite Development area can be regarded as a constraint to developing some of the potential strategic industry uses, notwithstanding applicants need to submit an acoustic report to Council which provides an assessment of noise impact associated with current and potential industrial uses and recommends appropriate noise attenuation measures to the dwelling to address any such impact.

The Strategic Industrial Area has been identified as a site worthy of further investigation for development of a marine supply base. Lot 50 and potential expansion areas to the north and also west of Minilya-Exmouth Road adjacent to the road train assembly area are prospective due to potential common user facilities with the approved limestone barge load-out.

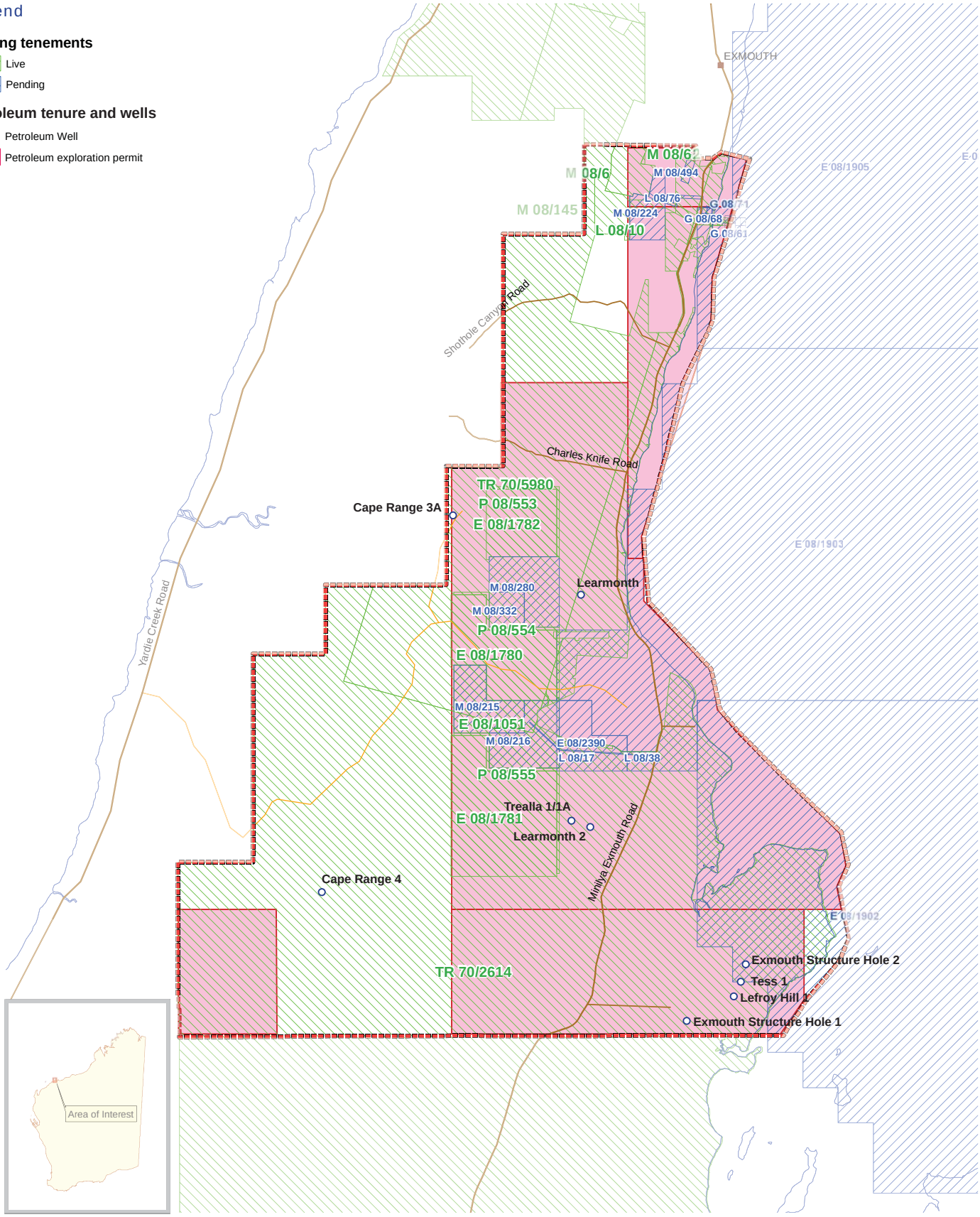
5.4.3 Mineral and Petroleum Resources

The Exmouth South Structure Plan area is in the Northern Carnarvon Basin and is underlain by sedimentary rocks. The bedrock comprises mainly exposed Tulki Limestone, of Middle Miocene age (approximately 15 million years old). There is also minor Exmouth Sandstone, of Pleistocene age (about 2 million years old) in the central south of the plan area. Sandplain, alluvium, colluvium, and tidal deposits of more recent times overlie the bedrock mainly along the eastern coast.

The Tulki Limestone contains sections of high-grade limestone. The younger surficial sediments provide a source of additional construction materials (basic raw materials) such as aggregate, gravel, sand, and clay. Most of these deposits are covered by granted mining tenements and pending tenements (*Plan 8*).

On Crown land, construction materials are defined as a 'mineral' and hence there is need for mining leases under the Mining Act 1978 for construction material extraction. On private property, commercial construction material extraction is authorised by the Shire through the grant of Extractive Industry Licences. It is very likely that mining of construction materials will be required for all new infrastructures (roads, bridges etc) to be built in the Exmouth South and Exmouth areas.

Extensive deposits of high quality limestone are present in Cape Range. Active mining tenements exist in the structure plan area where environmental approvals have been granted to mine limestone



PLAN 8

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Date: June 2013

Source information: Department of Mines and Petroleum
Geological Survey of WA

EXMOUTH SOUTH
Structure Plan

TME

Mining and Petroleum

deposits and transport by haul road to the Strategic Industrial Area (Mowbowra Creek precinct) for stockpiling and barge load-out via a causeway and land-backed wharf (yet to be constructed).

Currently, there are three mining leases (M08/62, 6, 145), one miscellaneous licence (L08/10), two temporary reserves (TR70/5980, 2614), four exploration licences (E08/1782, 1780, 1051, 1781), and three prospecting licences (P08/553-5), focussed on limestone. In addition there are also 13 registered tenement applications.

West of Learmonth Airport there is an extensive area identified in the Cape Range National Park Management Plan 2010 as "Proposed Conservation and Limestone Resource Management Reserve (CALM Act section 5(1)(h) Reserve)" over which there are existing leases.

It is expected that there will be future proposals for access to limestone resources within and beyond existing lease areas. Any future application would need to take into account requirements under the *Environmental Protection Act* 1986 and the *Mining Act* 1978.

The area is also prospective for hydrocarbons (oil and gas) in the sedimentary rocks of the Northern Carnarvon Basin. The Exmouth South Structure Plan area includes parts of the Cape Range and Rough Range anticlines (elongated domes), which are highly prospective for hydrocarbons. Indeed, Rough Range was the site of the first oil discovery in Western Australia, in 1953 by Wapet at Rough Range 1, three km south of the plan area. The major tracks up and across Cape Range were originally access roads for oil exploration wells. The principal targets for drilling are Cretaceous sandstones, approximately 120 million years old, overlain by Cretaceous shales, at depths greater than about 1 000 m. Targets have also been identified beneath the coastal plains surrounding the anticlinal ranges. Existing petroleum exploration permit areas are shown in *Plan 8*.

It is important for existing resource extraction sites, where there are resources that will last for a number of years, to be identified in the Structure Plan and protected from developments that would conflict with the extraction. Protection of construction material sites is important because all developments require supplies of cost effective, high quality resources.

5.4.4 Kailis Site

As discussed in Section 5.4.1, the MG Kailis former seafood processing plant and caravan park (Site 16 in *Plan 6*)has been identified as a site worthy of further investigation for development of a marine supply base.

In 1984, LandCorp (previously the Industrial Lands Development Authority) was granted Management Orders for Reserve 38865 (30.5888ha) and Reserve 37812. Reserve 38865 was set aside for marine supply base or industrial purposes and Reserve 37812 was intended for quarrying. The Management Orders provide LandCorp with the authority to lease part of all of Reserve 38865 for any period for industrial uses and Reserve 37812 as a quarry for up to 5 years.

For practical reasons, both the MG Kailis land and the Crown land to the east of Exmouth-Minilya Road should be considered together as a potential site for a marine supply base, lay-down area and general industry investigations.

MG Kailis site

5.4.5 Marine Based Industry Reserve (Heron Point)

EPA Bulletin 854 (May 1997) provides the EPA report and recommendations on a proposal by Cape Seafarms Pty Ltd to develop a major prawn farm at Heron Point, Exmouth Gulf. The subject land is shown as Site 22 on *Plan 6* which is an existing Crown Reserve created for Marine Based Industry Purposes. The proposal was for staged development of a 120ha prawn farm. The EPA recommended to the Minister for the Environment that the proposal be approved subject to conditions. It is understood that Ministerial approval was granted however the project did not proceed.

Although the Cape Seafarms project was not developed, the existence of the Crown Reserve maintains the opportunity for other aquaculture proposals or other types of marine based industry to be considered.

As discussed above, this site, together with the Strategic Industry and Kailis sites, was identified as a site worthy of further investigation for development of a marine supply base, although it was not regarded as being as prospective as the other two sites.

Research during preparation of the Exmouth South Structure Plan has revealed additional factors that constraint the Heron Point site in terms of its suitability for a marine supply base. These are:

- Recommended marine protected area south of Wapet Creek (WAPC);
- This section of Exmouth Gulf having 'Remote' status in tourism and landscape terms compared to the alternative sites which have 'Semi-remote' status (WAPC);

- Presence of Cape Range subterranean waterways affecting portions of the site;
- Presence of four Aboriginal sites in the area; and,
- Proximity to Learmonth Solar Observatory and the potential risk of increased radio frequency interference.

Whilst these factors make the Heron Point site less prospective for a marine supply base than initially thought, it should be further considered for aquaculture purposes, although limited to a smaller portion of the reserve to avoid the subterranean waterway and Aboriginal sites.

5.5 Landscape and Environment

5.5.1 Landscape Values

The remoteness values of the North West Cape region are outstanding. Although such values are especially significant on the west side (Ningaloo Reef) of the Cape Range, the landscape significance of the east side of the range should not be underestimated. Despite historic pastoral grazing, the prominent RAAF Base and Learmonth Airport, and pockets of industry, the area retains a high degree of natural beauty dominated by Cape Range and Exmouth Gulf. The range is flanked by highly eroded limestone terraces, drainage lines and gorges that give way to alluvial fans and pebbly creek beds that snake their paths across the plain to breach the coastal dunes and spill into the ocean.

Natural beauty of Cape Range

The Exmouth South Structure Plan should protect these natural landscape values as much as possible by focusing appropriate development in nodal locations, separated by near-natural wide open spaces that maintain the remoteness values until approaching Exmouth townsite. Establishing a visual protection corridor along the Minilya-Exmouth Road from Learmonth to Exmouth will help maintain the landscape and sense of remoteness.

The coast south of Wapet Creek has substantial areas of fringing mangroves that embodies its own landscape significance and semi-wilderness values. This should also be acknowledged in the Structure Plan.

5.5.2 Groundwater Resources

Section 4.4 describes the groundwater resources of the area. In terms of environmental requirements, it is thought that the maintenance of water quality, natural hydrological regimes and the mixing of freshwater and seawater are particularly important for the conservation of stygofauna and other groundwater dependent or reliant species.

Potential threats to the integrity of aquifer ecosystems include:

- Ecologically unsustainable water abstraction (and associated salt-water intrusion);
- Pollution (e.g. by sediment, nutrients, herbicides, insecticides, industrial wastes, bacteria);
- Alterations to natural drainage patterns (e.g. associated with recreation or other infrastructure development, limestone mining);
- Exotic aquatic organisms (aquarium fish and invertebrates in particular); and
- Disturbance of interrelationships between surface and aquifer environments (e.g. clearing of vegetation of overlying soils and landforms).

The Structure Plan and more detailed land use plans should aim to avoid or minimise these potential threats.

5.5.3 Creek Corridors

There are numerous creeks and drainage lines that dissect the coastal plain before discharging to the ocean. Most contain weathered cobbles and boulders or smaller pebbles along with alluvial soils and sands that have eroded from the Cape Range. As well as being geologically significant, the creeks have environmental, landscape and cultural heritage values. Although most hold surface water for only short periods of time associated with rainfall events, at a sub-surface level they can hold moisture and therefore support flora and fauna not always found across the whole coastal plain. The creeks typically hold significance for indigenous people but are also recognized as important by non-indigenous people.

Creeklines dissect the coastal plain

It would be impractical for the Structure Plan to seek to conserve all creek corridors in the Exmouth South Structure Plan area because of their high number and resulting impacts on public and private lands. However, identifying an indicative drainage and multiple use corridor along either side of three substantial creeks (Mowbowra, Badjirrajirra and Wapet) can be the catalyst for their conservation and management as examples of important creeks in the area. The three creeks identified in *Plan 5* are shown with an indicative width of approximately 500m. Although this width could be regarded as substantial, the creek flows can become wide in high rainfall events and the corridors should also be sufficient to support representative stream ecosystems, and to create environmental corridors linking Cape Range to the Gulf.

5.6 Heritage

5.6.1 Aboriginal Heritage

The rich natural heritage of the area is evident across a wide part of the structure plan area and its surrounds. Indigenous connection with the Cape Range area has occurred for some 36,000 years and the North West Cape area therefore holds great Aboriginal heritage value.

Indigenous cultural history and knowledge of the area has been poorly documented, although persists amongst local Indigenous people. The *Aboriginal Heritage Act* 1992 protects places and objects customarily used by, or traditional to, the original inhabitants of Australia. There are a number of Registered Aboriginal sites and heritage places in the study area that are included in the State's Register of Aboriginal sites. Some sites do not have full Registered Site status, however they have significance and protection under the Act regardless.

The recorded sites are shown in *Plan 5* and comprise site types including artefacts/scatters, grinding patches, camps, ceremonial and burial/skeletal remains. The location of the recorded sites is indicative and represents an area rather than a specific point. The locations shown are in the Mowbowra Creek, Qualing Pool, Pebble Beach, Wapet Creek/Heron Point, Gales Bay and within the Learmonth Airport communications tower area.

Aboriginal sites exist that are not recorded on the Register and consultation with Aboriginal people is ongoing to identify additional sites or make changes to registered sites as new information becomes available. Aboriginal heritage sites may also be listed under the *Australian Heritage Council (Consequential and Transitional Provisions) Act* 2003 (Australian Heritage Council Act).

In addition, under the *Native Title Act*, native title claimants and representative Aboriginal bodies must be advised prior to undertaking public works on land subject to claims. The Gnulli Group represented by the Yamatji Land and Sea Council – Yamaji Marlpa Aboriginal Corporation has an active Native Title Claim under the Act that covers a wide area of the Gascoyne well beyond Exmouth Shire. The North West Cape Exmouth Aboriginal Corporation also has strong associations with the area and considers it is the rightful traditional custodian of the North West Cape area.

Ongoing consultation should occur with Indigenous representatives regarding Aboriginal sites and heritage, and proposed land use, conservation and development.

5.6.2 Geoheritage

National and State registered geoheritage sites within the Exmouth South area are described in Section 4.2. As identified in the *Cape Range National Park Management Plan*, although unlikely to be affected by low-key recreational use, it is important that potential effects on geoheritage values are considered in recreational use and site developments. Other land uses with the potential to impact geoheritage sites must be carefully consider – and avoided if possible.

For State Geoheritage Sites, the Director of Geological Survey of Western Australia should be consulted prior to undertaking any significant site development with the potential to adversely impact on geoheritage values.

5.6.3 Military Heritage

Military heritage should be taken into account in the Structure Plan and subsequent detailed planning.

The Krait Z Force and Potshot Memorials near Learmonth are sites of military heritage significance. During World War II, 'Operation Potshot' saw the Learmonth area established as a base for Australian and United States submarines. Squadron 76 Kittyhawk planes first landed in the area in 1943, which lead to establishment of Learmonth as an RAAF airfield.

Krait Z Force and Potshot memorials have recently been upgraded

The Krait Z Force memorial is the site where allied ships moored during WWII. It is also the beach from which in 1943 a small group of Australian and British Special Forces departed in a former fishing boat re-named *Krait* which they sailed to Singapore in a daring operation called 'Operation Jaywick'. The operation resulted in the sinking of seven Japanese ships before successfully returning to Learmonth.

The Potshot and Krait memorials, being in close proximity to each other, and the Learmonth RAAF Base and the Learmonth Jetty being nearby, further enhances the heritage value and interest of the area. The two memorial sites have recently been upgraded, including the addition of more interpretive information which will encourage increased visitation by tourists and locals and help conserve the historic location.

Clumps of mature Tamarisk trees previously planted in the dunes close by provide shade and add to the attraction of the locality as a day use recreation site.

5.7 Servicing

5.7.1 Water Supply

As noted in section 4, the water resources of the area are limited. Whilst Birdrong Aquifer groundwater is available for pastoral uses and other uses that can tolerate semi-saline or saline water, groundwater resources suited for public water supply or private use are limited.

In 2011, the Department of Water released the report WRP 122 *Exmouth Water Reserve Drinking water source protection review Exmouth town water supply* (DoW 2011). It found that the existing reserve adequately reflects the recharge area and management objectives consistent with drinking water source protection.

The Exmouth bore field consists of 34 bores of which 24 were operational and 10 were still to be commissioned, drawing water from the Tulki and Trealla limestone unconfined aquifer. This borefield is located to the west and south of the Exmouth townsite and extends over a distance of about 7km. The Exmouth Water Reserve boundary has been determined based on the recharge area for the production bores and consideration of surrounding land uses and ownership. In 2000, the northern and southern borefields were connected, with a combined licensed allocation of 1.0 gigalitres (GL) comprised of:

- The town sub area with a license allocation of 168,000 kL
- The central sub area with a license allocation of 832,000 kL

The town sub area is fully allocated hence further allocations will be limited to the southern extension of the bore field.

As noted in earlier sections, there is potential for contamination of groundwater resources from above-ground land uses due to the karstic nature of the unconfined aquifers. Although the depth to groundwater west of the tidal interface (<5km from the coast) is generally > 100m,

Exmouth Water Supply bore

this could be shallower adjacent to drainage lines and waterways. Waterways may function as recharge areas to groundwater. Confined aquifers are recharged in specific areas where water leaks from overlying aquifers, or where the aquifer rises to meet the surface.

Karstic formations contain sink holes and solution channels that can transport contaminates quickly to the drinking water production bores in the event there is a contamination spill or incident. Water quality risks include:

- Pathogens and nutrients from people and animal waste
- Hydrocarbons from vehicles via spills and leaks of fuel

Significant land uses that have the potential to contaminate the drinking water source include:

- livestock grazing
- limestone mining
- unauthorized use of unsealed tracks for camping and off road vehicles
- activities associated with the exploration and production of geothermal and petroleum leases existing in the area

The Exmouth South Structure Plan and more detailed land use planning and development proposals must acknowledge the importance of protecting both confined and unconfined groundwater resources of the Exmouth Water Reserve for public water supply, and the environment.

Reticulated water from the Exmouth town water supply currently extends south of the townsite to service the strategic industrial area, the Exmouth aerodrome and the Wilderness Estate special rural area. It will be cost-effective to locate any additional special rural, commercial and industrial uses in proximity to the existing service area.

It is open to proponents to apply for individual water allocations for groundwater for drinking water or other purposes, however groundwater in the Exmouth town sub area is understood to be fully allocated and limited in the central sub area. Only the Exmouth south sub area has significant unallocated potential.

Wherever possible, it will be prudent for development to harvest rainwater (such as roof catchments and rainwater) to supplement other water supplies.

5.7.2 Waste Water

Waste water (sewer) services are provided to Exmouth townsite in which reticulated sewerage is conveyed to a waste water treatment plan near the golf course. The site is close to town and odours impact parts of the town under certain weather conditions. Water Corporation has funds set aside

to construct a replacement waste water treatment plant further away from town. Negotiations are currently being conducted with Defence, with the objective of securing a co-located site to the north of town.

The existing special rural subdivision to the south of the townsite is the most remote area to be provided with sewer connections. Distance from the treatment plant becomes the limiting factor. The practical limit is in the order of 7km, beyond which costs are prohibitive, and the wastewater tends to reside within the conveyance system for so long that it becomes septic in transit.

5.7.3 Power Supply

Power supply to Exmouth Townsite and the Exmouth South area is supplied by Horizon Power from Exmouth Power Station located at the western end of Welch Street, Exmouth. The power station is a relatively new gas-fired facility with diesel back-up. There are presently 9 units in operation, with design capacity up to 16 units, providing significant growth potential. Power is generated and delivered by Exmouth Power Station Pty Ltd (a wholly-owned subsidiary of Worley Parsons) in accordance with an 18 year Power Purchase Agreement signed in 2003 and approved by the Economic Regulation Authority.

There are a number of power transmission lines through the Exmouth South area, including a 22 kVA line shown in Plan 6 that extends southward serving the Strategic Industrial Area, aerodrome, MG Kailis site and Learmonth. Other transmission lines serve the Water Corporation's Exmouth water supply borefield.

High voltage power transmission

Some stakeholder concerns have been expressed about potential noise and gaseous emissions from the power station, the required buffer and potential impacts on the community and proposed urban development in the locality. The *Exmouth Townsite Structure Plan* (2011) identifies a 350m buffer and recommends a Buffer Definition Study be undertaken as a priority to define the off-site buffer requirement assuming full capacity, acknowledging best management practice, and assuming the land use preference for urban/tourism use on adjacent landholdings.

The power station has recently added noise exhaust extensions; and a noise study to measure the emissions has recently been carried out by an independent acoustic consultant. The main focus is meeting the Environmental Protection (Noise) Regulations, particularly the required night time noise levels for sensitive uses such as residential.

In terms of planning for Exmouth South, it is assumed that power supply will continue to be provided by Exmouth Power Station in accordance with the existing power purchase agreement for the term of the agreement. Without making any comment or predictions regarding the longer term future of the existing Exmouth Power Station and whether or not it should remain and expand in its current location beyond the term of the current Power Purchase Agreement, it is considered prudent to identify an alternative long term power station site further from the town within the Exmouth South area. This site would enable construction of an additional, or replacement, power station.

5.6.4 Rubbish Tip

The Shire's existing rubbish tip (Site 7 in *Plan 6*) is located on a Crown reserve west of the Minilya-Exmouth Road, south-west of the Strategic Industrial Area and north of the Exmouth Aerodrome. The site is used for disposal of household and general waste and some septage. Although rubbish is regularly covered via mechanical means, the nature of a waste disposal facility of this type means that it attracts scavengers, especially birdlife.

Being located generally in the flight path of the aerodrome, the rubbish tip potentially increases the risk of aircraft bird strike. The tip has some visual impact from the Minilya-Exmouth Road and is more visually evident from the air, conflicting with the tourism images and objectives of the Shire. As shown in *Plan 5*, the site also overlies portion of the Cape Range Subterranean Waterways which may present a risk of contamination. Anecdotally, there may also be Aboriginal heritage values in the area.

Rubbish tip site

Accordingly, it would be prudent for the Shire to consider identifying a suitable new tip site and to plan for the closure and rehabilitation of the existing tip to avoid increased risk of aircraft bird strike, visual impact and potential impact on subterranean waterways and Aboriginal heritage.

5.6.5 Drainage and Flood Management

The coastal plain between Exmouth and Learmonth is characterized by numerous intermittent incised creeks which discharge eastwards from Cape Range. These creeks are highly seasonal and typically only flow following intensive rainfall events (often associated with cyclones). Local roads, including the Minilya-Exmouth Road, pass through a number of floodway crossings (causeways) that typically become impassable to vehicles during intensive rainfall events. Crossings may be impassable for some hours up to several days in more significant events. The floodwaters typically discharge to the Gulf at creek mouths and discrete breakout locations associated with low points in the coastal dunes.

A recent *Exmouth District Water Management Strategy* (Cardno, 2012) identified floodway and flood fringe areas but was limited to the Exmouth townsite and immediately adjacent areas. Only a small northern-most portion of the Exmouth South Structure Plan area was included.

The DWMS supplemented the *Exmouth Floodplain Management Study – Floodplain Management Strategy* (SKM, 2007), which had the following objectives:

1) Limit the impacts of existing flooding problems on the well-being of individuals to acceptable levels;

2) Limit the property impacts of existing flooding problems to acceptable levels;

3) Preserve, and enhance where possible, the natural function of the floodplain to convey flood waters and/or sustain flood dependent ecosystems; and,

4) Encourage the compatible planning and use of floodplains as a resource for the use of the whole community.

The main land use planning recommendation from the two strategies of relevance to Exmouth South was the setting aside of land under 'floodway' designation to avoid inappropriate development, and the planning and management of land under 'flood fringe' designation to avoid regional flooding impacts.

Typical causeway

Broadly, using desk-top information and site visits, preparation of the Exmouth South Structure Plan has sought to avoid likely 'floodway' areas and minimize intrusion into likely 'flood fringe' areas.

A DWMS should be prepared for the Exmouth South Structure Plan area as part of the Shire's proposed Local Planning Strategy. The DWMS should outline design objectives for water quality and conservation across the Structure Plan area. The DWMS should also include flood modelling to identify 'floodway' and 'flood fringe' areas and to recommend appropriate planning and management responses. The key focus for the flood modelling is to be in those areas where flood sensitive infrastructure is to be located or development is likely to cause a potential change to the flood regime of significant ecosystems. The DWMS should also address other relevant matters as outlined in *Better Urban Water Management* (WAPC 2008).

6. STRUCTURE PLAN PROPOSALS

Having analysed the site context and planning issues and taken into account community consultation for this and previous plans, a high-level district structure plan is proposed for Exmouth South. Section six describes the Exmouth South Structure Plan proposals, shown in *Plan 9*.

6.1 Overall Objective

The overall objective of the Structure Plan is:

> *To provide a strategic, long term land use plan to facilitate responsible economic development balanced with the need for conservation, landscape and heritage protection, and compatible with the requirements of Defence and communications and internationally significant scientific activities.*

The following sub-headings list the Objectives and Actions for the key elements of the Structure Plan. For convenience, key initiatives are generally listed by location from north to south, followed by more generic sub-headings for matters such as servicing.

6.2 Beachside Bridle Trail

Objective:

> *To provide a horse trek tourism and recreation experience unique to Exmouth that showcases a section of the Exmouth Gulf coast and the proposed Mowbowra Creek heritage and day use area.*

Actions:

6.2.1 Provide an opportunity for creating a beachside bridle trail from the existing equestrian area to Mowbowra Creek day use site.

6.3 Special Rural Eco Estate

Objective:

> *Creation of a sustainable, low density eco-estate that provides lifestyle choice and responds appropriately to the landscape and environmental features of the site.*

Actions:

6.3.1 Undertake detailed investigations into the feasibility and suitability of the particular area for a low density eco-estate.

6.3.2 The southern extent of the estate should be determined by factors including flood risk and drainage, significant setback distances from Mowbowra Creek and, importantly, a suitable separation distance from the potential site for a marine support facility, lay-down area and general industry investigations (suggested minimum 1000m).

6.4 Creek Corridors

Objective:

Conservation of drainage and multiple use corridors representative of the environmental, landscape and heritage values of significant creeks linking Cape Range to Exmouth Gulf.

Actions:

6.4.1 Identify proposed drainage and multiple use corridors for Mowbowra, Badjirrajirra and Wapet Creeks.

6.4.2 Engage with landowners and other stakeholders over suitable arrangements to conserve the environmental, landscape and heritage values of the corridors.

6.5 Rural – Conservation and Landscape Protection

Objective:

Conserve the open rural landscape values of the area.

Actions:

6.5.1 Identify the area in the proposed local planning strategy for rural – conservation and landscape protection or similar.

6.6 Water Reserve and Limestone Mining Precinct

Objective:

Protection of public drinking water, environmental and landscape values, and facilitating high quality limestone mining consistent with maintaining those values.

Actions:

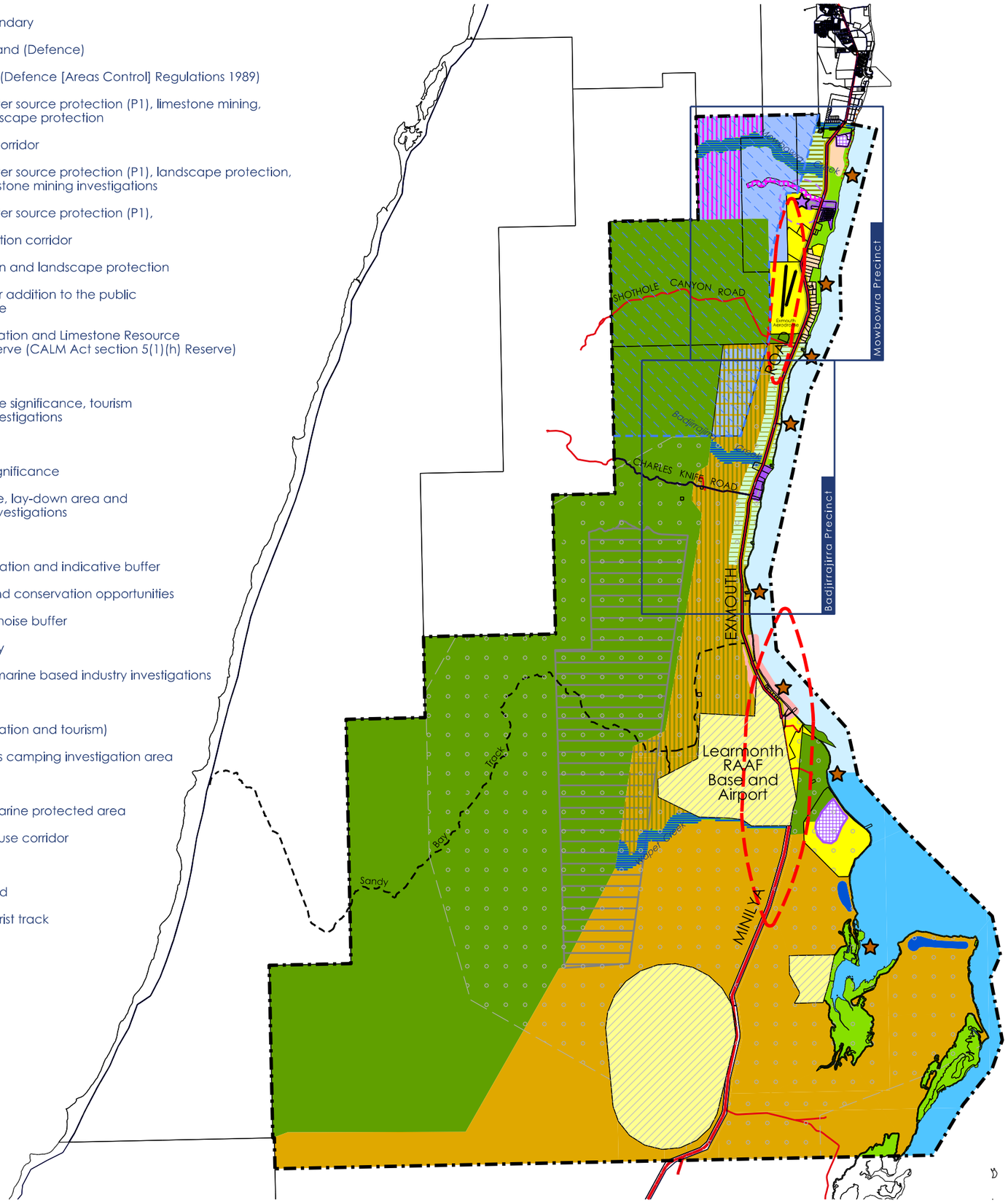
6.6.1 Acknowledge primacy of the Exmouth Water Reserve (P1) for protection of public drinking water.

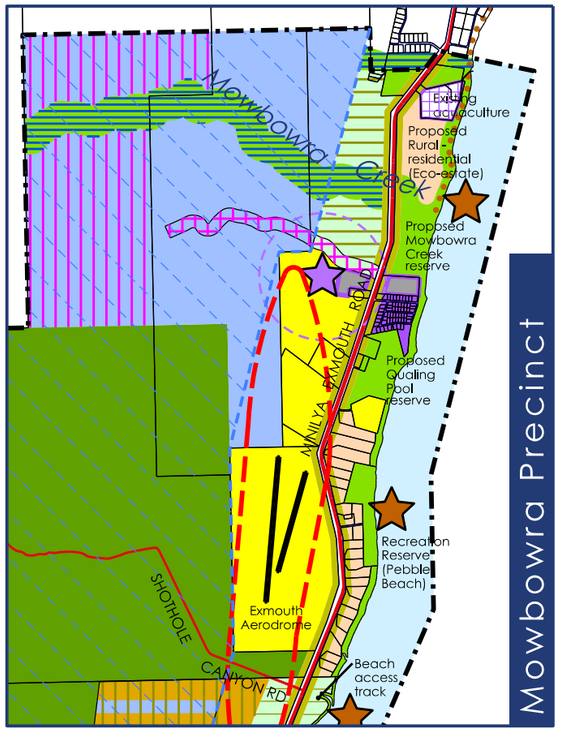
6.6.2 Acknowledge the Crown Reserve vested in the Water Corporation for public drinking water supply purposes, together with the Wellhead Protection Zones.

LEGEND

- Structure plan boundary
- Commonwealth Land (Defence)
- Height limits apply (Defence [Areas Control] Regulations 1989)
- Public drinking water source protection (P1), limestone mining, conservation, landscape protection
- Mining haul road corridor
- Public drinking water source protection (P1), landscape protection, conservation, limestone mining investigations
- Public drinking water source protection (P1),
- Landscape protection corridor
- Rural - conservation and landscape protection
- Areas proposed for addition to the public conservation estate
- Proposed Conservation and Limestone Resource Management Reserve (CALM Act section 5(1)(h) Reserve)
- Pastoral land
- Pastoral, landscape significance, tourism and education investigations
- Public purposes
- Military heritage significance
- Marine supply base, lay-down area and general industry investigations
- Industry - special
- Proposed power station and indicative buffer
- Park, recreation and conservation opportunities
- Indicative aircraft noise buffer
- Aerodrome runway
- Aquaculture and marine based industry investigations
- Rural - residential
- Day use site (recreation and tourism)
- Tourism - wilderness camping investigation area
- Ocean
- Recommended marine protected area
- Drainage multiple use corridor
- 2 wd sealed road
- 2 wd unsealed road
- Proposed 4WD tourist track
- Bridle trail

PLAN 9





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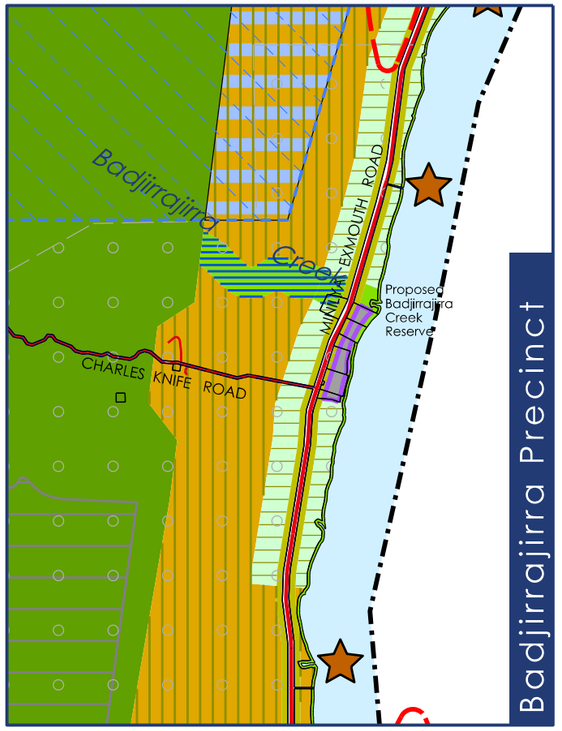

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Date:
October 2013

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EXMOUTH SOUTH
Structure Plan

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Structure Plan

6.6.3 Acknowledge the mining tenements (active and pending) existing over the area, including Crown Reserves and Unallocated Crown Land.

6.6.4 Acknowledge the areas proposed for addition to the public conservation estate under the *Cape Range National Park Management Plan 2010*.

6.7 Strategic Industrial Area

Objective:

Strengthen and enhance the role of the strategic Industrial area as Exmouth's principal industrial area.

Actions:

6.7.1 Broaden the area identified for the strategic industrial area to include land adjoining Lot 50 and adjacent to the road train assembly area extending as far west as the power transmission line and north to the mining haul road corridor.

6.7.2 Further investigate the expanded strategic industrial area for suitability for a marine supply base and lay-down area.

6.8 Future Power Station Site

Objective:

Identify a suitable power station site as a potential long term second power station or alternative to the existing Exmouth Power Station.

Actions:

6.8.1 Investigate a proposed future power station site to the west of the road train assembly area, west of and adjacent to the existing power transmission line, and south of the Exmouth Limestone mine haul road as a potential second power station or alternate site for the Exmouth Power Station.

6.8.2 Ensure the proposed future power station site is a suitable distance from Exmouth townsite and its planned expansion to achieve substantive buffers to sensitive land uses (including the proposed special rural eco-estate north of Mowbowra Creek) whilst providing transmission efficiency.

6.8.3 Assess whether the separation distance of approximately 1000m to the nearest caretakers dwellings in the Composite Industrial component of the Strategic Industrial Area are appropriate under the State Industrial Buffer Policy and EPA requirements (noting also that such dwellings are subject to individual acoustic provisions).

6.8.4 Assess potential visual impact from Minilya-Exmouth Road and other important viewsheds, taking account of distance, topography and vegetation.

6.9 Exmouth Aerodrome

Objective:

Exmouth aerodrome to operate as a regional aviation hub providing civil aviation services independent of, but mutually compatible with, Learmonth RAAF Base and Airport.

Actions:

6.9.1 Progressively upgrade Exmouth aerodrome with sealed runway (minimum 1800m, ultimate 2300m), night capability, apron areas, service and terminal facilities initially suited to turboprop aircraft but capable of upgrade to accommodate narrow bodied jet aircraft.

6.9.2 Complete the preparation of the Exmouth Aerodrome Master Plan to inform future development, land encroachment protection and building and structure height limiatations.

6.9.3 Use the indicative aircraft noise buffer shown in the Exmouth South Structure Plan as an interim guide to avoiding encroachment of incompatible land uses, pending detailed studies.

6.9.4 In conjunction with Learmonth RAAF Base and Airport, undertake an Aircraft Noise Exposure Forecast study as a basis for establishing a noise and safety buffer area and avoiding encroachment of incompatible land uses.

6.9.5 Investigate Exmouth aerodrome and Learmonth RAAF Base and Airport having single air traffic control.

6.9.6 Plan for the closure and rehabilitation of the Exmouth rubbish tip to avoid increased risk of aircraft bird strike, visual impact and potential impact on subterranean water waterways and Aboriginal heritage.

6.10 Minilya-Exmouth Road

Objective:

Progressively improve the safety and convenience of the Minilya-Exmouth Road, particularly addressing the mix of additional road trains and recreational traffic (especially car/caravan and car/boat combinations).

Actions:

6.10.1 Set aside an area approximately 100m wide on each side of Minilya-Exmouth Road between the Learmonth airport and Exmouth townsite as recommended in the *Ningaloo Coast regional strategy Carnarvon to Exmouth* (WAPC, 2004) and identified in the Structure Plan to help maintain the landscape and sense of remoteness.

6.10.2 Prepare a visual amenity policy to control landscaping and building development on the land on either side of the Minilya-Exmouth Road.

6.10.3 Progressively carryout widening of the narrow sections of pavement width on the Minilya-Exmouth Road, commencing with widening of "Area C" of Minilya Exmouth Road (north of Exmouth Station Homestead to Exmouth) from 6.2m seal to 9.0m seal (7.0m plus 2 x 1.0m sealed shoulders) plus turning pockets and overtaking bulges.

6.10.4 Investigate the introduction of suitably sized culverts or optional structures in place of the most flood-prone causeways. Structures should be designed to cater for rainfall associated with storms up to the 1 in 50 year ARI event.

6.11 Pastoral Land

Objective:

Acknowledge and support pastoral lands for their economic, heritage and landscape values.

Actions:

6.11.1 The proposed local planning strategy and local planning scheme to acknowledge and support pastoral land uses including grazing and potential diversification.

6.11.2 The proposed local planning strategy, local planning scheme and land use and development proposals under the *Land Administration Act* to acknowledge the contribution of the Exmouth Gulf Station pastoral lease in conserving the environment, heritage and landscape of the area.

6.11.3 In the Exmouth Gulf Station pastoral lease (portion north of Wapet Creek) particular emphasis be given to investigation of pastoral-based and nature-based tourism and education opportunities in recognition of the pastoral management challenges associated with this relatively narrow and elongated land parcel and potential competing interests with adjoining land uses.

6.11.4 Should Exmouth Gulf Station wish to pursue the concept of wilderness camping as a nature-based tourism experience and diversification of pastoral activities, the two potential areas shown in the Structure Plan near the Bay of Rest and Gales Bay should be investigated.

6.11.5 Creation or rationalization of public access agreements that grant a right of way for the use and benefit of the general public (e.g. to access isolated Crown land) should occur in consultation with the pastoral lease owners and have appropriate regard to the interests of the owners and the public.

6.12 Kailis Site

Objective:

Facilitate transition of the former seafood processing plant and caravan park to a new economic activity compatible with environmental and landscape values.

Actions:

6.12.1 Further investigate the MG Kailis site and nearby Crown reserve east of the Minilya-Exmouth Road and south of Badjirrajirra Creek for suitability for a marine supply base , lay-down and general industry area compatible with environmental and landscape values.

6.13 National Park Management Plan

Objective:

Acknowledge and support the vision for Cape Range National Park including that by 2020, the park and the Ningaloo Marine Park will be formally recognised amongst the world's most valuable conservation and nature based tourism icons.

Actions:

6.13.1 Acknowledge and support *Cape Range National Park Management Plan No 65 2010* including "Areas proposed for addition to the public conservation estate" (proposed additions to the National Park) and "Proposed Conservation and Limestone Resource Management Reserve (CALM Act section 5(1) (h) Reserve)".

6.13.2 Acknowledge and support the principles of involving the community in park planning and implementation, including the relationship with adjoining landowners as set out in *Good Neighbour Policy* (CALM, 2007).

6.13.3 Take account of the National Park Management Plan in decision-making within the Exmouth South Structure Plan area, including during preparation of the proposed Local Planning Strategy and Local Planning Scheme, and during determination of subdivision and development applications.

6.14 Sandy Bay 4WD Track

Objective:

The Sandy Bay Track to become renowned as a four wheel drive tourism experience that showcases the Cape Range National Park and wilderness values 'from reef to range to gulf' across the North West Cape peninsula.

Actions:

6.14.1 In consultation with DEC, the owners of Exmouth Gulf Station, Defence, Shire of Exmouth and other stakeholder formalise the existing Sandy Bay Track as a 4WD tourism experience inclusive of a new eastern access from Minilya-Exmouth Road in the vicinity of the Krait memorial and a track alignment that avoids Defence land.

6.15 Military Heritage Precinct

Objective:

Create a military heritage precinct recognising important military sites and historic military operations in the Learmonth area and their physical, strategic and heritage context.

Actions:

6.15.1 Identify and formalise a military heritage precinct comprising the Potshot and Krait memorials within their immediate context of Exmouth Gulf and Learmonth Jetty and nearby Learmonth RAAF Base.

6.15.2 Progressively develop the precinct as a heritage, tourism and recreation area, including the clumps of Tamarisk trees becoming part of a day use site.

6.16 Learmonth RAAF Base and Airport

Objective:

Acknowledge the strategic and defence significance of Learmonth RAAF Base and Airport and its associated role as a regional civil aviation hub.

Actions:

6.16.1 Avoid encroachment of land use and development incompatible with military and civil aviation and communications.

6.16.2 Use the indicative aircraft noise buffer shown in the Exmouth South Structure Plan as an interim guide to avoiding encroachment of incompatible land uses pending detailed studies.

6.16.3 Acknowledge the RAAF Base and Airport and surrounding area is affected by building and structure height limits under the Defence [Areas Control] Regulations 1989 and apply the regulations when determining applications for buildings and structures in the area.

6.16.4 In conjunction with Exmouth aerodrome, undertake an Aircraft Noise Exposure Forecast study for the Learmonth RAAF Base and Airport as a basis for establishing a noise and safety buffer area and avoiding encroachment of incompatible land uses.

6.16.5 Investigate Learmonth RAAF Base and Airport and Exmouth aerodrome having single air traffic control.

6.17 Marine Protection Area

Objective:

Protect the significant environmental and remoteness values of the marine waters south of Wapet Creek.

Actions:

6.16.1 Acknowledge the near-shore marine waters of Exmouth Gulf south of Wapet Creek are identified as a 'significant environmental area' under *State Planning Policy 6.3 Ningaloo Coast*.

6.16.2 Acknowledge the above-mentioned waters are identified as a 'recommended marine protected area' under the *Ningaloo coast regional strategy Carnarvon to Exmouth* (WAPC, 2005), with the section Wapet Creek to Bay of Rest also classified as 'semi-remote' and the section from Bay of Rest south classified as 'remote'..

6.16.3 On-shore decision-making on land use and development should have due regard for the identified significant environmental and recommended marine protected area.

6.18 Marine Based Industry Reserve (Heron Point)

Objective:

Provide opportunities for development of marine based industry, especially aquaculture.

Actions:

6.18.1 Undertake further investigations into the C class Crown Reserve to ascertain what portion of the 684 ha site is best suited to development of marine based industry, especially aquaculture.

6.18.2 Further examine the significance of on-site subterranean waterways and Aboriginal heritage sites, and the nearby proposed marine protection area, as these have the potential to impact the extent of future aquaculture or other marine based industry.

6.18.3 Further examine the less-constrained portion of the site as a possible site for a marine supply base and lay-down area, noting that it is considered less prospective than at the Strategic Industrial Area or MG Kailis sites.

6.19 Waste Water Treatment

Objective:

Provide for sustainable waste water treatment, reuse and disposal.

Actions:

6.19.1 As no waste water treatment plants are proposed in the Exmouth South Area, it is recommended that all residential, industrial and commercial development in the northern portion of Exmouth South (generally north of Shothole Canyon Road) be serviced by the Exmouth waste water treatment plan, including at its proposed new site on Defence land north of town.

6.19.2 Isolated development (generally south of Shothole Canyon Road) should have appropriate aerobic treatment units (ATU) or approved alternative environmentally friendly, on-site waste water treatment systems.

6.20 Rubbish Tip

Objective:

Meet the rubbish disposal needs of Exmouth townsite and Exmouth South compatible with surrounding land uses, the environment and visual management.

Actions:

6.20.1 Identify a suitable new rubbish tip site to service Exmouth townsite and Exmouth South.

6.20.2 Progressively phase out waste disposal operations at the existing rubbish tip and close and rehabilitate the site.

6.21 Drainage and Flood Management

Objectives:

1) *Limit the impacts of existing flooding problems on the well-being of individuals to acceptable levels;*
2) *Limit the property impacts of existing flooding problems to acceptable levels;*
3) *Preserve, and enhance where possible, the natural function of the floodplain to convey flood waters and/or sustain flood dependent ecosystems;*
4) *Encourage the compatible planning and use of floodplains as a resource for the use of the whole community.*

Actions:

6.21.1 A District Water management Strategy (DWMS) should be prepared for the Exmouth South Structure Plan area as part of the Shire's proposed local planning strategy.

6.21.2 The DWMS should include flood modelling to identify 'floodway' and 'flood fringe' areas and to recommend appropriate planning and management responses for areas of sensitive infrastructure and significant ecosystems.

7. IMPLEMENTATION

Once adopted by Council and endorsed by the WAPC, the Structure Plan will provide immediate guidance to decision-making on land use and development. It will also provide guidance for the proposed whole-of-shire local planning strategy, preparing local structure planning (where necessary), and assessing subdivision and development proposals.

REFERENCES

Aboriginal Heritage Act 1992 (WA)

AMC (2011) *Marine Based Common User Facilities: Northwest Western Australia.* Prepared for the Department of Commerce. AMC Management Pty Ltd, Australian Marine Complex, Perth, WA.

Conservation and Land Management Act 1985 (WA)

CALM (2007) *Good Neighbour Policy* Department of Conservation and Land Management, Perth, WA.

Cardno (2012) *Exmouth District Water Management Strategy* Cardno, Perth. WA.

DoW (2011) *Exmouth Water Reserve drinking water source protection review – Exmouth town water supply.* Report WRP 122, June 2011 Department of Water, Perth, Western Australia

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

EPA (2012) *A review of subterranean fauna assessment in Western Australia.* Environmental Protection Authority, Perth, WA.

DEC (2010) *Cape Range National Park Management Plan No 65 2010.* Department of Environment and Conservation and Conservation Commission Western Australia, Perth, WA.

DPI (2008) *Exmouth Harbour Development Community Consultation Report.* Department for Planning and Infrastructure, Perth, WA.

Environmental Protection Act 1996 (WA)

Gascoyne Development Commission (2011) *Economic Development Opportunities for the Gascoyne Region associated with Resource Sector Investment and Expansion – Gascoyne Pilbara Project.* Prepared by SGS Economics & Planning Pty Ltd (Brisbane, QLD) in conjunction with O'Neil Pollock & Associates Pty Ltd

Gascoyne Development Commission (2010) *Gascoyne Regional Development Plan 2010/2020.* Gascoyne Development Commission, Carnarvon. WA

Government of Western Australia (1997) *Limestone Mine, Quicklime Plant and Use of Existing Port Facility (Point Murat) Shire of Exmouth (715). Statement No 461. Statement that a proposal may be implemented (Pursuant to the provisions of the Environmental Protection Act 1986).* Minister for the Environment; Employment and Training. Perth, WA.

Government of Western Australia (1998) *Exmouth Limestone Project Barge Loading Facility Mowbowra*

Creek, Shire of Exmouth (1107) Statement No 465. Statement that a proposal may be implemented (Pursuant to the provisions of the Environmental Protection Act 1986). Minister for the Environment; Employment and Training. Perth, WA.

Gray and Lewis (2008) *Limestone Stockpile and Barge Loadout Facility Lot 50 Murat Road Exmouth – Application for Planning Approval.* Prepared for Exmouth Limestone Pty Ltd. Perth, WA.

Maunsell (1981) *Exmouth Marine Supply Base Study*. Prepared for Department of Resources Development. Maunsell & Partners Pty Ltd, Perth, WA.

Mining Act 1978 (WA)

Native Title Act 1993 (Commonwealth of Australia)

Martinick McNulty (2000) *The Cape Wilderness Estate Pebble Beach Locations 222 and 223 Murat Road Exmouth – Foreshore Management Plan.* Prepared for Springdale Holdings Pty Ltd. Martinick McNulty Pty Ltd, Perth. WA

Planning and Development Act 2005 (WA)

Pracsys (2011) *Exmouth Town Centre Revitalisation Strategy – Economic Analysis.* Pracsys, Perth, WA.

RPS (2011) *Proposed Scheme Amendment Lots 1, 101. 112 & 220 Minilya-Exmouth Road, Learmonth.* Shire of Exmouth Town Planning Scheme No 3. Prepared for MG Kailis Group. RPS Environment and Planning Pty Ltd, Perth, WA.

Shire of Exmouth (2001) *Exmouth Gulf Coastal Plan.* Prepared by Coast*Wise* in association with MJ Lundstrom Pty Ltd, Perth, WA.

Shire of Exmouth (2011) *Exmouth Townsite Structure Plan.* Prepared by Taylor Burrell Barnett. Shire of Exmouth, WA

Shire of Exmouth (2007) *Shire of Exmouth Strategic Plan 2007-2012* Shire of Exmouth, WA.

Shire of Exmouth (2011) *Shire of Exmouth 10+ Strategic Community Plan.* Prepared by UHY Haines Norton (WA) Pty Ltd for Shire of Exmouth, Perth, WA.

Shire of Exmouth (1999) *Shire of Exmouth Town Planning Scheme No 3.* Western Australian Planning Commission 1999 (as amended) Perth, WA.

SKM (2007) *Exmouth Floodplain Management Study – Floodplain Management Strategy* Department of Water, Perth, Western Australia

WAPC (1998) *Exmouth-Learmonth (North West Cape) Structure Plan.* Western Australian Planning Commission, Perth, WA.

WAPC (2004) *Ningaloo coast regional strategy Carnarvon to Exmouth.* Western Australian Planning Commission, Perth, WA.

WAPC (2012) *Draft Gascoyne Regional Planning and Infrastructure Framework*. Western Australian Planning Commission, Perth, WA.

WAPC (2012) *Population Report No. 7, Western Australia Tomorrow: Population Projections for Statistical Division, Planning Regions and Local Government Areas of Western Australia.* Western Australian Planning Commission, Perth, WA.

WAPC (2004) *Statement of Planning Policy No. 6.3 Ningaloo Coast.* Special Government Gazette, Western Australian Planning Commission, Perth, WA

WAPC (1997) *State Planning Strategy.* Western Australian Planning Commission, Perth, WA

Table 1 - Pre-lodgement Consultation (Stakeholder Contact)

Agency	Contact	Date of consultation	Summary of outcome
Department of Regional Development and Lands	Henty Farrar - Manager State Lands, Mid-est Gascoyne	10/05/ 2012 22/10/2012	Confirmed Pastoral Lease exclusion areas taking effect in 2015. Has significant implications for the Exmouth South Structure Plan. Crown Reserve at Heron Point started as an aquaculture (prawn farm) proposal but lease has expired. Compulsory acquisition took place and Native Title extinguished. No specific proposal is current. RDL supports good strategic planning for the Pastoral Lease Exclusion Area. "Default" position is recreation and landscape value.
	John Audrioff – Project Leader 2015 Pastoral Leases	22/10/2012	Issues include groundwater protection (subterranean fauna). Floodways in Exmouth South tend to remove floodwater, less subject to inundation than the town. RDL not consulted over Amendment 27 – Kailis site. Nulli Group Native Title Claim is the only current claimant. In terms of tourism activities on pastoral leases, RDL try to consult with the Shire wherever possible. Rangelands tenure being considered under possible changes to the LAA.
Department of Transport	Daren Hutchins – Gascoyne Region	23/02/ 2012	Expansion of the Exmouth Boat Harbour has been investigated but the emphasis now is on more efficient use of existing infrastructure. There is no capacity to have a 24/7 marine supply base facility at the marina.
	Steve Jenkins – General Manager, Coastal Infrastructure	07/03/2012	Marine supply bases are typically a 24/7 operation. There are constraints at the Exmouth Boat Harbour. Limited to boats up to 35m and cannot accommodate rig tenders 60-90m long with 5-6m draft. Mentioned Beadon Creek at Onslow where LNG plant proposed will have a facility to handle larger boats. 'Target market' at Exmouth is '2nd tier' support vessels for a marine supply base. An Exmouth Limestone jetty licence application at Lot 50 remains on hold. May have merit for a marine supply base.
	Michael Kennedy A/Manager Aviation	05/11/2012	Supported use of indicative ANEF buffer pending detailed studies. Acknowledged our reference to the Geraldton aircraft noise study, although heavy helicopters at Exmouth are a point of difference. Suggested talking to a modeller re indicative ANEF and to DoP re Perth-Peel airport planning.

Agency	Contact	Date of consultation	Summary of outcome
Department of Environment and Conservation	Arvid Hogstrom – District Manager Ray de Jong – Acting District Manager	Feb 2012 24/10/2012	Desire to see the National Park Management Plan (2010) reflected in the Structure Plan. Cape Range National Park (around 220,000 visitors per annum), Ningaloo Marine Park and the Gulf are exceptionally popular with visitors, especially following World Heritage listing. DEC is comfortable with the pastoral lease that will be renewed after the 2015 exclusion, although DEC notes revised stock management would assist protection of priority listed fauna. The proposed Conservation and Limestone Resource Management Reserve (section 5(1)(h)) will only be accessed if there are no other alternatives. There are existing gravel pits that may be used. Sees some merit in a Sandy Bay track 4WD experience across the Cape. In regard to a marine supply base, the high conservation value wildlife must be considered. Some service vessels pass through the Marine Park (but can't anchor there). Noted that travel distances from oil and gas facilities to Onslow were similar to Exmouth.
Gascoyne Development Commission	Stephen Yule – Director	24 Feb 2012	The GDC commissioned economic consultants to investigate opportunities for the region to benefit from the oil and gas sector. This report was released in January 2012. Four initiatives identified for Exmouth are: o Boat Harbour Expansion o Market / promote Exmouth as a Logistics Hub o Development of Exmouth Gulf Marine Supply Base o Exmouth Fly In - Fly Out / Drive In - Drive Out Initiatives Commission sees opportunities for economic development in tourism, defence, oil and gas and marine research.
Department of State Development	Chris Clarke	16/11/2012	The Department understands the need for a marine supply base in Exmouth and agrees that Exmouth has significant opportunities to benefit from the resource sector activity in the Carnarvon Basin. Whilst recognising the potential benefits from such facilities there is a need to preserve the unique and pristine character of the area.
LandCorp	Tom Engelbrecht – Project Manager	31/10/2012	Exmouth Townsite Structure Plan shows a 350m buffer between the Exmouth power station and LandCorp's Nimitz Street urban area. An ODP has been endorsed by Shire and WAPC, with Stages 1 & 2 approved. LandCorp has responded to the OEPA letter that recommended a larger generic buffer. It would be prudent to identify a site for a new power station in Exmouth South SP area. LandCorp also controls Reserve 38865 near Kailis site and have power to lease.

Agency	Contact	Date of consultation	Summary of outcome
Department of Indigenous Affairs	Robert Brock	20/11/2012	Advised of the requirements and processes for any future developments suggesting that with such a large area that site specific archaeological and ethnographic studies be undertaken when a site is being considered. Although there are many areas where evidence of activity can be found, not all of these are significant and in coastal areas some of the finds may have been moved by wind and water and although found in one place it is not necessarily the area of significance. Information provided on Aboriginal Sites. There are 11 sites of which 4 are registered within the Exmouth South structure plan area.
Main Roads WA	Brad Pearce Ernie Reynolds A/Regional Manager – Gascoyne Region Peter Ward Peter Sewell	17/08/2012 + follow-ups	The requirement for widening of existing narrow sections of Minilya Exmouth Road in this instance is not triggered by total traffic volume, but rather by virtue of the mix of traffic. Additional road trains are likely to be generated by any service industries that might be developed. For safety reasons, the mix of additional road trains and recreational traffic (particularly car/caravan and car/boat combinations) cannot be sustained on narrow pavements. The introduction of suitably sized culverts in place of existing causeways is likely to be required if significant increases in traffic are anticipated.
Water Corporation	Steve Greeve - Asset Manager Mid West Region Russell Nelson	11/09/2012	<u>Water Supply:</u> Water supply for Exmouth is from a wellfield consisting of a number of low-yielding bores located to the southwest of Exmouth in the Cape Range. The northern portion of the wellfield can be described as "overdeveloped" and the southern portion "underdeveloped". Options for increasing the capacity of the system includes: o further development of the southern portion of the wellfield; o development of a Desalination Plant, or ; o a combination of these two options. No feasibilities have been carried out to date. <u>Wastewater:</u> Water Corporation has funds set aside to construct a replacement waste water treatment plant further away from town. Negotiations are currently being conducted with Defence, with the objective of securing a co-located site. The existing special rural subdivision to the south of the townsite is the most remote area to be provided with sewer connections. Distance from the treatment plant becomes the limiting factor. The practical limit is in the order of 7km, beyond which costs are prohibitive, and the wastewater tends to reside within the conveyance system for so long that it becomes septic in transit.

Agency	Contact	Date of consultation	Summary of outcome
Department of Defence	Tim Horgan – Assistant Director External Land Planning	07/11/2012	Supports the planning initiative and the principle of identifying an indicative noise buffer for Learmonth Airport. Dimensions of TME's draft indicative buffer seem generally OK. There is an existing ANEF for Learmonth but it is dated. Defence provided information on recent relevant ANEF examples including Williamtown, Edinburgh & Darwin.
Department of Planning	Justin Breeze, Robert Moore, Greg Davy, Johan Gildenhuys	07/03/2012	Anticipating the structure plan process will allow for community input and technical analysis to provide a context for decisions on land uses and address the question of a marine support facility. Mentioned Amendment 27 rezoning – proponent lodged a s.76 request with Minister for Planning. DoP noted need for the EPA to set level of environmental assessment. Expects the structure plan to go a step further than the AMC report in regard to the marine support facility matter.
		20/10/2012	Noted that the *Land Administration Act* prevails over the *Planning and Development Act* in relation to town planning schemes and Crown land. Regional Development and Lands must have 'due regard' to schemes, and WAPC policy but is not fettered in decision-making.
	John Pride	05/11/2012	Acknowledged merits of indicative noise buffers for Exmouth aerodrome & Learmonth airport. Based on Perth-Peel regional airports planning, meteorology is potentially a significant factor in differences between airports at Geraldton and Exmouth, especially winds. Long term planning for runway lengths is increasing to handle larger, wider-bodied planes. The National Airports Safeguarding Framework and provides useful principles and guidelines for airport planning.
Exmouth Chamber of Commerce	Jon Warren	14/03/2012	Tourism alone won't justify the required investment in social infrastructure. Some families have already left the town due to inadequate education and employment opportunities. Several marine businesses operating from Exmouth Boat Harbour currently service the oil and gas sector. A marine supply base would provide economic benefits. FIFO and DIDO already exists in Exmouth (approximately 50-60 jobs/families) with positive effect. Concerned that businesses and absentee owners have an opportunity to participate in the survey.

Agency	Contact	Date of consultation	Summary of outcome
Tourism WA	Derryn Belford – Acting Executive Director Infrastructure and Investment Renata Lowe – Director Projects Infrastructure and Investment	16/11/2012	Exmouth tourism season is too short - 6 months PA compared to Broome 10 months PA. Importance of airport capacity to take large planes and visual impacts as entry into town. Need to ensure any priority projects are included in the Gascoyne regional planning and infrastructure framework. Exmouth needs both tourism and resource sector investment.
Northwest Cape Exmouth Aboriginal Corporation	Ann Preest Andre Wheeler	24/02/2012 28/03/2012	The Corporation considers it is the rightful traditional owner for the North West Cape area. Cape Range has significant heritage value including many camp sites and in the National Park there is rock art. North West Cape is also the place where cone shell beads (c 32000 years old - the oldest evidence of human adornment in Australia) were found. Concerns the land near the rubbish tip may be possible burial grounds. The Corporation has looked at opportunities to provide a marine supply base and logistics hub and is trying to bring benefits to the local aboriginal people such as an aboriginal education facility for providing skills to work in the oil and gas industry, and a cultural education facility. Discussions have occurred regarding a possible desert museum on North West Cape.
Gnulli Group represented by the Yamatji Land and Sea Council – Yamatji Marlpa Aboriginal Corporation (YMAC)	Maimbo Chilala	16/11/2012	The Gnulli group has an active Native Title Claim under the Commonwealth Native Title Act. Group meets infrequently and the next meeting is likely to be March 2013. The Group would be pleased to invite a project representative to come and explain the purpose of the structure plan and to gain feedback on the stories and places of heritage significance of the area from the Group.
Centre for Whale Research	Lyn Irvine	24/02/2012	The Exmouth Gulf is an important area for marine life particularly as a resting and nursing place used from August to November during the southern migration. It is a critical habitat and is recognised at the State and Federal level. Research has shown that boat noise and vibration are a major issue for the whales. When considering use of the Gulf it is important to limit the number of boats overall but also consider the type of boat, speed and type of activity.

Agency	Contact	Date of consultation	Summary of outcome
MG Kailis Group (plus Teras Australia)	Alex Kailis Peter Breuer	29/02/2012 Meeting + follow-ups	Concerns that the Structure Plan process not be a quasi assessment of TPS 3 Amendment 27 proposal. Provided information on marine supply base proposal including trans-shipment (no breakwater or harbour facilities) and history of trawler operations.
Cape Conservation	Jacqueline Hine	24/02/2012	Concerned that the Exmouth Gulf could be a critical habitat for the Humpback whales as it is one of the few remaining resting places for migrating whales. Boat traffic impacts on whales and dugongs and turtles are also at risk as they are slow moving and can be struck. Other risks include the risk of oil spill (marine environment and mangroves) and contaminates brought in by overseas vessels including invasive species and disease. Oil and gas support services already use the Navy Pier and Cape Conservation believes that a resource company is applying to use this facility. Onslow would be more appropriate for a port. Understand the need for an interim solution prior to the Onslow Port being built and support a low key marine facility but concerned that if approved it will grow incrementally. There is a need for some industry in town but not too much as this would impact town character and there is evidence elsewhere that there has been increased anti-social behaviour attributed to transient workers. Opportunity for Exmouth to develop as a 'green town'. Need a certain population size to be sustainable and would like to see skilled workforce with a focus on tourism, education, and lifestyle.
Department of Mines and Petroleum	Steve Lance Environmental Division	06/11/2012	There are 4 operating mines/quarries in the Exmouth/Learmonth area including Exmouth Limestone, Exmouth Quarries & Concrete, Cape Range Limestone, Holcim Exmouth Quarries. DMP needs to consult with the relevant authorities (EPA, DoW, WaterCorp) before granting a lease. Only required to consult with LGA if the LGA is the vesting authority, however generally consult with the LGA over a proposal within a townsite boundary. Proposals need to follow Mining Proposal Guidelines. Shire can gazette the Exmouth Limestone haul road if it wishes to do so (S.6 Part 2 of the Mining Act provides for LGAs purposes under the Local Government Act). If Exmouth Limestone wishes to use its lease areas for a marine supply base then it would need revised approvals – Mining and EPA. A DoT jetty license would be needed. A jointly managed common use facility could be compatible and mutually beneficial. There is an aquaculture licence area due east of the approved barge load out facility.

Agency	Contact	Date of consultation	Summary of outcome
Exmouth Limestone . Adelaide Brighton	Shelley Lewis, Director Julian Grenthal	07/03/2012 Meeting + follow-ups	Has existing mining lease and environmental approvals for limestone mining, road haulage, site storage and a barge load-out facility. Willing to consider a common use (marine supply base) facility if compatible and mutually beneficial.
Learmonth Solar Observatory	Owen Giersch, Manager Major Muller, Commander USAF	23/10/2012	Concern at potential increased radio frequency interference from MG Kailis proposed marine supply base site. (Subsequently Kailis has supplied information to the observatory).
Exmouth Gulf Station	Phillip Kendrick	16/10/2012 + meeting 23/10/2012	Owners of Ningaloo and Exmouth Gulf Stations have operated tourism activities on Ningaloo under permit since 2002. Are proposing some wildness and homestead tourism uses for Exmouth Gulf station. Acknowledged difficulties of managing the narrow portion of the pastoral lease north of Learmonth and are willing to negotiate options on a mutually beneficial basis.
Worley Parsons	Warren McClintock	31/10/2012	Worley Parsons operate existing Exmouth power station for Horizon Power. Have recently added noise exhaust extensions. Lloyd George Acoustics to undertake a noise study in November 2012 and report to Shire.
Shire of Exmouth	Rob Manning – Manager Building	02/11/2012	(Specific contact by TME re power station matter). Shire favours long term relocation. Sees merit in identifying site in vicinity of the Strategic Industrial Area. EPA/DEC should acknowledge that noise attenuation provisions are required under TPS 3. Horizon power station has an existing Power Purchase Agreement.
Department of Water	Clint Roberts - Scientific Officer, Water Source Protection Planning Kerry Wray - Land use Planning Officer, Mid West Gascoyne Region	29/10/2012 07/11/2012	Supplied GIS info relating to the Wellhead Protection Zones for the Exmouth Water Reserve. In relation to the structure plan, WRP 122 supports the establishment of a 5(g) Reserve for conservation and limestone extraction in the area where water resources are least vulnerable, consistent with recommendation 12 of the original *Exmouth water source protection plan* (2000). DoW manages the Exmouth water reserve under a Priority One (P1) objective to avoid contamination risks.

Table 2 - Advertised (draft) Structure Plan - List of Submitters

No.	Submitter
1.	Department of Defence (Commonwealth)
2.	Cape Conservation Group
3.	Department of State Development
4.	Resident Lot 312 Cape Wilderness Estate Minilya-Exmouth Road
5.	Resident Lot 312 Cape Wilderness Estate Minilya-Exmouth Road
6.	PhD candidate – Humpback Whale research University of Western Australia
7.	Resident Lot 308 Cape Wilderness Estate Minilya-Exmouth Road
8.	J.V & M.J. Richards Lot 313 Cape Wilderness Estate Pebble Beach Road
9.	Department of Environment and Conservation
10.	Department of Water
11.	Water Corporation
12.	Department of Mines and Petroleum
13.	Taylor Burrell Barnett
14.	Department of Regional development and Lands – Pastoral Lands
15	LandCorp