

Geraldton Geraldton Region Plan Final

Prepared by ...



WESTERN AUSTRALIAN
PLANNING COMMISSION

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Minister's Foreword



The Geraldton Region Plan is one of a number of regional strategic plans produced by the Western Australian Planning Commission for the management of growth of regional Western Australia. It has been produced to provide a regional framework for planning decisions, and builds on previous plans for the region.

The plan recognises Geraldton as the regional centre for the Mid-West and emphasises that role within the region as well as its role within the State.

The Region Plan incorporates the principles of the *State Planning Strategy* and identifies areas which should be the focus of future planning. A coordinated approach by local government, the State and the private sector is required to address regional land use issues including matters related to port, industry and transport networks.

The Region Plan is flexible and includes options which allow the opportunity to accommodate change. While it is not possible to be precise about the future, it is possible to identify areas that require further attention. The plan identifies those areas which should be the focus of future regional planning efforts and establishes the principles to guide decisions as changes occur.

The plan aims to ensure that future generations will be able to access and enjoy the characteristics of the region while protecting its natural assets and qualities. It promotes a strong cultural identity and priorities for future housing, employment, recreation and tourism.

The Region Plan incorporates a structure plan for the Greater Geraldton area which identifies future residential, industrial areas, transport links and conservation and recreation areas. The need to retain options and maximise flexibility is exemplified by the inclusion of Oakajee, Wizard Peak and Narnghulu as industrial areas. Similarly the regional transport system incorporates an alignment for the Southern Transport Corridor.

I hope that the community, local governments and State government will participate in implementation of the strategy.



Graham Kierath MLA
Minister for Planning

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Executive Summary

1.0 Background

The 1999 *Geraldton Region Plan* recognises the background and history of previous region plans for Geraldton. The first region plan was prepared in 1966. Since then, there have been two reviews in 1976 and 1989. The previous plans focused on Greater Geraldton, acknowledging the importance of the regional centre to the Mid-West Region. Recent discussion surrounding industry and port issues has emphasised the need for regional planning to provide a framework for planning at the regional level and guidance for government agencies and the private sector.

2.0 Introduction

The *Geraldton Region Plan* incorporates two principal components: a policy framework and regional strategies for the City of Geraldton and the shires of Greenough, Chapman Valley, Northampton, Mullewa and Irwin; and a structure plan for Greater Geraldton. Greater Geraldton includes the City of Geraldton and portions of the Shires of Greenough and Chapman Valley which are urban or which are likely to experience pressure for urban and strategic industrial development over the life of the plan.

The Structure Plan incorporates recommendations resulting from a number of sub-studies including: the Nargulu Industrial Estate Study, the Wizard Peak Industrial Site Selection Study and the Southern Transport and Services Access Corridor Master Plan.

A number of other studies have also provided input into the Region Plan including the *Geraldton Region Cultural Plan*, the Geraldton-Greenough *Retail and Services Strategy* and the Oakajee Industrial Estate studies. While a number of studies are ongoing, release of the plan will provide the opportunity to consider the studies within the context of the Region Plan.

3.0 Geraldton Region Planning Committee

The *Geraldton Region Plan* has been prepared under the guidance of the Geraldton Region Planning Committee (GRPC), which comprises representatives from the City of Geraldton, and the Shires of Greenough, Chapman Valley, Mullewa, Irwin and Northampton, Mid West Development Commission and the Ministry for Planning. Representatives from government agencies including Main Roads WA, Department of Resources Development, Department of Transport, Westrail, LandCorp, Water Corporation, Department of Conservation and Land Management and Geraldton Port Authority have also contributed to the report.

4.0 Implementation

The Region Plan provides the Western Australian Planning Commission (WAPC) with a framework to implement regional planning strategies for the whole region and detailed proposals for Greater Geraldton.

5.0 Monitoring and Review

The Region Plan is a long-term plan and implementation will be a long-term process. The plan will need to be updated and reviewed as circumstances and priorities change. The plan must be capable of changing to reflect the future needs of the community. It is a flexible statement establishing the broad principles for future development in the Geraldton Region. The plan will be progressively refined through more detailed planning and, where appropriate, modified to suit particular local circumstances and community needs.

6.0 Structure and Content of the Region Plan

The Region Plan is divided into four parts:

- Part One outlines the purpose of the plan, the background including a summary of previous regional plans, component studies and the management structure for preparation of the plan.
- Part Two examines the characteristics of the sub-region under five sub-headings identified in the *State Planning Strategy*. The key objectives, regional issues, guidelines and recommendations for the Region Plan are identified in this section.

- Part Three of the report examines the regional centre, termed Greater Geraldton, in detail. This section includes the Structure Plan for Greater Geraldton.
- Part Four examines implementation, staging, monitoring and review of the Region Plan and the Structure Plan.

7.0 The Region Plan

The plan seeks to provide a framework for the future management, protection and coordination of regional planning in the region. The purpose of the Region Plan is to identify planning objectives and actions necessary to achieve those objectives. A key objective of the Region Plan is to provide a link between State and local planning and a balance between environmental, social and economic factors.

The Region Plan addresses the principles outlined by the *State Planning Strategy* under five sub-headings: regional development, community development, the natural and cultural environment, economic development and infrastructure. The Region Plan also provides a context within which further detailed studies can occur.

7.1 Regional Development

The *State Planning Strategy's* "Mid-West Vision" states: In the next three decades, the Mid-West Region will continue to diversify its economic base in the areas of agriculture, minerals development, downstream processing of commodities and tourism. Geraldton will develop as the largest regional centre north of Perth, offering a wide range of facilities and attractions.

7.2 Community Development Objective

"To enhance the region as a place to live, promote orderly urban growth while recognising environmental and other constraints, and encourage the provision of a range of residential living environments. To ensure that the community is supported by adequate and appropriate community services and facilities."

The Region Plan recommends monitoring the amount of population growth and the structure of the population to ensure that there is an adequate supply of land available to meet anticipated demand for housing, community purposes and other land uses. Other actions promote planning for a range of housing and encouraging protection and enhancement of the unique character of the region's towns. Planning to identify land for schools, recreation and other community services to support the changing needs of the population is also recommended.

7.3 Environmental Objective

"To conserve and enhance the region's natural environment, resources and distinctive landscapes, its European and Aboriginal heritage and the overall character and amenity of the cultural environment."

The Region Plan recommends inclusion of ecologically significant areas in the conservation estate, protection of areas of agricultural significance and the establishment of landscape committees to protect areas of landscape value. The actions also recommend continued support for townscape programs and the implementation of recommendations resulting from the *Geraldton Region Cultural Plan* to protect and foster development of the region's cultural heritage. Environmental and marine planning priority areas have been identified as important environmental areas which require integrated planning to balance resource and environmental issues.

7.4 Economic Objective

"To enable the economic potential of the region to be utilised, encouraged and planned."

The Region Plan recommends that areas of State and regional significance be identified to protect areas of productive agricultural land. The Region Plan acknowledges the importance of basic raw materials and minerals to the economy of the region and the role of the planning decisions in protecting these resources. Monitoring commercial and industrial land supply through regular land use surveys and the land development program is recommended together with promotion of the Geraldton city centre as the focus of retail, administrative, community and cultural activity. The importance of a tourism strategy to the region's economy is also identified.

7.5 Infrastructure Objective

“To ensure that well planned and adequate infrastructure is provided in accordance with community and economic development needs of the region.”

The Region Plan recommends coordinating provision of regional infrastructure in areas identified for development under the land development program, coordinating provision of services to small, remote and coastal settlements, investigating freight bypasses around urban centres, promoting development of regional tourist roads, protecting land around the Geraldton Port for port-related uses, ensuring adequate port access between the port and industrial areas and protecting the future expansion of the Geraldton Airport.

7.6 The Land Use Strategy

The land use strategy builds on the strategic policy framework of the Region Plan. The land use categories have been generalised to reflect the major land uses and present a concept of the region as a whole.

8.0 The Greater Geraldton Structure Plan

Greater Geraldton is the focus of commercial and administrative activity for the Mid-West Region. The Structure Plan provides a framework for coordinating development and managing growth of the regional centre.

The Structure Plan is also intended to provide a basis for:

- regional planning scheme/s;
- statutory planning and development control at the local level; and
- planning by servicing and transport authorities.

The objectives of the Structure Plan are to identify:

- the extent and location of urban land;
- the extent and location of regional open space;
- future transport networks and infrastructure;
- future infrastructure and service corridors; and
- the location of regional activity centres including employment areas, industrial areas, regional commercial centres, regional community facilities such as universities, hospitals and regional recreation facilities.

8.1 Population

It is projected that the population for the Structure Plan area will grow from the currently estimated 32,000 to 41,000 by the year 2011 and 50,600 by the year 2026. There is potential for further increase to 60,800 by 2026 if all potential resource projects including Kingstream Steel and Mt Gibson Iron were fully operational.

Analysis of vacant zoned land, vacant serviced lots and current conditional approvals indicate Greater Geraldton's short-term residential land supply should meet the demand scenarios presented and have capacity to produce additional lots if required to meet any increase in demand.

The land use survey conducted in April 1997 and updated in February 1998 indicated there were about 1,450 vacant single and special residential lots and a further 300 vacant rural living lots in the area. Approvals are in place to create at least a further 1,700 lots over the next three years if required. Of these proposed lots, 1,200 are single residential and the balance are either special residential or rural-residential. The land use survey also identified 1,391ha of vacant urban zoned land with the capacity to create between 9,700 and 12,500 lots. It is estimated that the land shown on the Structure Plan including land north and south of Geraldton has the capacity to accommodate a total population for Greater Geraldton of more than 100,000 people.

8.2 Residential Areas

Greater Geraldton benefits from an adequate supply of residential land in a variety of locations to accommodate the community's preferences and requirements. The character of the residential areas is diverse including the historic areas of Geraldton, early beach settlements at Bluff Point and recent coastal developments at Drummond Cove.

The urban form depicted on the Structure Plan is essentially linear, comprising a coastal corridor about 24 kilometres long and about two kilometres wide. The corridor extends 14 kilometres north of the city centre to the southern banks of the Buller River in the Shire of Chapman Valley. On the southern side of the city centre the corridor extends 10 kilometres south reaching the mouth of the Greenough River. The central part of the corridor at the City of Geraldton widens to between three and four kilometres, generally being contained to the western side of the Chapman River.

Assessment of residential land supply indicates that the amount of urban, special residential and rural-residential land is substantial and will adequately cater for future growth of the region including additional growth associated with future industrial development. However, there is a need to monitor and review development to ensure provision of urban services and infrastructure is coordinated.

8.3 Commercial Development

Greater Geraldton has one of the most comprehensive retail networks in rural Western Australia. The majority of residents live within 300 to 400 metres of some form of day to day convenience-based shopping facilities.

The city is the centre of commercial activity in the region providing convenience shopping and a range of comparison goods and services. As the population increases the composition of commercial activity in the city centre will change to strengthen its role as the regional focus for tourism, cultural and entertainment activities. Development of the marina site will strengthen the role of the city centre, complementing rather than competing with the city centre. It will also assist in linking the Northgate Shopping Centre with the city centre.

While supermarket activity is largely responsible for the vitality of the city, it is considered that the city has now reached a size where convenience shopping is more appropriately located within the residential neighbourhoods they service. The draft *Retail and Services Strategy* recommended expansion of retail development to include a district centre, as population increases. The draft strategy indicates that population is unlikely to warrant full development of a district department store in the short to medium term. The location of a future district centre needs to be determined and should be located following consideration of a broad range of factors including accessibility to existing and future residential areas.

8.4 Community Services

Community services include schools, child-care centres and recreational facilities. The identification of land for community services is necessary to ensure that the land is available in appropriate locations when required. The Geraldton Regional Infrastructure Study identified the potential impacts of the population growth associated with industrial development and the actions required by State and local government to ensure that the required community infrastructure (social and engineering) is available to meet its needs.

8.5 Rural-Residential Areas

Rural-residential areas are located immediately to the east of the residential development areas, in a band between two and three kilometres wide. The areas of Woorree, Eastlyn, Moresby, Moonyoonooka, Rudds Gully, Cooper Street and White Peak are included in this category of land use.

The Structure Plan recognises rural-residential subdivision as providing an alternative to conventional residential subdivision, but recommends that the development be limited to physically suitable locations where services can be easily provided.

The plan does not support rural-residential subdivision on productive agricultural land, areas containing important basic raw materials, regionally significant landscapes, environmentally sensitive areas and areas suitable for residential subdivision.

8.6 Rural Areas

Rural land surrounds the urban area and accommodates a mix of rural activities. There is pressure for rural land to be developed for special rural uses, tourism development and other non-rural uses as a result of proximity to the city centre and physical characteristics. The Structure Plan supports the continued use of rural areas for agriculture and protection of basic raw materials and mineral resources.

8.7 Recreation, Landscape and Conservation Areas

The Structure Plan proposes an integrated system of open space including parks and recreation reserves, river corridors, foreshore reserves, landscape amenity areas and urban bushland.

The Moresby Range and Chapman River systems have been identified and are the subject of current studies which will provide the basis for community consultation and the preparation of comprehensive management strategies.

The Moresby Range Management Committee has completed a preliminary analysis which has defined the extent of the Moresby Range, shown on the Structure Plan. The Range is diverse including areas with value for conservation, tourism, recreation and landscape amenity. The Moresby Range Management Committee is currently investigating methods of protecting the special characteristics of the Range. The area shown on the plan does not imply future reservation.

Committees have also been formed to develop and implement management plans for the Chapman River. Work on these plans is continuing.

8.8 Industrial Areas

8.8.1 Strategic Industry

Industry, port and transport issues have been possibly the most contentious regional planning issues in Geraldton for some years.

In November 1996 Cabinet considered the Kingstream Steel project and resolved to support relocation of the project from Narngulu to Oakajee provided it was technically, economically, environmentally and financially feasible to do so. The site identified on the Structure Plan encompasses 1,100 hectares of core industrial area and approximately 2,500 hectares of buffer and an associated deepwater port.

The Structure Plan also identifies a possible strategic industry site in the area referred to as Wizard Peak. Preliminary assessment indicates that this area has potential for industrial development, but this need be pursued only if Oakajee does not proceed.

8.8.2 General Industry

Two existing areas of general industry are shown on the Structure Plan at Webberton and Narngulu. There is potential to expand the Narngulu Industrial Estate. However, there is concern about the proximity of residential areas and the types of industries that could be permitted under existing zoning. The Structure Plan recommends limited expansion of the area and a review of the current zoning provisions to ensure that permitted development is appropriate for the area.

8.9 Transport

8.9.1 Geraldton Airport

The Geraldton Airport is strategically situated to serve the needs of Greater Geraldton for the foreseeable future. Appropriate planning of the existing and proposed industrial areas nearby will ensure compatible uses are adjacent to the airport, enabling its continued operation and future development. The Shire of Greenough has completed an airport master plan which will provide the opportunity for further expansion of the facility.

8.9.2 Port

The Region Plan recognises the importance of the existing Geraldton Port to the economy of the region and includes proposals for road and rail access which will ensure that the port continues to operate in the long term. The Region Plan identifies the proposed deepwater port at Oakajee and recognises that this port will complement rather than compete with the existing port by catering for different requirements.

8.9.3 Railways

The current location of the railway along the foreshore is considered by some sectors of the community to be detrimental to the amenity of the town. The Structure Plan includes the removal of the existing rail line along the foreshore, and its relocation into the southern transport corridor.

The alignment of a possible railway, road and services corridor between Oakajee and Narngulu is also shown on the Structure Plan. The corridor would provide the opportunity to develop a railway and services which may be required for the industrial estate.

8.9.4 Roads

The major traffic movement in the Structure Plan is in a north-south direction. The existing primary north-south route is formed by Brand Highway and North West Coastal Highway. The Structure Plan proposes a variation to the primary route between the intersection of Webberton Road and North West Coastal Highway and Brand Highway, near Devlin Pool Road. The proposed route utilises the railway reserve between Webberton Road and the Geraldton - Mt Magnet Road. The realignment of the primary north-south route between Webberton Road and Cape Burney will provide a bypass of the inner commercial area for through traffic. This road would replace Brand Highway and North West Coastal Highway as the primary route.

The primary east-west route on the Structure Plan is formed by the Geraldton-Mt Magnet Road, the realignment of Geraldton-Mt Magnet Road, west of the airport, a proposed alignment north of the Meru landfill site and Port Way. Road alignment and intersection designs along Eastward Road will be used to encourage use of the east-west route for access by heavy haulage traffic to the port and commercial area.

The Southern Transport and Services Access Corridor Master Plan assessed the primary road alignments shown on the Structure Plan.

8.9.5 Public Transport

The Structure Plan supports the development of a public transport system including the development of a spine in the old alignment of the North West Coastal Highway in the northern corridor and the Brand Highway in the southern corridor. With the northern and southern urban corridors being only two kilometres wide, these two roads will be nearly central to the future extent of residential development.

8.9.6 Walking and Cycling

The Structure Plan supports the development of a regional pedestrian and cycle path system to connect with local pedestrian cycle paths and integrated with the main public transport spine along the North West Coastal Highway in the northern corridor and Brand Highway in the southern corridor. As urbanisation proceeds, the development of a continuous dual-use path along the foreshore, from the Greenough River mouth in the south to the Buller River mouth in the north, would be encouraged.

8.10 Infrastructure

The Structure Plan considers regional infrastructure requirements including water supply, wastewater and waste disposal. Wastewater treatment sites and buffers are identified on the Structure Plan. Possible land uses within the buffer areas include non-residential uses such as industry, open space and recreation. The regional waste disposal site is identified on the plan and will accommodate future requirements of Greater Geraldton. Infrastructure issues have been addressed in the *Geraldton Land Development Program* and the specific impacts of industrial development on community infrastructure (social and engineering) have been addressed in the *Geraldton Regional Infrastructure Study*.

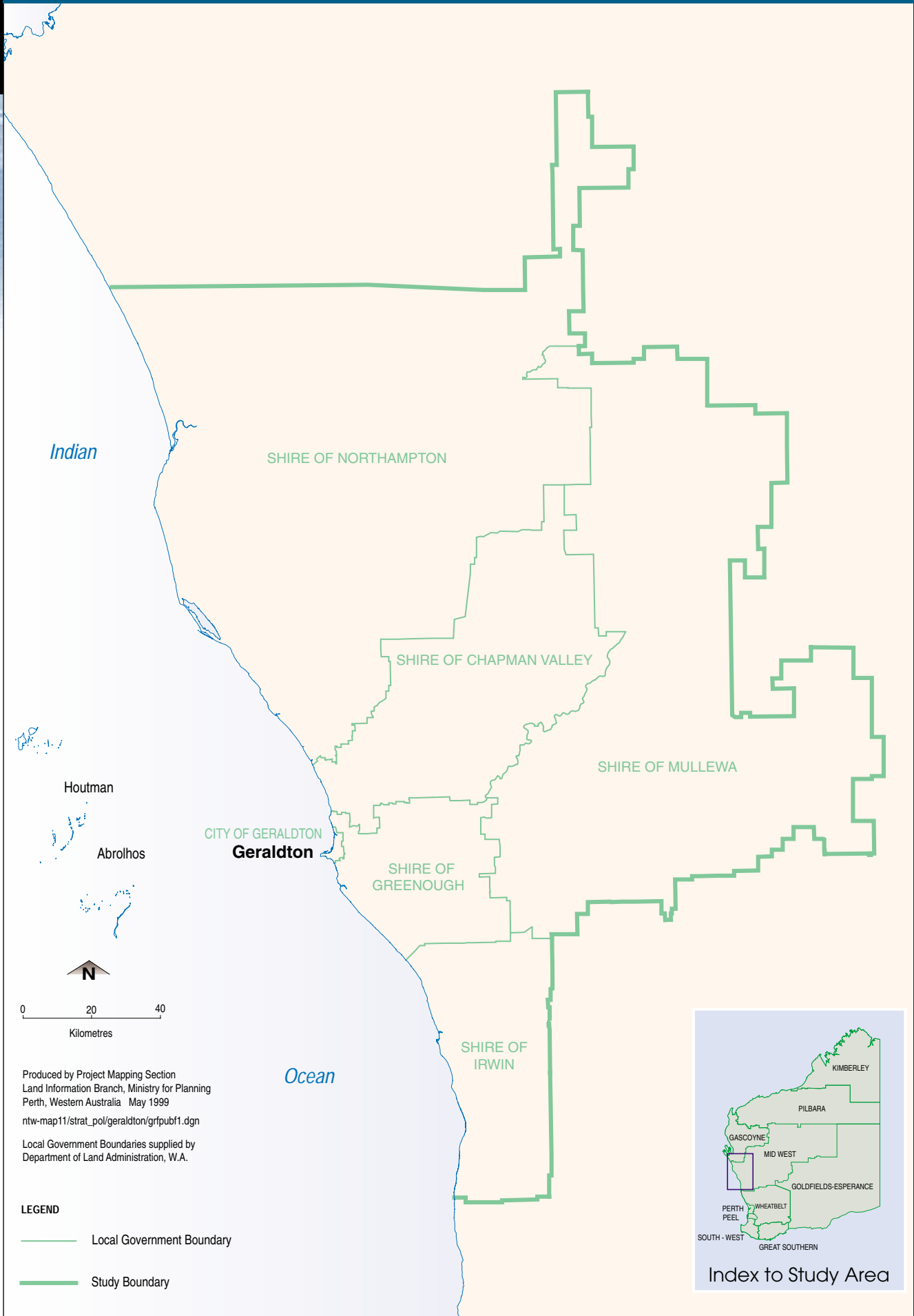
9.0 FURTHER STUDIES

The Region Plan includes an assessment of available studies but recognises that there are a number of additional studies which have been commissioned and would provide valuable input into the report. The findings of further studies will be incorporated as part of the implementation and review of the report.



Geraldton Part 1 - Introduction

Figure 1 Geraldton Region Study Boundary



Geraldton 1 - Introduction

1.1 Regional Planning in Western Australia

The *Geraldton Region Plan* is one of a number of regional plans which have been prepared in Western Australia. The first region plan in the State was prepared in 1955 by G Stephenson and JA Hepburn for the Perth Metropolitan Region. This led to the formulation of the statutory-based Metropolitan Region Scheme in the early 1960s. Stephenson and Hepburn also identified other regions within the state, including the Mid-West, and discussed the reasons for planning at the regional level.

In 1985, the State Planning Commission was created and assumed responsibility for planning at the State level. Ten regions were identified for the State based on ward boundaries of the Country Shire Councils Association of WA (Inc). In March 1995, the State Planning Commission was replaced by the Western Australian Planning Commission (WAPC) which defined the current regional boundaries (Figure 1). The WAPC is committed to strategic regional planning in country areas, and the introduction of regional planning schemes where appropriate.

The Western Australian Planning Commission boundary for the Mid-West Region incorporates 19 local government areas. The Geraldton Region is a sub-regional planning unit of the Mid-West Region which incorporates the City of Geraldton and the Shires of Northampton, Chapman Valley, Greenough, Irwin and Mullewa.

1.2 Reasons for the Plan

The State Government supports regionalisation and decentralisation of urban and industrial development in Western Australia. Policies have been directed towards accelerating growth based on the use of extensive natural resources available within the regions and the desirability of country areas as places to live. These trends are acknowledged as integral factors in future land use planning activities by the *State Planning Strategy*. Economic and urban development create the need for change, which can often result in conflict between land uses and contention over the philosophy for management of natural resources.

Some of the issues in the Geraldton Region include:

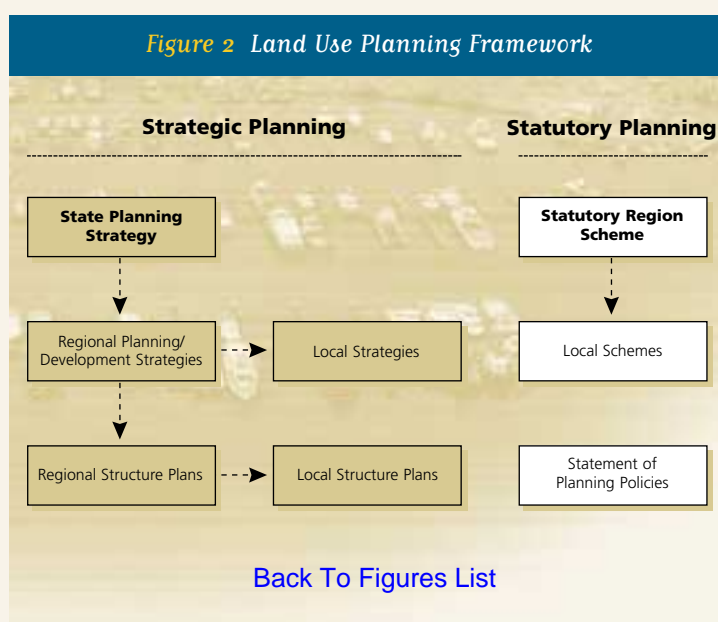
- the need for coordination between government agencies to balance economic, environmental and social objectives;
- the need for coordination between local governments in relation to urban development;

- the need for a regional framework to provide for regional infrastructure requirements;
- the need for a coordinated approach to regional open space;
- the need for a coordinated approach to resource management;
- the need to provide adequate land resources for future urban and industrial needs;
- the need for efficient transport access to the Geraldton Port and industrial areas;
- competition for use of land;
- conflict between land uses.

The *Geraldton Region Plan* is a vehicle for bringing together information from different sources to deal with these issues.

The plan is strategic in nature, has a long-term time horizon and provides for the region's needs for the next 20 to 30 years. Its implementation will occur through non-statutory mechanisms and regional planning schemes where appropriate. The plan is regional in scale and relies on local investigations, strategies and schemes to add detail to the concepts.

Figure 2 illustrates the interrelationship of the Geraldton Region Plan with other planning activities in the region.



1.3 Purpose of the Region Plan

The purpose of the Geraldton Region Plan is to:

- provide a framework for decision-making which will assist in overcoming land use conflicts;
- ensure intra and inter-generational equity in relation to the use of natural resources;
- facilitate the efficient allocation and use of resources;
- create certainty for investors in the economic and social development of the region;
- provide regional guidance for all involved in the use of land which balances economic, social and environmental considerations;
- reduce ad hoc and duplicated decision-making and activity by coordinating action by government agencies, private sector organisations and community groups;
- identify opportunities for integrating resource and catchment management and land use planning;
- assist in the ongoing formulation of policy on land use and development at different levels of government;
- assist local government in preparing and implementing local strategies, schemes and other local planning and development matters;
- identify land required for public purposes;
- provide the basis for the preparation of a regional planning scheme for Greater Geraldton.

1.4 Format - Structure of the Report

The report is divided into four parts.

- Part One outlines the purpose of the plan, the background, including a summary of previous regional plans, component studies and the management structure for preparation of the plan.
- Part Two examines the characteristics of the region under five headings: regional development, community development, natural and cultural environment, economic development and infrastructure, as identified in the *State Planning Strategy*. The key objectives, regional issues, guidelines and recommendations for the Region Plan are identified in this section.
- Part Three examines the regional centre, termed Greater Geraldton, in detail. This section includes the Greater Geraldton Structure Plan.
- Part Four examines implementation, staging, monitoring and review of the Region Plan and the Greater Geraldton Structure Plan.

1.5 The Planning Process

The planning process is cyclical, ongoing and involves four phases:

1.5.1 Research and Data Collection

The research phase included updating information already collected for previous plans, including the 1989 draft *Geraldton Region Plan* and additional research studies outlined in Part One.

1.5.2 Planning

The Geraldton Region Plan:

- identifies issues and major planning considerations;
- determines strategies needed to accomplish the objectives through analysis of the issues and public consultation.

This is discussed in Part Two of this report and provides the basis for implementation.

1.5.3 Implementation

The Geraldton Region Plan recommends that implementation be undertaken by a proposed Mid-West Region Planning Committee. Implementation, discussed in Part Four, will lead to further regional and local studies being undertaken.

1.5.4 Review

The Mid-West Region Planning Committee will monitor and review the implementation of the Region Plan on a regular basis. An annual review is recommended to account for minor changes, with a comprehensive review to be undertaken approximately every five years or as circumstances require.

1.6 Key Policy Areas Affecting the Region

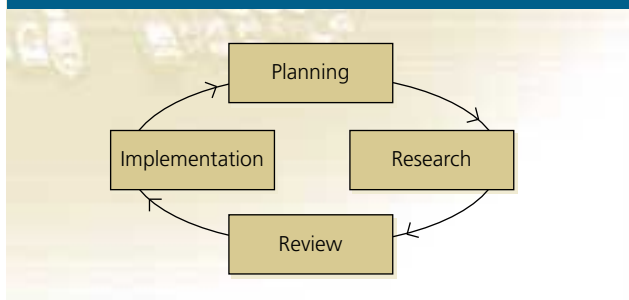
1.6.1 Commonwealth Government

Environmental programs relevant to the Mid-West Region include: Landcare, Bushcare, Coastcare, Coast and Clean Seas and Ocean Rescue 2000 Programs. In addition to these programs are the international and national strategies to which the Commonwealth Government is a signatory (e.g. Montreal Protocol, Agenda 21).

1.6.2 State Government

The State Government has adopted a framework for implementing policy through the various programs of government agencies. This region plan is part of the Western Australian Planning Commission's work program. The following section summarises the policies and plans which have a direct influence on the Geraldton Region Plan.

Figure 3 The Planning Process



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State Planning Strategy

The *State Planning Strategy* released in December 1997, provides a guiding framework for the coordination and management of regional planning and development across the state. It promotes the development of east-west linkages between the existing transport and industry infrastructure in Geraldton and the resource spine between the Pilbara and the Goldfields. The impact of the *State Planning Strategy* on the Geraldton Region is discussed in Part Two.

Planning for Agricultural and Rural Land Use

Agriculture Western Australia and the Ministry for Planning are working together to implement a 1994 Cabinet decision relating to the protection of productive agricultural land in conjunction with a review of the Western Australian Planning Commission's *Rural Land Use Planning Policy DC 3.4*. In 1997 a discussion paper *Planning for Agricultural and Rural Land Use* was released to promote discussion on the issue. It is intended that a Statement of Planning Policy be prepared to give effect to the policy initiatives outlined in the discussion paper. These included the identification and protection of areas of State, regional and local significance, prevention of land use conflicts, management of subdivision and integration of catchment planning.

Regional Development Policy

The State Government is committed to regional development within Western Australia. Although this commitment concentrates on the promotion and the development of commerce and trade, these have many flow-on social and economic benefits. The Mid West Development Commission is responsible for mobilising local initiatives for economic and social development to the point where this development becomes self-generating. This includes support for the provision of infrastructure and the development of strategically important projects. The Mid West Development Commission has prepared *Towards 2010: An Economic Development Strategy for Western Australia's Mid West Region* which aims to coordinate action in the region toward commonly agreed directions and goals.

State Industrial Policy

In 1991, the then Minister for State Development announced that the Government had approved a policy of regional heavy industry sites based primarily on Bunbury, Geraldton, Kalgoorlie, Northam and the Pilbara.

The Environment

The Department of Conservation and Land Management (CALM) is responsible for nature conservation in the State, including the conservation and management of wildlife and the lands, waters and resources for the benefit of present and future generations. In keeping with its mission, the Department of Conservation and Land management has the following objectives.

Conservation:

"To conserve indigenous plants, animals and ecological processes in natural habitats throughout the State."

Value and Use of Resources:

"To optimise the value and economic return to the community of wildlife, lands, waters and resources entrusted to the Department without compromising conservation and other management objectives."

Tourism and Recreation:

"To identify and provide opportunities and services to the community which allow them to enjoy the wildlife, lands, waters and resources entrusted to the Department without compromising conservation and other management objectives."

Significant contributions to protection of the environment are made by Integrated Catchment Management Programs, Landcare, community groups and Land Conservation District Committees (LCDCs) in addressing land degradation issues.

The objectives of the Environmental Protection Authority (EPA), as stated in the *Environmental Protection Act*, are to protect the environment and control, prevent and abate pollution. In pursuing its objectives, the EPA carries out many functions, including environmental impact assessment, formulating environmental policy, seeking information and providing advice. In reaching conclusions on many issues with which it deals, the EPA considers subjects on the basis of a set of criteria. Many of these criteria are based on international treaties to which Australia is a signatory.

Coastal Planning

A review of coastal management policy and practice in Western Australia resulted in the establishment in 1995 of the Coastal Zone Council, a committee reporting to the Western Australian Planning Commission. The Council is responsible for coordinating planning and management of the State's coastal zone. Substantial funding for coastal zone planning and management is provided through Commonwealth Government grants programs under the Coast and Clean Seas initiative. These programs include Coastwest/Coastcare, a jointly funded Commonwealth/State program designed to support community involvement in coastal management and rehabilitation.

In 1996, the WAPC released a discussion paper on *Coastal Planning and Development in Western Australia* for public comment. This is intended to lead to a Commission Development Control Policy with Statewide effect, to replace the existing *DC 6.1 Country Coastal Planning Policy*.

1.7 Consultation and Study Management

1.7.1 Community Liaison

In 1996, in order to assist the Western Australian Planning Commission to understand the community's aspirations, seven community vision-setting workshops were held in centres throughout the region (Geraldton, Greenough, Northampton, Kalbarri, Mullewa, Chapman Valley and Dongara). The format of the workshops was based on providing the communities with a forum to develop a shared vision. The workshops were designed by the Community Economic Development Branch of the Department of Commerce and Trade. The key issues identified at the community workshops are listed in Appendix 2.

It was acknowledged that only a sector of the community was represented at the workshops and a cultural planning study was also undertaken to provide groups not represented with the opportunity to contribute to the region plan. The *Geraldton Regional Cultural Plan* gathered submissions through a range of alternative forums and programs, including media, pictures, drawings, photographs and written submissions.

1.7.2 Study Management

Figure 4 outlines the study management structure. The study was coordinated by the Geraldton Region Planning Committee which is chaired by the Mayor of Geraldton and comprises elected members representing each local government within the region, and a representative each from the Mid West Development Commission and the Ministry for Planning. Table 1 lists the related studies which have provided input to the Geraldton Region Plan.

Figure 4 Geraldton Region Plan Study Management Structure



Table 1 Geraldton Region Plan Component Studies

COMPONENT STUDY	AGENCY	PURPOSE OF THE STUDY	STATUS
<i>Industry and Port Sites Study</i>	Ministry for Planning	To assess industry, port and service requirements in the Geraldton Region, in the short, medium and long-term.	Completed January 1996
<i>Southern Transport and Services (Port Access) Corridor Study</i>	Ministry for Planning	To define land requirements for the transport corridor involving assessment of economic, social, engineering and planning factors.	Completed April 1997
<i>Geraldton Southern Transport and Services (Port Access) Corridor Master Plan 1998</i>	Department of Transport, Main Roads WA	To develop an integrated transport proposal which will provide efficient long-term access to the Geraldton Port	Draft completed October 1998
<i>Narngulu Industrial Estate Study</i>	Ministry for Planning, LandCorp	To assess the potential to expand the Narngulu industrial estate and to recommend appropriate land uses for the buffer.	Completed December 1996
<i>Wizard Peak Industrial Site Selection Study</i>	Ministry for Planning,	To assess the potential to develop an industrial area to the east of Narngulu.	Completed April 1997
<i>Narngulu Transportation Access Study</i>	Department of Resources Development	To formulate a preferred road route for transport of the Kingstream Steel projects freight. requirement between its mill and the port.	Completed April 1996
<i>Oakajee Industrial Area</i>	LandCorp	A series of studies to assess the suitability of Oakajee for industry and a deepwater port site development including a services corridor.	Commenced April 1996.
<i>Towards 2010 - An Economic Development Strategy for Western Australia's Mid West Region</i>	Mid West Development Commission	To provide a framework for the region to develop its economy.	Completed October 1996
<i>Batavia Coast Marina</i>	Mid West Development Commission	To assess the development potential and options of the Batavia marina area, including associated Westrail leasehold land and marina foreshore south to Fitzgerald Street.	Completed June 1996
<i>Geraldton Greenough Retail and Services Strategy</i>	City of Geraldton	To provide a strategic planning framework for retail and commercial development.	Draft completed September 1996
<i>Geraldton Region Cultural Plan</i>	City of Geraldton, Ministry for Planning	To identify regional community needs, values and identity.	Completed April 1997
<i>Moresby Range Management Study</i>	Ministry for Planning	To identify the regional significance and extent of the Range.	Commenced 1996
<i>Geraldton Region Traffic Modelling</i>	Ministry for Planning	Review road network options for the Greater Geraldton area.	Draft completed September 1997

2. Planning Context

2.1 Regional Planning in the Mid-West Region

The 1997 draft Geraldton Region Plan recognises the background and history of previous regional plans for Geraldton. Numerous plans and studies have influenced planning in the region. The first region plan was prepared in 1966. Since then, there have been two reviews resulting in new plans, in 1976 and 1989, both of which significantly altered the planning philosophies of the 1966 plan. The previous plans were strategic in nature and tended to focus on principles and broad directions of development. A brief review of these documents provides a context for the Region Plan.

While planning has focused on the regional centre, there also have been a number of strategies and plans prepared for other parts of the region, including the *Central Coast Regional Strategy* 1996, the *Kalbarri Plan* (1992), the *Horrocks Beach Coastal Plan* (1993), and townscape plans for Northampton, Kalbarri and Dongara-Denison.

2.1.1 The 1966 Geraldton Region Plan

In 1966 the then Geraldton Region Planning Committee produced the first *Geraldton Region Plan* which catered for a population of approximately 50,000 and provided for regional roads, future residential and industrial expansion and reserves for regional parks.

2.1.2 The 1976 Geraldton Region Planning Study

In 1976 the Geraldton Regional Planning Study Group prepared the *Geraldton Region Planning Study* which was adopted by Cabinet (Figure 5). The plan catered for a population of 100,000 and envisaged:

- Essentially a linear coastal corridor form of development about four kilometres wide, stretching about 10 kilometres north and south of the city centre. The corridors were terminated north and south by "Special Recreation Areas" at the mouths of the Buller and Greenough rivers. This form of development was consistent with what were described as "natural" trends in development which favoured the higher well-drained coastal ridge where climatic factors are favourable.
- A complementary road network, based roughly on a 1.5 kilometre grid to accommodate neighbourhood populations of 5,000-6,000, with three north-south arterial roads intersected at 1.5 kilometre intervals by east-west connectors. The most important of the north-south roads was to be the central "Spine Road".

- The "Spine Road" involved the realignment and upgrading of the North West Coastal Highway to near-freeway standards with grade-separated interchanges. The new alignment was west of the existing alignment at the foot of a prominent ridge line which, at that stage, was substantially undeveloped. The topography of the ridge was to be used to facilitate the grade separation of the intersections.
- About 1,500 hectares of general industrial area at Narngulu, south-east of the town of Geraldton on flat land associated with the railway.
- A strategic industrial site of about 5,000 hectares and deepwater port at Oakajee, some 25 kilometres north of the Geraldton city centre. Two alternative conceptual railway routes were identified linking Oakajee with the existing railway at Narngulu.
- A new rail complex, south-east of the city centre at Narngulu to both serve the city and enhance the Perth-Pilbara rail concept.
- Protection of the Greenough and Buller River mouth in Special Recreation Area of about 3,000 hectares and 1,000 hectares respectively.
- Proposals to protect the scenic value of the Moresby Range by zoning against more intensive forms of subdivision and reservation in limited areas if appropriate.
- Expansion of the central business district in a north-south direction as a linear strip along the coast.

The 1976 plan aimed to rationalise and consolidate evolving development and zoning trends. Given that the population of the urban areas of Geraldton/Greenough was about 18,000 at the time, the amount of proposed new urban residential land and roads was substantial. The extent of the plan was justified on the basis that, in the long term, the infrastructure routes needed to be protected through proposed development areas. At the time extensive residential development and special rural zones were being created in local town planning schemes.

2.1.3 The 1989 Geraldton Region Plan

In January 1989 the then State Planning Commission published a draft *Geraldton Region Plan* for public comment. While the report remained in draft form, it has provided a framework for detailed planning and decision-making by local governments and other agencies in the region during the years since its release (Figure 6).

Figure 5 Geraldton Region Plan 1976

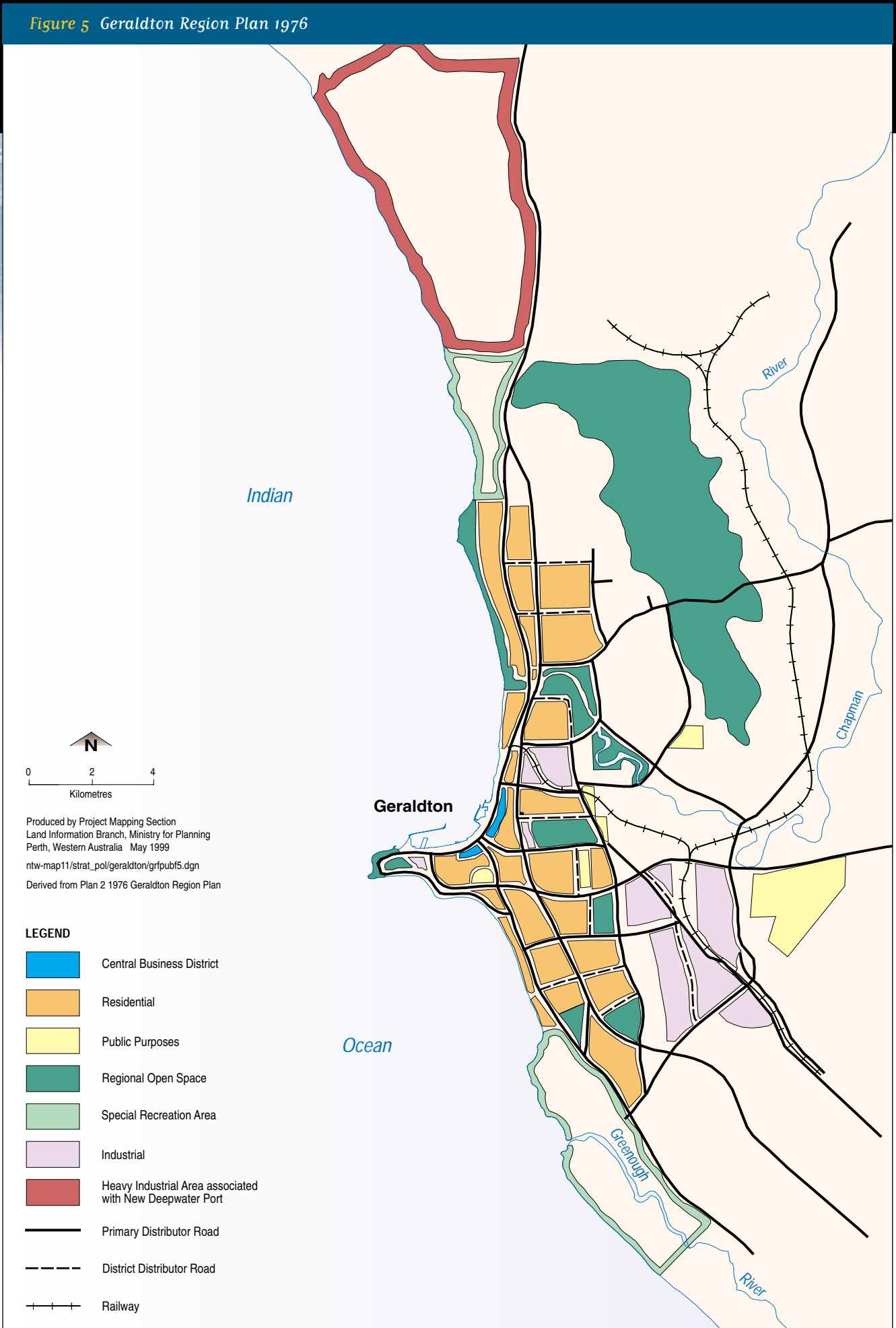
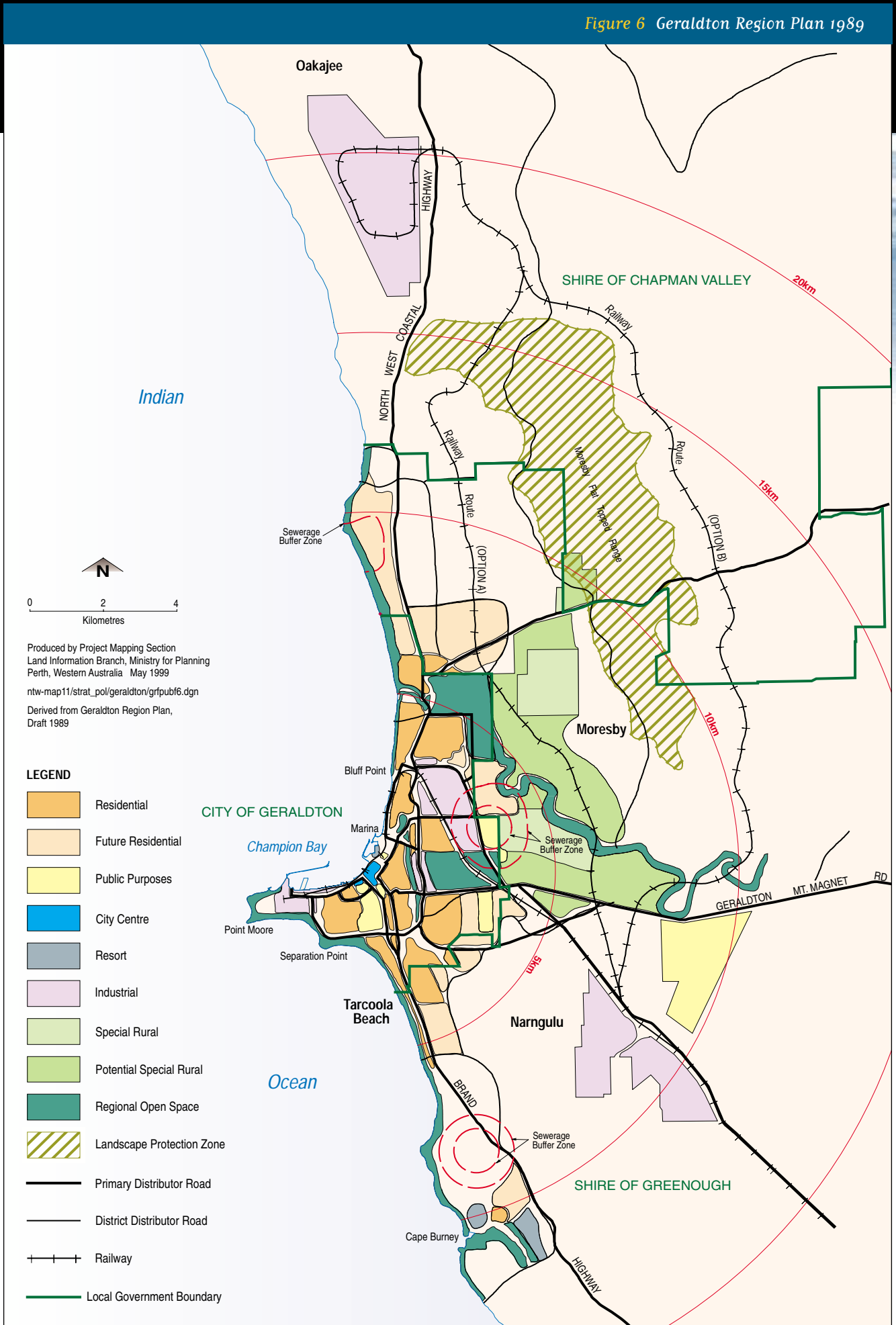


Figure 6 Geraldton Region Plan 1989



The purpose of the review was to account for changed circumstances since 1976 and as such to:

- Assess the evolving role of the Narngulu industrial estate, which by then had types of industries not originally envisaged.
- Assess proposals by the Geraldton Port Authority to expand the existing Geraldton Port and how these proposals were to relate to proposals for the new industrial area and port at Oakajee.
- Assess the impact of the satellite communications base.
- Review infrastructure needs.
- Consider the approach to retail provision in response to applications by major retailers to change the direction of the expansion of the city centre to accommodate major supermarkets in mall type centres. A proposal for Northgate Shopping Mall was being considered.
- Consider landscape and rural land protection in the face of widespread applications for special rural zones in the Shires of Greenough and Chapman Valley encircling the urban areas.

The 1989 plan, based on a 20-year horizon to the year 2011, noted that the population of the Geraldton-Greenough urban areas at the time was estimated at 22,543 and occupied about 7,000 residential lots. It projected a population growth to 46,000 for the region by 2011, of which about 39,000 would live in the Geraldton-Greenough urban areas. The plan therefore projected an additional requirement of about 4,000 lots to allow for demand to 2011.

Against this requirement, the plan noted that at the time there was sufficient land already zoned in Greater Geraldton to accommodate an extra 18,633 lots which, at an occupancy ratio of 3.1 persons per lot dwelling, would represent a total population potential for the region of about 80,000 people. As a compromise between what the 1989 report calculated as being required and the amount of land already zoned on Figure 7, the 1989 draft Geraldton Region Plan could accommodate between 60,000 and 70,000 people on densities used in the report.

The major features of the 1989 plan included:

- Consolidation of most of the residential and future residential areas within Geraldton and the adjacent areas of Waggrakine and Mt Tarcoola in the Shire of Greenough.
- A narrow coastal residential corridor west of the North West Coastal Highway to Drummond Cove.
- Residential and tourism proposals at the Greenough River mouth as envisaged in the Shire of Greenough Scheme No. 1.
- Expansion of the Webberton industrial area into east Wonthella as a buffer to the sewerage works. The then existing strips of zoned industrial land either side of the North West Coastal Highway, between Eastward Road and Eighth Street, were to be retained.

- Identification of the Moresby Range and Chapman River Valley as Landscape Protection Zones with recommendations to purchase those sections of the Moresby Range with tourism and recreational potential.
- Retention and upgrading of the existing road networks and those proposed in the City of Geraldton Town Planning Scheme.
- Industrial development at Narngulu to be substantially in accordance with the zoning in the Shire of Greenough Town Planning Scheme, much less than featured in the 1976 plan.
- Better definition to the Oakajee industrial area and the conceptual alternative railway alignments linking Oakajee with Narngulu.

A significant component of the 1989 plan was a traffic study by traffic engineers Uloth and Associates, which led to a complete revision of the 1976 road proposals. The study modelled traffic flows to the year 2011 based on a projected population forecast for the study area of 30,000.

The traffic study concluded that the road requirements recommended in the 1976 plan, (which had been based on a population potential of 100,000), were excessive. In particular, the "Spine Road" and associated improvements of the 1976 plan, estimated to cost \$18 million in 1989, were recommended against, in favour of upgrading the existing North West Coastal Highway at an estimated cost of \$5.4 million (at 1989 values). The recommended future road requirements to the year 2011 from the 1989 report are shown on Figure 8.

The 1989 Draft Region Plan was released for public comment in January and submissions were received from landowners, local governments, government agencies and private organisations. The submissions covered a range of issues related to the environment (Moresby Plateau and Southgate dune blow-out), land use conflicts, recreation, port expansion, residential development and sewage treatment works location.

2.1.4 Regional Planning Since 1989

Despite its draft status, the 1989 draft *Geraldton Region Plan* has provided a guiding framework for detailed planning and decision-making by local governments and other agencies within the region.

The Geraldton Region Planning Committee initially aimed to finalise the 1989 draft *Geraldton Region Plan*, however, late in 1994, a more comprehensive review was initiated, given that the 1989 draft *Geraldton Region Plan* was more than five years old and several major planning proposals, relating to industry and port development were proposed. The Geraldton Region Plan Review Taskforce was established to investigate and report on port, industry and port access issues as these were considered prerequisites to the review of the Region Plan.

The Taskforce recommendations led to the preparation of three sub-studies: the *Southern Transport and Services (Port Access) Corridor Study*, the *Narngulu Industrial Estate Study* and the *Wizard Peak Industrial Site Selection Study*.

Figure 7 Extent of Residential Zoning in 1989

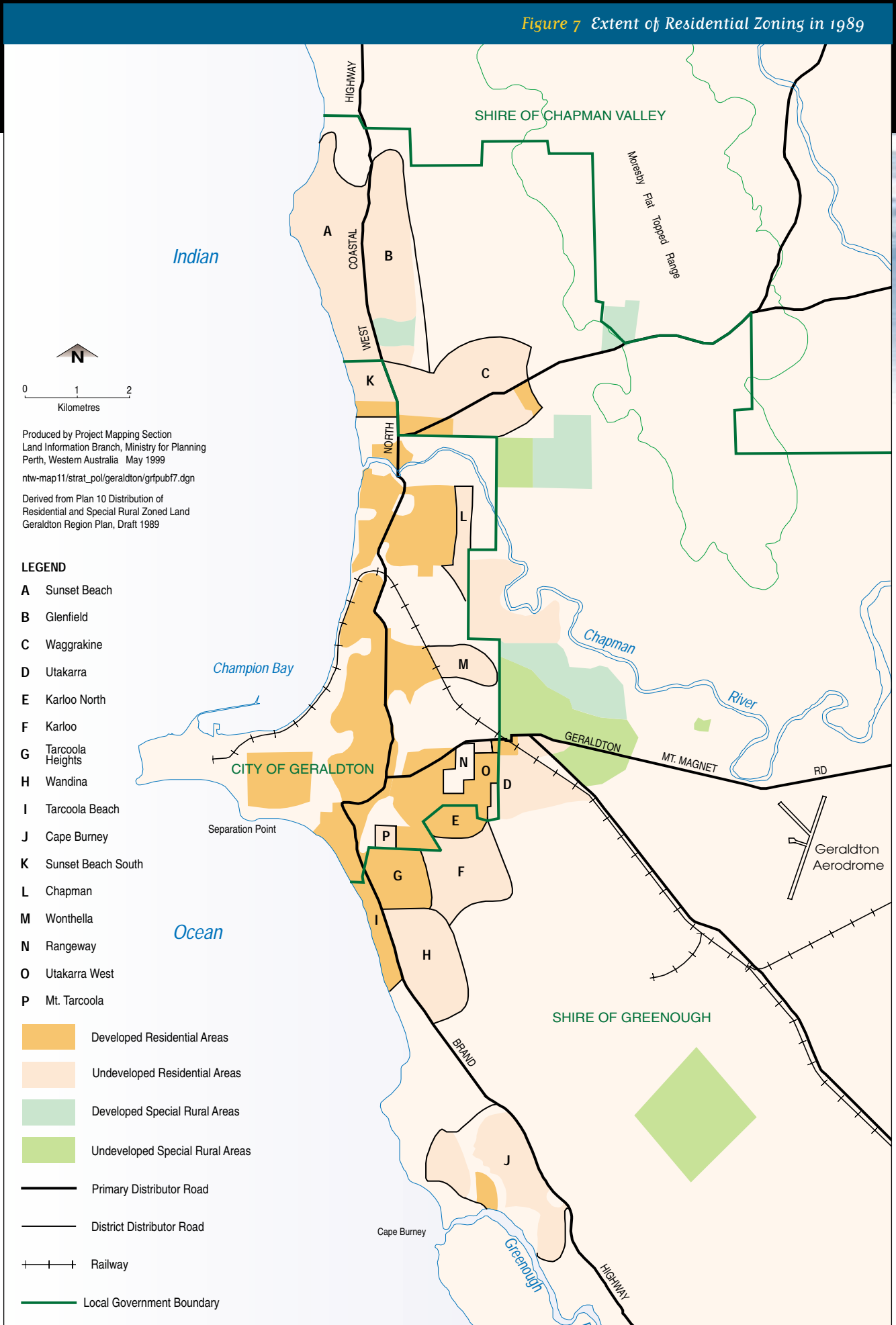


Figure 8 Uloth and Associates 1989. Recommended Road Strategy



0 1 2
Kilometres

Produced by Project Mapping Section
Land Information Branch, Ministry for Planning
Perth, Western Australia May 1999
ntw-map11/strat_pol/geraldton/grfpubf8.dgn

Road Centreline Network Data supplied by
Main Roads, W.A.

LEGEND

Existing	Future	
		2 Lanes
		3 Lanes
		4 Lanes
		4 Lanes divided
		Railway

The finalisation of the sub-studies was, however, affected by concern regarding the location of a major steel industry in Narngulu, only two kilometres from existing and future urban areas of Geraldton.

In November 1996, Cabinet considered the proposed location of Kingstream Steel and resolved to expedite investigation to facilitate relocation of the project from Narngulu to Oakajee, subject to technical, economic, environmental and financial feasibility. In March 1998 the Minister for Resources Development announced that the development of the Oakajee Industrial Estate and deepwater port was technically, economically and environmentally feasible.

In April 1997, Cabinet endorsed in principle the southern transport corridor on the basis that the existing port is a major infrastructure asset which will remain operational in the long term, and decisions regarding this issue need to be made independently from other regional issues including Oakajee. Cabinet endorsed in principle the development of the southern transport corridor subject to a further report on detailed aspects including costs, staging and management measures to ameliorate any environmental and social aspects. The Master Plan was initiated to address these issues.

2.2 Geraldton Region Plan - Related Studies

2.2.1 Geraldton North-South Road Study 1990

In 1990 Sinclair Knight and Partners undertook further work on the proposal from the Uloth study to upgrade North West Coastal Highway in preference to the "Spine Road". The report recommended that, in order to preserve the bypass function originally intended for the "Spine Road", the number of intersections with the highway would need to be significantly reduced by closing all but a few of the most important intersections or those for which no alternative access could be provided into local areas. It also recommended a number of associated road improvements and new roads to assist the north-south movement of traffic. The recommendations, as summarised on Figure 9, were adopted by the steering committee for the study.

2.2.2 City of Geraldton Transportation Study 1993

In 1993 Arup Transportation Planning submitted its final report, which was based directly on the traffic data (population forecasts etc.) developed by the Uloth study for the 1989 draft *Geraldton Region Plan*. The work was essentially a review of the Uloth plan and the City of Geraldton's transportation plan, concentrating on road functions as well as required capacities, and took into account environmental sensitivity and other factors. Their recommended functional road classification to the year 2011 is shown on Figure 10.

The Arup plan was concerned with identifying land requirements for future roads. With regard to road reserve widths it made the following recommendations:

Primary Distributor Roads – 40 metre wide reserve

District Distributor Roads – 30 metre wide reserve

Local Distributor Roads – 20 metre wide reserve

It should be noted that in proposing the road classification shown on Figure 10, the Arup Transportation Planning report adopted virtually all of the road closures, modifications and new roads recommended in the Sinclair Knight and Partners report on Figure 9.

2.2.3 Mid-West Regional Road Development Strategy – Roads 2020

In March 1997 Main Roads WA released its *Roads 2020 Regional Road Development Strategy* for the Mid-West Region. The strategy included proposals for major upgrades to most of the rural highways leading to Geraldton, the North West Coastal Highway, the Utakarra By-pass Road and Rudds Gully Road.

2.2.4 Geraldton Region Plan Review: Industry and Port Sites Study 1996

In January 1996 the Geraldton Region Plan Review Taskforce released the *Industry and Port Sites Study* for public comment. The recommendations of the study relate to three key areas; port development, industrial land and port access. Primary recommendations which led to further detailed studies of Narngulu, Wizard Peak and the southern transport corridor are listed. There also has been substantial investigation into the recommendations for Oakajee, as a result of developments relating to the establishment of a port and major industries as proposed by Kingstream Steel and Mt Gibson Iron.

Recommendations - Port Development

- In the absence of an industrial development requiring and justifying Oakajee, investment in port infrastructure should focus on maximising utilisation of the existing facilities.
- The development of a port at Oakajee should occur only if it is environmentally and socially acceptable and can be supported by a major industrial development which requires direct port access.
- Investigations into the acceptability of a port at Oakajee need to be finalised as soon as possible.

Recommendations - Industrial Land

- The capacity of Narngulu should be expanded and preserved where possible (*Narngulu Industrial Estate Study* - Section 2.2.6).
- In order to maximise use of existing infrastructure, additional industrial land should be identified and reserved to the east of Geraldton (Wizard Peak).
- Site selection studies, supported by technical studies on noise, risk, air dispersion and hydrogeology, should be commenced focusing on Wizard Peak (*Wizard Peak Industrial Site Selection Study* - Section 2.2.7).

Figure 9 Sinclair Knight and Partners proposals for upgrading the North West Coastal Highway



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Figure 10 The Arup recommended Functional Road Classification 1983



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- The investigations required by the Environmental Protection Authority (EPA) should be urgently completed such that a final decision can be made on the acceptability of Oakajee for a heavy industrial estate and deepwater port. (*Oakajee Industrial Area Studies - Section 2.2.9*)

Recommendations - Port Access

- Planning activities should be undertaken to accurately define the land requirements for the southern port access corridor and these requirements should be implemented in the appropriate town planning schemes (*Southern Transport and Services - (Port Access) Corridor Study - Section 2.2.8*).
- Urban design studies of critical locations on the existing railway line to maximise the benefit of its removal should be undertaken.

2.2.5 Geraldton-Greenough Retail and Services Strategy 1996

The draft *Geraldton-Greenough Retail and Services Strategy* was prepared by retail consultants Hames Sharley in 1996. The aim of the strategy was to formulate a strategy for coordinated development of retail and service commercial floorspace in the study area against which planning proposals could be assessed. The report made the following recommendations based on a population of 80,000. No specific timing is given for the implementation of the future shopping centre strategy.

The main elements of the strategy include:

- designation of Geraldton city centre as the regional focus.
- incorporation of Northgate Shopping Centre and the Batavia Coast Marina into the town centre.
- potential district centre (discount department store-based) with location of the centre to be determined.
- acknowledgement and designation of existing approved centres or sites as neighbourhood centres.
- provision for new local centres to service satellite residential areas.
- consolidation of the existing retail network including neighbourhood local centres and corner stores.
- designation of a range of potential showroom retail sites to the north, south and east of the town centre.

The Hames Sharley draft report refers to an ultimate population of between 70,000 and 80,000. It notes that retail development is demand-driven and that certain population milestones need to be reached so that new retail facilities can be economically self-sufficient without compromising the trading performance of existing centres. The report does not indicate when these population milestones would be reached, particularly with regard to the proposed district centre.

2.2.6 Narngulu Industrial Estate Study 1996

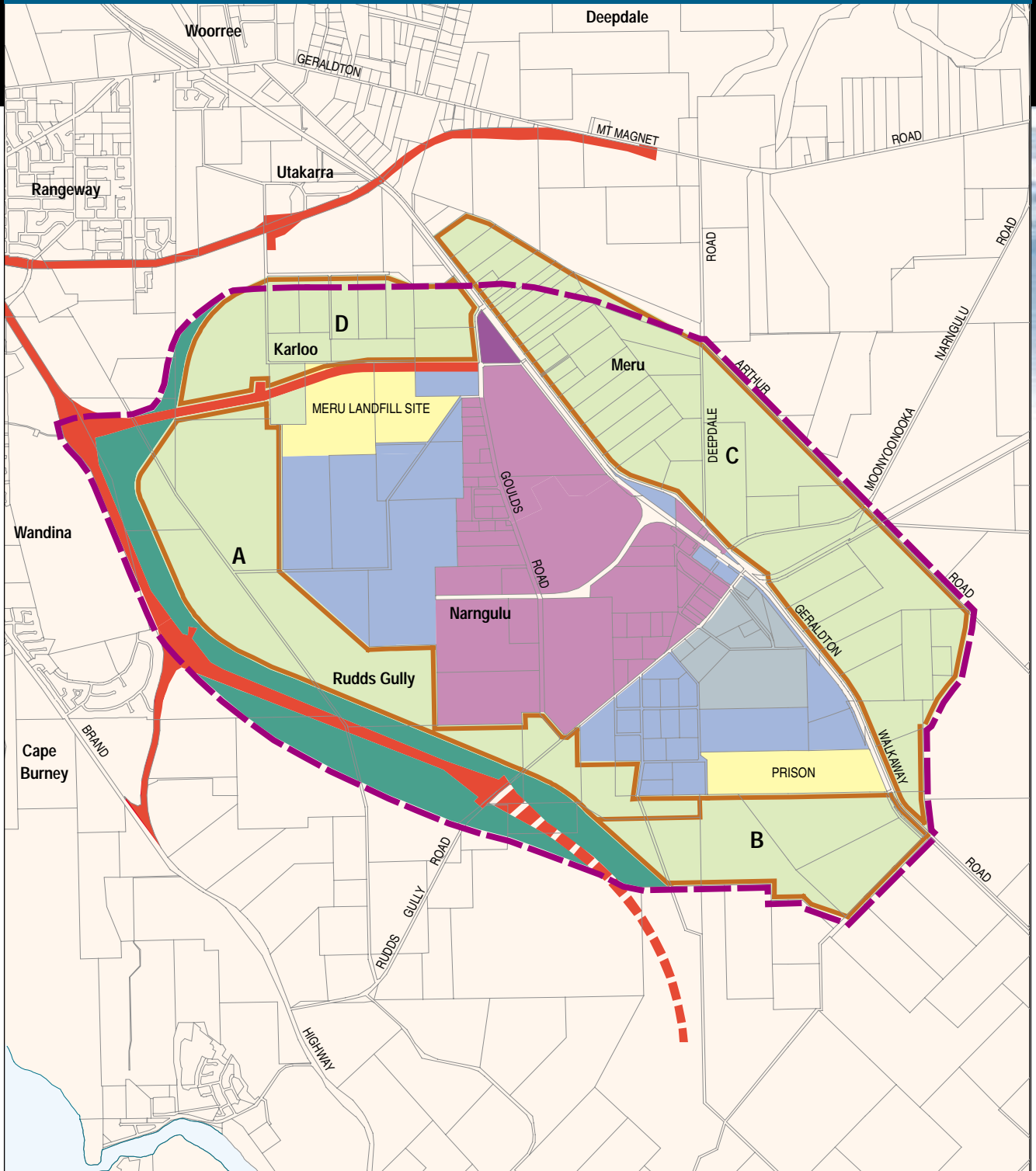
The *Narngulu Industrial Estate Study* was undertaken to investigate recommendations for Narngulu, identified in the *Industry and Port Sites Study*. It recognised that Narngulu Industrial Estate would serve as the only source of land zoned General Industry, close to Geraldton in the short to medium term and that the integrity of the Narngulu Industrial Estate needed to be preserved against projected residential encroachment through securing and appropriate zoning of a buffer (Figure 11).

The study concluded that the estate does not have any capacity to accommodate industry with large land requirements (i.e. 100 hectares or more). In determining the buffer for Narngulu, it is appropriate to consider that an expanded estate would place additional pressure on industries to meet environmental objectives when cumulative emissions are taken into account. A buffer of up to 1km around the estate as has been previously suggested in the report prepared by Alan Tingay and Associates (1993), would provide adequate separation between General Industry zoned land and residential use. Ultimately any new large industry wishing to establish at Narngulu would be subject to EPA assessment to ensure that environmental and social criteria are met. This could result in a reduced area of the expanded estate being available to large industry, in effect significantly increasing the separation between industrial and residential land use.

Conflicting land uses between the existing estate and the proposed estate expansion were identified and options for resolution were proposed. In summary, the following zoning proposals were recommended:

- The existing General Industry Zone should remain without change.
- An additional 417ha of General Industry zoned land should be included into the estate (comprising 254ha to the north-west, 152ha to the south and 5ha in the Narngulu Townsite).
- The existing Noxious and Hazardous Industry Zone should be reduced in size.
- The Greenough Prison site should be rezoned to Public Utilities Zone.
- The existing Light Industry Zone to the north of the industrial area should be retained.
- Most of the land contained within the buffer should remain within a General Farming Zone but be included within Development Areas. This would provide for the orderly subdivision and development of the land as and when demand provides the need for the land to be brought onto the market.
- All buffers associated with industrial land should have provisions prohibiting residential development or holiday accommodation.
- Caretakers' dwellings should be designated as a "not permitted" use within any Industrial zones.
- A wide recreation and vegetation buffer should be provided along the length of the future Brand Highway deviation.

Figure 11 Proposals for the extension of the Narngulu Industrial Area (Halpern Glick Maunsell 1996)

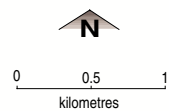


LEGEND

- Public Utility
- Existing Noxious and Hazardous Industry
- Existing General Industry
- Existing Light Industry
- Proposed General Industry
- Vegetation and Recreation

Development Area

- A** Buffer Area A Short-Term Light Industry
- B** Buffer Area B General Farming
- C** Buffer Area C General Farming and Future Light and General Industry
- D** Buffer Area D General Farming and Potential Long-Term Light Industry
- Important Future Road Alignment
- Possible Future Road Alignment
- Industrial Estate Buffer



Produced by Project Mapping Section
 Land Information Branch, Ministry for Planning
 Perth, Western Australia May 1999
 ntw-map11/strat_pol/geraldton/grfpubf11.dgn
 Cadastral Data supplied by Department of
 Land Administration, Western Australia

Priorities for resolution and mechanisms for consolidation of the estate were recommended and a process and schedule for implementation of the proposals were outlined.

2.2.7 Wizard Peak Industrial Site Selection Study 1997

The *Industry and Port Sites Study* recommended that an industrial site selection study with supporting environmental investigations be undertaken within an area from Mt Magnet Road in the north to Georgina Road in the south, with the Moresby Range and Edward Road forming the eastern and western boundaries respectively. The area is regarded as offering adequate land of modest slope, with few environmental constraints evident, and in reasonable proximity to services that should allow it to cater for short and medium-term demand from a range of industries.

A number of investigations were undertaken to define the significant constraints associated with the establishment of an industrial estate within the study area. The findings were:

- Geology, soils and topography do not pose any significant constraints to industrial development within the study area.
- Surface hydrology issues are similar across most of the study area, although surface ponding of water appears to increase towards the south.
- Groundwater within the study area is of marginal quality for any use other than stock watering and consequently fresh water will need to be supplied to the estate from external sources. The vulnerability of groundwater to contamination is low over most of the study area except for two areas towards the east where vulnerability is higher due to shallow groundwater levels and higher topography.
- Ecological issues do not pose any significant constraints to industrial development.
- There are no known Aboriginal archaeological or ethnographic sites of significance within the study area.
- The study area is relatively flat although it rises towards the east. An industrial estate would be visible from most of the surrounding area. Establishment of a vegetation buffer along Edward Road would provide some screening potential.
- Industry would be required to make its own arrangements in respect of waste disposal.
- Broadacre farming dominates with all land zoned General Farming.
- The study area is well serviced with infrastructure.
- The presence of the Obstacle Limitation Surface surrounding the airport will result in some constraints being imposed on the location of industry within the study area.

Six options were considered for the establishment of an industrial estate. The preferred option is a site of 1,190 hectares in the south-east corner of the study area. The site provides maximum separation from Geraldton residential areas and Bootenal West, is largely unconstrained by the Obstacle Limitation Surface and is separated from Edward Road to provide an opportunity for visual screening.

An analysis of potential air quality impacts has defined an appropriate buffer, which also provides protection against the potential impacts of noise, risks and hazards. Mechanisms to secure the estate and surrounding buffer are outlined (Figure 12).

2.2.8 Southern Transport and Services (Port Access) Corridor Study 1997

The *Southern Transport and Services (Port Access) Corridor Study* investigated various rail and road access strategies for the Port of Geraldton.

Engineering, environmental, economic and consultation work culminated in the development of a southern corridor road and rail alignment proposal. Two interchange options for the Brand Highway/Utakarra Bypass/North West Coastal Highway intersection were developed. Possible staging options to meeting funding and traffic demand variations over time were recommended.

Projected rail and road demand estimates were developed as part of the study. Cabinet endorsed in principle the development of the southern transport corridor in April 1997, subject to preparation of a master plan to address detailed aspects of the proposal.

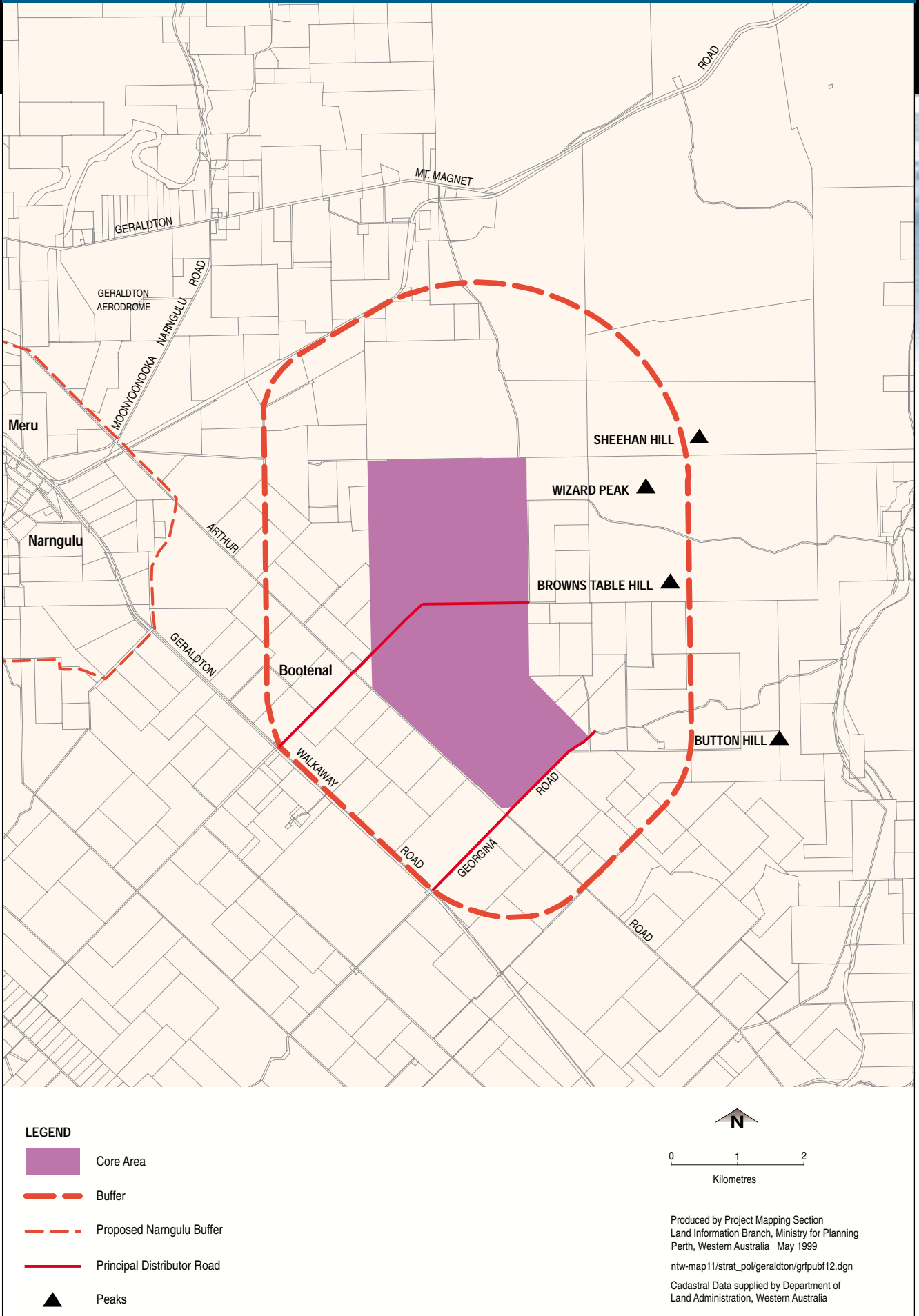
2.2.9 Geraldton Southern Transport and Services Access Corridor Master Plan 1998

The aim of the master plan is to develop an integrated transport proposal which will provide efficient long-term access to the Geraldton Port and increased opportunity to integrate the foreshore with the city.

The key objectives of the study were to prepare:

- Preliminary design for the construction of the Geraldton - Mt Magnet Road on a new alignment via Narngulu between the airport and Port Way in Geraldton.
- Preliminary design for the construction of the Brand Highway realignment between the Geraldton - Mt Magnet Road in Narngulu and McConkey Road in Rudds Gully.
- Preliminary design for the construction of the realignment of the North West Coastal Highway into the existing rail reserve between Webberton and Woorree and linking to Brand Highway realignment in Narngulu.
- Preliminary design for the construction of a new rail line for the Narngulu Industrial Estate to the Geraldton Port in conjunction with the realignment of the Geraldton - Mt Magnet Road and upgrading of Port Way.

Figure 12 Proposed Wizard Peak Industrial Area (Halpern Glick Maunsell 1997)



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- Preliminary design for the upgrading and realignment of Port Way between the Geraldton-Mount Magnet Road and the Geraldton Port.
- Preliminary design for the construction of NWC Highway between Utakarra Road and the new alignment of the Geraldton - Mount Magnet Road in Geraldton.

The master plan details the existing environment and recommends a preferred east-west corridor for road and rail in accordance with the study objectives. The selected route minimises impacts on the environment and surrounding community both during construction and when in operation.

The key elements associated with the Geraldton Southern Transport Corridor include:

- A cutting through Mt Tarcoola
- Rail requirements
- Road requirements
- Existing traffic
- Noise Impact

The master plan will include:

- Cost estimates, including the feasibility and costs of staged development.
- Recommended management measures to address any environmental or social impact of the corridor, during or after construction.
- Recommended construction timetable.

The east-west alignment has been refined with options for the Brand Highway/Cathedral Avenue interchange area and an alternative connection to maintain access along Durlacher Street.

The master plan examines the road between Port Way and Marine Terrace and connects the proposed rail with the existing rail line. Further investigation is required to rationalise road vehicle movements in the port area, north of Shenton Street.

The master plan details the north-south road alignment and recommends the use of the railway reserve, reflected on the structure plan. This option enables the use of the railway reserve and provides for the separation of through traffic from local traffic. Webberton Road has also been assessed as an alternative to the railway reserve.

The evaluation of the north-south alignment was undertaken as a separate report to allow for consideration of three additional options and the assessment of the Geraldton - Walkaway Road option, connecting with Brand Highway near the S Bend. Option 2 was recommended and this has been reflected on the structure plan.

In June 1999, Cabinet endorsed the east-west components of the Master Plan.

2.2.10 Geraldton Region Traffic Modelling September 1997

The *Geraldton Region Traffic Modelling Study* was commissioned to review the road network options proposed on the Structure Plan for the Greater Geraldton area. The study was to address the impact of various potential land use scenarios, for the region including significant industrial and residential growth with and without an eastern bypass (Figure 13). An eastern bypass is defined as a direct link west of the Moresby Range between Brand Highway south of Cape Burney and North West Coastal Highway near the Buller River.

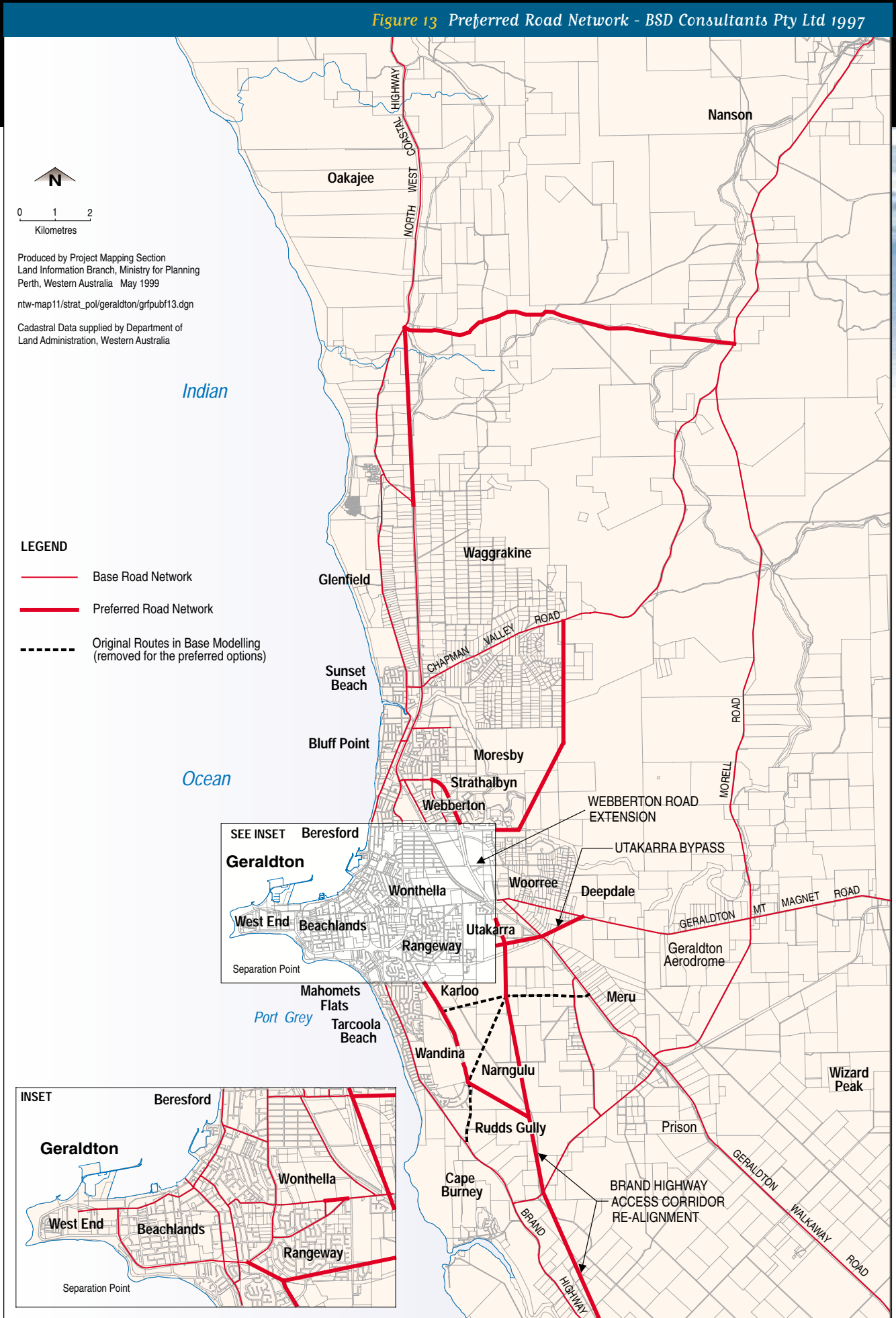
The study made the following conclusions and recommendations:

- The three industrial land use scenarios considered do not appear to differ significantly in terms of the ultimate road network requirements.
- The eastern bypass tested for each of the scenarios does not appear to be warranted on traffic grounds. The projected traffic volumes indicate that the North West Coastal Highway, between Webberton Road and Chapman Valley Road, would require upgrading to six lanes regardless of any proposed bypass. Options to deviate through traffic further east within an acceptable distance are severely constrained by environmental, social and cultural impacts. Even if the opportunity was available, it would be appropriate to retain the existing primary road. Further assessment would need to take into account social, environmental and economic impacts as well as traffic-related issues. It is recommended that further investigations of the requirements for North West Coastal Highway be undertaken when more detailed projections of the level of development become available.
- The study being prepared by Main Roads WA regarding the North West Coastal Highway requirements in the vicinity of the commercial area should take into account the findings of the study.
- The study of the Geraldton central commercial district currently being prepared by the City of Geraldton should take account of the findings of the study.

2.2.11 Oakajee Industrial Estate

Studies to assess the suitability of the Oakajee area for industry and a deepwater port have concluded that the area is suitable for development as a site for heavy industry and port development. In April 1997 the EPA advised that subject to its recommendations for the management of the industrial estate, and subject to further study results, implementation of the industrial estate concept can proceed to be managed without significant environmental effects. Further, in March 1998 the Minister for the Environment approved the implementation of the deepwater port at Oakajee subject to a number of Ministerial conditions. In July 1988 the Government announced that it would be extending the Oakajee Industrial Estate buffer and that the Minister for the Environment, via a public process, would determine the ultimate location of the buffer.

Figure 13 Preferred Road Network - BSD Consultants Pty Ltd 1997



2.2.12 Towards 2010: An Economic Development Strategy for Western Australia's Mid-West Region 1996

The strategy, prepared by the Mid West Development Commission, is a guide for future development in the Mid-West Region. The document will form a framework for the Mid West Development Commission and other key organisations to encourage sustainable economic development in the region. A broadly based community Joint Action Group, established to provide input into the implementation of this strategy has developed a detailed action plan. More than 30 of 45 key recommendations have been completed or addressed in some way. A key recommendation was to establish community-based special interest groups to focus effort on specific tasks. With this in mind, the Mid West Communications Group and the Mid West Investment Group have been successfully established to progress work in these areas. A summary of the strategy's key recommendations has been released to the public.

2.2.13 Geraldton Regional Cultural Plan 1997

The plan, prepared by Working Bodies and coordinated by the City of Geraldton, includes an inventory of cultural resources and approximately 40 recommendations relating to a range of issues, including regional planning. The study concluded that the community generally values the natural environment and associates certain features such as the coast and the Moresby Range as part of the identity of the region. People in the region also identify strongly with its cultural heritage, particularly in the built form. The inventory is in a form suitable for use by planning and decision-making agencies.

2.2.14 Batavia Coast Marina Strategy 1996

A new concept for the redevelopment of the Batavia Coast Marina has been developed by the Mid West Development Commission, Department of Transport, City of Geraldton and LandCorp in conjunction with Westrail and the Ministry for Planning. The new concept includes redevelopment of the land within the existing marina and adjoining Westrail leasehold land and places the new museum in a prominent waterfront location. The redevelopment will open Geraldton to its waterfront and create a variety of business opportunities in a foreshore and harbour district. Land uses include residential, tourism, marine chandlery, restaurant/cafe and retail areas to complement the adjacent central business district.

2.2.15 Moresby Range

The Moresby Range Management Committee was initiated early in 1996 to examine the land management requirements for the Range. The committee is currently completing a land management strategy with the following aims:

- To determine the extent and regional significance of the Moresby Range.
- To define a system of land management for the Range.

2.2.16 Mid-West Transport Strategy

The Mid West Development Commission in association with the Department of Transport is currently preparing a regional transport strategy for the Mid-West. The purpose of the study is to:

- Describe the transport system as it is today and how it is meeting today's regional needs.
- Identify current issues and problems.
- Describe the anticipated transport needs for the region for the next 25 years.
- Identify and evaluate options on how the transport system needs to be changed to meet current and future needs.
- Recommend plans and actions which need to be taken to address the region's transport needs.

Completion of the strategy will be subject to resolution of other regional planning issues, including the location of a deepwater port, the southern transport and services (port access) corridor and development of a strategic heavy industry area.

2.2.17 Geraldton Land Use Survey 1998

As part of the ongoing strategy of providing information to support the Western Australian Planning Commission's *State Planning Strategy*, the Ministry conducted a land use survey in 1997 and resurveyed the area in 1998. The land use survey has three main components: commercial land use, industrial land use, and the residential vacant lot survey. The survey also incorporates an assessment of areas designated for public purposes.

The report provides an assessment of the composition of employment, amount of vacant and occupied floorspace, number of establishments, number of activities, amount of residential, industrial and commercial vacant land and the type of land use.

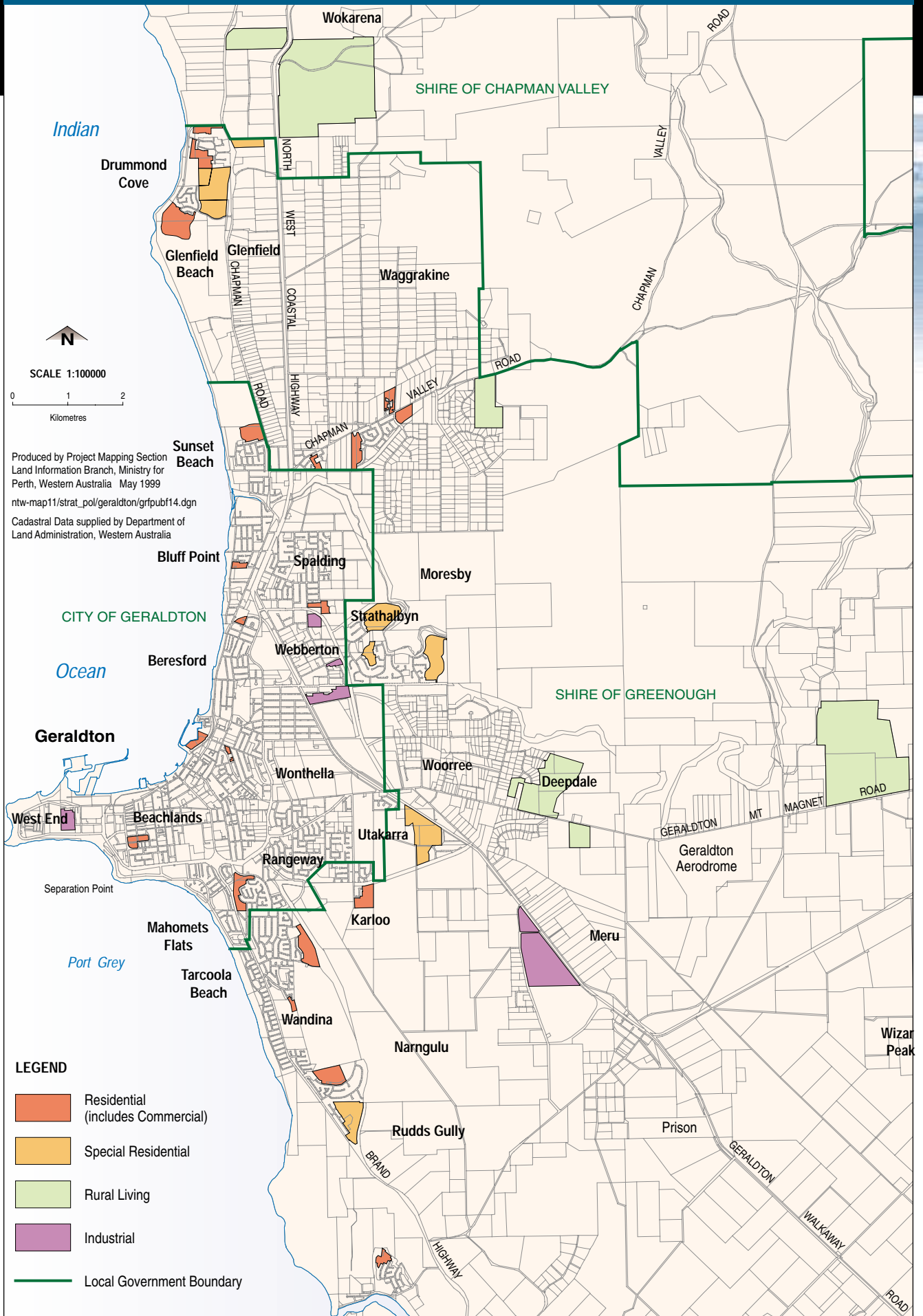
2.2.18 Geraldton Land Development Program 1998-2002

The *Geraldton Land Development Program* is part of the Country Land Development Program established in 1996. It was prepared as part of the statutory role of the Western Australian Planning Commission to advise Government on land use planning and the coordination of land development and infrastructure throughout the State. The program's principal objectives are to monitor and report on land development and provide direction to government infrastructure agencies for the planning and budgeting of additional services. The program focuses on land development and major infrastructure issues for the majority of the Greater Geraldton structure plan area. (Figure 14)

2.2.19 Geraldton Regional Infrastructure Study 1998

The *Geraldton Regional Infrastructure Study* was commissioned by the Department of Resources Development on behalf of the Mid West Industry Development Consultative Council (MWIDCC).

Figure 14 Geraldton Land Development Program 1998 to 2002 - Land Release Areas



The study was commissioned to identify the principal impacts of population growth associated with potential industrial and resource development and determine what action is required at State and local government level to ensure that the required community infrastructure is available to meet its needs.

In June 1998, the Western Australian Planning Commission's Infrastructure Coordinating Committee noted the report and recommended that the technical committee of the Geraldton Region Planning Committee be responsible for coordinating implementation of the actions.

2.2.20 Northern Agriculture Integrated Management Strategy (NAIMS)

Commenced in June 1995, the strategy is a cooperative approach by community groups, State government agencies and local governments, aimed at providing strategic directions and developing achievable on-ground actions for natural resource management in the region. Target areas include:

- surface and groundwater systems
- land degradation issues
- biodiversity and
- natural resource usage and conflict management.

2.2.21 The 1997 Geraldton Region Plan

The Geraldton Region Plan builds on the research and planning of the past and is part of the Western Australian Planning Commission's regional planning program for the State. It acknowledges that Geraldton, through its industry, port, business, fishing, tourism and cultural facilities, is the regional centre of the Mid- West Region, and is essential to the development of not only the region but also Western Australia. This plan covers a wider area than past plans and recognises the interrelationships and importance of the region as a whole to the continued development of the Geraldton Region.

2.3 The Mid-West Region - An Economic Overview 1

The Mid-West Region consists of 19 local governments including the City of Geraldton which is the region's commercial and service centre. The region extends along the west coast from Greenhead to Kalbarri, more than 800 kilometres into the Gibson Desert and covers almost a fifth of Western Australia's total land area. Mining, broadacre crop and livestock production and fishing are the mainstays of the economy.

The value of production from the mining sector, predominantly based on the production of gold, mineral sands, zinc, petroleum products and natural gas, is more than \$1 billion per annum.

The region has numerous mine sites and is the second largest producer of gold in the State.

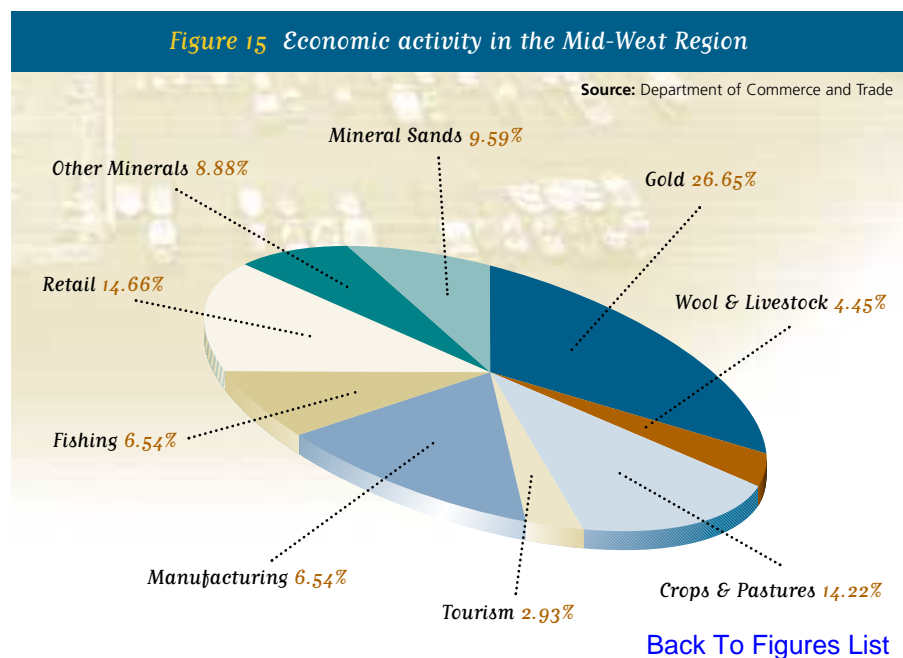
In recent years the value of agricultural production in the Mid-West Region has generally exceeded \$330 million per annum and reached \$427 million in 1993/94. The region is the second largest producer of wheat in the State. Wheat production contributes more than \$231 million per annum, representing about 20 percent of the State's total production. Annual production of lupins and other crops is valued at more than \$90 million. Wool production has been worth more than \$100 million each year although it is currently below this level due to low wool prices and stock numbers.

The region is the largest producer of rock lobster in the State and the fishing industry contributes more than \$153 million per annum to the region's economy.

The manufacturing sector is primarily based on supplying the fishing, agriculture and mining sectors and processing of minerals and fish products. The estimated annual value of total sales in the manufacturing sector is \$272 million. The retail and service sector, also oriented around the primary industry sector and to a lesser extent tourism, has a combined annual turnover of more than \$330 million.

The Mid-West Region is recognised as a major tourist destination with more than 449,000 people visiting the region each year. Direct expenditure by tourists injects more than \$66 million per annum into the region's economy. Continued development of the tourism industry, combined with opportunities to widen the region's economic base by downstream processing of minerals and further development of the agriculture, horticulture and floriculture industries, will provide a substantial base for future growth.

¹ Taken in part from Department of Commerce and Trade and the Mid-West Development Commission (May 1996) Mid-West Perspective, An update on the economy of Western Australia's Mid-West Region, Perth, Author.





Part 2 - Geraldton Region Plan

3 - Geraldton Region Planning Context

3.1 The State Planning Strategy and the Geraldton Region

The *State Planning Strategy* has outlined Western Australia's strategic land use planning principles. It provides a framework for future decision-making and planning for government and non-government organisations, and particularly for the Western Australian Planning Commission. The principles represent the ingredients of our quality of life: the environment around us, the community we live in and the wealth we enjoy.

The Geraldton Region Plan seeks to provide a framework for the future management, protection and coordination of planning efforts in the region. The key objective for a region plan is:

To provide a link between State and local planning based on a balance of environmental, social and economic considerations.

The Geraldton Region Plan will address the principles outlined by the *State Planning Strategy* under the following sections:

- Regional Development
- Community Development
- Natural and Cultural Environment
- Economic Development
- Infrastructure

3.2 Regional Development

Mid-West Region Vision

In the next three decades, the Mid-West Region will continue to diversify its economic base in the areas of agriculture, minerals development, downstream processing of commodities and tourism. Geraldton will develop as the largest regional centre north of Perth, offering a wide range of facilities and attractions.

The following strategies and actions have been identified by the *State Planning Strategy* as the first steps in achieving this vision (with the responsible agencies in brackets - See Appendix One):

Environment and Resources

- Protect sensitive environmental and cultural heritage areas.

- Identify environmental areas which could be protected as regional open space under regional planning schemes which might not otherwise be so protected. (WAPC WRC)
- Investigate alternative methods of protecting valuable natural environments such as the coast near Kalbarri. (CALM, WAPC, LG)
- Continue to review management plans for tourist areas in or near conservation areas to protect them from degradation. (CALM)
- Protect and manage significant environmental areas such as the Greenough, Chapman and Murchison Rivers. (CALM, Fisheries, DEP)
- Protect and manage significant environmental areas such as the Abrolhos Islands. (Fisheries)
- Protect culturally significant places through town planning schemes. (HCWA, LG)
- Manage and protect natural resources.
 - Identify and protect water resources in the region for future population, economic growth and environmental management needs. (WRC)
 - Undertake appropriate strategies for rangeland management in the Mid-West. (WAPC, AgWA)

Community

- Plans should address the need for the provision of social facilities.
 - Coordinate the provision of services such as schools, hospitals, recreation facilities, child care facilities and aged services. (WAPC)
- Provide improved education and training facilities within the region.
 - Promote the development of a specialist research school or a tertiary institution. (ED, all agencies)
 - Support the Geraldton Secondary College in its endeavour to service the region's upper secondary needs and to enhance the learning environment for middle school students. (ED)
 - Provide accommodation for students attending the secondary schools to allow them to remain in the region. (ED)
 - Promote specialist vocational training to service the region's employment demands and opportunities. (Training, MWDC, Industry)

- Improve health services to the region.
 - Upgrade the Geraldton hospital to provide a base for both visiting and permanent specialist medical practitioners. (Health)
 - Improve health services in the region by increasing the types and frequency of visits to remote areas by medical practitioners. (Health)
- Investigate the upgrading of the Geraldton to Leinster road to a sealed all weather capability thus improving east-west freight links to resource areas. (MRWA, MWDC)
- Address the need for improved service delivery of regional infrastructure to a highly dispersed population.
 - Facilitate the development of “one stop” shared/common government offices in small centres which would otherwise not have direct access to such services. (MWDC, Government Agencies)
 - Facilitate the development of priority regional communication requirements. (MWDC)
 - Coordinate and provide services to small and remote settlements. (MWDC, WAPC)
 - Promote the retention and further development of “telecentres” to enhance regional economic opportunities and service delivery in rural areas. (MWDC)

Economy

- Promote opportunities for economic development.
 - Investigate the area of land needed for the expansion of Narngulu Industrial Estate, or the development of a new industry and port site at Oakajee, including buffer areas that should not be subdivided. (WAPC, DRD, Transport, MWDC)
 - Protect Narngulu expansion areas and Oakajee industry and port site until the State Government decides whether they are required for future development. (WAPC)
 - Promote development of niche agricultural products, including aquaculture (fresh and saltwater). (MWDC, AgWA, Fisheries)

Infrastructure

- Provide a strategic transport network within and to the Mid-West Region.
 - Implement transport strategies such as the Mid-West Transport Strategy, when completed, (Transport, MWDC), Roads 2020 Strategies and the Additional Funding Program for roads, including the following specific proposals:
 - Construct an airport at Kalbarri. (Transport)
 - Examine the need to upgrade Geraldton Airport for airfreight capability. (Transport, LG)
 - Secure both road and rail transport links from throughout the region to Geraldton Port. (WAPC, Transport, MRWA, Westrail, GPA)
 - Investigate improving transport links between Oakajee and the port of Geraldton. (Transport, DRD, GPA)
 - Provide region scheme protection for the service corridor between current and proposed major industrial areas and the Port of Geraldton. (WAPC)
 - Secure the longer term functioning of major transport infrastructure, such as the Port of Geraldton, by determining suitable buffer zones in accordance with the State Industrial Buffer Policy. (WAPC, GPA, Transport)
 - Investigate upgrading of transport links between the Geraldton Port and industrial areas. (WAPC, MWDC)
 - Investigate providing freight bypasses around growing urban centres in the region, especially Geraldton and Northampton. (WAPC, MRWA)

4 - Community Development

4.1 State Strategic Community Principle

The *State Planning Strategy* recognises that planning would need to respond to the changing needs of the community in the future, specifically:

- changes in the age and ethnic composition of communities;
- the need to foster social development of communities;
- the need to ensure that land use planning and design contributes to the development of a sense of community;
- the timely provision of community facilities and services.

4.2 Geraldton Region - Community Development Objective

“To enhance the region as a place to live, promote orderly urban growth while recognising environmental and other constraints, and encourage the provision of a range of residential living environments. To ensure that the community is supported by adequate and appropriate community services and facilities.”

4.3 Population

4.3.1 Population Structure and Characteristics

In June 1996 the estimated population of the Mid-West Region was 49,415 which ranked sixth of the nine regions in the State. The region grew at an average annual rate of 1.0 percent per annum from 1986 to 1996, which was lower than the State's average growth of 1.9 percent per annum. There were four regions with higher growth rates and four with lower rates. The Mid-West Region's population is 10.5 per cent of the population of regional Western Australia.

The Mid-West Region currently makes up 2.8 percent of the State's population and this proportion has been declining slowly over a number of years. The region's population is projected to grow at a slightly lower rate than that of the State over the next 30 years and by 2026 the region should hold 2.78 percent of the State's population.

4.3.2 Growth Projections

Projections for the Mid-West Region's population indicate future average growth rates of about 1.3 percent per annum (Figure 16). These projections indicate that the region's population will reach about 53,000 by 2001, about 60,900 by 2011 and about 73,000 by 2026. Growth at this rate will be about the same as both country Western Australia and the State average growth rates, which are projected to be approximately 1.3 percent per annum (for the period from 1996 to 2026).

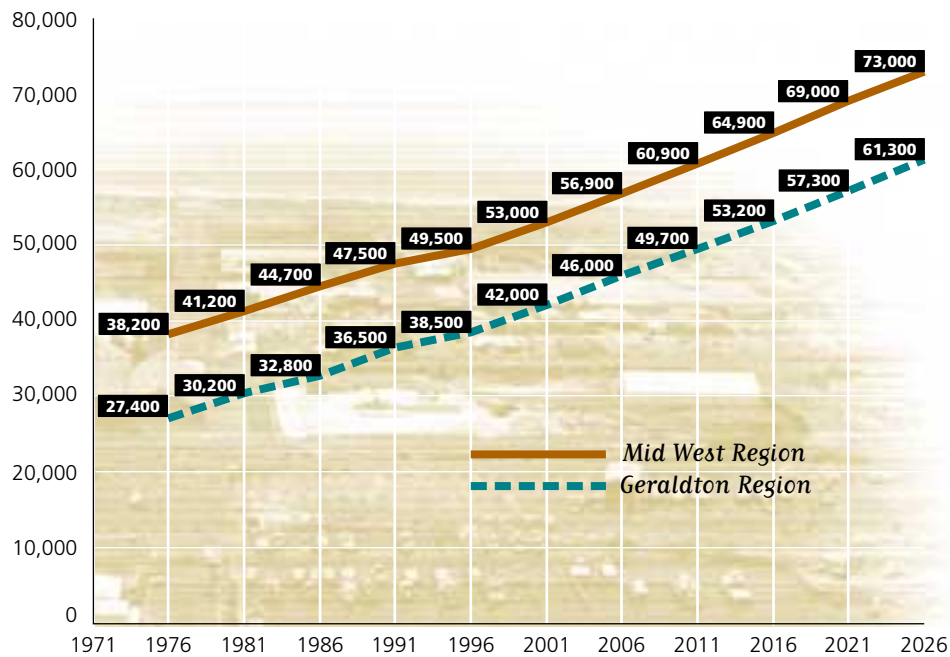
In 1996 the Geraldton Region contained about 78 percent of the Mid-West Region's population, with Geraldton and Greenough local governments providing more than 62 percent. By 2011, the Geraldton Region will provide about 82 percent of the Mid-West Region's population with Geraldton and Greenough local government areas providing more than 65 percent.

Most of the local governments in the Geraldton Region experienced population growth during 1991-96 except Geraldton and Mullewa (Table 2). While Greenough and Geraldton are experiencing the greatest increase in total numbers, Greenough, Irwin and Northampton will experience the most significant percentage increase in their resident populations between 1996-2011. Two local government areas within the region (Chapman Valley and Mullewa) currently have populations below 2,000 which makes the population projection beyond 2026 unreliable and hence difficult to use as the basis for future planning in these areas (Table 3).

Population projections in this context are based on the assumptions that the current trend in mortality, fertility and migration will continue and the population of the Mid-West Region is expected to reach 73,000 by 2026 and the Geraldton Region to reach 61,300, with 50,600 in Greater Geraldton (i.e. Geraldton, Greenough and Chapman Valley). These projections exclude the effect of proposed new developments such as the iron and steel projects in the area.

The population of the Geraldton Region is expected to grow by an additional 2,800 people and reach 44,800 in 2001 should the Kingstream Steel and Mt Gibson Iron projects proceed (Table 4). Based on these assumptions, the region will reach 49,700 in 2006 and 53,500 in 2011. Greater Geraldton will account for 38,400 in 2001, 41,800 in 2006 and 44,800 in 2011.

This large relative increase in population will need to be considered so that infrastructure requirements are planned, and if necessary constructed, in advance to meet this projected demand. Forward planning of residential land supply, transport and utilities to meet demand will prevent supply and access problems in the future.

Figure 16 Regional Population Projections**Source:**

Ministry for Planning, Research Branch Projections, June 1996 adjusted to ABS 1996 ERP.

Table 2 Estimated Resident Population as at 30 June Source: ABS Catalogue 3203.5 and 3218.0

STATISTICAL LOCAL AREA	1981	1986	1991	1996	POPULATION CHANGE 1981 - 86	POPULATION CHANGE 1986 - 91	POPULATION CHANGE 1991 - 96
Chapman Valley	850	782	821	836	-68	39	15
Geraldton	19,090	20,040	21,128	20,200	950	1,088	-928
Greenough	4,610	5,814	8,071	10,701	1,204	2,257	2,630
Irwin	1,580	1,799	2,189	2,526	219	390	337
Mullewa	1,650	1,472	1,466	1,146	-178	-6	-320
Northampton	2,370	2,943	2,849	3,020	573	-94	171
Geraldton Region	30,150	32,850	36,524	38,429	2,700	3,674	1,905

Table 3 Population Projections (without proposed steel plants)

LOCAL GOVERNMENT AREA	1996 *ERP	2001	2006	2011
Chapman Valley	837	850	850	900
Geraldton	20,200	21,200	22,400	23,200
Greenough	10,701	12,600	14,800	16,900
Irwin	2,526	2,900	3,300	3,800
Mullewa	1,146	1,150	1,100	1,050
Northampton	3,020	3,300	3,500	3,850
Geraldton Region	38,430	42,000	45,950	49,700

* Australian Bureau of Statistics 1991 and 1996 Regional Growth Australia - 3218.0

Source:

Ministry for Planning, Research Branch, May 1998

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Table 4 Scenarios for Population Projections Attributable to the Kingstream and Mount Gibson Iron (MGI)

MID-WEST PROJECTS	SCENARIO	BASE JOBS	BASE JOBS TAKEN BY NON-LOCAL POPULATION	TOTAL TO BASE JOB MULTIPLIER	TOTAL JOBS TAKEN BY NON-LOCAL POPULATION	MAXIMUM OCCUPANCY RATE	PLANTS GENERATED ADDITIONAL POPULATION
Mt Gibson & Kingstream (Minimum Employment Multiplier)	1	1,176	823	1.38	1,140	3.3	3,750
Mt Gibson & Kingstream	2	1,176	882	1.5	1,320	3.3	4,370
Mt Gibson & Kingstream (Minimum Employment Multiplier)	3	1,176	941	1.76	1,660	3.3	5,460

Note: It has been assumed that 30 percent of new jobs will be taken by local population under Scenario 1, 25% under Scenario 2 and 20% under Scenario 3.

Total employment = Base employment + Consequential employment

4.3.3 Population Growth Resulting from the Location of Potential Steel Plants in the Geraldton Region

Estimates of additional population growth in the Geraldton Region have been based on the analysis of regional input-output tables produced for the Geraldton Mid-West Region by the Department of Commerce and Trade and in the mid-1980s, the most recent Australian National input-output tables and other available relevant data. Three population scenarios have been produced, all based on different employer multiplier effects (Table 5).

The first scenario assumes the minimum employment multiplier effect on the Geraldton Region's economy. The second scenario is based on the multiplier derived from the input-output analysis of the regional economy. The third scenario is based on the assumption that steel mills and associated infrastructure (new port and other) may attract more investment in industries either linked to them or in higher order services linked to larger population spending potential or both, but does not include potential new investment in mining and related activities.

It has been further assumed that 30 percent of new jobs will be taken by local residents under the first scenario, 25 percent under the second scenario and 20 percent under the third scenario. These figures are slightly lower than that for similar projects in the South-West Region because the population of the Mid-West shows lower diversity of skills than the South-West Region population and total unemployment numbers are lower for the South-West.

A maximum population multiplier of 3.3 has been adopted for each scenario. This multiplier is higher than the regional average but assumes the maximum population growth potential as most of the new base jobs are likely to be taken by people aged under 40. The multiplier is slightly higher than the population multiplier "generated" by people employed by the South-West mineral and related industries. It has also been assumed that by 2001, about 65 percent of the potential population growth will be achieved. This figure is assumed to increase to 85 percent by 2006 and should reach the maximum population growth potential by 2011. Although no detailed analysis has been undertaken, suggested figures are based on resource development-related employment and population growth of Karratha, the Shire of Roebourne and the Pilbara Region over time.

Input-output employment multipliers methodology

Under the first two scenarios it has been assumed that all employment created by steel plants and associated mines will result from their backward linkages (mainly demand for energy, water, transport and telecommunications), domestic consumption of employees of both base and linked industries and some expansion of the public sector services necessary to cater for the needs of the new residents. It also has been assumed that there will be no regional demand for steel products.

Disposable incomes of employees have been estimated from national and regional input-output tables and adjusted backward for CPI to be compatible with figures in the older Mid-West regional input-output table. Backward linkages have been estimated from the national table for steel production and adjusted to comply with the regional structure of industries. The third scenario assumes that the project will create some opportunity for widening of the industrial structure of the region including stronger backward linkages.

4.4 Employment

Between 1981 and 1996 the Mid-West Region's labour force grew and the economic base widened and this was reflected in the employment by industry distribution. The most prominent change in the regional employment pattern from 1981 to 1991 has been the diminishing role played by the agriculture/forestry/fishing sector. However, creation of positions in several other sectors of the economy more than offset employment loss from this sector.

The region's largest employing sector in 1996 was retail trade, followed by agriculture/forestry/fishing, health and community services and construction representing 6,714 persons or 44 percent of the workforce in the region. The other significant employers in the Mid-West Region in 1996 were education and property and business services. The mining sector employed only 2.4 percent of the region's workforce.

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Table 5 Population Projections for the Geraldton Region with and without Proposed Steel Plants

YEAR	GERALDTON REGION (NO PLANTS) POPULATION PROJECTIONS	ADDITIONAL POPULATION CREATED BY STEEL			POPULATION PROJECTIONS WITH STEEL PLANTS			PROJECT MATURITY MULTIPLIER
		SCENARIO			SCENARIO			
		1	2	3	1	2	3	
2001	42,000	2,440	2,840	3,550	44,440	44,840	45,550	0.65
2006	45,950	3,190	3,710	4,650	49,140	49,660	50,600	0.85
2011	49,700	3,750	4,370	5,460	53,450	54,070	55,160	1

Note: Project maturity multiplier identifies total population generation stage achieved by the project: Initially, employment multiplier will be close to 1 and occupancy rates not much higher than 2; After five years it is assumed to achieve 85 percent of its maximum effect and the full effect within 10 years.

The Geraldton Region's major employment sectors (Table 6) are:

- retail trade (15.0%)
- agriculture, forestry, fishing and hunting (12.6%)
- health and community services (8.2%) and
- construction (8.1%)

4.5 Community Services

4.5.1 Education

The Geraldton Regional College of TAFE (Technical and Further Education) offers a range of education and training programs designed specifically to meet industry requirements. The college also conducts programs throughout the Mid-West via 12 regionally located centres. Higher education opportunities are available on a contracted basis from several Perth-based universities through Geraldton Regional College.

TAFE Award Programs are offered in a range of disciplines, including Accounting and Business, Agriculture, Computer Engineering/Technology, Hospitality and Tourism as well as Marine Studies, Nursing and Applied Science. The college also offers various equity programs and pre-apprenticeships and is a participant in the State Government's WESTLINK project which utilises satellite technology to deliver information, training and educational services to rural and isolated communities. Also located within the college is the self-funded Curriculum and Customised Training Network Business Centre which offers courses and curricula tailored to the specific needs of local industry.

The Geraldton Regional Community Education Centre offers a range of education and training services and provides resources and support to increase the quality of education, training and skills development in the community.

Existing school provision in the region is generally adequate and includes both public and private facilities. There are two public senior high schools in Geraldton and two private high schools. Primary schools are located throughout the Greater Geraldton urban area in Geraldton at Waggrakine, Bluff Point, Allendale, Rangeway, Mt Tarcoola, Geraldton and Beachlands.

Three district high schools are established at Northampton, Dongara and Mullewa and primary schools are also located at Kalbarri, Chapman Valley, Yuna, Binu and Walkaway. Geraldton Grammar School opened in February 1996 catering for students from kindergarten age to Year 8 and will progress through to Year 12 over the next four years. A site for a university campus is located in the Shire of Greenough. However a commitment to the site is required or it reverts to the bequeathing family.

Agriculturally based secondary education is available at schools located at Morawa and the Christian Brothers agricultural college at Tardun. Education needs for children of isolated families are provided by the School of the Air and the Distance Education Centre. A wide range of services is provided for students with special needs.

A number of telecentres are operating in the Mid-West Region which provide further opportunities to access education, training, information, employment and government services.

4.5.2 Health

The Mid-West Region has access to medical facilities, including the Geraldton Regional Hospital (90 staffed beds) and the St John of God Hospital - Geraldton (40 staffed beds). Within the Geraldton Region there are also district hospitals located at Northampton and Mullewa, as well as health centres and nursing posts throughout the region.

There are more than 35 general practitioners and private dental, physiotherapy, psychology, podiatry and chiropractic services based in Geraldton, and a number of visiting specialists travel to Geraldton and Meekatharra.

The Mid-West Region also has a regional public health unit, mental health unit and community health services run from Geraldton. Royal Flying Doctor Services are available throughout the region.

4.6 The Region's Towns

The Geraldton Region contains a number of urban settlements, including administrative centres, historic settlements and tourist towns (Figure 17, Table 7).

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Table 6. Employing Industry of the Workforce for the Geraldton Region and State, 1991

NUMBER OF PEOPLE	CHAPMAN VALLEY	GERALDTON	GREENOUGH	IRWIN	MULLEWA	NORTHAMPTON	THE REGION	STATE
Agriculture, forestry, fishing & hunting	58.6%	5.0%	12.0%	25.4%	50.0%	33.9%	13.8%	5.5%
Mining	0%	2.8%	3.1%	2.1%	0.6%	0.8%	2.5%	4.1%
Manufacturing	0%	6.6%	4.6%	5.4%	0%	3.7%	5.3%	10.0%
Electricity, gas & water	0%	1.7%	1.5%	0.4%	0.6%	0.8%	1.4%	1.3%
Construction	0.8%	8.0%	6.7%	9.2%	4.5%	3.1%	6.9%	6.1%
Wholesale & retail trade	8.8%	22.4%	22.2%	16.1%	7.1%	12.5%	20.0%	18.7%
Transport & storage	2.8%	5.7%	4.8%	1.2%	1.2%	4.0%	4.9%	4.5%
Communication	0%	1.7%	1.0%	1.4%	0.6%	1.2%	1.4%	1.4%
Finance, property & business services	0%	6.8%	7.0%	4.9%	0.6%	5.5%	6.2%	10.5%
Public administration & defence	5.5%	3.4%	3.3%	4.3%	4.5%	3.0%	3.5%	4.8%
Community services	13.5%	19.5%	18.7%	11.8%	20.2%	11.9%	18.0%	18.7%
Recreation, personal & other services	4.0%	7.8%	5.7%	9.9%	2.4%	9.4%	7.3%	7.0%
Not classifiable & not stated	6.0%	8.6%	9.4%	8.0%	7.7%	10.1%	8.8%	7.6%

Source: ABS Census 1991

Table 7 Urban Centres/Localities in the Geraldton Region 1986-1996 Census

URBAN CENTRE/LOCALITY	CENSUS COUNT			No. PEOPLE COUNTED AT USUAL RESIDENCE		No. PEOPLE COUNTED AT USUAL RESIDENCE %	
	TOTAL POPULATION			1986	1991	1986	1991
	1986	1991	1996				
Greater Geraldton	21,726	24,361	25,243	19,074	22,679	88%	93%
Dongara / Port Denison	1,496	1,677	1,874	1,178	1,498	79%	90%
Kalbarri	2,898	1,521	1,788	916	751	32%	49%
Northampton	827	786	842	671	712	81%	91%
Mullewa	758	739	591	718	680	95%	92%

Note: The 1986 Census was conducted during school holidays while the 1991 and 1996 Census were not.

Source: ABS Census Counts for Small Areas: WA (1991 Census) Cat No. 2730.5, ABS 1996 Census

The regional centre is the major growth centre and focal point for the Geraldton Region. The regional centre is referred to as Greater Geraldton and comprises the City of Geraldton and portions of the Shires of Greenough and Chapman Valley. An urban area may cross local government boundaries but is attributed to the larger population provider. Greater Geraldton is discussed in detail in Part Three (the Greater Geraldton Structure Plan).

Other Towns:

Kalbarri	Port Gregory
Horrocks	Walkaway
Ajana	Binnu
Isseka	Nanson
Yuna	Lynton
Narngulu	

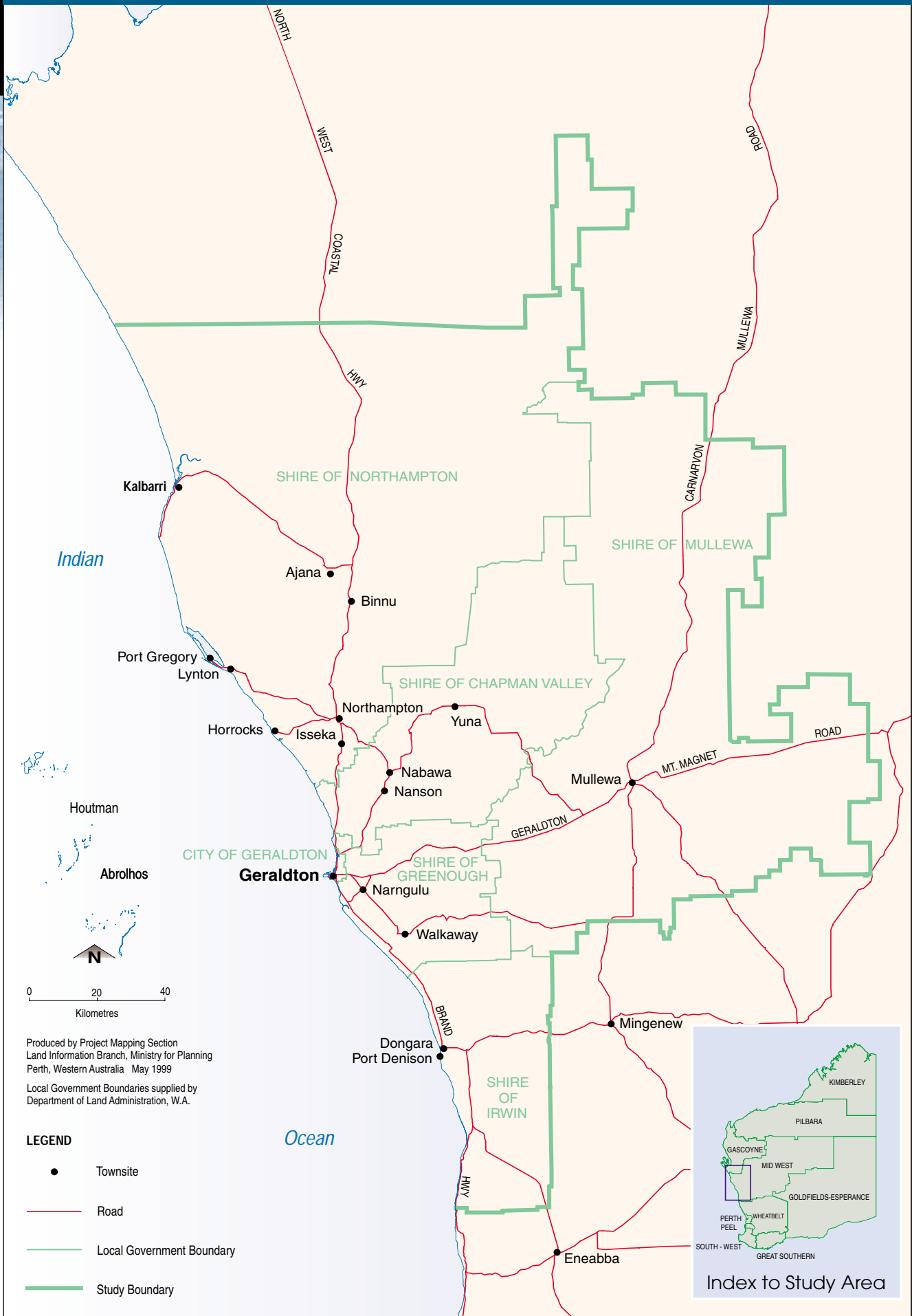
Administrative Centres:

Dongara/Port Denison
Northampton
Mullewa
Nabawa

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Figure 17 The Region's Towns



4.6.1 The Regional Centre

Geraldton is WA's third largest city providing a comprehensive range of office, administrative, retail and public administrative services.

Geraldton services the State's largest grain export industry and an important fishing industry. Industrial areas at Webberton, the Port and Narngulu accommodate a wide range of service, light and general industry.

4.6.2 Dongara / Port Denison

The towns of Dongara and Port Denison are located approximately 70 kilometres south of Geraldton. Dongara services the long established agriculture industry, with wheat, sheep and cattle being the mainstays of the economy. Development of the rock lobster and fishing industries at Port Denison has contributed to the economy and the discovery of natural gas has also been important to the town. Tourism is also increasingly important to the local economy.

The towns of Dongara and Port Denison are accessed from Brand Highway via Waldeck and/or Moreton Terrace. The recently opened Kailis Drive provides additional access to the towns. All new development within Dongara/Port Denison is required to be connected to the deep sewerage system. A program will be implemented to service unsewered areas as funds become available. A reticulated water supply is available to the urban area of Dongara/Port Denison. The Water Corporation does not envisage any problems with the facility being upgraded to accommodate growth. The towns are serviced by a range of community services, including medical facilities, firefighting, sea rescue and a police station.



Port Denison

The Shire's natural attributes, particularly a spectacular coastline combined with the area's geographical location, townscape and character, provide a base for the continued growth of the tourist industry in Dongara and Port Denison.

Fishing and agriculture will continue to remain important to the Shire's economy and the mining of mineral sands, talc, natural gas and oil are likely to increase in importance to the economic future of the area.

4.6.3 Northampton

Northampton is located approximately 50 kilometres north of Geraldton in the valley of Nokanena Brook. Historically the town was established to service its rural hinterlands and mining activities. Northampton has retained this function and also is becoming a popular tourist destination. It is the administrative centre for the Shire including the coastal towns of Kalbarri, Horrocks and Port Gregory. Northampton will experience growth as a result of industrial and port development at Oakajee and this will contribute to its economic base in the future.



Northampton

The Council is currently reviewing its local rural strategy to address matters affecting the rural areas of the shire. This is due to be completed in 1999.

Industrial activities in Northampton include agricultural, mining and crayfishing service industries. Council is currently negotiating with landowners to rezone land adjacent to the existing wheat bins to accommodate future general and light industrial land requirements. There are servicing issues associated with development of the land and only 'dry' industries will be permitted.

North West Coastal Highway passes through Northampton. The frequency and volume of through traffic, in particular heavy vehicles has increased and raised concerns about the impact of traffic on safety and the amenity of the town. A study has recently commenced to examine the justification for a heavy vehicle bypass. A steering committee has been established by Main Roads Western Australia to oversee the study.

A proposed route, east of the town along the foothills is currently being considered.

The Water Corporation provides scheme water for the town. The water is extracted from bores and wells treated and reticulated from elevated tanks to the south of Wannerenooka Hill. Northampton does not have a deep sewerage system, however the Water Corporation advises that it is anticipated that infill sewerage will be constructed during 2003/2004.

Many tourists pass through Northampton en route to Kalbarri, Carnarvon and other centres in the North-West. Northampton has numerous historical sites that relate to its past as a centre of mining and agricultural activity. The townsites in the Shire of Northampton including Northampton, Port Gregory, Horrocks and Kalbarri have the potential to develop a tourist economy based on heritage sites, coastal recreation and scenic areas.

4.6.4 Mullewa

Mullewa is located approximately 95 kilometres east of Geraldton and is the administrative centre for the Shire of Mullewa. Historically, the town developed as a service centre for the Murchison Goldfields and then for the surrounding farming industry. Mullewa is located in the sheep, wheat farming and lupin growing area of the Geraldton Region and is a gateway to the Murchison Goldfields.

Mullewa is directly connected to Geraldton, Mingenew and Morawa via the major regional road system. These roads are important for the transport of agricultural and mining products and also accommodate the increasing tourist traffic in the region. Mullewa is located on the railway line.

Mullewa's importance to the agricultural hinterland is reflected by the town's community services which include two schools, a district hospital, police station, courthouse, post office, public health services, family and children's services and emergency services. A medical practitioner is also resident. The town has a partial effluent scheme and is serviced with water, power and standard communications.

The development of mining in the shire and the hinterland represents the potential for significant population and economic growth. The existing community and commercial infrastructure provides the potential for the town to readily accommodate the requirements associated with mining by Kingstream Steel at Tallering Peak.

Tourism, which has increased in importance to the economy of the shire, peaks during spring when there are abundant wildflowers, including everlastings, orchids, grevilleas, hakeas and the unique wreath flower which has been adopted as the shire's logo. Heritage is also an important asset to the region's growing tourism industry.

4.6.5 Nabawa

Nabawa, approximately 35 kilometres north-east of Geraldton, in the Shire of Chapman Valley, is a service centre for the neighbouring rural communities. Community services in the town include a primary school, community hall, oval, indoor basketball stadium, tennis courts, cricket ground and nets, child health centre and pre-school. A tavern is also located in the town.

Infrastructure includes scheme water and power. There is currently no industrial development in the shire.

Nabawa is likely to benefit from diversification taking place in the local agricultural industry. Recently, a number of aquaculture enterprises have been established along with horticulture and viticulture. Agricultural diversification in the area will benefit the region. Nabawa and its surrounding district has the potential to develop a tourism economy based on heritage sites, recreation and scenic areas including the Moresby Range.

4.6.6 Kalbarri

Kalbarri is located at the mouth of the Murchison River approximately 145 kilometres north of Geraldton. The major link to Kalbarri is a 66km sealed road from the North West Coastal Highway to the townsite. The proposed sealed road between Kalbarri and Port Gregory will attract additional tourist traffic and development with the national park coastline to the south of Kalbarri offering spectacular views from steep cliffs.

The aircraft landing facilities at Kalbarri have been a constraint to development of the town. The Shire of Northampton has secured the land needed to construct an airport east of Kalbarri at an approximate cost of \$2.5 million to \$4.1 million. The facility has the capacity to handle the unrestricted landing of Fokker F28 and BAe146 aircraft and larger turbo propeller aircraft. Finance options for the construction of the airport are still being investigated. The development of a new Kalbarri airstrip is required to enhance the social and economic development of the town while catering for increased tourist demand. It is expected that these improvements in transport facilities will reinforce the importance of Kalbarri as a significant tourism centre in the region.

The Kalbarri Planning Study identified limited water supplies as a constraint to future growth. The town is presently serviced by bores situated on Reserve No. 31503 located to the south-east of town. Kalbarri is rated a high priority for connection to deep sewerage and the program was completed in 1998. The older parts of Kalbarri experience drainage problems during periods of high rainfall and new developments require stormwater drainage facilities to address these problems. The Shire of Northampton has recently completed the development of a new waste disposal site to the east of Kalbarri.

Kalbarri provides a range of community and welfare services for the residents and visitors. The seasonal population significantly increases the requirements for services in the town. The State is currently upgrading the existing medical centre to create the Northampton/Kalbarri health service. The centre provides an important service to the growing permanent population of the town and the increasing number of visitors. The Shire of Northampton is presently securing land for the development of an emergency services co-location centre adjacent to the oval on Porter Street. Funding has already been secured.

Fishing and tourism are Kalbarri's most important industries. The Department of Transport has recently completed the development of new fishing and recreational boat jetties within Kalbarri. It is expected that tourism will continue to grow, enhanced by the construction of the Port Gregory to Kalbarri Road and upgrading of the airport facility.

A major tourism development known as Port Kalbarri is proposed immediately south of the townsite. The zoning accommodates a range of tourist-related activities including a marina, residential and special residential subdivision.

The Council is currently reviewing the Kalbarri Town Planning Scheme and it is anticipated that this will be completed during 1999.

4.6.7 Port Gregory

Port Gregory is on the coast approximately 110 kilometres north of Geraldton via Northampton. The town is situated on a narrow promontory of sand dunes and protected from exposure to the ocean by a long reef which historically provided a safe anchorage. The eastern side of the promontory is the Hutt Lagoon, a long and shallow estuary of the Hutt River. A beta carotene processing industry and a garnet mine are located at Port Gregory.

A caravan park, local shop and small residential settlement are located in the town. A community centre has been established by the progress association with the assistance of the shire. A series of reefs provide protection for boats and create a suitable fishing environment. Port Gregory provides services to the crayfishing industry and is a popular holiday location for people seeking a quiet coastal location with good opportunities for recreational fishing. The area will experience more development pressure as access improves, such as the road from Kalbarri, and tourism expands (e.g. water-skiing).

Further expansion of the small townsite is constrained by environmental features and difficulties associated with the provision of services such as sewerage and reticulated water supply. The Shire of Northampton, Port Gregory Progress Association and the Ministry for Planning are currently preparing a coastal management plan for Port Gregory which will also provide recommendations for the development of the townsite. This is expected to be completed during 1999. The Council would encourage all development of tourist related facilities such as service stations etc, resulting from the sealing of the road to Kalbarri, to be located within the existing townsite to assist in maintaining its viability.

4.6.8 Horrocks

Horrocks, approximately 95 kilometres north of Geraldton via Northampton, was established as a coastal holiday town in the late 1800s. The area's attractions include sheltered in-shore waters, good surfing conditions and accessibility to recreational and commercial fisheries. The area also has an important cultural heritage. Services in the town include a general store and holiday accommodation. The provision of reticulated sewerage in 1997/98 will allow for the gradual expansion of the community and enhancement as a low-key tourist destination.

Horrocks in conjunction with Northampton would experience growth from the proposed industrial and port development at Oakajee. It is likely that Horrocks reputation as a coastal settlement would create growth pressures over the life of the Region Plan. The Council is presently reviewing its town planning scheme for Horrocks and this is likely to be completed during 2000.

4.6.9 Lynton

The Lynton townsite is a historic settlement built by convicts in the mid-19th century. The townsite is located approximately four kilometres inland from Port Gregory. This area is a popular tourist destination in the region.

4.6.10 Ajana

The Ajana townsite is located approximately five kilometres from North West Coastal Highway, along the Ajana-Kalbarri Road. The built form of the town comprises a small number of dwellings, community hall and tennis courts. The townsite is part of the region's history.

4.6.11 Binnu

The Binnu townsite, on the North West Coastal Highway approximately 35 kilometres north of Northampton townsite, is an important grain handling depot. Historically, grain was handled by rail to Binnu but all grain is now transported by road. Its importance as a grain handling depot will support the continued operation of this small town.

4.6.12 Isseka

The Isseka townsite is located on North West Coastal Highway approximately 11 kilometres south of Northampton. This area consists of small properties between two and 11 hectares, utilised for limited small-scale and hobby farm purposes. The townsite was established following the completion of the Geraldton-Northampton railway link in 1879, which led to the desire by local residents to live close to the railway line.

4.6.13 Walkaway

Walkaway is located approximately 30 kilometres south-east of the Geraldton/Greenough urban district, in the area known as the Greenough Back Flats. Walkaway was gazetted as a locality on 1 November 1985, though European settlement of the Greenough Flats began in the 1850s. Initial development of the locality began in the 1880s and the growth of the town was strongly influenced by the development of the Geraldton to Greenough railway line and the expanding agricultural area. Walkaway is a small rural community with an historical character, its many heritage buildings have been preserved and are important assets to the town with potential to be further promoted. Walkaway also has a number of sporting facilities which are utilised by many people in the surrounding region.

4.6.14 Narngulu

The Narngulu Industrial Estate has developed around the Narngulu townsite, east of the Geraldton central area with access via Edward Road. LandCorp has acquired all the residential lots within the townsite for inclusion in the industrial estate.

4.6.15 Nanson

The Nanson townsite is located approximately 25 kilometres north-east of Geraldton. There are about 20 dwellings in the town. Historically, the settlement was established in response to the needs of the surrounding rural areas.

4.6.16 Yuna

Yuna, located in the Shire of Chapman Valley approximately 90 kilometres north-east of Geraldton, has developed to service the surrounding rural communities. Services in the town include a primary school, recreation oval and community hall. Infrastructure includes scheme water and power. Commercial services include a tavern and shop. The town's wheat and grain silos service adjoining agricultural areas.

4.7 Summary - Geraldton Region - Community Development

4.7.1 Regional Issues

- Population growth focused on the Geraldton/Greenough urban area with Kalbarri and Dongara-Denison also likely to experience considerable growth.
- The region's population is expected to become more urbanised and older on average.
- The need to ensure an adequate supply of suitably zoned and serviced land to provide stability in the housing market.
- The need to provide for a range of residential living environments.
- The need to ensure an adequate supply of suitably zoned and serviced industrial land to service townsites in the region.
- Limited opportunities for tertiary education.
- The need to locate future school sites in appropriate locations.
- The need to protect opportunity for the expansion of the Geraldton Regional College of TAFE.
- The need to provide for appropriate recreational library and information services.

4.7.2 Geraldton Region - Community Development Objective

"To enhance the region as a place to live, promote orderly urban growth while recognising environmental and other constraints, and encourage the provision of a range of residential living environments. To ensure that the community is supported by adequate and appropriate community services and facilities."

4.7.3 Regional Guidelines and Recommendations

This section identifies Guidelines - G to provide a general guide for decision making and Recommendations - R for specific action to achieve the community development objective.

At the end of each recommendation a lead agency and associated agencies are listed to assist in implementation of the recommendation. In statements where there is no lead agency highlighted, the lead agency chosen will depend on the issue involved.

There are many private and community groups and individuals who may need to be involved to implement specific recommendations. Appropriate groups and individuals should be consulted when recommendations are considered for implementation.

Population

- R** Monitor population trends in the Geraldton Region to ensure that planning is able to meet future requirements. (MfP)

Urban Development

- G** Promote choice and variety in lot sizes and housing styles to meet the full range of residential lifestyle needs by including:
 - medium density housing;
 - redevelopment of existing residential areas;
 - small and large lot residential and rural-residential development in suitable locations (MfP, LGs).
- R** Monitor supply of zoned and serviced residential land is available for development in suitable locations ahead of demand in all towns and urban areas within the region. (MfP, LGs.)
- G** Provide for urban growth in accordance with demand and taking into account:
 - the orderly and efficient expansion of services;
 - access to community facilities;
 - minimisation of adverse impacts to the environment, natural resources, high-quality agricultural land and rural amenity; and
 - inappropriate interim uses of future urban land. (MfP, LGs.)
- G** Encourage town planning schemes to provide opportunities for urban consolidation in suitable locations within major urban areas subject to compatibility with existing character and protection/enhancement of residential amenity. (MfP, LGs)
- G** Ensure that the community is provided with adequate sporting, recreational, social, cultural and other infrastructure. (LGs, MfP)
- G** Ensure that residential development in all towns and urban areas promotes existing zoned land with any rezonings to be considered in accordance with need and established planning criteria. (MfP, LGs)
- G** Require the preparation of overall development plans/structure plans for all major residential subdivisions. (MfP, LGs)

Northampton

- G** Promote choice and variety in lot sizes and housing choices to meet the full range of residential lifestyles needs for the Northampton townsite including:
 - medium density housing (R30);
 - small and large lot residential and rural-residential;
 - aged persons' accommodation; and
 - rural-residential lifestyles. (LG, MfP)
- G** Encourage opportunities through preparation of new town planning schemes for urban consolidation subject to:
 - compatibility with existing character;
 - protection/enhancement of residential amenity;
 - landscape values;
 - protection of important views throughout towns;
 - retention of existing pockets of remnant vegetation; and
 - protection/enhancement of existing heritage values. (LG, MfP)
- G** Ensure that residential subdivision and development within Northampton utilises existing zoned land with any future rezonings being considered on the basis of:
 - need for additional land;
 - promotion of the orderly extension of servicing infrastructure;
 - access to community facilities; and
 - avoiding land with significant on-site impediments or off-site impacts. (LG, Water Corporation, MfP)
- G** Ensure that development considers the recommendations contained within the shire's municipal heritage inventory. (LG)
- G** Promote the provision and development of green spines and river corridors around all major creeks throughout the townsite. (LG, WRC, MfP)
- G** Promote the guidelines and policies formed through the Northampton Townscape Committee. (LG, MfP)
- G** Consider the use of alternative treatment units (ATUs) for medium density developments. (LGs, Health Department of WA, MfP)

Horrocks

- G** Promote choice and variety in lot sizes and housing choices to meet the full range of residential lifestyle needs for the Horrocks townsite including:
 - medium density housing (R30);
 - aged persons accommodation; and
 - rural-residential lifestyles. (LG, MfP)

- G** Ensure that residential subdivision and development within Horrocks utilises existing zoned land with any future rezonings being considered on the basis of:
 - need for additional land;
 - promotion of the orderly extension of servicing infrastructure;
 - access to community facilities; and
 - avoiding land with significant on-site impediments or off-site impacts. (LG, MfP)

Kalbarri

- G** Promote choice and variety in lot sizes and housing choices to meet the full range of residential lifestyle needs for the Kalbarri townsite including:
 - single residential housing;
 - medium density housing (R30 - R60); and
 - aged persons accommodation (LG, DOLA, MfP)
- G** Encourage opportunities through preparation of new town planning schemes for urban consolidation within the older residential areas subject to:
 - compatibility with existing character;
 - protection/enhancement of residential amenity; and
 - protection of important views throughout Kalbarri. (LG, MfP)

Port Gregory

- G** Allow for housing choices such as grouped dwellings within Port Gregory utilising alternative treatment units (ATUs). (LGs, Health Department of WA, MfP)
- R** Prepare guidelines and policies for any future developments within Port Gregory resulting from the completion of the coastal route from Kalbarri to Port Gregory. (LG, WA Tourism Commission, CALM)

Nanson

- G** Promote choice and variety in lot sizes and housing styles, to cater for a range of residential lifestyle choices in the Nanson townsite including:
 - low density housing (R10 - R15);
 - medium density housing (R20);
 - rural-residential lots; and
 - aged persons' accommodation. (LG, MfP)
- G** Ensure that an adequate supply of zoned residential land is available for development, and review town planning schemes accordingly. (LG, MfP)

G Encourage town planning schemes to provide opportunities for urban growth on the basis of the:

- need for additional land;
- promotion of the orderly extension of servicing infrastructure;
- access to community facilities; and
- protection of the natural environment, natural resources, high quality agricultural land and rural amenity and places of heritage value within Nanson. (LG, MfP)

G Encourage the protection of rivers, creeklines and other waterways and water bodies within and around Nanson townsite. (LG, WRC, MfP)

G Require the preparation of overall development plans/structure plans for all major residential subdivision. (LGs MfP)

Yuna

G Promote choice and variety in lot sizes and housing styles, to cater for a range of residential lifestyle choices in the Yuna townsite, including:

- low density housing (R10 - R15)
- medium density housing (R20)
- rural residential lots and
- aged person accommodation. (LG, MfP)

G Ensure that an adequate supply of zoned residential land is available for development, and review town planning schemes accordingly. (LG, MfP)

G Encourage town planning schemes to provide opportunities for urban growth on the basis of:

- need for additional land;
- promotion of the orderly extension of servicing infrastructure;
- access to community facilities;
- protection of the natural environment, natural resources, high quality agricultural land and rural amenity; and
- protection of future urban land from inappropriate interim uses. (LG, MfP)

G Ensure that the community of Yuna is provided with access to adequate sporting, recreational, social, cultural and other infrastructure. (LG)

G Ensure that all residential subdivision, development and associated uses have due regard to the landscape amenity and places of heritage and cultural value within Yuna. (LG, MfP)

G Encourage protection of rivers, creek lines and other waterways and water bodies within and around Yuna townsite. (LG, WRC, MfP)

G Require preparation of overall development plans/structure plans for all major residential subdivision. (LGs MfP)

Nabawa

G Promote choice and variety in lot sizes and housing styles, to cater for a range of residential lifestyle choices in the Nabawa townsite including:

- low density housing (R10 - R15);
- medium density housing (R20);
- rural-residential lots; and
- aged persons' accommodation. (LG, MfP)

G Ensure that an adequate supply of zoned residential land is available for development, and review town planning schemes accordingly. (LG, MfP)

G Ensure that residential subdivision and development within Nabawa utilises existing zoned land with any future rezoning being considered on the basis of:

- need for additional land;
- promotion of the orderly extension of servicing infrastructure;
- access to community facilities;
- protection of the natural environment, natural resources, high quality agricultural land and rural amenity; and
- protection of future urban land from inappropriate interim land uses. (LG, MfP)

Mullewa

G Promote choice and variety in lot sizes and housing choices to meet the full range of residential lifestyle needs for the Mullewa townsite including:

- medium density housing (R20);
- small and large lot residential and rural-residential;
- aged persons accommodation; and
- rural-residential lifestyles. (LG, MfP)

G Encourage opportunities through preparation of a district planning scheme including provision for urban consolidation subject to:

- compatibility with existing character;
- protection/enhancement of residential amenity;
- landscape values;
- protection of important views throughout Mullewa;
- retention of existing pockets of remnant vegetation; and
- protection/enhancement of existing heritage values (LG, MfP)

G Ensure that residential subdivision and development within Mullewa utilises existing zoned land with any future rezonings being considered on the basis of:

- need for additional land;
- promotion of orderly extension of servicing infrastructure;
- access to community facilities;
- avoiding land with significant on-site impediments or off-site impacts;
- protection of the natural environment, natural resources, high quality agricultural land and rural amenity; and
- protection of future urban land from inappropriate interim land uses. (LG, Water Corporation, MfP)

G Ensure that development considers the recommendations contained within the shire's municipal inventory. (LG)

R Prepare guidelines and policies for any future developments within Mullewa resulting from the AFKS development. (LG)

G Ensure that an adequate supply of zoned residential, commercial and industrial land is available for development, and review the district planning scheme accordingly.

G Provide opportunities in the district planning scheme for commercial and industrial growth on the basis of the:

- need for additional land;
- promotion of the orderly extension of servicing infrastructure;
- access to community facilities; and
- protection of the natural environment, natural resources, high quality agricultural land and rural amenity and places of heritage value within Mullewa. (LG)

G Ensure that the community of Mullewa is provided with access to adequate sporting, recreational, social and cultural infrastructure. (LG)

Irwin

G Ensure zoning provides for a choice of residential and rural-residential land to meet demand of present and future populations. (LG, MfP)

G Ensure adequate provision of industrial and commercial land is available to accommodate future requirements. (LG, MfP)

G Provide for social and recreational needs of the community. (LG)

G Promote and enhance the local heritage, townscape and cultural landscape. (LG, MfP)

G Provide protection for the community's economic mainstays, being farming and crayfishing. (LG, MWDC)

G Promote development of public open space around the Irwin River foreshore. (LG, WRC, MfP)

G Ensure relevant development plans and structure plans are prepared and updated to meet the needs of the shire. (LG, MfP)

G Protect, enhance and enable controlled access to the coastal areas within Dongara/Port Denison. (LG, DOLA, MfP)

Education

R Monitor school facilities in the region in accordance with population increases. Provision should be made for:

- new primary schools at Glenfield and Wandina;
- a new high school at Waggrakine;
- upgrading of Kalbarri Primary School to District High School status;
- expansion of the Northampton district high school site;
- safeguarding land to the east of the Geraldton Regional College of TAFE for future expansion. (EDWA, LGs, DOLA, MfP)

G Promote the development of a specialist research school or tertiary institution. (All relevant agencies)

G Continue to support the development of the Geraldton Secondary College to service the region's upper secondary needs. (All relevant agencies)

G Support development of accommodation for students attending the secondary school to allow them to remain in the region. (All relevant agencies)

G Promote specialist vocational training to service the region's employment demands and opportunities. (All relevant agencies)

G Encourage the broadening of educational choices and opportunities in the region, including the establishment of independent grammar schools in Geraldton and extension of university courses through the Geraldton Regional College of TAFE. (All relevant agencies)

R Investigate development of land identified on the Greater Geraldton Structure Plan for a university site and examine potential funding sources or investment options for the establishment of a university prior to the year 2000. (All relevant agencies)

Libraries and Information Services

R Monitor provision of library and information services to meet community needs. (LISWA, LG)

Health

- G** Ensure that the provision of health services continues to meet community needs, and in particular that adequate and appropriate services are provided for the elderly and frail aged. (All relevant agencies)
- G** Support the Geraldton Regional Hospital to provide a base for both visiting and permanent specialist medical practitioners. (All relevant agencies)
- G** Improve health services in the region by increasing the types and frequency of visits to remote areas by medical practitioners. (All relevant agencies)

5 - Natural and Cultural Environment

5.1 State Strategic Environmental Principle

The *State Planning Strategy* has responded to the need for strategic environmental assessment by identifying the strategies which, in their application, will result in development achieving a greater level of sustainability. In turn, these strategies have identified criteria which should be applied in the preparation of regional plans and local town planning schemes.

5.2 Geraldton Region - Environmental Objective

“To conserve and enhance the region’s natural environment, resources and distinctive landscapes, its European and Aboriginal heritage and the overall character and amenity of the cultural environment.”

5.3 The Terrestrial Environment

5.3.1 Physical Characteristics

Three broad geological zones exist in the region. Two major sedimentary basins, the Carnarvon Basin and Perth Basin, are located to the north and the south-east. Between these in a north-east, south-westerly direction is the Northampton Block, an area of crystalline basement rock.

The region is dissected by a number of rivers (flowing intermittently) and can be subdivided into a number of geomorphological units based on topographic and geological characteristics. The most significant rivers are the Murchison, the Chapman, the Greenough and the Irwin. To the east, the Perth and Carnarvon Basins and the north-east section of the Northampton Block are overlain by the Victoria Plateau, a gently undulating sand plain with minor dune fields, underlain by laterite and silcrete. At its western edge, the plateau is deeply dissected by a range of dramatic landscape features. The Murchison Gorge is possibly the most dramatic but the more characteristic mesas (flat-topped hills) interspersed by valleys with rolling hills are also significant. This dissected area slopes towards the coastal plain.

South of Geraldton the coastal plain is formed from a wide area of limestone deposit with recently formed dunes along the coast. The alluvial flats of the Greenough and Irwin Rivers overlay much of the inland limestone material.

To the north, the coast is a narrow strip of limestone, sometimes falling direct to the sea from high cliffs. The Murchison, Hutt and Bowes Rivers are the major rivers which enter the sea along this coast.

5.3.2 Vegetation

Vegetation reflects the geomorphological pattern, the hot dry climatic conditions and rainfall distribution. Vegetation over the entire area is typically sand heath or low scrub. North-east of the 250mm isohyet the sparse vegetation is predominately acacia species with occasional occurrence of eucalypts and sandalwood. The land is held in pastoral leases on vacant Crown land and is generally uncleared.

Between the 250mm and 350mm isohyet there is a botanically rich scrub and heathland with mallee in depressions and jam and York gum woodland on better quality low-lying soils. The areas dissected by river systems south of the 350mm isohyet have a diverse range of vegetation which reflect topography and rainfall which ranges from 500mm in the south to 350mm in the north. Tall trees (eucalypts, acacias and casuarinas) in isolated clumps of woodland occur along valleys. Steep hillsides are covered in various forms of thicket, and scrub is found on flat-topped hills.

The coast is characterised by scrub with acacia forest on some of the flood plains. Most vegetation south of the 250mm isohyet has been cleared for pasture or crop. Very little of the acacia low forest or jam-York gum woodland remains. Natural vegetation remains along rocky or steep areas prone to degradation or not suitable for cultivation.

Remnant Vegetation

Remnant vegetation is important for:

- maintaining evolutionary opportunities, functional links (corridors), nutrient cycling, groundwater recharge, erosion protection;
- providing examples of ecosystems, communities or habitats, benchmark sites and important research sites;
- conservation of individual species and gene pools as a local seed source;
- social values - recreation, aesthetics, public education; and
- forming part of a regional perspective.

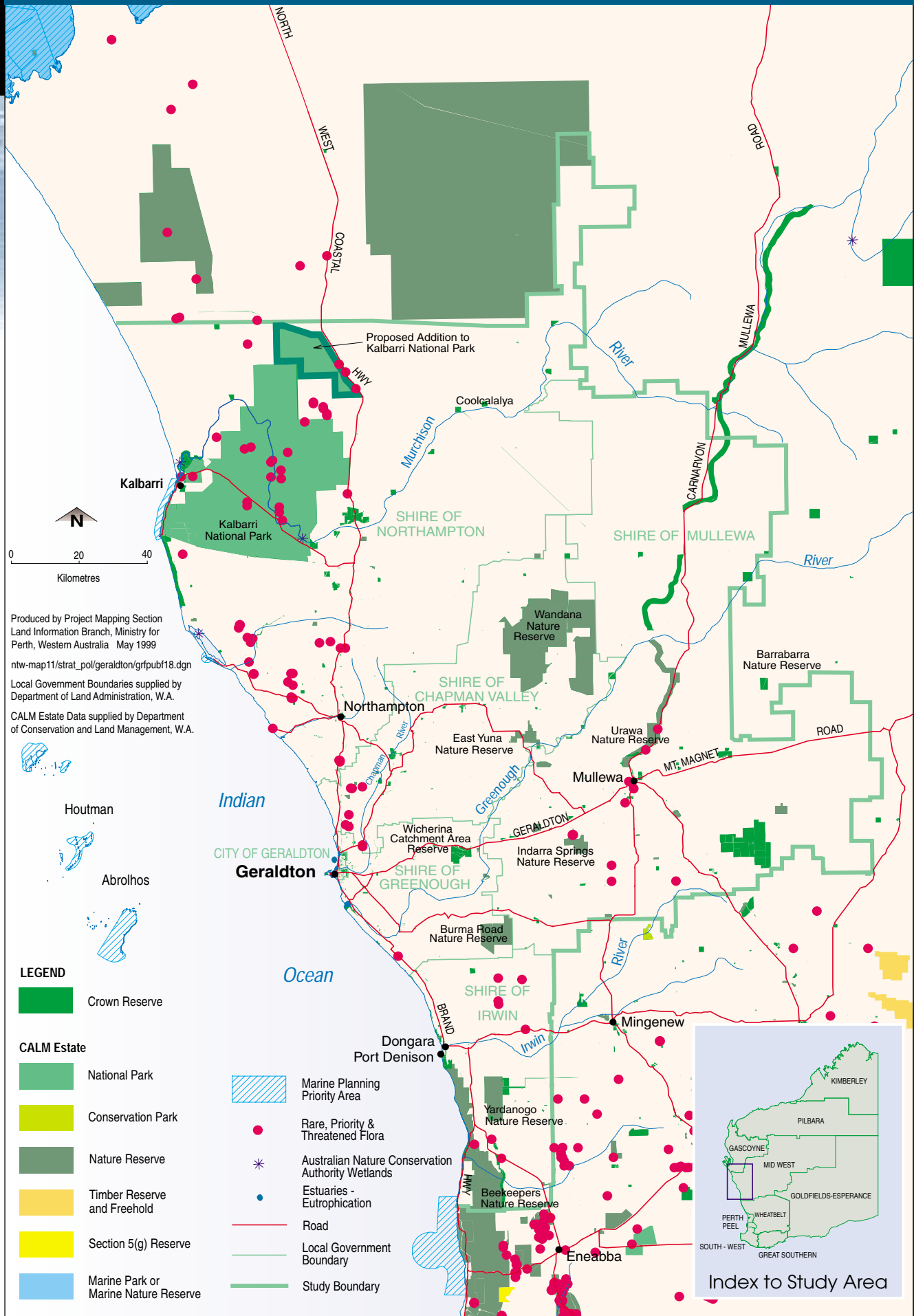
Remnant vegetation on private land comprises 7 percent of the region and is of variable size, shape and biotic composition.

Remaining remnant vegetation

SHIRE	% REMNANT VEGETATION
Chapman Valley	8.15*
Greenough	13.45
Irwin	47.37
Mullewa	8.99*
Northampton	4.97*

Source: AgWA Note: * These figures exclude pastoral land

Figure 18 Conservation Priority Areas



Produced by Project Mapping Section
Land Information Branch, Ministry for
Perth, Western Australia May 1999
ntw-map11/strat_pol/geraldton/grfpubf18.dgn
Local Government Boundaries supplied by
Department of Land Administration, W.A.
CALM Estate Data supplied by Department
of Conservation and Land Management, W.A.

CALM managed land is the core of the conservation system but conservation reserves are inadequate to represent the range of ecosystems that once existed in the region. Sixteen percent of the known populations of endangered and vulnerable flora in Western Australia is on freehold land. Conservation efforts by private landholders are vital and must be encouraged.

Although the Geraldton Region does not suffer from salinity problems to the same degree as the rest of the Wheatbelt, it is at high risk from wind and water erosion, particularly the former. Due to the very high winds experienced in the region particularly in summer, areas which have been cleared for farming are very susceptible to erosion and many areas suffer from land degradation. Careful farming techniques and planting of tree breaks have assisted but further planting and fencing of remnant vegetation is required.

Land degradation in areas of remnant vegetation results from weeds from farming areas, uncontrolled fire and over grazing by introduced pests such as feral goats, foxes and rabbits. This, combined with alterations to the hydrological regime, presents considerable obstacles to continued biodiversity.

5.3.3 Conservation Estate in the Geraldton Region

Conservation priority areas within the Geraldton Region are indicated on Figure 18.

Kalbarri National Park (186,000 hectares)

The spectacular scenery of the Kalbarri National Park is the result of millions of years of geological formation. Beneath this countryside, the geology consists of deep, horizontal bands of multi-coloured sands which were deposited in layers about 400 million years ago. The resultant sedimentary rock formation is called the Tumblogooda Limestone. As the Murchison River carves its way to the sea, red and white banded gorges have been cut by the flow. These gorges meander 80km through the park. Along the coast, the processes of erosion have fashioned formations from the sea cliffs. The colourful coastal views provide significant opportunities for tourism. Cabinet has endorsed the incorporation of vacant Crown land north-east of the national park which will add approximately 30,000 hectares to the size.

Indarra Springs Nature Reserve (2,655 hectares)

Indarra Spring Nature Reserve is a "C" class reserve (25km south-west of Mullewa) vested with the National Parks and Nature Conservation Authority (NPNC). Indarra is characterised by sand plain heath with mallee formations in various areas. Acacia, melaleuca and allocasuarina thicket also are present with several examples of samphire located on the reserve. This was in private property until vested with the NPNC in 1991.

Wandana Nature Reserve (54,821 hectares)

Wandana Nature Reserve, an "A" class reserve 20km north-west of Yuna, is located near the boundary between the South-Western and Eremaean Botanical Provinces. Vegetation is typical of both provinces. The shrub mallee and banksia thicket formation predominate. Similarly the fauna is a mixture of south-western and arid zone species.

Reptiles are well represented in the reserve with at least 41 species. The reserve comprises a gently undulating sand plain overlying laterite of Pleistocene and late Tertiary age.

East Yuna Nature Reserve (1,736 hectares)

East Yuna Reserve, an "A" class reserve is located 20km south-east of Yuna and is the only known locality in the Wheatbelt where three macropods (Grey and Red Kangaroos and the Euro) occur simultaneously. The reserve supports more species of birds than have been recorded elsewhere in the Wheatbelt. The Reserve is located in the Irwin Botanical

District and contains components from the Austin Botanical District to the east and from the Avon Botanical District to the south. Twenty-five different vegetation associations are present in the area.

Barrabarra Nature Reserve (930 hectares)

Barrabarra Nature Reserve is a "C" class reserve located 40km south-east of Mullewa at the headwaters of the Irwin River which flows to Dongara. The flora consists of heath, including melaleuca and acacia scrub. A large display of the wreath *leschenaultia* is common during spring.

Burma Road Nature Reserve (6,889 hectares)

The Burma Road Nature Reserve is a "C" class reserve situated 20km south-east of Walkaway. It is vested jointly in the Tree Society and the NPNC for the conservation of flora and fauna. The vegetation of the sand plain soils of the reserve is termed Kwongan, which is characterised as being species rich and contains a high degree of endemism. The vegetation growing on the leached laterite sand plain soils of the reserve is a scrub heath (sand heath) which is typical of the Tathra vegetation system. This heath is found on the shallower soils of the higher areas with low banksia woodland on deeper soils of the shallow valleys. The scrub heath's plant assemblage is dominated by the Leguminosae (pea family), Proteaceae (banksia family) and Myrtaceae (bottlebrush, eucalyptus families).

Urawa Nature Reserve (8,783 hectares)

Urawa Nature Reserve includes "A" class (33466) and "C" class (33475). It is located directly north of Mullewa and follows the Mullewa/Carnarvon Road north for approximately 40km before following Hackett's Creek to the Greenough River. The reserve was part of the De Grey-Mullewa Stock Route. Three points of historical interest on the reserve are the Perkins No. 2 Government Well, Woodenooka Government Well and Hughies Rock. These were all stock watering points.

Yardanogo Nature Reserve (6,591 hectares)

The Yardanogo Nature Reserve is a "C" class nature reserve vested with the NPNC for the "Protection of Flora and Fauna". The reserve extends across Adams Road and is located about 20km south-east of Dongara, east of Brand Highway, in the Shire of Irwin. The reserve is characterised by sand plain heath with emergent low trees. Banksias are the main tree species with Proteaceae and Myrtaceae dominating the heath vegetation. Beharra Springs is located on the reserve's south-eastern boundary.

Beekeepers Nature Reserve (68,063 hectares)

The Beekeepers reserve No 24496 is a "C" class nature reserve declared in 1956 for the purpose of preserving its natural characteristics to protect its use for beekeepers. The Kwongan flora of the Northern Sand plains is extremely rich. The combination of pollen and nectar-producing plants with the mild climate makes this one of the best areas in Australia for beekeeping, especially in winter. The vegetation is mainly low or tall heath, and contains a wide range of plants typical of the lower central west coast. Access is difficult, but beekeepers have registered many apiary sites both on the reserve and on the coastal plain.

The reserve extends beyond the Geraldton Region and is the largest nature reserve between Perth and Geraldton. Its size can be attributed to the fact that most of the land cannot be cultivated, a result of a complex of limestone ridges across the region. The reserve, vested in the NPNCA and set aside for the purpose of "Protection of Flora and Fauna", stretches from Dongara to Jurien, within the Shires of Irwin, Carnamah, Dandaragan and Coorow.

The eastern part of the reserve is subject to EPA recommendation 5.15 which recommends the purpose be amended to "Apiculture and Protection of Flora". The Beekeepers Reserve accommodates a variety of uses including:

- Mining - Basic raw materials (limestone, shellgrit, sand), mineral sands, lime sands, petroleum.
- Beekeeping - The reserves are extremely important to the apiculture industry.
- Recreation - The coastal sections of the reserves are used extensively for recreation, including camping, fishing, and off-road driving. They also contain significant numbers of squatters' shacks.

The diversity of uses creates conflicting demands which are currently being addressed e.g. the classification of "nature reserve" does not allow the extraction of basic raw materials or wildflower picking and restricts recreation and apiculture. One of the major issues for the Beekeepers Reserve is the management of squatters. It is intended that the reserve, mainly west of the coastal road, be temporarily vested to enable implementation of the Squatter Policy. Rationalisation of vesting will take place after the policy has been implemented. This issue was addressed in detail in the *Central Coastal Regional Strategy* 1996.

5.3.4 Other Reserves in the Geraldton Region

There are a further 30 nature reserves in the Geraldton Region and numerous reserves with other purposes and vesting. These combine to form a network of conservation areas covering a wide range of flora and fauna habitats.

5.3.5 Proposed Additions to the Conservation Estate in the Geraldton Region

Wicherina Catchment Area Reserve

The Wicherina catchment area is located east of the Geraldton/Greenough urban area, near the Eradu townsite and is 2,247ha in area. The reserve is the site of the Wicherina Dam which provided all the original water supply

to Geraldton and Mullewa prior to the development of the Allanooka borefield. However, this dam has not been in use for some time and is no longer suitable to provide town water supplies. The reserve is set aside for water supply purposes and is vested in the Minister for Water Resources.

The Wicherina catchment area is currently managed by the Water Corporation, which has proposed that the area be vested in the Department of Conservation and Land Management so that the reserve can be used primarily for conservation purposes, as it is one of the few remaining large areas of remnant vegetation. There is possibly the potential for long-term tourism development, however there are many management issues to be resolved prior to this occurring.

Coolcalalya

The area known as Coolcalalya is vacant Crown land located in the eastern sector of the Shire of Northampton. This large area is different, particularly in terms of plant communities, from the existing reserves in the region (Kalbarri National Park, Wandana and Toolonga Nature Reserves). The major feature of this area is the overlap of the South-Western and Eremaean vegetation, resulting in the occurrence of unusual vegetation associations. This land is a proposed addition to the conservation estate in the Geraldton Region.

East Pindar

East Pindar is vacant Crown land located in the eastern sector of the Shire of Mullewa. This area is in relatively pristine condition. Dominated by Bowgada scrub and heath, it contains a freshwater lake, granite outcrops, open tree mallee and York gum woodlands. The country is marginal for wheat, and salt problems in the district would be exacerbated if the vacant Crown land was cleared. This land is a proposed addition to the conservation estate in the Geraldton Region.

5.3.6 Other Areas of Significance in the Geraldton Region

Moresby Range

The flat-topped Moresby Range forms a unique landscape backdrop east and extending north of Geraldton. While many of its steep slopes remain largely uncleared, much of the flat-top area has been cleared for agricultural purposes. Blocks of remnant vegetation occur in the northern portions.

The range is primarily a linear feature running north-south, comprising a remnant of the Victoria Plateau. In its southern extent, both western and eastern sides are equally as steep. However, further north, where the range is more distant from the north-south flowing Chapman River, slopes on the inland side are much more gentle. Remnant vegetation throughout consists of heath and tall shrub communities and the range supports several rare and restricted species of flora.

Currently there are conservation reserves in the vicinity of Wokatherra Hill, at Oakajee and at Howtharra Hill. These are small reserves, less than 130ha, which do not contain complete ecological units and comprise only a small proportion of the range. Areas of high conservation value need to be identified to improve the representation of ecological units in the conservation reserve system.

Some areas have high landscape and recreation values, however these values have not been formally identified. The Moresby Range Management Committee has been formed to investigate methods of protecting the special characteristics of the range. This approach may also be appropriate for other areas of landscape value.

Chapman River Valley

The Chapman River and its extensive valley is a major landscape feature of the Geraldton Region. It is one of four large river drainage systems which dissect the Victoria Plateau. All flow intermittently. Most of the Chapman Valley has been cleared for agricultural use. However, some riverine vegetation remains, comprising scattered *Eucalyptus camaldulensis* (River Red Gum). The Chapman River drains the inland slopes of the Moresby Range and is visually enclosed by the range and other remnants of the Victoria Plateau. In its lower reaches it skirts the southern extent of the Moresby Range, forming a natural inland edge to the northern built-up area of Geraldton. Several short stretches of the river are within Crown reserves.

The Chapman River Valley extends through the City of Geraldton, the Shire of Greenough and the Shire of Chapman Valley. The Chapman River Regional Park Management Plan has been prepared for the Chapman River within the City of Geraldton, acknowledging the recreational demand that is placed on this portion of the river valley by the urban population. The primary purpose of the plan is to achieve the greatest possible community use of the Chapman River Regional Park consistent with the retention of its environmental values.

The Shire of Greenough has commenced preparation of a management plan for the Chapman River Valley within the shire, focusing on the areas adjacent to the City of Geraldton. This study would include an assessment of the width of the recreation reserve and management issues. The portion of the Chapman River Valley within the Shire of Chapman Valley is not subject to the same development pressure as the Shire of Greenough and the City of Geraldton and the council will consider preparation of a management plan when the need arises.

Greenough River Valley

The Greenough River mouth is located approximately 10km south of the Geraldton town centre and the Greenough River meanders eastwards through the Greenough Shire, with its tributaries extending approximately 400km inland. It is a permanent water section and is one of two rivers within the Mid-West Region that has an extensive estuary. The catchment is about 13,000km² with predominantly sheep and cereal production in the lower reaches and pastoral production in the upper reaches.



Moresby Range

In regional terms the Greenough River is a significant resource for bird life. Few other waterbeds of comparable size are found in the region, and in late summer the river provides an important aquatic refuge. Osprey, heron, pelican, darters and cormorants feed on fish, and water fowl are found in the river in large numbers. The Greenough River Valley is a valuable recreational area. The river is used for canoeing, waterskiing, fishing and windsurfing and the areas adjacent to the river are used for walking, driving and picnicking.

The land around the river was developed from the middle of the last century as farming land for wheat and sheep production and agricultural development has resulted in extensive clearing in the catchment areas. In common with many rivers in Western Australia, this has resulted in an increase in the salinity and turbidity of the river water, and it has led to periodic eutrophication. The quality of the water affects fish and aquatic plants.

There is a large area of land south of the river mouth adjoining the river which the Shire of Greenough is currently negotiating to acquire, as part of a land exchange, for a conservation reserve, as there is extensive remnant native vegetation in this locality. While the finalisation of the negotiations will not occur for some time, it is proposed that a management plan for this area will be prepared and its ecotourism values promoted.

Ellendale Pool

Ellendale Pool is 20km east of the Walkaway Townsite and forms part of the Greenough River system. It is a permanent water section located within a reserve which is 14ha in area. The pool which can be accessed via Ellendale Pool Road which leads off the Walkaway - Nangetty Road, is at the foot of steep river cliffs and is surrounded by river gums. Ellendale Pool has been developed as a tourist focus within the Shire of Greenough and toilet and parking facilities, gas barbecues and a landing at the edge of the pool have been provided. It is recognised as the home of the peregrine falcon and is a significant bird-breeding area.

Byne Park

Byne Park is located approximately 3 km south-east of the Narngulu Townsite and is managed jointly by the Shire of Greenough and the Geraldton Regional College of TAFE. The park is 86ha and is a flora and fauna reserve used for both recreational and educational purposes. Byne Park provides for a number of youth-training programs within the region which, in conjunction with local environmental groups, has served to revegetate an area of land previously cleared for agricultural purposes with much of the native flora seed being propagated on site.

Greenough Dunes

The Greenough Dunes have conservation land landscape value. The dunes are largely in private ownership and are experiencing increasing pressure for development which will affect the environmental values of the area. The dunes, if denuded of vegetation, could quickly become mobile as winds are extremely strong in this locality.

Galena Mining Area

The Galena Mining area is located partly on public and private land approximately 63km north of Northampton on the North West Coastal Highway. It is significant for its evidence of previous mining activity and industrial heritage, coupled with the natural environment and existing rest points at the Murchison River bridge. The Galena Management Plan Steering Committee is presently preparing a Management Plan for the area to deal with all related issues. It is envisaged that the Management Plan will be completed during 1999.

5.3.7 Northern Agriculture Integrated Management Strategy

The Northern Agriculture Integrated Management Strategy (NAIMS) has an important role in natural resource management throughout the region. NAIMS is a cooperative approach aimed at providing strategic directions and developing achievable on-ground actions for natural resource management throughout the Northern Agricultural Region.

NAIMS has developed four local community sub-regional groups, the boundaries of which are based on natural drainage basins. The Greenough Sub-Region includes all of the local governments within the region. All of the sub-regions are developing strategies linked with specific and achievable on-ground actions. The on-ground action plans will make up an important component of the final strategy.

The Greenough Sub-Region has been actively working towards addressing key natural resource management issues. To date this group has developed a strategy which addresses the aims of the vision statement of the group. The Greenough Sub-Region Vision for the Year 2010 is:

“Broadacre farms move to cropping continuously using integrated weed management, minimum tillage, and no tillage techniques, with stock incorporated into this system. Farms are larger and mostly owned by families. Diversified farms are developed on sustainable water supplies. Land ownership is mixed with both leased and freehold. Aquaculture, horticulture, floriculture, silviculture and viticulture have become well developed with tourism spin offs as a result. Remnant vegetation and water courses are well managed.

Transport infrastructure supports good access to international markets for our clean, green and quality assured produce. The City of Geraldton is a major support centre for industries in the eastern and northern hinterland.”

Priorities

- Diversification - Involving the identification and protection of potential sites for new and emerging industries. Developing industry expertise and support in the region. Investigating and attracting investment for new and emerging industries.
- Regional allocation of research funds - Initiate a review into funding allocation of research funds. Regional research facilities developed by agencies.
- Clean, green, quality assured produce.
- Sustainable land management - Access alternative and simplified funding to support implementation of landcare programs. Share best practice. Support and promote promoters as “stewards” of the land and environment.

5.4 Water Resources

The Geraldton Region has limited potable surface water resources and is therefore reliant on groundwater sources. The Allanooka Water Reserve is located 50km south-east of Geraldton and is the current major regional water resource. The Geraldton Regional Water Supply Scheme is sourced from the Allanooka and Mt Hill borefield supplies.

The Geraldton Regional Water Supply Scheme supports development from Dongara/Denison in the south, north to Geraldton and east to Mullewa. Other urban centres in the region rely on local groundwater to provide scheme water requirements.

The *Arrowsmith Groundwater Area Management Plan (1995)* estimates the safe sustainable limit for the Yarragadee aquifer in the Allanooka area to 28.8 gigalitres. Of this, 12 gigalitres has been allocated for public water supply with a further 12.3 gigalitres reserved for future supply, reserving a total of 24.3 gigalitres of potable water for public water supply. The remainder of the 28.8 gigalitres is available for private groundwater supply for activities such as horticulture. Currently, the licensed abstraction between the Mt Hill and the Irwin River account for 0.5 gigalitres. There is therefore a potential for private abstraction to increase by 4 gigalitres.

The Water and Rivers Commission is currently reviewing the groundwater allocation policies for the Allanooka area and the above limits may change.

The primary objective of the groundwater allocation plan is to ensure the sustainable use of the groundwater resource. Management of the groundwater resources in the area can be broadly defined as review, assessment and allocation of groundwater resources on a local scale. This is carried out by the Water and Rivers Commission based on the information from bores monitored by the Commission or by licences. Management of the groundwater resources, including regulatory controls on (any) abstraction, is based on the following objectives:

- To recognise and protect the environmental values of groundwater, thereby protecting the attendant beneficial (human) uses of groundwater for present and future generations.
- To harvest water at a sustainable level; to conserve and protect the long-term security of the groundwater resources in the region; and to ensure that the use of the resource benefits as many people as possible.
- To ensure that where possible, a reasonable quantity of water is available to existing enterprises dependent upon a continued supply of good quality groundwater.
- To promote the allocation of the available groundwater resource on a basis which provides the most beneficial use to the community.
- To encourage efficiency in water use through improvements to methods of agriculture and irrigation and encourage development consistent with the regional planning and land use objectives for the region.

There are no other “economical” potable water sources apart from Allanooka and Wicherina, although there is potentially an abundance of marginal to saline water in the region. Wicherina has two sources, a dam site and a bore site. The bores supply Mullewa and communities between Mullewa and Geraldton. The extent of the Wicherina groundwater resource cannot be determined until exploratory drilling is undertaken. An extensive supply of potable groundwater is available from the Allanooka scheme. To utilise this resource the Water Corporation would need to extend its bore network further south until it becomes uneconomical.

It is expected that the current proposed industrial development at Oakajee will not affect on the quality of water at Allanooka or Wicherina. Both water resources more than 50km upgradient from the City of Geraldton and are managed on a sustainable basis to prevent overuse of the resource.

Local LCDCs also assist in the protection of groundwater by identifying priority water courses and drainage lines for restoration and such groups have commenced fencing programs and improved management practices. The focus to date has been on bank stabilisation and nutrient export reduction, with salinity management not a major focus. The result has been that approximately 30 percent of the region is covered by farm and catchment plans, however, implementation of these plans is limited and requires further planning.

Agriculture WA and CALM have also contributed by promoting farm forestry options within the region. These agencies in partnership with the Water and Rivers Commission and Department of Environmental Protection are in the process of implementing the *WA Salinity Action Plan*. This plan sets down a new integrated strategy, administrative structure and additional financial resources to refocus salinity management in the State and it recognises that successful salinity control requires management of saline groundwater.

The Action Plan aims to:

- protect and restore key water resources to ensure salinity levels are kept at a level that permits safe, potable water supplies in perpetuity;
- maintain natural (biological and physical) diversity; and
- protect designated infrastructure affected by salinity.

The major factor which may influence future farming systems is rising groundwater tables. As a consequence of less water being used by annual crops and pastures than by the original native vegetation, the rise began with the first clearing. In large areas of the region, shallow groundwaters are saline, although the locations of Chapman Valley in Greenough can contain fresh groundwater. The result of the rise in groundwater levels is increased waterlogging, or salinity or both and major reduction in any form of traditional farm production. It is also causing loss of significant tracts of the already small areas of remnant vegetation.

5.4.1 Chapman Valley Geophysical Survey

Large proportions of the Shires of Northampton, Chapman Valley and Greenough are underlain by crystalline (granitic) basement of the Northampton Block. In this geological environment groundwater is extremely variable in quantity and quality.

Agriculture is dominated by cereal cropping and annual pasture production for sheep grazing. However because of the diverse suite of soil types, favourable climate and appealing lifestyle, there is growing interest in intensive pursuits such as horticulture and aquaculture. This is placing considerable subdivision, rezoning and planning pressure on local government.

However, a lack of information exists about the extent and sustainability of groundwater resources required to support intensive development in the heterogenous geological environment. Allocation of groundwater resources and appropriate scale of enterprise development matched to resource sustainability are key issues requiring urgent attention. There are substantial opportunities for horticultural enterprise throughout the region of the Northampton Block, but they are, and will remain, essentially niche opportunities within a broadacre dryland agricultural region.

A 20,000 hectare area in Chapman Valley was chosen for inclusion in a National Airborne Geophysics project funded through the National Dryland Salinity Program to evaluate the use of airborne geophysics for catchment management. Chapman Valley was selected because the geophysical techniques being trialled are considered the most appropriate for providing the geological understanding, and hence hydrological insight, for resource management at a farm scale within the geological environment of the Northampton.

The key issues to be addressed in the Chapman Valley geophysical survey are:

- delineation of geological controls on areas of salinity development;
- identification of geological features prospective for groundwater resources; and
- allocation of groundwater resources matched to resource sustainability.

The airborne geophysical survey area in Chapman Valley covers a rectangular area approximately 22km long by 9km wide oriented north-east along the northern branch of the Chapman River.

Initial qualitative analysis of the geophysical data shows it has:

- provided detailed definition of the geological structure of the basement rock;
- measured high resolution spatial variability in the regolith; and
- measured soil characteristics and distribution.

It is anticipated that the airborne geophysics will have demonstrable practical application at a sub-paddock scale both for ameliorating areas of hydrological land degradation and definition of groundwater resources for future development.

As development and planning pressure continues to grow in the Geraldton Region, it is imperative the resource base is adequately understood for optimum decision making. For example, allowing subdivisions for horticulture without knowledge of groundwater resources may alienate highly productive broadacre agricultural land and not result in development of intensive industries, hence the need to base decisions on sound understanding of available resources.

5.5 Coastal and Marine Environments

5.5.1 Physical Characteristics

The region has a coastline which alternates between hard (rocky) shorelines and soft (sandy) beaches and is segmented by the Murchison, Hutt, Bowes, Chapman, Oakajee, Buller, Greenough and Irwin Rivers which drain into the Indian Ocean. One of Western Australia's longest rivers, the Murchison, enters the sea at Kalbarri but its flow is seasonal. The Murchison Estuary is the most northerly of the temperate estuaries in Western Australia. The Mesozoic sandstone cliffs adjacent to the Kalbarri National Park comprise rocky shore habitats.

The region's various beach sections are backed by coastal landforms comprising either long-walled parabolic dunes, nested parabolic dunes or transgressive dune sheets. The latter are also termed mobile dunes. Evidence of mobile dunes and blow-outs exist along parts of the coast. However, it should be noted that while the origins of most mobile dunes and blow-outs are generally natural, their extent can be exacerbated by human activity. The most notable of these mobile dunes, due to its close proximity to an urban area, is the Southgate Dunes Complex, south of Geraldton.

Generally the beaches have been fairly stable in the longer term but have been severely eroded in some areas during storm events.

In near-coastal waters, the marine environment comprises offshore islands, sand beds, seagrass meadows and reefs. The coast is the interface between the marine and terrestrial environments and is influenced by natural processes and human activities which are most obvious in the near-shore, beach and dune areas. Influences such as currents, climate, and activities in catchments can be local, regional or global.

5.5.2 Proposed Marine Park Reservations

There are four recommendations within the *Representative Marine Reserve System for Western Australia* (Report of the Marine Parks and Reserves Selection Working Group, 1994) which affect this region.

1) Kalbarri - Consideration be given to reservation of the marine areas adjacent to Kalbarri National Park and the Kalbarri Townsite, seaward for a distance of one nautical mile and encompassing the tidal waters in the mouth of the Murchison River, for the purpose of public recreation and the protection of flora and fauna. This recommendation was made in consideration of the distinctive coastal geomorphology and rocky shore habitats, and that the Murchison Estuary is the most northerly of the temperate estuaries in Western Australia.

2) Port Gregory - The report recognised that the most southerly coral reef on the Western Australian mainland coast occurs at Port Gregory. It recommended that consideration be given to reservation of the reef and lagoon at Port Gregory for the protection of marine flora and fauna and scientific study. Further study is required to determine the reserve boundaries to the north and south.

3) Seven Mile Beach - Consideration be given to reservation of a small area about one kilometre long and extending to 400 metres offshore, located about 10 kilometres north of Port Denison for the protection of marine flora and fauna and scientific study. The reserve should cover at least the area closed to rock lobster fishing under the Fisheries Act (1905) where research on the western rock lobster has been carried out over many years.

4) The Abrolhos Islands - The Abrolhos Islands consist of islands, reefs and lagoons near the continental shelf edge, 50 kilometres west of Geraldton. The area is well known for its significant conservation and heritage values, value to the fishing industry and potential for nature-based recreation and tourism. The coral reefs are of international scientific significance, with no other reefs of this type anywhere in the world, or communities of marine animals which equate to those found at the Abrolhos.

The Marine Parks and Reserves Selection Working Group considered the Abrolhos as perhaps the most significant marine area in Western Australia for its natural resources, nature conservation, historical and recreation values, and the most worthy of reservation. The group recommended that, in keeping with the high scientific, historic, recreational and conservation values of the Abrolhos Islands and reef complexes, and the high value of the rock lobster fishery and other fisheries, the entire area to the limit of the State Territorial Waters should be reserved and managed as a multiple-use area.

Fisheries WA has prepared a plan of management for the Houtman Abrolhos System. The plan will seek to establish a Fish Habitat Protection Area over the surrounding State Territorial Waters under the Fish Resources Management Act 1994. Concurrently with this plan, separate plans for sustainable tourism and aquaculture development are currently being finalised for the area.

5.5.3 Coastal Management Plans

Coastal management plans have been completed recently for the Chapman Valley coastline and Horrocks Beach in the Shire of Northampton. Plans were also commenced, in 1984, for the Shire of Greenough and the City of Geraldton. These have not been finalised. A review of the *Draft Coastal Plan: Shire of Irwin* (1988) is currently in progress. The coastal section of Kalbarri Townsite has a coastal plan and a plan is proposed for Port Gregory to encompass the inshore area and jetty.

Kalbarri - Coastal-related matters associated with foreshore management and development of the Kalbarri Townsite have been carried forward from the *Coastal Management Plan: Kalbarri Townsite* (1983) into the subsequent report by the Department of Transport. The 1992 structure plan prepared by the Ministry for Planning further addressed coastal issues and were addressed again more recently in the Shire of Northampton's Kalbarri Town Improvement Plan (1995).

Chapman Valley - *The Chapman Valley Coastal Plan* (1993) indicates that this coastline experiences high visitor impact for a variety of recreational purposes. The plan addressed the issues of dune erosion and management, shoreline erosion and foredune management, off-road vehicle use, recreation and tourism and coastal access.

Horrocks - The small coastal settlement of Horrocks Beach within the Shire of Northampton is a popular holiday destination, and an integral part of the future growth of the Shire. *The Horrocks Beach Coastal Plan* (1993) identified the appropriate use of beach and foreshore under the issue groupings of environmental, townsite and development, recreation and tourism.

Port Gregory - The Shire of Northampton is currently preparing a coastal management plan for Port Gregory to address the issues of ensuring that any growth or development aims to preserve and enhance the existing coast and facilities.

Irwin - Recently, the Shire of Irwin's coastline has been included in the planning study resulting in the *Central Coast Regional Strategy* (1996). The study focused on the coastal districts where local governments faced common coastal issues.

Geraldton - Relocation and removal of the railway line from the northern coastal section of central Geraldton Townsite would present opportunities for access and development along the coast.

Batavia Coast Coastal and Marine Planning Strategy - The Batavia Coast Coastal and Marine Planning Group has recently been formed to oversee the formulation of a regional strategy for the coastal areas of the Shires of Irwin (north of Dongara), Greenough, Chapman Valley, Northampton and the City of Geraldton.

This area represents 70 percent of the Mid-West coastal area with the balance covered by the *Central Coast Regional Strategy*.

The aim of the Batavia Coast Coastal and Marine Planning Group is to prepare a coastal and marine planning and management strategy for the Batavia Coast consistent with the principles and objectives of the Commonwealth Coastal Action Plan Memorandum of Understanding. The coastal strategy is intended to achieve the following outcomes:

- Improved Database
 - Improved information on the coastal and marine environment (coastal processes and vegetation).
 - A framework for further research.
- Improved Strategic Planning Framework
 - A strategy to guide decision-makers involved in land use and marine planning issues.
- Improved Management and Administrative Arrangements
 - A mechanism to coordinate State and local government, community groups and private sector involved in land use and marine planning issues.
 - Agreed priorities for future actions between State and local government.
 - A framework to resolve and manage coastal management conflicts and issues.
 - An integrated approach between the community, local government and State government agencies involved in coastal and marine planning.
 - Clarification of the roles and responsibilities of the government agencies responsible for implementing integrated management of the region.
 - An administrative structure which will facilitate ongoing cooperation between agencies.
 - A framework for funding applications and implementation of coastal planning actions identified in the strategy.
- Implementation of Commonwealth and State Coastal Planning Policy
 - A strategy consistent with the principles and objectives of the Commonwealth Memorandum of Understanding.
 - Implementation of the Coastal Management Program jointly with the Commonwealth.
 - Implementation of the coastal and marine planning actions identified in the *State Planning Strategy*.

- Improved Local Area Planning
 - Local area development plans to guide decision making by State and local government and efforts by community groups.
- A basis for review of local government planning schemes.

5.6 The Cultural Environment

5.6.1 Issues and Values

In consulting the communities which make up the Geraldton Region, themes emerged which demonstrate both regional and local identity and character. Most towns in the region have significant heritage places. Sites of State significance are listed on the Register of Heritage Places (Appendix 3). These sites are afforded the protection of the *Heritage Act* (1990) which has implications for planning and development. Some communities have developed townscape plans and express the unique identity and character of their towns in the public environment in order to conserve or develop a sense of place and belonging. The history of agricultural development has also had a significant impact on the cultural issues and values of the region.

It is important to balance the development of a regional identity with particular local identities of towns and smaller communities within the region. The coastline, the mouths and valleys of the Chapman and Greenough Rivers, the Moresby Range, the Murchison Gorge, the natural flora and fauna, particularly wildflowers, are all important aspects of the natural environment valued by both residents of, and visitors to, the region. There is a need to develop cultural and recreational opportunities for young people throughout the region, and particularly in the City of Geraldton.

5.6.2 Cultural Heritage

Heritage contributes significantly to the Geraldton Region's identity and is considered very important to local communities and tourists. There are opportunities to conserve many heritage places and to enliven them with people and activities.

Historic buildings and other mainly stone structures provide a major unifying aspect of regional identity. The work of Priest-Architect Monsignor Hawes in particular covers a number of the local government areas within the Geraldton Region. Other sites are of national significance such as the Greenough Hamlet and Lynton Convict Hiring-Depot at Port Gregory, with Northampton being declared an Historic Town by the National Trust of WA.

Sites such as the Greenough Hamlet and Pioneer Museum provide a unique collection of heritage buildings within a confined precinct. Lynton at Port Gregory combines a high level of historical significance, as one of the major works in Western Australia, with important buildings and the remains of a mid-19th century convict-hiring station.

Municipal inventories of heritage places have been completed for the City of Geraldton and the Shires of Irwin, Chapman Valley, Northampton and Mullewa and Greenough. The inventories can help to identify regional themes, develop a plan to conserve significant sites and initiatives to encourage private owners to stabilise, restore and develop uses for heritage places on their properties. The conservation of significant heritage places will be addressed as part of the review the Western Australian Planning Commission's *Rural Land Use Policy DC 3.4*. Appendix 3 - Register of Heritage Places lists places registered in the Region.

There are also sites of Aboriginal material heritage such as the Aboriginal middens discovered on the waterfront in Geraldton. The Aboriginal Cultural Material Committee is conducting investigations into Aboriginal sites of significance in the region. For instance cave paintings, camps, and rock carvings have been identified in various areas. An inventory of Aboriginal sites of significance is currently being compiled.

The Geraldton Regional Museum plays an important role in identifying, conserving, interpreting and displaying regional material heritage.

There are also sites such as Wittecarra in Kalbarri with national significance as the purported first landing site of Europeans in Australia - being connected to the Batavia mutiny - and also the possible site of the first Europeans to live in Australia. Many sites have attached significance from historical incidents. The Yamaji Language Centre in currently compiling an Aboriginal history of the area.

The region has a number of festivals, rituals and events which provide opportunities for community cohesion as well as potential tourism appeal. Some festivals, such as the Mullewa Wildflower Festival are already attracting significant numbers of tourists while articulating important local values. Many of the region's annual events have similar potential to celebrate the uniqueness of the area, to provide a community focus and to attract tourists and economic benefits.



St Peter's Church and St Joseph's School, Greenough Hamlet

Whereas much of previous marketing of the region has concentrated on beaches, fishing, swimming and windsurfing, its culture is beginning to be recognised as an important aspect of tourism.

Heritage places, historical sites and Aboriginal culture have potential for tourism in the future. Currently, however, cultural and environmental attractions of the region have poor interpretation. To realise the potential of cultural tourism and ecotourism, informative, attractive, site-specific interpretive material needs to be developed within the region.

In addition to this the region has very high-quality cultural facilities such as the Geraldton Public Library, the Queen's Park Theatre, the Geraldton Regional Museum and the Geraldton Art Gallery. These facilities can play an important part in tourism if Geraldton is promoted as a regional centre and a home base for regional tourism.

5.6.3 Townscape

The region's towns have a rich history which is evident in their built form. Townscape programs are a means of enabling local communities to protect their heritage and enhance both the form and function of their town.

Townscape is a planned and designed response to the town's existing infrastructure. It encompasses the social, economic and physical characteristics and needs of the community, all of which contribute to the town's image and identity.

The Townscape program helps to clarify the community's own vision of the ways it wants the town to develop. This vision is placed within a staged implementation program that is both practical and achievable. In addition, the town benefits from an increased community awareness of planning and environmental assessment. The program seeks to cooperate with other government agencies to the greater benefit of individual towns. The Ministry for Planning, local governments and communities in the region have been involved in formulating Townscape programs in Northampton, Kalbarri, Mullewa, Dongara-Denison and Walkaway. The issues which local Townscape programs have dealt with include:

- promoting the town's individual identity and image;
- improving overall aesthetics;
- improving economic viability;
- emphasising pedestrian comfort, amenity and safety;
- enhancing heritage elements, especially streetscapes;
- promoting community awareness and involvement in town issues.

Irwin

In the early 1990s, the Shire of Irwin formed a committee to examine the preparation of a Townscape plan for the townsites of Dongara-Denison, largely in response to a desire in the community to improve the physical environment to enhance the business viability of the town.

A Townscape plan has been formulated by the committee and is being implemented in stages. The plan includes the following elements:

- urban design - reinforcing and enhancing the existing character of the built environment of the town, in particular important streetscapes;
- open space - enhancing the open space and interconnecting important components of the open space such as the Irwin River and the coast;
- pedestrian and vehicular access - improving the movement of people and vehicles throughout the town and providing improved ease of access to Denison;
- community involvement - methods for getting the community involved in the implementation of Townscape improvement proposals.

Northampton

The Northampton Townscape Committee was formed in 1990 to formulate a Townscape plan for Northampton Townsite. In addition to seeking to improve the physical environment, the committee is particularly concerned with preserving and celebrating the town's heritage which is historically linked to mining and agriculture.

The Townscape program is in its ninth year of operation and is presently reviewing its action plan. The committee has developed the following:

- a detailed urban design improvement plan;
- guidelines for the future management and development of the town and its environs;
- guidelines that serve to link the town with its past;
- options for reducing the impact of heavy traffic on the form and function of the town; and
- detailed plans for the location and development of suitable carparks in the town centre and at other sites of significance.

Some of the specific achievements include:

- the formation of a business and tourism association;
- the opening, financing and management of a tourist bureau; and
- promotion and creation of local events such as market days and the annual "Airing of the Quilts".

Kalbarri

The Kalbarri Townscape Committee has been active for a number of years and has completed many successful projects such as the provision of dual-use paths, foreshore restoration, landscaping, improvement plans and other works in association with the council and the local community.

Walkaway

The Walkaway Townscape Committee was formed in March 1996 and, in conjunction with the Shire of Greenough, has completed a character study. This document is currently being finalised. The committee will undertake the preparation of the Townscape Improvement Plan in 1998.

Geraldton

The City of Geraldton has recently formed a sub-committee to aid the preparation of a Townscape plan for the central business district. It is intended that the plan would achieve the following:

- upgrade the urban environment;
- establish a clear identity for Geraldton and the region;
- provide landowners with guidelines for redevelopment and/or renovation;
- promote Geraldton as a preferred tourist destination.

It is expected the formulation of the plan will draw heavily upon information gathered as part of the *Geraldton Regional Cultural Plan*. The formulation and implementation of the plan will support the development of Geraldton's cultural identity.

Mullewa

The Shire of Mullewa completed a Townscape plan in the early 1990s in cooperation with the Ministry for Planning. Implementation of the plan is proceeding, including repaving and landscaping of the central area. The Mullewa community is committed to the Townscape program and will continue to implement proposals.

5.7 Summary - Geraldton Region - Natural and Cultural Environment

5.7.1 Regional Issues

- The fragility of the region's landscape.
- The intrinsic and tourism value of the region's landscape.
- The scenic, recreational and tourism values of the Moresby Range.
- The need for an integrated management program for areas of landscape significance.
- The regional recreation significance of Spalding Park.
- The need for improved coastal areas.
- Impact of increased off-road vehicle usage on the coast.
- The need to identify and protect high-quality agricultural land.
- The need to protect remnant vegetation and resources susceptible to degradation and rehabilitate degraded areas.
- The need to locate development in accordance with land capability.
- The need to protect areas with high-grade limestone and lime sand from sterilisation by urban development.
- The need to protect cultural heritage of the region from unsuitable redevelopment and neglect.
- The need to protect the physical character of towns.

5.7.2 Geraldton Region Environmental Objective

"To conserve and enhance the region's natural environment, resources and distinctive landscapes, its European and Aboriginal heritage and the overall character and amenity of the cultural environment."

5.7.3 Regional Guidelines and Recommendations

This section identifies Guidelines - G to provide a general guide for decision making and Recommendations - R for specific action to achieve the environmental objective.

At the end of each recommendation a lead agency and associated agencies are listed to assist in implementation of the recommendation. In statements where there is no lead agency highlighted, the lead agency chosen will depend on the issue involved.

There are many private and community groups and individuals who may need to be involved to implement specific recommendations. Appropriate groups and individuals should be consulted when recommendations are considered for implementation.

Terrestrial Environment

- R** Continue programs to include ecologically significant areas in the conservation estate. (CALM)
- R** Prepare and review management plans for tourist areas or near conservation areas to protect them from degradation. (LGs, MfP, CALM)
- R** Identify areas which should be protected as regional open space. (MfP, LGs, CALM)
- R** Establish landscape protection committees as required, including representatives of community groups and landowners to:
 - prepare an inventory of significant regional environmental places/areas;
 - develop baseline data;
 - investigate landscape protection requirements;
 - identify sensitive and significant landscapes and protection priorities;
 - develop and coordinate implementation of strategies for protection and management with the Moresby Range and Chapman River Valley identified as priority areas for assessment. (MfP, LGs, CALM, AgWA, Landcare, community groups, private landowners)

- R** Complete the management plan for the Chapman River Valley including definition of the reserve and management issues in the Shire of Greenough. (LGs, MfP, WRC, DEP)
- R** Identify regionally significant remnant vegetation and other natural resources. (AgWA, CALM, MfP)
- G** Conserve regionally significant remnant vegetation in private and government ownership. (AgWA, CALM, MfP, LGs)
- G** Ensure the appropriate location of industry with adequate buffers to non-compatible land uses. (DEP, MfP, LGs, DRD, LandCorp)
- G** Protect land from degradation and rehabilitate degraded areas. (AgWA, LGs)
- R** Prepare, implement and regularly review local rural strategies to guide the development and management of rural land, taking into account agricultural productivity, land capability and suitability, landscape features, environmental constraints, heritage issues, lifestyle objectives and opportunities. (LGs, MfP, AgWA, HCWA, DME)
- R** Prepare and implement a regional rural strategy that will provide for the conservation and enhancement of the natural and cultural environment and the protection of areas of agricultural significance. (MfP, LGs, AgWA, CALM, HCWA, DME)
- R** Investigate opportunities for implementing catchment and natural resource management plans and strategies using statutory planning processes. (WAPC, AgWA)
- R** Prepare an extractive industries policy to protect important basic raw materials and provide guidelines for their extraction with due regard to environmentally sensitive areas and surrounding and/or competing land uses. (LGs, DME, MfP, MRWA)
- G** Promote recycling programs. (All agencies)
- R** Complete investigation of groundwater supplies for agricultural development within the Irwin River area and review of the Arrowsmith Groundwater Allocation Plan. (WRC, MWDC)
- R** Complete the Chapman Valley Geophysical Survey to provide information on groundwater supplies in the Chapman Valley area. (AgWA, LGs, MWDC)
- G** Prevent the drainage of stormwater into riparian environments through water-sensitive design. (LGs)
- G** Support LCDC's efforts to protect and restore water courses and manage salinity. (LCDC's, AGWA, DEP, Water and Rivers Commission, CALM, Water Corporation)
- R** Implement the WA Salinity Action Plan. (AgWA, CALM, WRC, DEP)

Coastal and Marine Environment

- G** Plan for and manage areas identified as Marine Planning Priority Areas. (CALM, Fisheries)
- G** Protect and manage significant conservation areas such as the Abrolhos Islands and Murchison River. (Fisheries WA, CALM)
- R** Implement and review as appropriate the recommendations of the plan of management for the Houtman- Abrolhos System (Fisheries WA, AIMAC)
- R** Prepare long-term planning and management policies for the coast at the regional level through the preparation of the Batavia Coast Regional Strategy. (MfP, LGs, DEP, Fisheries, CALM)
- G** Support long-term planning and management policies for the coast at the local level by:
 - endorsing and implementing the existing coastal plans;
 - preparing or reviewing existing local coastal management plans to determine appropriate uses, development and management;
 - supporting the principles of the Western Australian Planning Commission's Coastal Policy DC 6.1
 - ensuring that local government town planning schemes contain appropriate provisions and/or policies relating to coastal matters. (MfP, LGs)
- G** Encourage and plan for a wide range of tourism and visitor facilities along the coast which are appropriate to its local features, suitability and natural characteristics. (WATC, LGs, MfP)
- R** Continue to implement the State Government Squatter Policy as a matter of priority. (LGs, DOLA, MfP)

Northampton

- R** Prepare a management plan for the Northampton Townsite commonage area. (LG)

Dongara/Denison

- G** Manage natural industries which develop within the Shire i.e. lime sand, oil and gas mining. (DME, LG)

Water Resources

- R** Identify, protect and manage water resources in the region for future population, economic growth and environmental management needs. (Water Corporation, WRC, LGs)
- G** Ensure land development does not increase the potential for pollution of river systems or groundwater reserves. (MfP, LGs, DEP)

Dongara/Denison

- G** Protect, enhance and enable controlled access to the coastal areas located within Dongara/Denison. (LG, DOLA)

Horrocks

- G** Recognise the environmental and visual importance of the coastal foredune areas. (LG, MfP)
- R** Prepare a coastal management plan for the Bowes River mouth and coastal dune area. (LG)

Kalbarri

- G** Recognise the environmental and visual importance of the Murchison River and coastal foredune areas. (LG, other agencies)
- G** Promote the provision and development of green spines and river corridors around major creeks throughout the townsite and the Murchison River. (LG, WRC, MfP)

Port Gregory

- R** Prepare a coastal management plan for the Port Gregory port area and foreshore. (LG)
- G** Recognise the environmental importance of Hutt Lagoon and coastal foredune areas. (LG, other agencies)

Cultural Environment

- G** Support the implementation of the recommendations of the *Geraldton Region Cultural Plan*. (All agencies)
- G** Identify themes for the development of regional identity for the whole region and local character of each town and locality to support conservation and enhancement of the cultural environment. (MfP, Lgs)
- G** Promote the regional structuring principles and performance standards of Liveable Neighbourhoods as necessary. (MfP, LGs)
- G** Support and continue the use of Townscape improvement programs to protect and enhance the character of towns and town centres in the region. (MfP, LGs)
- G** Encourage residential or housing strategies/policies which provide for energy-efficient housing and subdivision design. (MfP, LGs)
- R** Prepare a regionwide heritage strategy examining key heritage assets contributing to the economy and amenity of the whole region, and possible cooperative financial, planning, promotional and interpretive strategies for heritage conservation. (HCWA, National Trust of Australia (WA), LGs, MfP)

- R** Review the Western Australian Planning Commission's *Rural Land Use Policy DC 3.4* to facilitate conservation of significant heritage places, listed in the State Register of Heritage Places or on a Heritage List in local town planning schemes. (MfP, AgWA, LGs, HCWA)

- G** Recognise Aboriginal heritage considerations in regional and local planning and ensure protection of known significant Aboriginal sites. (LGs, MfP, Aboriginal communities, WA Museum)

6 - Economic Development

6.1 State Strategic Economic Principle

Land use planning can play a strategic role in assisting the development of new industries. Identifying sites for downstream processing and technology and business parks is integral to the development and implementation of planning schemes and plans. In an increasingly competitive world, the effectiveness of planning systems to contribute to wealth creation by catering for emerging new businesses will become vital.

The Mid West Development Commission recently completed *Towards 2010: An Economic Development Strategy for Western Australia's Mid West Region*, which provides a basis for realistic and sustainable development.

The Strategy identifies the region's natural resources as offering a competitive advantage in the production of agricultural, fishing and mining products and tourism. These natural resources include:

- a Mediterranean climate near the coast which is ideally suited to cropping, particularly grains;
- ample land suitable for broadacre farming;
- a pristine environment, including the waters off the coast;
- a highly productive and valuable fishery based on rock lobster;
- abundant minerals and large areas of prospective land;
- numerous natural attractions (e.g. wildflowers) to support a growing tourism sector;
- a rich cultural heritage.

6.2 Geraldton Region - Economic Objective

"To enable the economic potential of the region to be utilised, encouraged and planned."

6.3 Commercial Development

Geraldton is the largest business and service centre in the region and provides a range of goods and services comparable with those in Perth. The commercial sector employed 29.8 percent of the workforce in 1991. The city centre is the focus of employment and commercial activity resulting in a range of traffic and parking conflicts. The City of Geraldton has initiated parking and traffic studies to address these issues.

Geraldton provides a full range of services including: banking; investment and financial services; industrial supplies; building supplies and home maintenance; real estate; retail; computer sales and service; accommodation; hospitality services; motor vehicle sales and repairs and recreational and cultural facilities, including: the Queen's Park Theatre; Geraldton Art Gallery; Regional Museum and Library. In addition, Geraldton is a major service centre for the agricultural, pastoral, fishing and mining industries and the major administrative centre, with branches of many State and Commonwealth government agencies.

Geraldton attracts customers from a wide area including the other smaller towns in the region with many people in the region making regular trips to the regional centre for shopping, business and recreation.

Commercial development in the other towns in the region is focused on servicing local shopping and tourist-related businesses. The region's smaller towns provide important services to visitors, including motor supplies and repairs, recreational equipment, souvenirs and food.

6.4 Industrial Development

Industrial development is concentrated in the City of Geraldton and the Shire of Greenough with service and specialised industry related to fishing in the other towns in the region.

Serviced light industrial land in the Greater Geraldton area is available at Narngulu, Webberton/Wonthella, and Utakarra with a small number of blocks available at West End.

The 1997 *Geraldton Land Use Survey* calculated that the Narngulu Industrial Estate, located approximately five kilometres south-east of Geraldton in the Shire of Greenough, had a total area of 656 hectares. Nearly 25 percent of the estate catered for noxious industry with the remainder catering for general industry. By late 1995, more than 80 percent of the estate had been sold to a diverse range of industries, including plants for the processing of mineral sands, garnet and attapulgitite, tanneries and a broad range of general support industries. Narngulu has a number of constraints including:

- the limited remaining supply of land for general and heavy industry;
- proximity of the north-east corner of Narngulu to residential and urban areas, including land zoned for these purposes;
- the proximity of Narngulu to Geraldton Airport flight paths, which restricts the height of smokestacks.



Narngulu Industrial Estate

time in the future. This view is supported by the paper, *A Heavy Industry Policy* (Dover Consultants, 1994) which identifies Geraldton as one of five industrial "gateways" for the State. Since 1987 resource downstream and value-added projects (with a capital value of \$40 million or more) to the total value of \$20,731 million have been commissioned or are under construction throughout the State. Less than \$400 million (about 2 percent) of the \$20,731 million has been spent within 500 kilometres of Geraldton. The proposed Oakajee infrastructure is likely to see the Mid-West region receive a significant increase in the proportion of investment in the State's resource sector. Given the richness of the region in terms of its mineral and petroleum resources, development of these resources will require land use planning to alleviate potential land use conflicts.

The *Narngulu Industrial Estate Study* assessed the potential to expand the estate and to recommend appropriate land uses for the buffer. This study reaffirms the buffer identified in the earlier Tingay Study, and outlines compatible land uses within the buffer zone surrounding the estate.

Following a recommendation from the *Industry and Port Sites Study* that the area be further evaluated, the *Wizard Peak Industrial Site Selection Study* identified a potential site for industry to the south-east of the existing Narngulu Industrial Estate.

Oakajee was identified as potential industrial land in the 1976 Region Plan and studies have concluded that from an economic, technical and environmental view it is the preferred option for development as a strategic site and deepwater port. Oakajee is approximately 20 kilometres north of Geraldton and is likely to be developed as an integrated deepwater port and industrial park for heavy industry. In late 1996 Cabinet gave in principle support to relocate the Kingstream Steel project to Oakajee and requested that government agencies investigate the feasibility of developing Oakajee as the future strategic industrial site for the Mid-West, as a matter of urgency.

Following an assessment of the financial, economic, environmental and technical aspects of the proposed industrial estate and adjoining port, the Government, in March 1998, announced that it had successfully determined the economic, technical and environmental feasibility of the Oakajee concept. The Government also announced that, for environmental (noise) reasons, the buffer to the Oakajee Estate is to be extended. The exact location of the buffer will be determined by the Minister for the Environment.

6.4.1 Major Industrial Prospects in the Region

The prospects for major industrial development in the region were addressed by the Industry and Port Sites Study. The study obtained information from the Department of Resources Development which indicated that in the long term there is potential for development of a wider range of industries.

The assessment is based on existing resources rather than expressed interest. It is suggested that the area's natural resources could support a range of heavy industries at some

6.5 Manufacturing

Manufacturing activity is based on processing the products of, and supplying products to, the fishing, agricultural and mining industries. The City of Geraldton and the Shire of Greenough contain the majority of such enterprises, including boat building, fish processing, superphosphate production and mineral sands processing.

In 1991/92, a total of 95 manufacturing locations were operational. The value of total sales increased 45 percent in the three years to 1991/92. (Figure 19)

Towards 2010: An Economic Development Strategy for Western Australia's Mid West Region identified the development of an iron ore processing plant as having the potential to stimulate further activity in the manufacturing sector.

6.6 Construction

The Mid-West construction industry services residential, commercial and industrial requirements both within the region and the North-West of the State.

In 1997/98, 59 percent of the Geraldton Region's dwelling approvals were for the Shire of Greenough and 16 percent for the City of Geraldton.

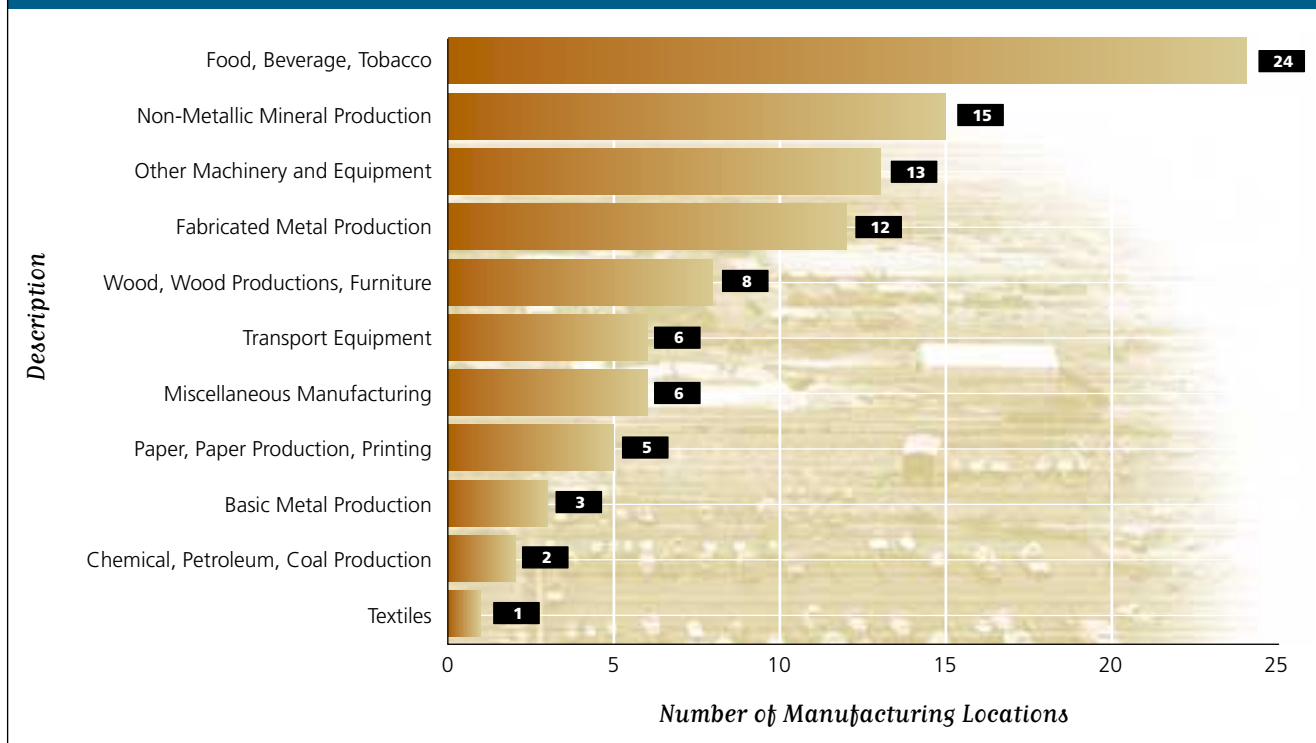
Infrastructure associated with mineral processing, fishing and tourism has made up most of non-residential construction in coastal areas, while for areas further inland this construction has been mainly associated with mining.

6.7 Tourism

Tourism is an important contributor to the Mid-West economy. The region's tourism attractions include the Batavia Coast, Kalbarri and the Murchison Gorge, wildflowers and the Murchison Goldfields.

Tourism activity in the region is reasonably well spread throughout the year compared with most regions, but reaches a peak from July to October - the wildflower season.

Figure 19 Manufacturing Industries in the Mid-west Region 1991/92



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Source: Australian Bureau of Statistics

The major visitor market to the Mid-West in 1994/95 was intrastate visitors comprising 87 percent of total visitors to the region. Interstate and international visitors represented 8 percent and 5 percent of the total respectively. While the main reason for travel to the Mid-West in 1994/95 was for pleasure/holiday (71 percent), others came for business (11 percent) and visiting friends/relatives (10 percent).

Realisation of the region's tourism potential will be advanced by the completion of the Batavia Coast Marina, the construction of the new Geraldton Region Museum and increased promotion of the region's unique maritime archaeology. The region will also benefit from major developments including the Port Kalbarri proposal, the construction of the Kalbarri Airport and upgrading of the Geraldton Airport.

There are also opportunities to develop ecotourism in areas such as the wildflower industry. Consideration should also be given to the potential to further utilise significant landscape features such as the Moresby Range.

6.8 Agriculture

The agricultural sector contributes significantly to the Mid-West economy. The total value of production for 1993/94 was \$427.3 million, which represented 13 percent of the State's agricultural production. The majority of income is derived from broadacre grain crops (predominantly wheat) and wool.

Some potential may exist to add value to the region's agricultural products. For example, advances have been made in value adding to pulses by cleaning, grading and bagging produce for traditional and non-traditional markets, including the Middle East.

Crops

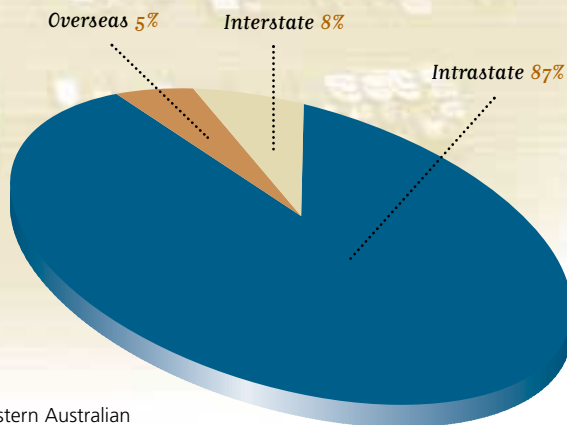
Cropping accounted for approximately 75 per cent of total agricultural production in 1993/94. Wheat is the dominant crop followed by lupins. Other grains grown include barley and oats. Hay is the most significant non-grain crop.

Horticulture and Agricultural Diversification

There is scope within parts of the region for the development of an array of diverse farming systems. This diversification has commenced in the Shires of Northampton, Chapman Valley and Greenough where high quality groundwater is available. Higher winter temperatures and somewhat better soils will provide opportunities to meet market niches which cannot be met further south. The potential of this sector is dependent upon the identification of an adequate groundwater supply and other infrastructure. The development of such sectors may have a competitive advantage over similar industries in the Perth Metropolitan Region, namely proximity to Asia and climatic conditions and patterns.

Wildflower production is beginning in the Northern Agricultural Region after trials in the area. Recent advances in crop agronomy mean that northern farmers may select from pulse crop rotations including desi peas, kabuli, chickpeas, faba beans and lentils. The desi and kabuli chickpea varieties are the most promising for this area as they are well suited to neutral, alkaline and clay loams and the warmer Mediterranean temperatures found in the region.

The Irwin River District between Dongara and Mingenew and the Northampton Block have the potential to develop significant horticulture and viticulture industries based on providing niche markets in Perth and South-East Asia. Advances have been made towards this development in

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Figure 20 Visitor Trips by Point of Origin 1994/95


Source: Western Australian Tourism Commission

securing water to the extent that a variety of crops are currently being grown including grapes, stone fruit and a variety of vegetables. These areas feature large pockets of fertile loam and sandy soils, numerous small parcels of land, abundant quality water, a favourable climate, access to transport and power, proximity to several sizeable regional centres and access to containerised shipping at Geraldton. It is estimated that the volume of groundwater found in the Irwin River Valley could support an irrigated area about the same size as the horticultural area near Carnarvon in the Gascoyne area, an area of about 2000ha.

Livestock

The region's farms and pastoral stations supported about 3.8 million sheep and lambs and 81,000 cattle and calves in 1993/94. Livestock for meat production is a significant source of income to the region's farmers. Both cattle and sheep production are for export as well as domestic consumption. More recently there has been increased activity in the export of goats. Pigs are also raised for meat.

Agroforestry is growing in importance in the Geraldton Region both for economic and environmental reasons. Plantations of mallee oil trees and sandalwood are currently undergoing trials in the region.

6.9 Fishing

The Mid-West is the State's premier commercial fishing region. Approximately 50 percent of the State's fishing fleet is registered in the region. Species such as rock lobster, scallops, snapper, cod and shark are caught in commercial quantities.

6.10 Aquaculture

At present approximately 10 landowners throughout the region are involved in the aquaculture industry, most located in the area from Northampton to Irwin. Current production is concentrating on marron and yabbies. One producer has diversified into silver perch production. The development of aquaculture has the potential to complement the region's commercial fishing industry, which is said to be valued at approximately \$150 million per annum, the highest amount of any region in the State.

The Mid West Development Commission, Fisheries Western Australia and the Ministry for Planning are currently investigating the potential for land-based marine aquaculture in the Mid-West Region. The principal objective of the study is to present a description of sites which are technically suitable for the commercial development of land-based aquaculture. The study will guide investors, local communities and agencies responsible for regional and local planning.

Table 8 Mineral Production in the Geraldton Region, 1990 and 1997

MINERAL	SHIRE	1990	1990	1997	1997
		TONNAGE	A\$M	TONNAGE	A\$M
Clays - Attapulgite	Mullewa	27,985	5.062	28,262	4.203
Gypsum	Irwin	210	0.003	nil	nil
Heavy Mineral Sands - Garnet Sands	Northampton	22,272	1.471	97,070	11.163
Limesand - Limestone	Irwin	22,272	1.471	33,028	0.132
Petroleum - Condensate (kl)	Irwin	1,214	0.053	2,637	0.412
Petroleum - Crude Oil (kl)	Irwin	38,990	6.510	15,134	2.309
Petroleum - Natural Gas (kl)	Irwin	129,685	14.443	374,547	48.453
TOTAL A\$M			27.548		66.672

Source: DME (1990 & 1997) Statistical Digest - Mineral and Petroleum Production

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6.11 Mining

The Mid-West Region contains a diverse range of minerals that are important for resource development, which contributes to the economic growth of the region. (Figure 21) The Geraldton Region is a significant producer of mineral sands (zircon, ilmenite and rutile being the major commodities). Upgraded ilmenite production is one of the major generators of wealth for the region. Supplies of high-grade lime sand, gypsum and limestone are available within the region. These are strategically important in terms of their agricultural and industrial applications. Oil and gas production within the region continues to grow with a significant increase in gas production since 1991/92 from the Dongara/Mondarra fields and expansion of the gas-processing plant at Beharra Springs. (Table 8)

Two major developments, Kingstream Steel and Mt Gibson Iron are currently investigating mining of iron ore in the region. Weld Range, Koolanooka and Blue Hills deposits would come into production during or after the exhaustion of the Tallering Peak reserves. Mt Gibson Iron will utilise resources at Mt Gibson which is south-east of Perenjori. Figure 21 shows the location of mineral resources within the Geraldton Region.

Towards 2010: An Economic Development Strategy for Western Australia's Mid West Region identifies some potential for other base metals such as zinc and copper and vanadium, depending on world prices with further potential for production of garnet sand at Port Gregory".

6.12 Summary - Geraldton Region - Economic Development

6.12.1 Regional Issues

- Need to integrate and coordinate planning and economic development.
- Supply of suitably zoned and serviced light industrial land.
- Inadequate land for heavy industry in the long term.
- Environmental constraints on the existing Narngulu industrial area.
- Suitability of Oakajee for future heavy industry.
- Potential for a deepwater port at Oakajee.
- Relatively high unemployment rate.
- Employment potential of increased downstream processing within the region.
- Need for appropriate land for processing industries.
- Economic importance of Geraldton Port to the region.
- Constraints on, and planning problems with, the existing port facilities, including:
 - depth limitations;
 - complicated road access from industrial areas;
 - existing rail service forming a barrier between the town centre and the foreshore.

- Identification and protection of areas of agricultural significance.
- Identification of water resources and management for sustainable economic use.
- Diversification of agricultural land use systems.
- Need to protect mining, agriculture, fishing and tourism to continue as the mainstay of the region's prosperity.
- Need for careful management of fishing grounds.
- Need to protect basic raw materials including limestone, lime sand and gypsum.
- Need to support and develop a focus for the tourism industry.
- Need to support the regional centre (Geraldton) as the focus for a range of commercial, cultural and tourist activities to best serve the needs of the community.

6.12.2 Geraldton Region Economic Objective

"To enable the economic potential of the region to be utilised, encouraged and planned."

6.12.3 Regional Guidelines and Recommendations

This section identifies Guidelines - G to provide a general guide for decision making and Recommendations - R for specific action to achieve the economic objective.

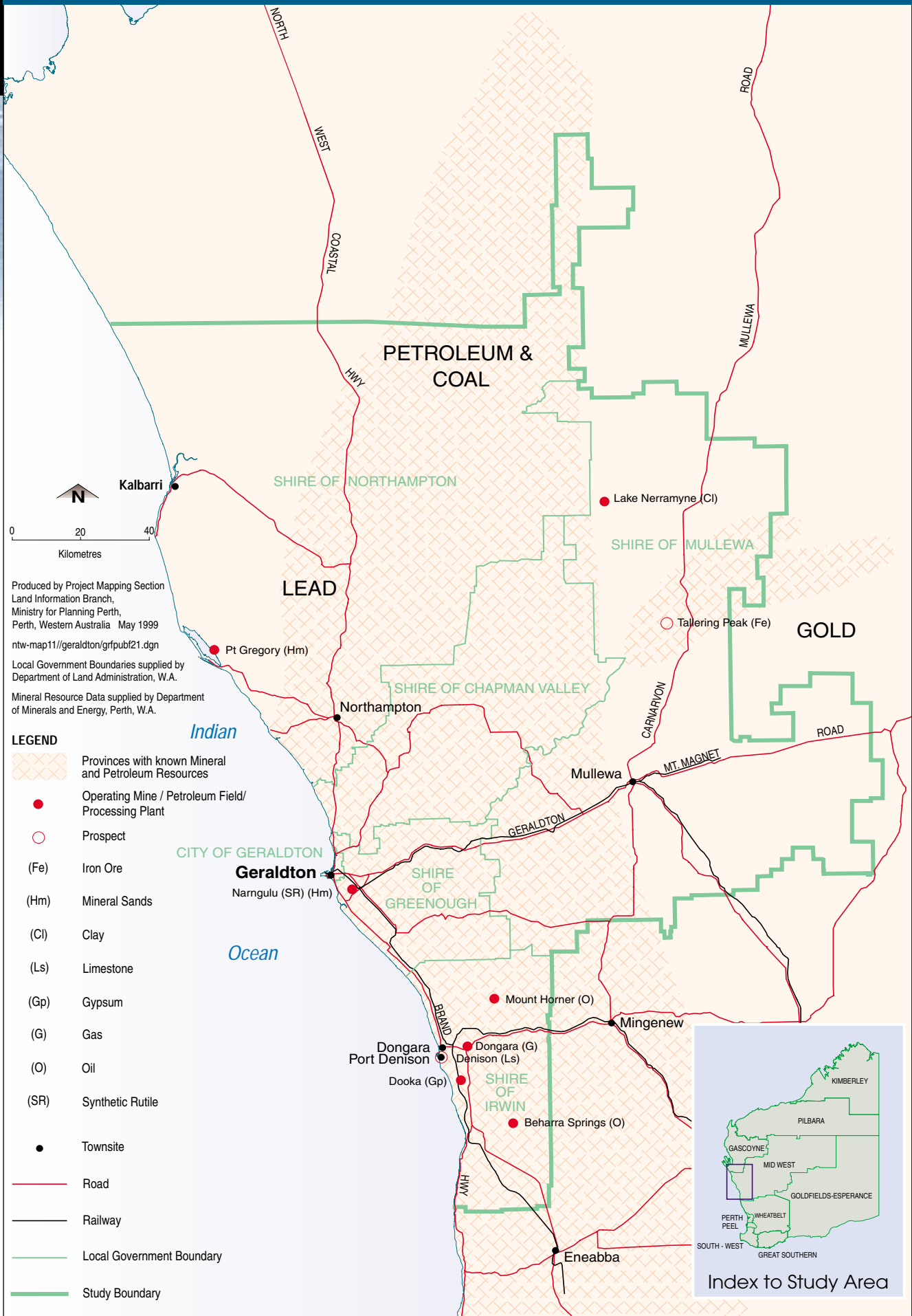
At the end of each recommendation a lead agency and associated agencies are listed to assist in implementation of the recommendation. In statements where there is no lead agency highlighted, the lead agency chosen will depend on the issue involved.

There are many private and community groups and individuals who may need to be involved to implement specific recommendations. Appropriate groups and individuals should be consulted when recommendations are considered for implementation.

Industrial Development

- G** Ensure that a full range of industrial land is made available in all townsites. (LG, MfP)
- R** Rationalise and retain land around the port for port-related industrial uses. (LG, MfP)
- G** Retain Webberton and Wonthella for a range of industrial uses. (LG, MfP)
- G** Retain Narngulu for general industry consistent with EPA requirements for industrial development, close to urban areas. (LGs, MfP, LandCorp, MWDC, DRD)
- R** Formalise the Narngulu buffer to prohibit further residential development, including consideration of impacts on landowners. (DRD, LandCorp,, LGs, MfP)
- R** Complete assessment of Wizard Peak as a possible future heavy industrial estate only if Oakajee does not proceed. (LandCorp, DRD, LG, MfP)

Figure 21 Mineral Resources



Produced by Project Mapping Section
 Land Information Branch,
 Ministry for Planning Perth,
 Perth, Western Australia May 1999
 ntw-map11/geraldton/grfpubf21.dgn
 Local Government Boundaries supplied by
 Department of Land Administration, W.A.
 Mineral Resource Data supplied by Department
 of Minerals and Energy, Perth, W.A.

LEGEND

- Provinces with known Mineral and Petroleum Resources
- Operating Mine / Petroleum Field/ Processing Plant
- Prospect
- (Fe) Iron Ore
- (Hm) Mineral Sands
- (Cl) Clay
- (Ls) Limestone
- (Gp) Gypsum
- (G) Gas
- (O) Oil
- (SR) Synthetic Rutile
- Townsite
- Road
- Railway
- Local Government Boundary
- Study Boundary

R Rezone the site at Oakajee to provide for strategic industry and the development of a deepwater port. (LandCorp, MfP, DEP, LG, DRD, MWDC,)

R Identify and protect a future rail, road and services corridor between Narngulu and Oakajee industrial estate. (DRD, LandCorp,, LGs, Westrail, MfP)

Northampton

R Provide for additional light industrial land adjacent to the Cooperative Bulk Handling (CBH) site. (LG, MfP)

Mullewa

G Ensure adequate provision of industrial land to accommodate future requirements. (LG,MfP)

Yuna

G Provide opportunities through the local town planning scheme for the development of rural, service and light industries and rural produce-handling facilities within the Yuna townsite. (LG, MfP)

Geraldton Port

G Recognise the importance of the Geraldton Port to the regional economy and ensure that it can continue to meet regional development requirements. (GPA, LGs, MWDC, DOT, MfP)

Agriculture, Fishing, Mining, Aquaculture

G Acknowledge and support the contributions of agriculture, fishing, mining and industry to the region's economy. (All agencies)

G Promote opportunities for downstream processing of the region's resources within the region. (MWDC, DRD, LGs)

Agriculture, Aquaculture

G Continue to support development of a viable, diverse and ecologically sustainable agricultural industry. (AgWA)

G Promote development of niche agricultural products, including aquaculture (fresh and salt water). (Fisheries Department, MWDC, LGs)

R Prepare guidelines and information for the establishment of new intensive/irrigated agricultural pursuits. (AgWA, LGs, MfP, MWDC)

R Identify and protect areas of productive agricultural land of State and regional significance having regard to :

- protection of land from degradation and rehabilitation of already degraded areas;
- protection of remnant vegetation;
- prevention of pollution of water resources (rivers and underground water);
- protection and enhancement of key landscape features;

- effective management and sustainable use of the coast;

- protection of high-quality agricultural land from inappropriate land uses and practices;

- protection of areas of Aboriginal, scientific, ecological and recreational significance;

- protection and responsible management of places of non-Aboriginal cultural heritage value;

- protection and enhancement of the cultural environment. (AgWA, LGs, MfP, HCWA, DEP)

G Discourage removal of prime productive agricultural land from existing or potential production and prevent adverse effects on the productivity of established or potential agricultural industries. (AgWA, LGs, MfP)

G Protect areas of high agricultural value from non-agricultural uses and the expansion of urban areas. (LGs, MfP, AgWA)

R Prepare, implement and regularly review rural local strategies to guide the development and management of rural land, taking into account agricultural productivity, land capability and suitability, landscape features, environmental constraints and lifestyle objectives and opportunities. (LGs, MfP, AgWA)

R Identify rural areas suitable for intensive agricultural uses through local rural strategies and support the subdivision of rural land only if consistent with an approved local rural strategy. (LGs, AgWA, MfP)

Fishing

G Ensure the continuation of a viable and ecologically sustainable fishing industry. (Fisheries WA)

G Recognise the contributions from the fishing, beta carotene and garnet industries. (All agencies)

Mining

R Formulate an extractive industries policy to protect important basic raw materials and provide guidelines for their extraction with due regard to environmental factors and surrounding and/or competing land uses. (DME, LGs, MRWA, MfP)

G Consider the protection of basic raw materials as part of land use planning decisions. (DME, MfP)

Commercial Development

G Recognise and promote the Geraldton city centre as the focus for retail, administrative, cultural, community, entertainment, religious, educational and recreational activity in the region. (All agencies)

R Monitor commercial land supply through regular land use surveys and the *Geraldton Land Development Program*. (MfP, LGs)

- G** Promote commercial development in townsites throughout the region to service local community and tourist requirements. (All agencies)

Tourism

- R** Prepare a tourism development strategy for the region which:
 - promotes the region generally with Geraldton as its focus;
 - promotes internal (intra-regional) tourism and tourism from outside the region;
 - identifies the region's attributes and popular tourist destinations;
 - recognises the need to avoid conflicts between tourism proposals and other land uses;
 - encourages the development of tourist facilities in appropriate locations;
 - ensures conservation practices and protection of heritage locations consistent with environmental factors and surrounding land uses;
 - recognises that the intrinsic qualities of the region, emerging from its natural features, landscape, heritage, townscape and lifestyle are an important resource for tourism;
 - addresses the need for informative, well-designed, and site-specific interpretive material; and
 - encourages an improvement in the range and style of tourist accommodation. (WATC, Mid-West Tourism Promotions, MWDC, LGs, MfP, Local Tourist Bureaus)
- G** Support development of an inland scenic drive between the S-Bend on Brand Highway leading through Walkaway, Sandsprings and Nabawa through to Northampton and Kalbarri. In achieve this strategy:
 - the roads should be upgraded, sealed and signposted as appropriate; and
 - all relevant agencies should be involved in investigations into road alignment and standards, locations of signs and stopping places and the most appropriate means of promoting and maintaining the route. (WATC, MWDC, LGs, MfP, Main Roads WA, Local Tourist Bureaus)

Northampton

- G** Ensure that all development of tourist and transport services occurring from the North West Coastal Highway re-alignment is focused within the community. (LG)

Port Gregory

- G** Ensure that all development of tourist services resulting from the completion of the coastal road is focused on the Port Gregory community. (LG, WATC, CALM, DEP)

Kalbarri

- G** Ensure that development of tourist services resulting from the completion of the coastal road is focused on Kalbarri. (LG)
- R** Complete planning for the coastal road between Kalbarri and Shark Bay. (LG, DEP, CALM, WATC)

Horrocks

- R** Complete planning and acquisition of the coastal route between Horrocks and Port Gregory. (LG, DEP)

Nanson

- G** Encourage town planning schemes to provide opportunities for low-key, nature-based heritage tourism and hospitality developments. (LG, MfP, WATC, HCWA, MWDC)

Yuna

- G** Encourage town planning schemes to provide opportunities for low-key rural and nature-based tourism and hospitality within the Yuna townsite. (LG, MfP, WATC, MWDC)

Nabawa

- G** Encourage town planning schemes to provide opportunities for tourism, hospitality, light, service and rural industry developments within the townsite of Nabawa. (LG, MfP, WATC, MWDC)

Mullewa

- G** Encourage the development of a tourism strategy, including the provision in the district planning scheme of opportunities for tourism, hospitality, light, service and rural industry developments within the townsite of Mullewa. (LG, MfP, WATC, HCWA)

Geraldton

7 - Infrastructure

7.1 State Strategic Infrastructure Principle

In the 21st century, efficient and effective transport systems and other strategic infrastructure will be more important than ever to economic success and enhancement of our quality of life.

The size of Western Australia, its relatively small population (and therefore small tax base) and the extremely uneven geographical distribution of that population result in unusual transport problems. Providing effective transport in Western Australia at an acceptable cost is a major challenge for both government and industry. Land use and transport are interdependent and a coordinated approach to planning is therefore imperative. One of the most consistent issues in the development of the *State Planning Strategy* was the need to ensure that the transport corridors between the major generators of heavy traffic (the ports and the strategic industry sites) should be protected from uses which could jeopardise their efficiency.

7.2 Geraldton Region - Infrastructure Objective

“To ensure that well-planned and adequate infrastructure is provided in accordance with the community and economic development needs of the region.”

7.3 Infrastructure

7.3.1 Water Supply

The Water Corporation operates all the public water supply schemes within the region. (Figure 22) As outlined in Section 5.4 - Water Resources, the Geraldton Regional Water Supply scheme extends supply from Dongara-Denison through Geraldton and east to Mullewa. Water is also provided to a number of minor centres and farmland services between Geraldton and Mullewa. The remaining urban settlements in the region are serviced by the Water Corporation and reliant on local borefields. Strategic water supply routes and tanksites will need to be secured in order to provide for new development areas such as Oakajee and Wizard Peak.

7.3.2 Wastewater

The Water Corporation operates wastewater systems at Geraldton, Kalbarri and Dongara/Denison. The Shire of Mullewa operates a limited effluent scheme within the Mullewa Townsite. The Corporation is continuing with its program to progressively provide full sewerage services, in accordance with the State Infill Sewerage Program.

The provision of environmentally sustainable and economically viable wastewater services requires the combined efforts of service providers, planning authorities and the community to secure treatment plant sites and their associated buffer areas and protect them against the threat of competing non-compatible land use proposals.

7.3.3 Energy Supply

Electricity

Western Power provides power to the Mid-West Region by a 132kV line via the interconnected grid from Bunbury, Muja and Kwinana power stations. Geraldton and Chapman Valley each have 132kV zone sub-stations. Power is then distributed by 33kV lines throughout the Geraldton Region. Power supplies can be supplemented by gas turbine generators located at Mungarra, as required. Future large industrial power users, such as Kingstream Steel, have indicated that they will have their own on-site power generation. There may be scope to divert excess energy from private generating facilities into the Integrated South-West Network. Western Power administers its installation, maintenance and planning functions via the North Country Branch Office in Geraldton.

Gas

Natural gas is piped through the Geraldton Region from the Pilbara to Perth via the Bunbury-Dampier Pipeline. Gas from this source is available in Geraldton and Narngulu for domestic, commercial and industrial purposes. Independent gas supplies are available through West Australian Petroleum (WAPET) at Dongara and Sagasco's Beharra Springs Gas Facility in the Shire of Irwin, 35km south of Dongara.

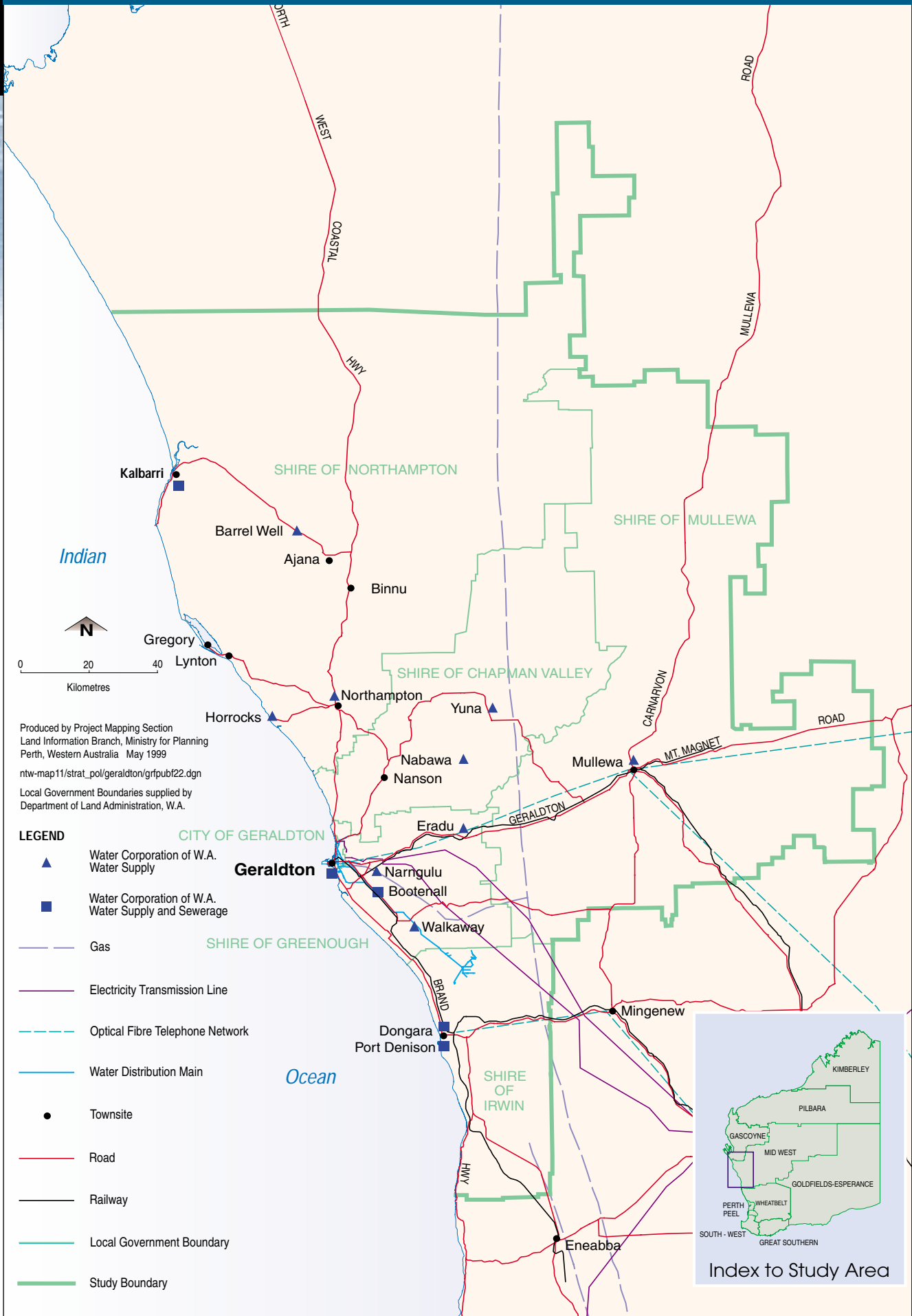
7.3.4 Road Network

The Mid-West Region is serviced with a network of major sealed roads connecting Geraldton to Perth, the North-West and the hinterland and providing for extensive use of road trains.

Major roads include:

- Brand Highway linking Perth and Geraldton;
- Midlands Road between Moora and Dongara;
- the Geraldton - Mt Magnet Road linking Geraldton to the east;
- Wubin - Mullewa Road providing a south-east link between Mullewa and Great Northern Highway;
- North West Coastal Highway linking Geraldton to the north via Northampton, Carnarvon and Port Hedland;

Figure 22 Regional Infrastructure



Main Roads WA recently completed the *Roads 2020 Regional Road Development Strategy*, which proposed a strategy for the expansion and improvement of the regional road network to the year 2020.

7.3.5 Rail Network

Westrail operates and provides transport services to the region. Haulage in the Mid-West Region is now exclusively of bulk products and includes coal, grain, mineral sands and talc. There is also the possibility of iron ore transport in the future from mine sites to the east of Geraldton to processing plants near the Greater Geraldton area.

The main depot at Narngulu, 13km from the Port of Geraldton by rail, is the junction of the two railway lines which come from the south. One line travels through Northam, Wongan Hills, Perenjori and Mullewa, while the other passes through Moora, Three Springs, Mingenew and Dongara. Another line branches off at Dongara to service the rich mineral sands area of Eneabba.

Currently, the rail network accesses the Geraldton Port along the Champion Bay foreshore. The location of the railway along the foreshore, is perceived by some sectors of the community to limit the opportunity to integrate the foreshore with the city centre. The concerns regarding the constraints imposed by the location of the railway led to the preparation of the Southern Transport and Services (Port Access) Corridor Study. The study assessed the feasibility, including the social costs and benefits, of relocating the railway access into the Geraldton Port.

7.3.6 Port Facilities

The Geraldton Port is central to the region's economy and a major infrastructure asset valued at approximately \$170 million. Its importance to the region's economy will ensure that it remains operational in the long term.

The port has six land-backed berths ranging from 8.8m to 9.4m depth. Grain-handling facilities include two wharf gantries, with a capacity of 1,000 tonnes per hour each, and a minerals sands single gantry with a capacity of 1,600 tonnes per hour. Vessels may load to a maximum draft of between 9.1 and 9.3 metres depending on the state of the tide. Imports include petroleum products, phosphate and urea. Exports account for approximately 85 percent of throughput and include wheat and other grains, mineral sands, talc, stockfeed, frozen meat and lobsters, livestock, copper and zinc. The total trade through the port for 1995/96 was 3,598,853 tonnes which included imports of 443,383 tonnes and exports of 3,155,470 tonnes.

There are however a number of constraints associated with future development of the port. These include:

- **Depth and width restrictions** - The present harbour cannot accommodate fully laden ships of more than 20,000 dead weight tonnage (dwt). The harbour approach channel has a limiting depth of



Geraldton Port

between 9.1 and 9.4 metres depending on tidal conditions and the harbour basin is limited by depth and width restrictions. Consequently, while ships up to 70,000dwt can berth, they are unable to leave fully laden. This is a constraint to existing and potential industries that typically require berthing for fully laden ships between 50,000dwt and 80,000dwt or "Panamax" ships;

- **Access restrictions** - Access to the port is currently provided by the railway line, which runs from Narngulu to the east of the city past Wonthealla and curves around north of the city to run along the foreshore to the port. Road access is provided along Port Way, the main road link in the southern part of the city. There are a number of problems associated with existing transport infrastructure, including the separation of the central business district from the foreshore by the railway, noise associated with rail activities, traffic problems on Port Way and the safety problems associated with mixed port and residential traffic.
- **Land use restrictions** - The existing port and associated transport facilities are surrounded to the north and east by urban development, limiting opportunities for further expansion of direct port activities.

Studies have determined the economic, technical and environmental feasibility of a deepwater port adjoining the proposed Oakajee Industrial Estate. This port would be used by industries locating at the Oakajee Industrial Estate in the short term. In the long term other port users may choose to locate or relocate to the facilities at Oakajee.

The Government, in March 1998, called for expressions of interest to build, own and operate a deepwater port at Oakajee.

7.3.7 Airport Facilities

The Geraldton Airport is owned and operated by the Shire of Greenough and is located approximately 15km from the Geraldton CBD along the Mt Magnet Road. The relocation of the airport has previously been assessed and the Shire of Greenough has affirmed its support for the current location in the medium to long-term future. The Shire of Greenough has recently completed the construction of a general aviation terminal.

The Shire of Greenough has completed an Airport Master Plan which includes a second parallel runway to be established which will provide the airport with the capacity to accommodate international freight flights. It is intended that the airport facilities be utilised as a base for major flight training schools.

Regular passenger services operate between Perth and Geraldton. Services are also provided to a number of smaller communities including Kalbarri, Mt Magnet, Cue, Meekatharra and Wiluna, as well as to various mining operations within the Mid-West Region. General aviation services include a helicopter pad, a private charter operator and maintenance/servicing for light aircraft located at the airport as well as a number of private charters operating throughout the region.

The Shire of Northampton has secured the land needed to construct an airport to the north-east of Kalbarri at an approximate cost of \$2.5 - \$4.1 million. The facility will have the capacity to handle the unrestricted landing of Fokker F28 and BAe146 aircraft and larger turbo propeller aircraft. Finance options for the construction of the facility are still being investigated.

7.3.8 Waste Management

The Narngulu Waste Disposal Facility is located to the north-west of the Narngulu Industrial Estate. This is a Class IV facility which provides for the disposal of a range of waste material. The facility established primarily for the disposal of domestic waste, is managed by the Regional Council which includes representatives from the City of Geraldton and the Shire of Greenough.

7.3.9 Communications

The Geraldton Region receives national and State radio and television services and coverage by newspapers produced in Geraldton. Two commercial FM stations are located in Geraldton and broadcast to Geraldton and neighbouring areas. Satellite radio services are available for purchase outside the coverage area of Geraldton services. State and national newspapers are available daily in Geraldton and most areas of the region.

Postal services are provided from Geraldton daily and direct from Perth to all towns except for those in the Murchison pastoral area, which have a weekly service.

The region has access to the national telephone network. Modern telecommunications include STD, ISD, facsimile and teleconferencing facilities.

Pastoral stations and isolated communities use modern satellite facilities to access television and radio services. Mobile phone facilities are available, however, currently their range is limited to the Geraldton urban area.

The commercial fishing fleet utilises satellite navigation equipment as well as auto seaphone facilities provided by OTC for communications between the Abrolhos Islands and Geraldton.

7.4 Summary - Geraldton Region - Infrastructure

7.4.1 Regional Issues

- The need for improvements to the Geraldton-Greenough road network.
- The need for upgrading of North West Coastal Highway.
- The need to promote segregation of heavy vehicles from residential areas.
- The need for improvements to the road system to improve access to the regional centre.
- The need to consider public transport requirements.
- The importance of the existing port to the region's economy.
- The need to support development of Geraldton as the regional airport facility.
- The need to protect a future multi-use railway and services corridor to Oakajee.
- The need to develop a more direct road and rail link between Narngulu and the Geraldton Port.
- The movement of hazardous and industrial material.
- The need to investigate groundwater supplies to accommodate population growth and industrial development.
- The need to protect the region's groundwater resources.
- Constraints imposed on development related to the extent of deep sewerage.
- Adequate power supplies being available to meet projected demand.
- The importance of communications to future development of the region.

7.4.2 Geraldton Region - Infrastructure Objective

"To ensure that well-planned and adequate infrastructure is provided in accordance with the community and economic development needs of the region."

7.4.3 Regional Guidelines and Recommendations

This section identifies **Guidelines - G** to provide a general guide for decision making and **Recommendations - R** for specific action to achieve the infrastructure objective.

At the end of each recommendation a lead agency and associated agencies are listed to assist in implementation of the recommendation. In statements where there is no lead agency highlighted, the lead agency chosen will depend on the issue involved.

There are many private and community groups and individuals who may need to be involved to implement specific recommendations. Appropriate groups and individuals should be consulted when recommendations are considered for implementation.

Public Utilities

- G** Ensure that an adequate supply of zoned and serviced residential land is available for development in suitable locations ahead of demand in all towns and urban areas within the region. (LGs, MfP, other agencies)
- G** Discourage inappropriate interim uses of future urban land. (MfP, LGs)
- G** Coordinate the provision of regional infrastructure in the areas identified for development under the *Geraldton Land Development Program*. (MfP, LGs)
- R** Update the *Geraldton Land Development Program*. (MfP, LGs, other agencies)
- G** Coordinate and provide services to small, remote and coastal settlements. (Office of Water Regulation, LGs, MfP)
- G** Retain the mandatory sewerage status of the Geraldton-Greenough and Dongara-Denison urban areas, and endorse the progressive full provision of sewerage in accordance with the State Infill Sewerage Program. (Water Corporation, LGs, MfP)
- G** Guide development towards sewerage priority areas by means of local town planning schemes for the City of Geraldton and the Shires of Greenough and Irwin. (LGs, MfP, Water Corporation)
- G** Ensure that tourist facilities including new sites and expansion of existing sites within the region have adequate effluent disposal systems and water availability. (LGs, MfP, WA Tourist Commission)
- G** Consider future development proposals, environment and economic factors in determining the location of wastewater treatment work sites. (Water Corporation, MfP, DEP, LGs)

Horrocks

- R** Complete development of the Horrocks waste water treatment plant (Water Corporation)

Kalbarri

- R** Complete the development of the collocation emergency services base. (LG)
- G** Encourage electricity providers to improve the continuity of supply. (LG)

Port Gregory

- G** Improve the existing water supply to potable status. (LG, Water Corporation)

Mullewa

- R** Develop a wastewater treatment facility. (LG, other agencies)

Road Network

- R** Investigate the provision of freight routes around urban centres in the region, including Geraldton and Northampton. (MRWA, LGs, other agencies)
- R** Complete the upgrading of the Geraldton to Leinster Road to a sealed all weather capability, thus improving east-west freight links to resource areas. (MRWA, LGs, other agencies)
- R** Modify and upgrade the Greater Geraldton road network in accordance with the Structure Plan and subsequent road studies. (MfP, LGs, MRWA)
- G** Recognise North West Coastal Highway as the major north-south route through Geraldton-Greenough which includes the upgrading of the existing North West Coastal Highway between Green Street and the Geraldton Rotary, including the rationalisation of frontage access and connecting service roads. (MRWA, LGs, MfP)
- G** Ensure adequate port access and transport linkages between the Geraldton Port and Narngulu. (DOT, MRWA, Westrail, GPA, LGs, MfP)
- R** Investigate and rationalise road vehicle movements in the port area, north of Shenton Street. (MRWA, LG, GPA, Westrail)
- G** Support development of an inland scenic drive between the S-Bend on Brand Highway at Greenough and Kalbarri including:
 - upgrading of roads as appropriate;
 - investigation of the most appropriate alignment, standard of construction and maintenance;
 - identification of stopping places and signage;
 - appropriate methods of promoting the route. (LGs, MRWA, WATC, CALM, MfP)

- R** Prepare a road hierarchy plan for Greater Geraldton. (MfP, MRWA, LGs)

- R** Complete sealing the road between Port Gregory and Kalbarri. (LGs, MRWA, CALM)

- R** Investigate the potential and need for the expansion of public transport services in the region. (DOT, LGs, MfP)

Rail Network

- G** Maintain and upgrade the rail network throughout the region. (DOT, Westrail)
- G** Support removal of the railway from the foreshore and relocation in the southern transport corridor. (DOT, Westrail, MRWA, MfP, LGs, GPA)

- R** Protect the transport corridor between Narngulu and the Geraldton Port (MRWA, MfP, other agencies)
- R** Complete assessment of a multi-use railway and services corridor between Narngulu and Oakajee. (DRD, Westrail, LGs, MfP)
- R** Protect the railway and services corridor between Narngulu and Oakajee. (DRD, MfP, LGs, other agencies)
- G** Support urban design studies to maximise the benefit of removing the existing railway line from Champion Bay foreshore. (All agencies)

Pedestrian Cycleway Systems

- R** Investigate and secure reservations for safe and convenient pedestrian/cyclist access to/from residential and key public use facilities - particularly schools, hospitals and retail centres. (DOT, LGs, all agencies)

Port Facilities

- G** Recognise the importance of the Geraldton Port to the regional economy. (GPA, other agencies)
- G** Support rationalisation of land use and retention of land around the Geraldton Port for port-related activities. (LGs, MfP)
- R** Undertake planning to enhance the tourism and recreation values of the area adjacent to the Geraldton Port. (GPA, LG, WATC)
- G** Secure both road and rail transport links from throughout the region to the Geraldton Port. (All agencies)
- G** Support development of a port at Oakajee to support the Oakajee industrial estate. (DRD, LandCorp, all agencies)
- R** Prepare a regional strategy for the movement of hazardous wastes. (DME, DEP, DOT, MRWA, LGs, MfP)
- R** Undertake a survey and identify local area facilities required such as boat ramps and launching facilities within the region (DOT, LGs)

Horrocks

- G** Ensure that boating facilities are adequate to meet the needs of:
 - the local fishing industry; and
 - recreational fishermen. (LG, DOT)

Kalbarri

- G** Ensure that port and boating facilities are adequate to meet the needs of:
 - the local fishing industry;
 - tourist operators; and
 - recreational fishermen. (LG, DOT)

Port Gregory

- G** Ensure that port facilities are adequate to meet the needs of the local fishing industry. (LG, DOT)

Dongara/Denison

- G** Ensure that boating facilities are adequate to meet the needs of the local fishing industry. (LG, DOT)

Airport Facilities

- G** Promote the Geraldton Airport as the hub for air transport within the Mid- West Region. (All agencies)
- G** Support upgrading of the Geraldton Airport, including a second parallel runway, to provide the capacity for international freight flights. (LG, other agencies)
- R** Construct a new airport at Kalbarri. (LG, other agencies)

Communications

- G** Promote the retention and further development of "Telecentres" to enhance regional economic opportunities and service delivery to small remote settlements. (All agencies)
- R** Investigate opportunities for new information technologies to link libraries and Telecentres with regional and State education and cultural facilities. (All agencies)
- G** Encourage telecommunications utilities to extend mobile telephone networks throughout the region. (All agencies)
- R** Coordinate regional communications issues through a Communications Group. (MWDC)

Northampton

- G** Encourage telecommunications utilities to improve and increase services. (LG, other agencies)

Port Gregory

- G** Encourage telecommunications utilities to improve and increase services. (LG, other agencies)

8 - The Land Use Strategy

8.1 The Strategy

The land use strategy (Figure 23) builds on the strategic policy framework of the Region Plan, described in Part Two of this report. The strategy is broadly divided into the following categories:

- Rural - Rangeland Area
- Rural - Broadacre Agricultural Area
- Rural - Potential Intensive Agricultural Area
- Environmental Planning Priority Area
- Marine Planning Priority Area
- Rural - Landscape Amenity Area
- Greater Geraldton
- Main Townsites
- Transport Infrastructure

The categories have been generalised to reflect the major land uses at the regional level. Current land use activities and patterns are much more complex than the categories suggest, but the strategy reflects the main elements to present a concept of the region as a whole, taking into account known trends and possible future proposals and information regarding specific sites.

The process used to prepare the strategy has included both objective and subjective assessment, and the values and opinions of individuals, local governments and State government agencies have also contributed.

8.1.1 Rural - Rangeland Area

Pastoral areas extend across the northern and eastern portions of the Shires of Northampton and Mullewa. The rangelands are not only important agricultural areas, but also are important for minerals and basic raw materials. The need to formulate an extractive industries policy to protect important basic raw materials with due regard to environmental factors and surrounding and competing land uses is acknowledged. The potential development of a strategic heavy industry site and associated deepwater port at Oakajee has focused interest on a range of potential industries, associated with mineral development, which may develop in the region in the future. Resources currently utilised in the region include mineral sands and gas production.

8.1.2 Rural - Broadacre Agricultural Area

Broadacre agriculture, consisting primarily of grain cropping areas, is the primary land use in the region. Broadacre farming extends across the southern and western portions of the Shires of Northampton and Mullewa, and includes the whole of the Shires of Greenough, Chapman Valley and Irwin. At a regional scale, it is difficult to represent the complexity and diversity of rural activities across the Geraldton Region.

The area also contains important minerals and basic raw materials which require appropriate land use planning considerations to ensure their protection. The *State Planning Strategy* identifies a large area in the east as subject to extreme soil salinity risk, and the Land Use Strategy supports management to address this environmental issue. The strategy recommends actions to achieve balance between productivity and long-term conservation of valuable natural resources, with involvement by a range of government and other agencies.

The Land Use Strategy promotes the protection of broadacre agricultural areas from encroachment by incompatible uses. Land capability and land care practices, including programs to rehabilitate degraded areas, would be supported and promoted.

8.1.3 Rural - Potential Intensive Agricultural Area

Intensive/irrigated agricultural areas are important to the region. These areas are limited natural resources which require protection from competing land uses, including special rural and residential development.

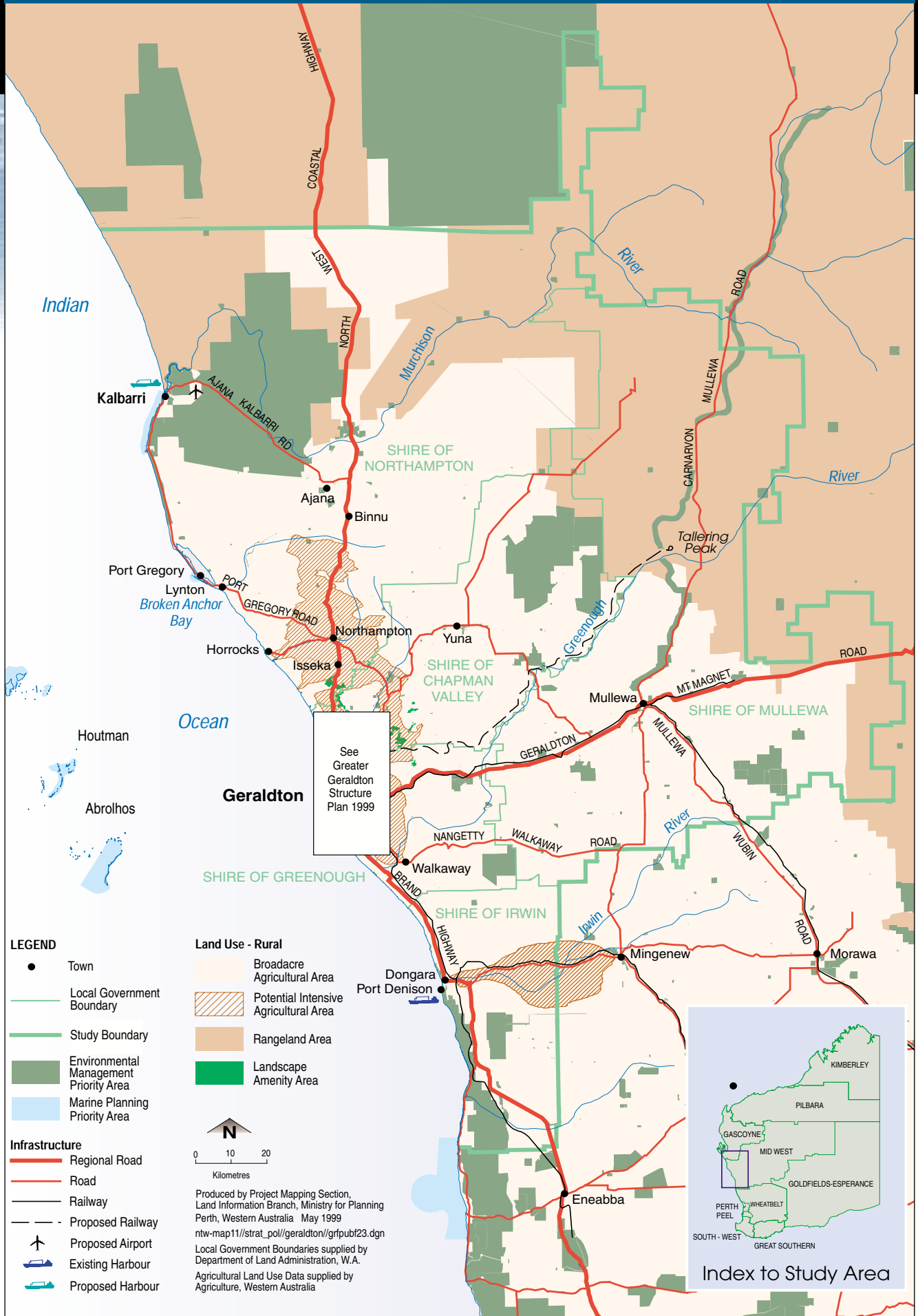
The State is committed to identifying and protecting productive agricultural land for the longer term. The discussion paper, *Planning for Agricultural and Rural Land Use*, released for public comment in November 1997 identifies the need to identify areas of State and regional significance to ensure that productive agricultural land is conserved and managed in the long term.

The Geraldton Region is one of the most significant intensive agricultural areas north of the Perth Metropolitan Region. The areas identified in the Land Use Strategy are located in the Shires of Greenough, Chapman Valley, Irwin and Northampton. The *State Planning Strategy* identifies these areas as agriculture priority management areas which represent, subject to detailed evaluation, areas of potential significance. The Land Use Strategy recommends further investigation to define areas of State and regional significance and that guidelines and information be prepared to support the development and establishment of new intensive/irrigated agricultural activities.

8.1.4 Environmental Planning Priority Area

The region has many unique and valuable landscape features with aesthetic, conservation and recreation value. Community consultation emphasised the value of these features to residents who regarded them as of the part of the region's character and identity. They are also an important contribution the region's appeal to visitors and tourists.

Figure 23 Land Use Strategy



Landscape features in the region are diverse and include:

- the coastline;
- rivers and river valleys;
- wetlands;
- the Moresby Range;
- remnant vegetation.

The conservation category comprises existing managed Crown land (nature reserves, national parks and conservation parks), other vested Crown reserves, some vacant Crown land, together with areas identified as significant wetlands and river systems.

8.1.5 Marine Planning Priority Area

The identification of significant marine environments recognises the importance of these areas to the economy of the Geraldton Region, specifically the crayfishing industry. Areas of regional significance are the Abrolhos Islands, and coastal areas near Kalbarri, Port Gregory and Illawong. Marine planning priority areas have been identified as important environmental areas which require integrated planning to balance resource and environmental considerations.

8.1.6 Rural - Landscape Amenity Area

The region contains a variety of features which have landscape value recognised by residents as well as visitors to the area. Much of the land identified as having landscape amenity is in private ownership, and cooperation between landowners, local and State government agencies and the community is promoted as a means of protecting landscape amenity and community interest in the features.

The Strategy acknowledges the specific pressures on areas within or adjacent to urban areas which are subject to a range of competing and often conflicting pressures, including urban development, recreation and conservation use. It may be appropriate to consider regional parks where conservation reserves or private ownership are not appropriate, and public access is an agreed objective.

The Moresby Range, identified as an important landscape element by the Land Use Strategy, forms a backdrop for the Greater Geraldton area and coastal areas extending north to Northampton. Although the majority of the range is in private ownership, there are areas of significant remnant and modified native vegetation. The Moresby Range Management Committee was formed to assess the extent and regional significance of the range and investigate methods of protecting its special characteristics. Assessment of the Chapman River Valley also has been identified as a priority and the Shire of Greenough has initiated further assessment with an emphasis on the area subject to the most intense development pressure, between the City of Geraldton and Geraldton Airport.

8.1.7 Greater Geraldton

The Land Use Strategy depicts the Greater Geraldton Structure Plan area as a separate category. The need to review the 1989 draft *Geraldton Region Plan*, in addition to the degree of detailed planning required to resolve more complex issues and conflicts, has led to the formulation of the Structure Plan for Greater Geraldton, discussed in detail

in Part Three of this report. The Structure Plan addresses the location of land uses and infrastructure and outlines the principles for development.

Geraldton through its industry, port, business, fishing, tourism and cultural facilities is the regional centre of the Mid-West Region. Maintenance and strengthening of this role is essential not only to the development of the region but also to Western Australia.

The Land Use Strategy recognises the importance of Geraldton as the regional centre, and promotes structured and orderly growth, in accordance with the Structure Plan.

8.1.8 Main Townsites

The Land Use Strategy recognises the importance of the region's towns, many of which are within commuting distance of Geraldton being less than 50 kilometres from the city centre. The importance of these towns will increase as the region grows and the changes will have social and economic impacts on the towns. Anticipating the future of the region will assist in planning at both local and regional levels. The Strategy recognises the views expressed at the community workshops in identifying major issues and objectives in addition to population and economic scenarios.

The towns have developed individual and distinct characters focused on commercial, administrative or recreational activity. They provide alternative lifestyles for people in the region as well as opportunities for employment, recreation and tourism. The development of townscape and where relevant coastal management plans is important for the character and identity of each town as well as contributing to the character of the region as a whole.

8.1.9 Transport Infrastructure

The Land Use Strategy recognises the major transport infrastructure elements in the region. A network is formed by the combination of roads, rail, airports, ports and harbour facilities. The strategy identifies important links between industrial locations, natural resources, urban centres and recreation areas.

The transport system focuses on Geraldton city centre and a number of land use conflicts occur as a consequence. The studies of the southern transport corridor have been commissioned to address access between the Narngulu Industrial Estate and the port, as well as urban amenity issues associated with the location of the railway along the foreshore. The Structure Plan for Greater Geraldton was prepared to assist in resolving the current and future land use conflicts, including transport issues in the city centre. The Structure Plan considers a range of transport issues, including the need for a bypass to accommodate future traffic movement and requirements. The traffic requirements of future industrial areas are also addressed by the Structure Plan.

Roads

The Strategy identifies the primary road system which provides access from the region to the north and south of the State. It also identifies roads which provide connections between Geraldton and the surrounding towns and rural areas in the region. The significance of the coastal road

system is recognised and ongoing discussions regarding the extension of additional coastal roads with associated coastal management, urban development and environmental issues are acknowledged. Social, economic and environmental implications result from the construction of additional links or bypass roads for towns such as Dongara or Northampton, which are important for future planning of the towns.

Rail

The rail system is important to the region and has the potential to be upgraded in the future. AFKS proposes to construct a standard gauge rail line from Tallering Peak to Oakajee. The line could eventually be extended to Weld Range. When it is warranted, the State will construct a narrow gauge rail line in the Narngulu to Oakajee services corridor. The possible relocation of a portion of the railway from the foreshore into the southern transport and services corridor has been the subject of a detailed study during the preparation of the Region Plan. The relocation of the railway from the foreshore should assist in improving the amenity of the Geraldton city centre.

Ports

The Strategy identifies the existing port at Geraldton and the proposed port at Oakajee. The *Industry and Port Sites Study*, the *Southern Transport and Services (Port Access) Corridor Study* and the investigation associated with Oakajee have focused interest on the future development of ports in the region. The Strategy identifies harbours at Port Denison and Kalbarri which are important to both the fishing and recreational industries.

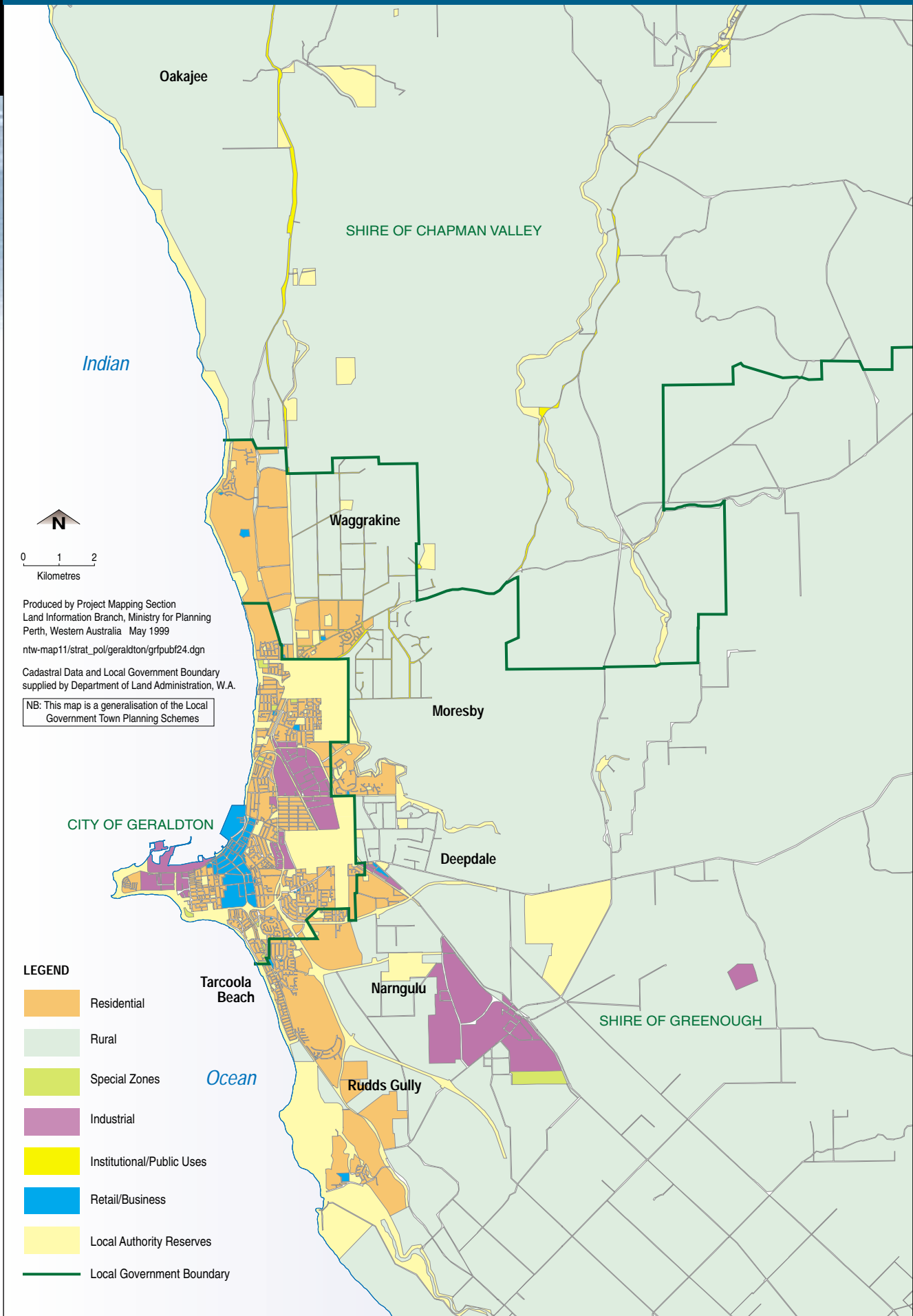
Airports

The Strategy acknowledges the importance of airport infrastructure to the region. The Geraldton Airport is identified in the Strategy and will cater for the region's future requirements, complemented by upgraded facilities in other locations, including Kalbarri, to enhance business and tourism opportunities in the region. There are opportunities to include tourist destinations in the Mid-West in packages with other centres in the State if airport facilities are available.



Part 3 - The Greater Geraldton Structure Plan

Figure 24 Existing Local Government Town Planning Schemes



9 - Greater Geraldton

9.1 The Structure Plan

Regional structure plans are used by State and local governments to assist long-term planning and budgeting for the provision of infrastructure to support future urban development and as a basis for assessing the cost implications of acquiring future regional open space and infrastructure reserves.

The Structure Plan covers the City of Geraldton, and portions of the Shires of Greenough and Chapman Valley which are urban or likely to experience pressure for urban and strategic industrial development in the future. The Structure Plan provides a framework for coordinating development within the area referred to as Greater Geraldton.

The Structure Plan recognises the views expressed at the community workshops for the City of Geraldton, the Shire of Greenough and the Shire of Chapman Valley (Appendix 2) (Section 4.6). The issues identified at each workshop were consistent throughout the region although the emphasis on different issues varied. All communities stressed the need for a coordinated approach to planning and development in the region.

The Structure Plan is also intended to:

- Provide the basis for formulating and promulgating a regional planning scheme for Greater Geraldton. When finalised, the Structure Plan will provide the rationale behind, and the basis for a regional planning scheme for Greater Geraldton.
- Provide the basis for statutory planning and development control. The Structure Plan will provide a guide for further statutory amendments and reviews to the City of Geraldton, Shire of Greenough and Shire of Chapman Valley town planning schemes and local rural strategies. It will also assist in the assessment of development and subdivision applications.
- Provide a basis for servicing and transport authorities to plan their future requirements. Major trunk services and transport routes require long-term forward planning and programmed budgeting to acquire the required land for reserves and for implementation. Accurate forecasts of population potential, the location of employment, and other important uses which affect demand for services are required.

9.1.1 General Objectives of the Structure Plan

The general objectives of the Structure Plan are to define the:

- extent and location of future urban land;
- extent and location of areas with regional open space potential;
- arrangement and location of the future transport infrastructure;
- arrangement and location of infrastructure and service corridors;
- arrangement and location of major activity centres, including employment areas, areas zoned for industry, major commercial hierarchy, major social institutions such as universities, regional hospitals and regional recreation facilities.

The Structure Plan considers the physical arrangement of urban areas, roads, schools, open space, shopping facilities and the other items of regional urban infrastructure.

9.1.2 Explanation of the Structure Plan

The previous Geraldton Region Plans published in 1966, 1976 and 1989 were strategic in nature, although the 1976 plan did attempt to reconcile infrastructure requirements (for roads at least) with the extent of future urbanisation as it was then envisaged.

The general objectives for the Structure Plan have been listed in Section 9.1.1. Given the evolution of planning philosophies for the region and the range of new planning initiatives, the two main objectives for the Structure Plan are to:

1. Reconcile the previous plans and statutory schemes across the various administrative boundaries in the area towards achieving a cohesive, functional and efficient metropolitan area.
2. Integrate current urban, industrial and infrastructure planning initiatives for the study area into the Structure Plan.

9.1.3 Current and Proposed Town Planning Schemes

The Structure Plan recognises the City of Geraldton, Shire of Greenough and Shire of Chapman Valley town planning schemes. A composite of the three current town planning schemes is reflected on Figure 24.

The City of Geraldton has undertaken a review of its town planning scheme. The proposed Town Planning Scheme No. 3 has been advertised, submissions have been received and analysed and the scheme is approaching finalisation.

The Structure Plan incorporates the new scheme proposals where possible. The Shires of Greenough and Chapman Valley are currently undertaking reviews of their town planning schemes.

9.2 Population, Housing and Residential Land

Population projections for the study area are discussed in Section 4.3.2 of this report. The 1996 population of the City of Geraldton and Shires of Greenough and Chapman Valley is estimated at 32,000. This population occupies the areas on the Structure Plan designated as Urban, Special Residential and Rural-Residential.

Analysis of vacant zoned land, vacant serviced lots and current conditional approvals indicate Greater Geraldton's short-term residential land supply should meet the demand scenarios presented and have capacity to produce additional lots if required to meet any increase in demand.

The land use survey conducted in April 1997 and updated in February 1998 indicated there were about 1,450 vacant single and special residential lots and a further 300 vacant rural living lots in the area. Activity in the land and housing industry in Greater Geraldton was strong between the 1997 and 1998 residential vacant lot surveys. In 1997, 1,601 vacant lots were recorded. By 1998, this stock was depleted by 237 lots to 1,364 lots representing a decline of 15 percent during the period. Much of the new housing activity occurred in developing suburbs of Wandina and Mt Tarcoola. Approvals are in place to create at least a further 1,700 lots over the next three years if required. Of these proposed lots, 1,200 are single residential and the balance either special residential or rural living.

A total of 177 broadhectare lots were counted in the 1998 survey. The combined total area of these lots was 1,391 hectares. If net residential density of seven to nine lots per hectare is used, these broadhectare holdings can be expected to yield between 9,700 and 12,500 lots. The residential vacant lot survey indicates that substantial capacity exists within Greater Geraldton for further residential development subject to servicing constraints. The suburbs with the largest vacant broadhectare residential land were Glenfield with 362 hectares, Wandina with 202 hectares, Karloo with 155 hectares and Cape Burney with 146 hectares.

Most surveyed regional centres between 1995 and 1998, with the exception of Geraldton, were experiencing a shortage of housing land. Kalgoorlie and Kununurra were surveyed as experiencing the most severe housing land shortages with only 472 and 44 single residential vacant lots respectively. Conversely, Geraldton with an estimated 1,364 single residential vacant lots, has sufficient capacity to accommodate growth in the short to medium term. In addition, it is not constrained by Native Title claims.

It is estimated that the land shown on the Structure Plan including land north and south of Geraldton has the capacity to accommodate a total population for Greater Geraldton of more than 100,000 people.

In section 4.3.2 of this report it is projected that the population for the Structure Plan area will increase from the currently estimated 32,000 to about 41,000 by the year 2011. A comparison of population projections with land

availability indicates that the amount of urban and rural living areas in the Structure Plan will more than adequately accommodate the region's future requirements.

The availability of zoned land has contributed to a dispersed development pattern which extends the requirement for urban services over a relatively large urban area. This pattern reinforces the need for an infrastructure framework to ensure development does not preclude options for future roads and other items of social infrastructure (schools, recreation areas etc.).

The absence of a comprehensive structure plan for the area can create difficulties in achieving some road alignments because they affect existing development areas. This is particularly relevant in the central areas of Geraldton.

For these reasons it is important that the Structure Plan provide for future urban requirements, including future sewerage or industrial buffer areas and major highways. The lack of planning for these requirements will adversely affect the amenity of residential areas and impose restrictions on transport operators.

9.3 Urban Form

The Structure Plan depicts an essentially linear city comprising a coastal corridor about 24 kilometres long and about two kilometres wide. The corridor stretches 14 kilometres north of Geraldton city centre to the southern banks of the Buller River in the Shire of Chapman Valley. On the southern side of the city centre the corridor extends 10 kilometres, reaching the mouth of the Greenough River. The central part of the corridor at the City of Geraldton widens to between three and four kilometres contained to the western side of the Chapman River.

Immediately to the east, the urban areas are bounded by a band of rural-residential between two and three kilometres wide and by the rural buffer between the urban and industrial areas on the south-eastern side of the city. The special residential and rural-residential areas on the Structure Plan have an estimated population potential of about 10,000 people.

The main industrial and strategic industrial areas are located at Narngulu, Wizard Peak and Oakajee. The Wizard Peak industrial estate comprises 1,650 hectares made up of 450 hectares of the proposed Mt Gibson Iron site and 1,200 hectares for future strategic industries.

Oakajee, situated to the north of the Structure Plan area, was first identified in the 1976 *Geraldton Region Plan* and again in the 1989 draft *Geraldton Region Plan*. Detailed investigation into this area is proceeding. About 1,100 hectares of core industrial area and a buffer of 2,500 ha (approximately) buffer is reflected on the Structure Plan. Further assessment of the buffer is required to address environmental (noise) issues.

Both Wizard Peak and Oakajee are shown on the Structure Plan as no major industries have made a final commitment to the Oakajee site. Oakajee is favoured as the future industrial location because it includes a deepwater port and is better located in relation to existing and future residential areas. If a deepwater port is not feasible then it is likely that the development of Wizard Peak will be advanced. The development of Wizard Peak would occur in

association with the continued operation and upgrading of the existing Geraldton Port, including a suitable access corridor for road and rail to link the port more directly with the industrial areas.

9.4 Residential Areas

The Greater Geraldton area benefits from an adequate supply of residential land in a variety of locations to accommodate the community's preferences and requirements. The character of the residential areas is diverse including the historic areas of Geraldton, early beach settlements at Bluff Point and recent coastal developments at Drummond Cove.

The residential areas include Special Residential areas which provide for the creation of lots between 2000m² and one hectare. Because Special Residential areas are less efficient in both the use of land and utilisation of services compared with conventional residential subdivisions, such zoning should be restricted and used only in special circumstances.

The City of Geraldton is substantially developed, however there are considerable opportunities for redevelopment and infill development, supported by the infill sewerage program. The City of Geraldton aims to retain the character of established areas by encouraging new development to reflect and enhance the historic style of the area. The city has prepared a housing strategy, entitled *Residential Development Policy*, which contains an analysis, objectives and prescriptive controls for each of 21 policy areas and five particular design precincts.

The Shire of Greenough is experiencing considerable expansion and determines applications in accordance with planning policies, having regard to servicing implications and the impact of linear development on the provision of community services.

9.4.1 Future Urban Development Areas

A) Shire of Greenough

Southgate Dunes

Residential development of the Southgate Dunes is constrained by environmental considerations. The development of land in the vicinity of the Southgate Dunes has been the subject of considerable investigation. In October 1994 Landrow, a company with significant landholdings north and south of the Greenough River, submitted a proposal to exchange its landholding south of the Greenough River with the Department of Land Administration (DOLA), which owns land to the north containing the Southgate sand dunes. Landrow proposes to stabilise and ultimately urbanise the Southgate Dunes. While this proposal is considered long-term, the principles, terms and conditions of the land exchange and dune stabilisation agreement between Landrow and DOLA have been agreed and this land has been included in the Structure Plan.

Waggrakine

The Waggrakine area is located east of Geraldton on Chapman Valley Road. The Waggrakine Guided Development Scheme, gazetted in 1982, provides for the development of approximately 1,750 residential (R12.5) lots. Development in the area has been limited to date. The Shire of Greenough proposes to initiate a scheme review to address development issues in the area.

Glenfield

The Glenfield area is situated to the north of Geraldton, east of old North West Coastal Highway. Council has recently prepared a structure plan for this area, which provides potential for the development of approximately 2,500 Residential R12.5 lots, 100 Residential R5 lots and 70 Special Business lots. Finalisation of the Structure Plan will increase the already substantial amount of land stock available to accommodate demand. While there are no major development constraints in the area, the rate of development is restricted by fragmented land ownership.

Wandina

The residential areas at Mt Tarcoola and Wandina are elevated, providing houses with expansive views of the coast and Champion Bay. The Wandina area is situated immediately south of the existing urban front with some stages of development completed. Wandina is expected to dominate medium-term development with capacity to develop a further 1,800 lots, predominantly on Homeswest land.

Rudds Gully

Proposals to rezone land in the Rudds Gully area have recently been approved. The estimated lot yield for the area is approximately 3,000 lots. The land, situated south of the Geraldton urban area with access from Brand Highway, is separated from the urban development front and structure planning is required prior to subdivision to assist the coordination of services and infrastructure. The council has initiated structure planning for the area.

Drummond Cove

Drummond Cove is situated north of Geraldton and west of the old North West Coastal Highway. Structure planning for the area was completed in the early 1990s with some stages developed. The site allows for the development of approximately 1,500 Residential lots and about 200 Special Residential lots. Drummond Cove has an extended coastal frontage and planning and development proposals are required to be consistent with coastal planning principles and policy.

B) City of Geraldton

Sunset Beach

Sunset Beach is located approximately seven kilometres north of Geraldton. Structure planning has recently been completed for the area, providing for the creation of approximately 1,050 lots. Sunset Beach can be readily serviced by a range of existing infrastructure and services.

If demand for the development of residential lots increases, this area would be considered a priority and development would be required to be consistent with coastal planning principles and policy.

C) Shire of Chapman Valley

Chapman Valley

Proposals have been prepared by landowners of the coastal strip between Drummond Cove and the Buller River mouth for a combination of Residential, Special Residential and Special Rural Development. Although remote, approximately 14 kilometres from the centre of Geraldton, the area is attractive for development. The Shire of Chapman Valley is preparing to undertake structure planning for the area. At the northern extremity of the urban area, it would be the closest and most convenient housing area to Oakajee. Given the impact that this has on the provision of infrastructure and community services, it is desirable to assess this in the context of the overall Structure Plan.

Residential Area Objectives

- To support development of a range of residential areas, coordinated with infrastructure and servicing.
- To support best practice urban design in the planning and development of new residential areas.
- To retain and enhance the existing historical character of established residential areas.
- To support consolidation and infill of residential areas.
- To consider expansion of residential development beyond the areas identified on the Structure Plan only where it is well justified.
- To protect the coast from environmental degradation.
- To support Special Residential development only where it is well justified in accordance with the Western Australian Planning Commission's *Special Residential Zone* DC2.5 and will not jeopardise the development of land otherwise strategically placed for residential development.

Residential Area Guidelines

- Require the preparation of local structure plans for new residential development areas prior to consideration of subdivision or rezoning proposals, to ensure adequate consideration of infrastructure issues, community facilities and environmental considerations. (LG, MfP)
- Promote the regional structuring principles and performance standards of the *Liveable Neighbourhoods: Community Design Code*, as appropriate. (WAPC/MfP)
- Assess design and development proposals for coastal developments in accordance with coastal planning principles and policies. (MfP)

- Assess special residential development proposals in accordance with the Commission's *Special Residential Zone Policy* DC2.5. (MfP, LG)

Recommendations

- Prepare district and local structure plans to ensure the coordinated and integrated provision of urban services and infrastructure. (LG)
- Update the *Geraldton Land Development Program*. (MfP)
- Review Waggrakine Guided Development Scheme. (LG - Greenough)
- Complete structure planning for future development areas including land south of Buller River, Glenfield, and Rudds Gully. (LG - Greenough)

9.5 Rural-Residential Areas

Rural-residential areas include the areas described as rural living and special rural. The rural-residential areas provide an alternative to conventional residential subdivision and an important part of the Greater Geraldton Structure Plan. It is important to avoid allocating excessive areas of land for rural-residential development to avoid land speculation and pressure for the provision of services and facilities that are difficult to provide economically. It is essential to identify areas for rural-residential development in physically suitable locations, where services can be easily provided, preferably as extensions to existing settlements, taking into account the existing land available for this form of development. The shires' local rural strategies provide a framework for assessment of rezoning proposals and subdivision applications.

Rural-residential areas, immediately to the east of the residential development areas in a band two to three kilometres wide, include Wooree, Eastlyn, Moresby, Moonyoonooka, Greenough coastal area (south of Cape Burney), Rudds Gully within the Shire of Greenough, and the Cooper Street Precinct and White Peak in the Shire of Chapman Valley. The larger lot sizes provide the opportunity for rural and recreational uses, such as horse riding and hobby farming, not accommodated in conventional residential subdivisions. The rural-residential areas relate to natural features, including the rivers and the Moresby Range.

The areas of Wooree, Moresby, Eastlyn, and the Cooper Street Precinct are well serviced by infrastructure and in reasonable proximity to community facilities. The development of these areas for small rural lot subdivision is unlikely to use land that would otherwise be suitable for standard residential purposes, given the availability and location of residential land elsewhere.

The Greenough coastal strip is currently subject to pressure for more intensive residential subdivision. Planning proposals for this area should be in accordance with coastal planning principles, acknowledging environmental, servicing and other issues.

Moonyoonooka is located to the east of Geraldton and to the north of the Geraldton/Greenough Airport. A number of rezonings enabling rural-residential development have recently been approved. Although some of the area is not within the rural-residential precinct of council's local rural strategy, the land has some merit for rural-residential development, including potential access to a reticulated water supply. It may be appropriate to consider inclusion of this area within a rural-residential precinct.

The area south of White Peak Road in the Shire of Chapman Valley has been identified as having potential for rural-residential subdivision. It has limited access to a reticulated water supply, but if the Oakajee development proceeds, reticulated water would be available to the area.

The absence of a reticulated water supply is a major issue for rural-residential development in the area. In other areas of the State, water supply can be supplemented by rainwater tanks; however, the low rainfall in the Geraldton Region means that rainwater must be supplemented by an alternative water supply, such as groundwater. The availability of groundwater resources in the area is unknown.

The Mid West Development Commission, the Ministry for Planning and Agriculture Western Australia have undertaken to identify groundwater resources in the area. This information will assist in determining future locations for rural-residential development.

Rural-Residential Area Objectives

- To retain opportunities for rural-residential living within Greater Geraldton.
- To exclude rural-residential development from productive agricultural land, areas containing important basic raw material deposits, potential service corridors, regionally significant landscapes, environmentally sensitive areas and areas suitable for future urban development.
- To develop land for rural-residential use in accordance with established environmentally sustainable practices to ensure that they are not prejudicial to neighbouring agricultural uses.
- To minimise the extent to which rural-residential development has an adverse impact on the environment and maximise the extent to which it enhances the environment.
- To give preference to further rural-residential development in existing settlements, or adjacent to existing settlements, or where public utility services (e.g. water, power, rubbish disposal), community services (shops, schools etc.) and employment opportunities, are available or can be economically extended, in order to avoid locations which create unnecessary additional demands.
- To give special consideration to the availability of water supply in determining locations for rural-residential development.

- To limit encroachment of rural-residential areas into areas that would otherwise be suitable for residential development.
- To encourage the development of open space systems through rural-residential areas.
- To select areas for rural-residential development which satisfy land capability requirements including slope, soil stability, soil erosion, effluent disposal and bushfire risk.
- To select areas for rural-residential development which are physically suitable (e.g. topographically varied, visually attractive, with distinct attributes such as creeks or water features, distant views, or uncleared land with substantial vegetation and/or trees).
- To avoid conflicts with agriculture and other incompatible land uses.

Guidelines

- Consider rezoning and subdivision of rural-residential areas in accordance with town planning schemes and local rural strategies. (MfP, LG)
- Review local rural strategies. (LG)
- Develop the land south of Cape Burney, on the coastal strip, in accordance with the Guidelines for Rural Development South of the Greenough River Mouth. (LG - Greenough)
- Assess impacts on existing or potential agricultural and rural uses on the edge of residential areas and include suitable buffers to reduce potential conflicts. (MfP, LG)

Recommendations

- Complete the Chapman Valley groundwater investigation, coordinated by the Mid West Development Commission. (MWDC, AgWA)

9.6 Rural Areas

Rural land surrounds the Greater Geraldton urban area and accommodates a mix of rural activities. There is pressure for portions of the rural area to be developed for special rural uses, tourism development and other non-rural uses as a result of its location and physical characteristics.

Given the location and proximity of rural lands to Geraldton, it is likely that the areas near the Greater Geraldton urban area will experience pressure for the development of more intensive forms of agriculture. There has been some discussion about the development of viticulture and an associated wine industry to the east of Geraldton particularly, where water is available and soils are suitable. There also has been interest in the development of various aquacultural enterprises in the area.

Agricultural diversification, particularly related to horticulture, has economic potential for the region. It is therefore important that prime agricultural lands are protected in order to provide opportunities for agricultural diversification.

In considering proposals for Special Rural development, it is important to avoid land with high capability for agriculture. Consideration should also be given to the buffer requirements and likely impacts of intensive agriculture on nearby residential development and broadacre farmland. Consideration should also be given to conflicts that may occur between different agricultural uses.

Rural Area Objectives

- To exclude Special Rural development and subdivision from productive agricultural areas, areas containing basic raw material deposits, potential service corridors, regionally significant landscapes and other environmentally sensitive areas.
- To discourage removal of productive agricultural land from existing or potential production and prevent adverse effects on the productivity of established or potential agricultural industries.
- To identify and protect areas productive agricultural land of State and regional significance.
- To provide for the establishment of appropriate uses ancillary to the rural use of land.
- To facilitate the introduction of new rural economic activities.
- To provide for a range of lifestyles and activities in rural areas.
- To provide satisfactory services and infrastructure to rural areas at reasonable cost to the community.
- To provide for the protection of life and property within and around rural communities.
- To minimise the extent to which development has an adverse impact on the environment and maximise the extent to which it enhances the environment.
- To conserve the key natural resources such as water, soils, minerals and areas of ecological significance and protect them from land use or land management practices which lead to their degradation or destruction.
- To avoid conflicts with agriculture and other incompatible land uses.

Guidelines

- Consider rezoning and subdivision of rural land in accordance with land capability requirements including slope, soil stability, soil erosion, effluent disposal and bushfire risk. (LG, MfP)

- Discourage subdivision and development of productive agricultural land, areas containing important basic raw material deposits, potential service corridors, regionally significant landscapes and other environmentally sensitive areas. (LA, MfP, AgWA)
- Assess impacts on existing or potential agricultural and rural land uses on the edge of residential areas and include buffers to reduce potential conflicts. (LA, MfP, AgWA)
- Use land use planning processes to integrate actions for addressing land management and rehabilitation needs (LA, MfP)
- Identify and delineate areas of agricultural significance. (AgWA, MfP, LA)

Recommendations

- Complete landscape assessment of regionally significant features, including Chapman River Valley and the Moresby Range. (MfP, LGs, CALM, AgWA, DEP)

9.7 Infrastructure - Public Utilities

The Structure Plan identifies public utility sites, including water reservoir sites, wastewater treatment sites, to service the Greater Geraldton area.

9.7.1 Water Supply

A number of water reservoir sites have been identified on the Structure Plan.

The Water Corporation is finalising a Water Supply Scheme Review for Greater Geraldton. The review includes assessment of source development and transfer options to support township growth and also the AFKS and Mt Gibson Iron projects.

There are no water supply infrastructure constraints to short-term development. Detailed planning is in place for additional infrastructure to support land development.

9.7.2 Wastewater

Three main wastewater treatment sites are identified for Greater Geraldton. The northern corridor is serviced by a site in West Glenfield. Central Geraldton is served by the east Wonthella site while the southern corridor is served by a site adjacent to the Southgate sand dunes at Cape Burney.

The Water Corporation advises it may review the Geraldton Wastewater Scheme to incorporate additional long-term development areas included on the Greater Geraldton Structure Plan. The review will identify the capacity and timing for future upgrades to treatment plants. This is in addition to the current programmed upgrade of the main Geraldton No. 2 plant over the next 24 months.

To date approximately 1,500 lots within the City of Geraldton have been serviced by the 10-Year Infill Sewerage Program, with a further 2,300 lots tentatively programmed for servicing in the city and adjoining Shire of Greenough through to 2001.

Future growth areas of Glenfield, Waggrakine, Sunset Beach and Wandina require the provision of major wastewater infrastructure. Developers are required to negotiate acceptable staging options and consider proposals to review the timing of the Infill Sewerage Program to facilitate development proposals.

Further discussion with DRD, LandCorp, local government and the Water Corporation regarding the proposed wastewater treatment works site south of the proposed Oakajee industrial area is required to ensure that the site is appropriately located.

The currently defined buffer areas are based on experience with existing facilities and some air dispersion modelling work at some locations in Western Australia, as well as on experience with odour control measures. These buffers are based on normal plant operation, and odour nuisance may be experienced outside these areas under exceptional conditions of plant failure e.g. power failure. The buffer areas shown indicate current Water Corporation requirements. Refinement of these limits is continuing on the basis of air dispersion modelling (Ausplume) where possible, and on the application of odour control measures at the treatment facilities.

No residential uses are proposed within the buffer area. Possible land uses within the buffer areas include non-residential purposes such as industrial and parkland development and recreational uses such as golf courses determined as part of the rezoning, subdivision and development process.

9.7.3 Regional Waste Disposal

The regional waste disposal site, identified on the Structure Plan, is located adjacent to the Narngulu Industrial Estate and will accommodate future requirements of the urban area. The facility currently receives domestic waste but is identified as a Class IV facility which has the potential to accommodate other types of waste, subject to approval of the Regional Council that manages the facility. The provision of a landscape buffer at the periphery of the site is recommended to screen the facility.

9.7.4 Energy

Western Power indicates there are no servicing constraints to new urban development as the feeder network is installed as subdivision occurs and the supporting high voltage system upgraded to support additional demand as required.

Future industrial demand has the greatest influence on Western Power's network capacity. The opportunities and impacts of power generation by an independent power producer associated with development at Oakajee are undefined. Planning has made provision for additional substations at Narngulu and Point Moore to support potential industrial development if required.

Provision of gas services to new areas is considered discretionary. Although AlintaGas's Business Plans are

generally in line with broad land use strategies prepared or endorsed by the WAPC, gas supplies to new areas will only be made in a way that meets AlintaGas's criteria for both economic justification and operational requirements.

Infrastructure - Public Utilities Objectives

- To ensure adequate provision of water and sewerage services to accommodate future expansion of the regional centre, including residential, commercial and industrial development.
- To continue to support the infill sewerage program and urban consolidation.
- To support the development of land that can be serviced by existing infrastructure or economic extension of services.
- To maximise use of the existing infrastructure to limit the requirement for uneconomic development of additional infrastructure and facilities.
- To minimise the number of service corridors (which in turn will reduce the impact on landowners) by planning for a multi use railway and services corridor between Narngulu and Oakajee.
- To establish compatible land uses and development within buffer areas consistent with the *State Industrial Buffer Policy* gazetted in May 1997.

Guidelines

- Assess rezoning, subdivision and development applications with respect to buffer area requirements. (LGs, MfP)
- Liaise with all stakeholders to determine the most appropriate location for future wastewater treatment plants. (LGs, MfP, DEP, WC)
- Encourage urban consolidation and development of areas serviced by existing infrastructure. (MfP, LGs)
- Base standards for the required infrastructure and other reserves (including buffer areas) on optimum, rather than minimum standards, where possible.
- Identify and protect future infrastructure and other reserves by appropriate planning mechanisms. (LGs, MfP)

Recommendations

- Refine the wastewater treatment plant buffers on the basis of air dispersion modelling (Ausplume) where possible, and on the application of odour control measures at the treatment facilities. (WC)
- Determine the design and location of the Oakajee wastewater treatment plant in consultation with all affected stakeholders. (LG, LandCorp, DRD, WC, DEP, MfP)

- Continue to investigate the feasibility of establishing an infrastructure corridor between Narngulu and Oakajee to accommodate transport and service requirements. (DRD, LGs, MfP, Westrail)
- Assess the Structure Plan to determine future land requirements for services, so these can be incorporated into the planning process as soon as possible. (All agencies)
- Update the infrastructure component of the *Geraldton Land Development Program*. (MfP, LGs, Servicing Agencies)

9.8 Transport

9.8.1 Roads

The Structure Plan considers the regional road network which includes district distributor roads and above, to service the development anticipated within the time frame of this plan.

- **Primary Distributor Roads**

Primary distributor roads provide the major road connections between the main centres in the region and in the surrounding areas.

Primary distributor roads are at the highest level of the road hierarchy and form the principal through routes for traffic. Where practical, they are designed as limited access roads, in reserves of 40 metres or wider where topography requires. Older primary distributor roads within urban areas have often developed in a narrower reserve and with direct access to abutting properties.

- **District Distributor Roads**

District distributor roads provide road connections to lesser centres within the region and within urban areas.

District distributor roads are important roads which provide direct access for traffic and facilitate movement between land uses. The desirable reserve requirements for district distributor roads vary depending on the function of the road. Road reserve widths of 40 metres are recommended for industrial district distributor roads to allow added flexibility for road design to accommodate trucks and other heavy vehicles. Urban district distributors are recommended to be 30 metres wide, however, where these pass through built-up areas minimum standards for road reserves should be 24 metres mid-block and 28 metres at intersections.

- **Local Distributor Roads**

Local distributor roads provide the road connections from the district distributor road network into individual land use areas.

Local distributor roads should not carry significant proportions of through traffic. They also generally provide direct access to abutting properties.

The Structure Plan does not show local distributor roads as these would be designed as part of local and district structure plans.

- **Access Roads**

Access roads provide direct access to individual properties and provide road connections to the local distributor and district distributor road network.

9.8.2 Primary Distributor Roads

The major traffic movement in the Structure Plan area is in a north-south direction. The existing primary north-south route is formed by Brand Highway and North West Coastal Highway. The Structure Plan proposes a variation to the primary route between the intersection of Webberton Road and North West Coastal Highway and Brand Highway near Cape Burney. The proposed primary route utilises the railway reserve between Webberton Road and the Geraldton - Mt Magnet Road. The realignment of the primary route between Webberton Road and Cape Burney will provide a bypass of the inner commercial area for through traffic. This road would replace Brand Highway and North West Coastal Highway as the primary distributor road.

The primary east-west route on the Structure Plan is formed by the Geraldton - Mt Magnet Road, the realignment of Geraldton - Mt Magnet Road west of the airport, an alignment north of the Meru landfill site and Port Way. Appropriate traffic control measures will be used along Eastward Road and the Geraldton - Mt Magnet Road to encourage traffic destined for the port to use the new alignment.

The Geraldton Region Traffic Modelling Study recommended Utakarra bypass as the primary east-west connection into the port and the city centre. However, this was not supported because of concern about the social impact of the bypass and the southern transport corridor on the amenity of the adjoining residential areas.

The Geraldton Region Traffic Modelling Study also recommended that North West Coastal Highway be monitored and a detailed study undertaken if the requirements appear likely to exceed four lanes. This study should consider traffic, social, environmental and economic issues.

9.8.3 District Distributor Roads

A number of existing district distributor roads in the City of Geraldton which will require upgrading and a number of new district distributor roads in the Shire of Greenough are proposed on the Structure Plan.

The Structure Plan shows sections of the existing Brand Highway, North West Coastal Highway and Geraldton - Mt Magnet Road as district distributor roads where their current primary district distributor road function will be taken over by the new primary routes described above. Appropriate district distributor roads would also be required if Wizard Peak was developed as an industrial estate.

Each of the proposed new district distributor roads and upgrades to the existing district distributor roads identified, were the subject of investigations carried out during a traffic modelling exercise.

Further evaluation will be required to identify the final alignment and form of these district distributor roads.

9.8.4 Railways

The existing railway from Narngulu to the port traverses Utakarra, Wonthealla and Webberton and then loops southwards along the edge of the beach past the city centre to the port. The existing alignment along the beachfront is considered by some sectors of the community to be detrimental to the amenity of the city and has been a catalyst for the review of road and rail access to the port.

Relocation of the railway would enable productive use of the railway reserve through Utakarra, Wonthealla, Webberton and the northern part of Beresford to form an alternative primary north-south road link, providing a bypass of the inner commercial area for through traffic.

9.8.5 Oakajee Railway, Road and Services Corridor

The alignment of the road, railway and services corridor between Narngulu and Oakajee is shown on the Structure Plan. The alignment is based on preliminary analysis by Westrail in consultation with the Department of Resources Development and local government. This corridor would provide the opportunity to develop a railway and accommodate services which may be required for the Oakajee industrial estate.

The Department of Resources Development is proceeding with investigation into a 250 to 480 metre wide multi-use services corridor to accommodate short, medium and long-term transport and service requirements. The width of the corridor will be determined by the Minister for the Environment. An environmental assessment has been prepared for the corridor and provides for consideration of visual amenity issues such as the siting of power lines.

9.8.6 Public Transport

The current route plans provide adequate coverage of the major populated areas of Greater Geraldton. At present public transport services north to the Sunset Beach and Waggrakine areas are restricted and services to the south currently terminate at Mahomets Flats. Further development at Drummond Cove and Wandina will necessitate a review of the current routes, in consultation with the bus companies, Department of Transport, local governments and the community.

The Geraldton Bus Service advises it is currently undertaking a fleet modernisation program, replacing two buses annually. The service is also due to take delivery of two new low-floor buses to assist the disabled and elderly.

Consideration may be given to developing a public transport spine road in the old alignment of the North West Coastal Highway in the northern corridor and the Brand Highway in the southern corridor. With the northern and southern urban corridors being only two kilometres wide, these two roads will be nearly central to the future extent of residential development.

9.8.7 Walking and Cycling

The flat topography of the Greater Geraldton urban area makes it ideal for walking and cycling. The regional pedestrian and cycle path system should be used to connect with local pedestrian/cycle paths and should be integrated with the main public transport spine along the old North West Coastal Highway in the northern corridor and Brand Highway in the southern corridor. As urbanisation develops along the corridors, a continuous dual-use path should be built along the foreshore the entire length of the urban corridors, from the Greenough River mouth in the south to the Buller River mouth in the north. The development cycleways should have regard to a range of issues including environmental, aesthetic and public safety. Provision for pedestrian/cycle paths along the foreshore has been made in most of the local structure plans in the Shire of Greenough and the City of Geraldton. The *Geraldton/Greenough Bike Plan - 1995 Study Review* was developed in consultation with Bikewest (DOT) and endorsed by the City of Geraldton and the Shire of Greenough.

9.8.8 Geraldton Port

The importance of the Geraldton Port to the economy of the region is recognised and the Structure Plan includes proposals for adequate and effective road and rail access to ensure that the port continues to operate in the long term.

Planning for future development of the port should involve all stakeholders to ensure that the use of the existing infrastructure is maximised. The rationalisation of land use and the retention of land around the port for direct port activities is supported. The tourism and recreational values of the port area are also recognised.

9.8.9 Geraldton Airport

The Geraldton Airport, operated by the Shire of Greenough, is strategically situated to serve the needs of the Greater Geraldton urban area for the foreseeable future. Planning of the surrounding industrial areas should ensure minimum interference with flight paths of the aircraft using the facility. The noise exposure contours are included on the Structure Plan. The contours provide land use compatibility advice for land in the vicinity of the airport.

The alignment of the railway and multi-use service corridor, shown on the Structure Plan encroaches into the airport reserve. A study which investigated the possible impact of the railway, road and services corridor on the upgrading and future development of the airport has been completed and indicated that the proposal will not prejudice upgrading and future development of the airport.

The consultant preparing the airport master plan advised that:

- Railway development would not affect the future (Master Planned) development of the Geraldton Airport.
- Height limitations of approximately 9 metres would apply to the construction of structures in the service corridor at the point of intersection with the Geraldton Mt Magnet Road, such as signal heights, bridges, power poles and lights.

- Queued traffic on the Geraldton - Mt Magnet Road and following stock on the rail would be classified as structures and their heights also critically assessed in approach/take off gradient determination.
- Height limitations will apply to all future developments within the Obstacle Height Limitations Surfaces for the Geraldton Airport and all future construction, be it rail or high tension power lines, along the entire service corridor route will need to consider this airport requirement.
- The proposed service corridor will affect the existing Geraldton - Mt Magnet Road that lies within the approach inner edge of the two runways, because of the serious height limitations available at this point.
- Evaluation of the options available for the re-alignment of the Geraldton - Mt Magnet road should be undertaken.

Transport Objectives

- To facilitate coordination and a consistent approach to transport planning throughout the area.

Roads

- To provide a series of road network initiatives that provides adequate capacity to cater for the demands for travel in Greater Geraldton.
- To upgrade North West Coastal Highway, including requirements for Oakajee if the development proceeds.
- To achieve consistent road design standards, reserve widths and road alignments throughout the region.
- To provide suitable alternative access arrangements aimed at reducing the interaction of through traffic and heavy vehicles with other road users and to minimise the impacts of these vehicles on urban areas.

Railways

- To utilise the railway reserve through Utaakarra, Wonthella, Webberton and the northern part of Beresford as part of the primary north-south route following relocation of the railway from the foreshore.
- Continue to investigate the feasibility of establishing an infrastructure corridor between Narngulu and Oakajee to accommodate road, rail and service requirements.
- To consider the visual amenity impacts, such as the siting of power lines in the development of the Narngulu to Oakajee rail and services corridor.

Public Transport

- To identify the public transport system as a component of the overall transport network.

- To develop a continuous dual-use path along the foreshore the entire length of the urban corridors, from the Greenough River mouth in the south to the Buller River mouth in the north.

Pedestrian Cycleway System

- To review the 1995 Geraldton/Greenough Bike Plan to integrate with the proposed local and district distributor road links.
- To define and develop a regional pedestrian and cycle path system, integrated with local pedestrian/cycle paths and the main public transport spine along the old North West Coastal Highway in the northern corridor and Brand Highway in the southern corridor.
- To develop cycleways with regard to a range of issues including environmental, aesthetic and public safety considerations.

Airport

- To protect the existing airport operation and future requirements.
- To accept the future expansion of the airport as having precedence over any general or light industrial rezoning, which includes height limitations.

Geraldton Port

- To maximise use of the existing port infrastructure.
- To support rationalisation of land use and retention of land around the port for direct port activities.
- To provide adequate and effective road and rail access to Geraldton Port.
- To maintain and enhance the tourism and recreational values of the port area.
- To support the implementation of the southern transport and services corridor subject to social, environmental and financial approval.
- To involve all key stakeholders in future planning of the port.
- To ensure adequate port access and transport linkages between the Geraldton Port and industrial sites.

Guidelines

Roads

- Support development of the primary routes to minimise interaction of heavy vehicles with the existing urbanised areas. These should be promoted through general traffic management measures on the existing routes such as Eastward Road and North West Coastal Highway. (MRWA, LGs)
- Support the use of traffic control measures to encourage the use of the proposed realignment of the Geraldton - Mt Magnet Road for through traffic. (MRWA, LGs, MfP)

- Rationalise existing direct lot access and prevent future access to primary roads in accordance with Main Roads WA policy. (MRWA, LGs)

Recommendations

Roads

- Define primary road alignments shown on the Structure Plan. (MRWA, MfP, LG)
- Complete assessment of the proposed primary north/south southern road between North West Coastal Highway and Brand Highway. (MRWA, DOT, LGs, MfP)
- Define district distributor road connections to the CBD road network. (MfP, LG, MRWA)
- Upgrade portion of North West Coastal Highway in accordance with the Main Roads WA program. (MRWA)
- Further investigate requirements of North West Coastal Highway when more detailed projections of the level of industrial development becomes available to determine if requirements are likely to exceed four lanes. (MRWA, LGs, MfP)
- Review transport initiatives identified when more information is available and the relative levels of development become more evident. (MfP, DOT, MRWA, LGs)

Railways

- Complete assessment of the railway, road and services corridor between Narngulu and Oakajee. (DRD, Westrail, DEP, LGs)

Public Transport

- Identify regional public transport corridors as the basis for development of future systems. (DOT, LGs)

Pedestrian Cycleway System

- Identify regional pedestrian/ cycleway systems integrated with local structure plans. (DOT, LGs)
- Review the Geraldton/Greenough Bike Plan. (DOT, LGs)

Geraldton Port

- Initiate a coordinated and integrated approach to planning for the port involving all key stakeholders to address:
 - options for port development which recognise regional requirements;
 - port access; and
 - development proposals for land associated with the port. (GPA, LGs, DOT)
- Undertake investigation to rationalise road vehicle movements in the port area, north of Shenton Street. (GPA, DOT, MRWA, LGs)

Airport

- Define the airport buffer to protect existing and future operations and development plans in accordance with the airport management plan. (LG, DOT, MfP)

9.9 Recreation, Landscape and Conservation Areas

The Greater Geraldton urban area has relatively limited areas of publicly owned regional open space in comparison to other major urban settlements, including the Perth Metropolitan Region. This has resulted from the land surrounding the urban areas having been used productively for farming for many generations.

The 1976 *Geraldton Region Plan* proposed about 9,500 hectares of regional open space covering the Moresby Range, the Buller River mouth and land around the Greenough River mouth.

The 1989 draft *Geraldton Region Plan* proposed the Moresby Range and the Chapman River Valley as landscape protection zones and recommended that parts of the range with tourism and recreation potential be acquired. The implementation of these recommendations has been limited.

The categories of open space shown on the Structure Plan are not proposed reserves, nor is it intended that all the land be acquired. The Structure Plan shows areas such as the Moresby Range and Chapman River Valley to form the basis for further study and community consultation towards formulating a comprehensive approach to protecting natural features in the region which the community considers important to its heritage.

9.9.1 Existing Parks and Recreation Reserves

The existing parks and recreation reserves shown on the Structure Plan are taken from the current town planning schemes. They form the starting point of the proposals which are discussed below to create an integrated system of open spaces, landscape protection areas, conservation areas and recreation areas.

The City of Geraldton and the Shire of Greenough are currently undertaking a number of studies aimed at rationalising the existing parks, recreational reserves and river and ocean reserves to provide a functional and manageable "open space plan". These include preparation of a strategy for the Chapman River Regional Park and a public open space strategy. The preparation of these strategies is essential for the protection and management of the area's natural resources.

9.9.2 River Corridors

The 1976 and 1989 draft Geraldton Region Plans emphasised the importance of the major rivers as landscape and open space features in the region. The Structure Plan has identified about 1,520 hectares along the Chapman River and its tributaries, 64 hectares along the Buller River and 240 hectares along the Greenough River as the important elements of open space.

The Chapman River has a narrow valley and riverbed fairly well incised into the surrounding plain. Most of the remnant vegetation along the river is confined to the valley slopes and floor. The valley is approximately 160 metres wide from the top of the banks. Agriculture has generally extended to the edge of the banks. Further investigation is required to determine the reserve width along the river.

9.9.3 Foreshore Reserves

Foreshore reserves on the Structure Plan are a combination of existing foreshore reserves in the current town planning schemes and local structure plans. The formulation of the Batavia Coast Regional Planning Strategy will assist in defining appropriate management strategies for areas of significance along the coast.

9.9.4 Urban Bushland

Conservation of the remnant urban bushland in the Greater Geraldton urban area is an important objective and as a general principle, the retention and even the restoration of urban bushland should be encouraged as it provides relief and contrast in the urban environment. From an ecological perspective, it is especially important for wildlife thereby adding amenity and nature within the city limits. Further assessment is required to determine the extent and significance of urban bushland and the most appropriate methods for its protection.

9.9.5 Moresby Range

The Moresby Range was identified in both the 1976 and 1989 region plans for Geraldton. As a result of these recommendations, the Moresby Range Management Committee was formed early in 1996 to examine the land management requirements for the range. The committee is currently preparing a land management strategy for the range which has the following aims:

- To determine the extent and regional significance of the range.
- To define a system of land management for the range.

The 1976 plan identified approximately 5,000 hectares of the Moresby Range as future open space while the 1989 plan identified the range as a landscape protection area with recommendations that areas with recreation and tourism potential be acquired.

The area shown on the Structure Plan is derived from mapping undertaken by Agriculture WA in its Geraldton Land Resources Survey No. 13 (1990). Agriculture WA used both landform and soil type to define land units or systems in the Geraldton Region. This definition was used as a starting point for the strategy because it incorporates both the main factor influencing landscape (i.e. landform) and a major factor influencing agricultural land use (i.e. soil type). The area defined includes land further east, north and south of the common perception of the range, and includes the gently inclined footslopes which surround. Some of the areas have high conservation value and others have agricultural, landscape, tourism, recreational values. For the purpose of preparing the management strategy, the Moresby Range Management Committee has reduced the study area to exclude some of the outlying areas.

The committee is currently investigating methods of protecting the special characteristics of the range. The area shown on the plan does not imply future zoning or acquisition.

9.9.6 Regional/District Recreation Facilities

There are two major recreational areas in the Structure Plan area, at Spalding Park and Wonthella. Spalding Park is fully developed, with limited opportunity for expansion. The Wonthella site has potential to be expanded east to the existing railway site following the closure and rehabilitation of the waste disposal site.

Recreation, Landscape and Conservation Area Objectives

- To create an integrated system of open space, landscape protection areas, conservation areas and recreation areas to accommodate local and regional requirements.

Guidelines

- Support the preparation of the Batavia Coast Regional Planning Strategy to formulate regional planning and management policies for the coast. (MfP, LGs, CALM, Fisheries, AgWA, DEP, MWDC)
- Support the development of regional recreational facilities at Wonthella and Spalding Park. (MfP, LGs)

Recommendations

- Establish committees to formulate strategies to protect natural features in the region which have environmental, cultural, recreational or landscape significance. (MfP, LG, CALM, AgWA)
- Undertake further studies to identify appropriate management strategies for the protection of the Chapman, Greenough and Buller River Valleys. (LGs MfP, WRC, other agencies)
- Prepare a management strategy to protect the landscape value of the Moresby Range. (MfP, LG, AgWA, CALM, DEP)
- Compile an inventory of the extent and significance of urban bushland and the most appropriate method for its protection. (LG, MfP, AgWA, CALM)
- Finalise and implement a land management strategy for the Chapman River Valley, including definition of the width of the reserve in the Shire of Greenough. (LG, MfP, WARC)
- Finalise and implement the City of Geraldton public open space strategy. (LG)

9.10 Commercial Areas

The 1998 Land Use Survey identified that the major commercial complexes - the Geraldton City Centre and Northgate Centre are almost fully developed with only about 5 percent of the complex's land remaining vacant. Most of the vacant commercial land was located in smaller complexes. Geraldton, like the other regional centres, has the majority of the working population employed in Shop/Retail and Office/Business uses.

9.10.1 The City Centre

The city centre is the main focus of retail, administrative, cultural, community, entertainment, educational and recreational activity in the Geraldton Region. The 1997 Geraldton Land Use Survey found 438 commercial establishments employing over 1,900 people in the city centre. The centre should also be the focus of the public transport network and the main location of public sector office development. To maintain its importance, the city centre should be clearly defined, offering a range of services accessible from all major parking locations. Further development of the Anzac Terrace precinct for core retail activity, offices and showrooms will consolidate the city centre into four city blocks. The development of the marina should be a catalyst for rejuvenating the foreshore precinct.

The area includes the significant core areas centred on Marine Terrace/Chapman Road, the Northgate Shopping Mall and other areas of existing or potential business activity and civic significance to form a recognisable city centre.

The city proposes to prepare a Central Business District (CBD) Development Strategy encompassing CBD planning policies, traffic, parking, heritage, townscape and other miscellaneous issues (e.g. location of public toilets).

9.10.2 District Centres

There are no district centres in the Greater Geraldton area. A discount department store providing general merchandise should be the largest retail component of a district centre with development focused towards convenience goods and retail uses. The draft Geraldton-Greenough *Retail and Services Strategy* proposes a discount department store-based centre to be located north of the town centre. Population growth is unlikely to warrant full development of the centre in the short to medium term. The plan recommends that the future district centre be located in an area which can efficiently service future residential areas and complement the city centre.

9.10.3 Neighbourhood Centres, Local Centres, Corner Stores

Neighbourhood centres, local centres and corner stores include a range of retail and community facilities, with an emphasis on day-to-day needs of the neighbourhood. The size and the range of facilities should be related to the size and characteristics of the population they serve. The development of the lower order centres is controlled by the local town planning schemes and these centres are not identified on the Structure Plan.

Commercial Area Objectives

- To recognise and promote the Geraldton city centre as the focus for retail, administrative, cultural, community, entertainment, educational, religious and recreational activity in the Geraldton Region.
- To recognise and promote the Geraldton city centre as the focus for public transport and pedestrian and cycleway systems.
- To support further development of the Anzac Terrace precinct for retail, offices and showrooms to consolidate the city centre into four city blocks.
- To support the marina development and redevelopment of the foreshore area.
- To encourage redevelopment of the West End precinct for mixed uses including retail, tourist, office and restaurant uses.
- To expand retail development, to include a district centre, as population increases.
- To ensure that the location of neighbourhood centres are related to the district and local distributor road system.
- To locate the future district centre in an area which can efficiently service future residential areas and complement the city centre.

Recommendations

- Assess the most appropriate location for a district centre in accordance with population growth. (LG, MfP)
- Finalise, adopt and implement the recommendations of the Geraldton - Greenough *Retail and Services Strategy*. (LG - City of Geraldton)
- Define district distributor road connections to the CBD road network. (MfP, LG, MRWA)
- Prepare a CBD Development Strategy encompassing CBD planning policies, traffic, parking, heritage, townscape and other miscellaneous issues. (LG - City of Geraldton)
- Prepare and implement a townscape strategy for the Geraldton city centre. (LG, City of Geraldton)
- Implement the City of Geraldton car parking strategy. (LG, City of Geraldton)
- Update the commercial and tourism land supply component of the *Geraldton Land Development Program*. (MfP, LG)

9.11 Industrial Areas

Geraldton's economic base has a strong industrial foundation similar to Bunbury and Kalgoorlie regional centres. Industrial land uses are commonly defined by three Planning Land Use Categories:

Manufacturing/Processing/Fabrication, Storage/Distribution and Service Industry. Notably Storage and Distribution land uses occupy nearly one-third of all floorspace in Geraldton and is the highest for any regional centre.

The Geraldton Land Use Survey recorded 1,114 hectares with vacant land amounting to 244 hectares (22 percent). Narngulu contained the most vacant industrial land in the region with 146 hectares. However, much of this land is constrained and was already 80 percent committed by late 1995 to a diverse range of industries. Webberton is an industrial area with 71 hectares measured as vacant at the time of survey.

The Structure Plan identifies areas of mixed business, light industry, general industry and port industry uses.

9.11.1 Mixed Business/Light Industry

The light industry/mixed business category used on the Structure Plan is intended to include a wide range of commercial and industrial uses, including bulk and quasi-retailing, showrooms, service and light industry. These land uses have the same locational requirements as large shopping centres i.e. visual exposure and regional accessibility. Convenience to the public is essential.

The Structure Plan includes existing light industry/mixed business at north Webberton, Wonthella and in the triangle formed by the existing railway and the Geraldton - Walkaway Road, adjacent to the Shire of Greenough administration centre.

Additional light industry/mixed business has been proposed on the Structure Plan. In the northern corridor, consideration has been given to an area of light industry/mixed business within the buffer area of the west Glenfield wastewater treatment works. There may also be potential to develop light industry and mixed business in the southern corridor adjacent to the Cape Burney wastewater treatment works, given the accessibility and exposure of this area from Brand Highway.

An area of light industry is proposed at Beachlands as a buffer between the residential areas and the port. This area is currently undergoing transition from residential to light industrial and mixed business uses.

9.11.2 General Industry

Two existing areas of general industry are shown on the Structure Plan at Webberton and Narngulu.

Two areas of future industry are shown on the Structure Plan at Webberton/Wonthella and at Narngulu. The extension of the Webberton industrial area southwards into east Wonthella was proposed in the 1989 draft *Geraldton Region Plan* and is intended as a buffer use between residential development to the west and the Wonthella wastewater treatment works on the east.

9.11.3 Narngulu Industrial Estate

The Narngulu Industrial Estate was established in the early 1970s to provide a site for general industries in the Geraldton area. A range of mineral and animal product industries, together with smaller light and general industries, have since established on the estate. At the same time, residential subdivisions have been proceeding in proximity to the estate. Some of these industries would normally be regarded as heavy rather than general industry, suggesting the need to review the current zoning provisions to ensure that appropriate development occurs in the area.

Development Areas

The Structure Plan recommends that Council's town planning scheme provisions relating to development areas be applied to guide subdivision and development of land within the buffer. The Shire of Greenough town planning scheme provisions relating to development areas require comprehensive planning including the preparation and approval of an overall plan to provide for the orderly subdivision and development of the land. The Structure Plan proposes the following:

- **Area A - Future Light Industry**

This area is General Farming and will be considered for future light industry, consistent with its location on the future entry road into Geraldton. The development of the area as a business park rather than a conventional light industrial area would be encouraged given its location on the future entry road and adjacent to residential areas.

- **Area B - General Farming**

This area will be retained as General Farming only and will not be considered for light industrial uses.

- **Area C**

The land north of the eastern railway line will be retained as General Farming with potential for future light industry. The land south of the eastern railway line will be retained for General Farming only and will not be considered for future light industry.

- **Area D - General Farming - Long-Term Light Industry.**

This area will be retained as General Farming and with potential for long-term light industry. Given the amount of light industrial land available, the development of this area for light industry would be unnecessary in the foreseeable future.

9.11.4 Oakajee

The Oakajee industrial site is located approximately 20 kilometres north of the Geraldton central business district and encompasses about 1,100 hectares of core industrial area and 2,500 hectares (approximately) of buffer. Oakajee was first identified as a potential strategic industrial site in the 1976 *Geraldton Region Plan* and again in the 1989 draft *Geraldton Region Plan*. The *Industry and Port Sites Study* recommended that the investigation into the suitability of Oakajee for industrial development be completed to determine if the area is suitable for the development of heavy industry.

Major industrial proposals suggested to the south of Geraldton at Narngulu and Wizard Peak emphasised the need to complete the investigations into Oakajee, to ensure that industry is established in a location which facilitates economic development without adversely affecting community development. The Government, in March 1998, announced that it had successfully determined the economic, technical and environmental feasibility of the Oakajee concept including the deepwater port.

There is sufficient area in the estate to accommodate industry and buffer requirements, with potential for further expansion to the north. The site also offers potential to develop a deepwater port facility. A buffer which is suitable for the proposed pioneer industries has been identified for the estate however, based on EPA advice, the Minister for the Environment has been requested to determine the location for the ultimate buffer of the estate.

Servicing agencies have undertaken preliminary assessment of services required for the estate, including wastewater treatment sites, gas, electricity, water and transport.

9.11.5 Wizard Peak

Wizard Peak is identified on the Structure Plan, however its development would be pursued only if Oakajee does not proceed.

A preliminary study indicates that Wizard Peak would be suitable for the development of heavy industry. The industrial estate shown on the plan extends over an area of approximately 1,650 ha, including a 450 hectare site identified for the Mount Gibson Iron project.

The development of heavy industry at Wizard Peak would be partly constrained by the Obstacle Limitation Surface associated with the airport. The expansion of the airport would take precedence over any industrial zoning proposals.

Industrial Area Objectives

Mixed Business/Light Industry

- To retain and rationalise land adjacent to the Geraldton Port for port-related uses.
- To retain Wonthella and Utakarra industrial areas for light industry/mixed business consistent with their proximity to residential areas.

Narngulu

- To preserve the integrity of the Narngulu Industrial Estate for General Industry, recognising that this area will provide the only source of General Industry zoned land close to Geraldton in the short to medium term.
- To recognise airport requirements, including obstacle height limitations, will take precedence over general or light industrial rezoning.
- To retain Narngulu for general industry consistent with EPA requirements.
- To protect the integrity of the Narngulu Industrial Estate with appropriate buffers.

- To prevent residential and incompatible uses in industrial buffers.
- To prevent expansion of General Industry west of the existing zone.
- To support planning for the Development Areas as follows:

Area A - Future Light Industry

This area is General Farming and will be considered for future light industry, consistent with its location on the future entry road into Geraldton.

Area B - General Farming

This area will be retained as General Farming only and will not be considered for light industrial uses.

Area C

The land north of the eastern railway line will be retained as General Farming with potential for future light industry. The land south of the eastern railway line will be retained for General Farming only and will not be considered for future light industry.

Area D - General Farming - Long-Term Light Industry

This area will be retained as General Farming and with potential for long-term light industry.

Wizard Peak

- To protect Wizard Peak as a possible future heavy industrial estate only if Oakajee does not proceed.
- To acknowledge that development of Wizard Peak would be affected by the airport requirements, including obstacle height restrictions.

Oakajee

- To identify Oakajee as a strategic heavy industry site and associated deepwater port.
- To support the development of infrastructure in a shared services corridor to minimise impact on the area.
- To ensure the buffer surrounding the Oakajee Estate addresses environmental (noise) issues.

Guidelines

Mixed Business/Light Industry

- Zone future areas to accommodate future requirements for mixed business/light industry.
- Monitor light industrial land supply and identify ongoing land releases through the Land Development Program.

Narngulu

- Ensure that development proposals comply with airport requirements, including obstacle height limitations.
- Investigate mechanisms of implementing a buffer to screen the area from the road.

Recommendations

Mixed Business/Light Industry

- Update the light industrial land supply component of the Geraldton Development Program.

Narngulu

- Include additional land comprising 152ha to the south and 5ha in the Narngulu Townsite in the General Industry zone. (LG, DRD, LandCorp, MWDC, MfP)
- Reduce the size of the existing Noxious and Hazardous Industry zone as recommended by the Narngulu Industrial Estate Study. (LG, DRD, LandCorp, MWDC, MfP)
- Include most of the land within the buffer within a General Farming zone, but included within Development Areas, to provide for the orderly subdivision and development of the land as and when additional industrial land is required. (LG, DRD, LandCorp, MWDC, MfP)
- Review the zoning provisions in the General Industry zone to ensure that they accommodate the type of development appropriate for the area. (LG, DRD, LandCorp, MWDC, MfP)
- Formalise the Narngulu buffer to prohibit further residential development, including consideration of impacts on landowners. (LandCorp, DRD, LGs, MfP)

Wizard Peak

- Complete assessment of the suitability of Wizard Peak for development of a future heavy industry site, only if Oakajee does not proceed. (LG, DRD, LandCorp, MWDC, MfP)
- Ensure that future development of the area does not compromise operation and expansion of the airport. (LG, DRD, LandCorp, MWDC, MfP)

Oakajee

- Initiate amendments to town planning schemes to:
 - protect future development of industrial areas in accordance with the Structure Plan.
- introduce provisions in town planning schemes to control development within the industrial buffers.
 - prevent caretakers' housing and incompatible uses in industrial buffer areas. (LG, DRD, LandCorp, MWDC, MfP)
- Initiate amendments to town planning scheme amendments to rezone additional land identified on the Structure Plan to accommodate industrial development. (LG, DRD, LandCorp, MWDC, MfP)
- Complete assessment of the buffer surrounding the Oakajee Estate to address environmental (noise) issues. (DRD, LandCorp, DEP, LG - Shire of Chapman Valley)
- To complete assessment of services required for the estate including water, wastewater, gas, electricity and transport. (DRD, LandCorp, servicing agencies)

9.12 Community Services

Areas designated for community purposes, schools, hospitals, other institutional/cultural/religious/ government etc and airport and telecommunications sites were identified and surveyed in the 1998 Geraldton Land Use Survey. The largest number of establishments is located south of the Geraldton city centre and includes the TAFE campus, the Geraldton Regional and St John of God hospitals and several schools.

A principal objective of the Structure Plan is to facilitate provision of community services to accommodate population growth. The term "community services" covers a range of services including schools, health services, child care centres, community and neighbourhood centres, public transport, libraries and recreational facilities.

Community services are largely provided on a hierarchical basis, related primarily to population numbers.

- At the neighbourhood level, community services can include a primary school, corner store, playground, local library, child health centre, doctor's surgery, dentist's surgery, community hall, sports ground/recreation oval.
- At the district level, community services can include high school, health centre, district shopping centre, police/fire ambulance station, swimming pool, indoor sports complex.
- At the regional level, community services can include university/TAFE centre (separate or combined campus), hospital, cultural and entertainment facilities etc.

Based on the ultimate population potential of the Structure Plan of about 90,000, a guide to the number and range of services that will be required for the region is indicated on Table 9 which also shows the recommended site area and preferred location for facilities.

The region's present population is estimated at 33,000, only about a third of the potential population of the Structure Plan. However, it is important that the areas for the location of the required facilities are at least identified in principle so that the land is available or made available when it is required.

Not all of the required facilities have been identified on the Structure Plan. Further work is required in consultation with the providing authorities and the community to identify the most appropriate sites.

Based on the recommended site sizes for some of the facilities there are shortfalls in the Structure Plan. For example, the recommended site area for a university/TAFE is 20-30 hectares. The present TAFE in Geraldton is located on an 8ha site. Also, insufficient high school sites have been identified relative to the requirements specified on the following table. Further work is therefore needed to examine these shortfalls and recommend solutions.

9.12.1 Education

Education Department of WA provides seven primary and one senior secondary college in Greater Geraldton. Greater Geraldton is well serviced by both government and non-government schools.

Primary Schools

Education facilities to the north are restricted to the existing Waggrakine Primary School which has limited capacity. Given the vacant lot stock at Drummond Cove (approx 200 lots) and short-term development potential in both the Waggrakine (230 lots) and Drummond Cove areas (530 lots), immediate consideration of local education options is required as there is scope to potentially generate a nominal 380 additional students based on broad planning criteria of 0.4 primary aged students per household.

Preliminary assessment has identified the need for new primary schools at Glenfield, Drummond Cove and Sunset Beach. The locations shown on the structure plan are indicative only.

Primary school facilities in the area are presently restricted to the Mt Tarcoola Primary School. Local structure plans have made provision for future primary school sites in Wandina, Karloo, Rudds Gully and Greenough River.

Indications are that there will be a requirement for an additional primary school in the area in the medium term as housing absorbs the substantial vacant lot stock (approx 500 lots) and additional lots are created (approx 400) in the short term. Preliminary discussions between EDWA and MfP suggest the northern site is likely to be the next school based on the surrounding vacant lot stock and short-term development proposals.

Secondary Schools

The Geraldton Secondary College was created by the amalgamation of the Geraldton and John Willcock Senior High Schools under the Local Area Education Planning Framework. The College, consisting of one senior (Years 11 and 12) campus and two junior campuses provides the opportunity for greater curriculum choice through reducing duplication. EDWA indicates there should be no difficulties in accommodating the potential additional students between both campuses should the situation arise. Planning has made provision for a future high school site in the Waggrakine.

Catholic Education Facilities

The three Catholic primary schools offer five full streams of kindergarten to year 7 schooling. Current enrolment figures indicate capacity exists for a further 250-300 students. The Nagle Catholic College is a co-education campus located on the Stella Maris College site in Maitland Road. Scope exists to expand the current five streams to six and take up to 850 high school students.

Other Education Centres

The independent Geraldton Grammar School is located in George Street, Beresford. The school has experienced steady growth since opening with 55 (kindergarten to year 8) students in 1996. The 1997 enrolments of 100 (kindergarten to year 9) is expected to expand to 175 (kindergarten to year 10) during 1998. The school will ultimately become a kindergarten to year 12 facility.

9.12.2 Health Services

The Geraldton Health Service provides regional hospital facilities to support the Mid-West Health Service and a range of ancillary services for the local community.

Regional Hospital Facilities

The 89 bed Geraldton Regional Hospital and neighbouring 60 bed St John of God Hospital provide the current regional hospital services. Occupancy levels for these facilities are presently around 75 to 70 percent respectively.

The Geraldton Regional Hospital provides operating and recovery ward facilities and nursing staff but is reliant on local private general practitioners (GPs) to provide the necessary medical services as the service does not employ any registered medical staff. Currently, Geraldton has 15 GPs and three general surgeons, one orthopaedic surgeon and an obstetric and gynaecologist specialist that service the hospital with support from visiting Health Department specialists.

Ancillary Services

In addition to the regional hospital facility, the Geraldton Health Service provides the following services:

- Aged Care Assessment - Assessment and referral service to Federally funded aged care nursing.
- Community Health - Immunisation and occupational health and safety programs.
- Public Health - Drug and alcohol education and monitoring programs.
- Mental Health - Community-based psychological and counselling services including a 24 hour/ seven day crisis line.

The Geraldton Aboriginal Service also provides GP services to Aboriginal and non-Aboriginal clients.

A number of initiatives are under way to address future service delivery:

- A master plan is currently being prepared in direct response to a Health Planning Needs Analysis undertaken in mid-1995. The master plan will guide future development and redevelopment of the existing 15ha site.
- The needs analysis indicated the existing Geraldton Regional Hospital is adequate for another 10-15 years as population growth has not matched expectations when the facility was planned some 30-35 years ago. The needs analysis assessment was made prior to the advent of the proposed phase of industrial development in the region. Therefore release of the Geraldton Region Plan is timely as revised population projections can be incorporated into the master plan.
- Integral to the master plan are future service delivery strategies. These include:
 - increased day surgery and short stay/home based recovery.
 - more integrated service delivery with the neighbouring St John of God Hospital to reduce duplication.

The Geraldton Health Service has identified the recruitment and retention of medical and nursing staff as a key issue affecting service delivery. This matter is a critical concern given the hospital's reliance on GPs and the potential short-term population growth over the next five years.

9.12.3 Fire and Rescue Services

The Fire and Emergency Services Authority comprises the:

- Fire and Rescue Service (FRS);
- Bush Fire Service (BFS); and
- State Emergency Service (SES).

Presently, the Fire and Rescue Service provides fire, hazard and road accident rescue services from the Central Geraldton Station in Durlacher Street. The Central Geraldton Station is manned by career fire officers and volunteer personnel and equipped with three firefighting/pumping tenders and a rescue trailer. The Volunteer Bush Fire Service is present in the Geraldton area. These brigades operate bushfire tenders from facilities in Waggrakine and Moonyoonooka. The volunteer SES operates from a base in central Geraldton, providing rescue and community-oriented emergency services.

FESA considers the following as key issues confronting existing emergency services in the Greater Geraldton area.

- population expansion resulting from growth and new industry locating in the area;
- maintenance of response times for dispersed development, particularly at the Geraldton Port, Narngulu and Oakajee;
- adequacy of infrastructure to meet growth and emerging commitments to support the mining and manufacturing sectors which have traditionally provided their own emergency services.

FESA in its role of coordinating future service delivery of the current services had identified the following issues for action:

- examine existing capacity of emergency services in the Geraldton area to ensure the expanding needs of the area are met;
- encourage flexible planning processes within the divisions to optimise infrastructure provision.

The creation of FESA as a coordinating body to identify and assess emerging issues and plan for future service delivery provides for a holistic approach to emergency service delivery around Geraldton. This allows emergency service providers to adequately match capacity with existing and future risks. However, the planning and provision of future service delivery is dependant on relevant ongoing planning and development advice.

Community Services Objectives

- To facilitate provision of community services to accommodate population growth at an early stage of development.
- To expand educational facilities in the region.
- To ensure the provision of library and information services to meet community needs. (LISWA, LG)

Guidelines

- Adopt the Land Development Program as a basis to assist in the future budgeting and provision of community services. (All agencies)

Recommendations

- Prepare a community services plan which identifies future land requirements for Greater Geraldton. (LGs, Other Agencies)
- Identify land to accommodate TAFE future requirements.
- Investigate the potential to develop the university site identified on the Structure Plan to accommodate future requirements of the region, as a matter of priority. (LG, MWDC, EDWA, TAFE)

Figure 25 Greater Geraldton Structure Plan 1999

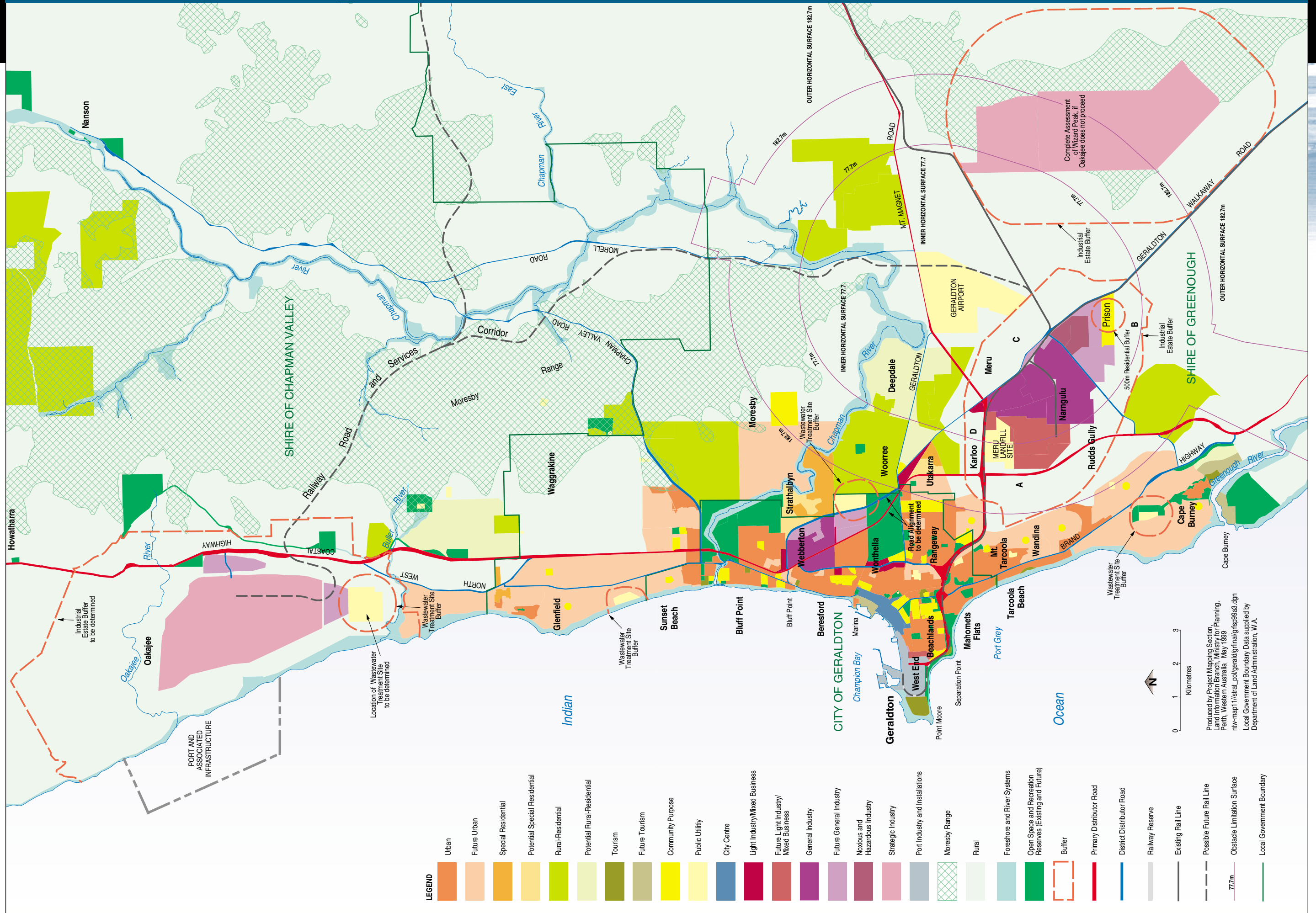


Table 9 Recommended Ratios between Population and Social Infrastructure

FACILITY OR SERVICE	POPULATION RATIO	REC'D SITE AREA (HA)	NO. REQUIRED	PREFERRED LOCATION
Education				
Pre-School	4,000	.25	20	suburbs - quiet areas
Primary School (Govt)	5,000	4	18	suburbs near local park away from main roads
Full High School (Govt)	18,000	10	5	suburbs/public transport
Primary School (Catholic)	12,500	4	7	suburbs near local park
High School (Catholic)	37,500	8	2	suburbs/public transport
Primary School (Other)	20,000	4	4	suburbs
High School (Other)	50,000	8	1	suburbs/public transport
Technical College	60,000	15	1	central/public transport
TAFE/University	100,000	20/30	1	central/public transport
Community Facilities				
Child Care				local centre
Senior Citizens' Centre				suburban near transport
Neighbourhood Centre/Hall				neighbourhood centre
District Centre/Hall				district centre
Library				central and district
Youth Centre				district, central and mixed business
Community Information Centre				central
Churches				
Catholic	80,000	1	2.5	central
Anglican	30,000	3	.5	suburbs
Uniting	20,000	4	.5	suburbs
Other	30,000	3	.5	suburbs
Health				
Doctor	1,500			shopping centre
Dentist	2,500			shopping centre
Child Health Centre	5,000			local centre
Community Health Centre	10,000			district centre
Hospital (Beds)	3.5/1,000	3		central
Nursing Home (Beds)	40/1,000 (70+)	0.4		central
Hostel (Beds)	52/1,000 (70+)	0.4		central
Local Active Recreation				
Football/Cricket	2,500	3.2		
Rugby League	20,000	1.6		
Soccer	7,000	1.2		
Hockey	3,000	0.3		
Tennis/Netball	600	0.6		
Basketball	1,000			
Bowls	1,000			
Swimming Pool	17,500	5		1 at regional rec centre, others suburban
Squash	2,500	36		mixed business areas
Police	1 Officer/400			1 central, 1 suburban
Fire	50,000	0.3	2	central and mixed business/industry

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Geraldton
Part 4 - Implementation

10 - Implementation of the Region Plan

The Geraldton Region Planning Committee has overseen the finalisation of the Geraldton Region Plan including reviewing public submissions. Following release of the Region Plan, the Western Australian Planning Commission (WAPC) will consider formation of a Mid-West Region Planning Committee to manage the broad implementation of the Geraldton Region Plan and provide advice on regional planning matters in the Mid-West Region. The planning objectives and actions necessary to achieve those objectives are identified in the Region Plan.

In addition, the WAPC may consider the establishment of a regional planning committee to oversee the preparation and implementation of a regional planning scheme for Greater Geraldton.

10.1 Implementation of the Structure Plan

Implementation of the Structure Plan will require:

- Acceptance of the Structure Plan as the basis for future local government town planning schemes and a regional planning scheme and for amendments to those schemes.
- Establishment of the mechanisms and procedures to implement the plan and a process for review.

Successful implementation requires the cooperation and involvement of State government agencies, local government, the private sector and the community.

It is important to note that the Structure Plan is not a statutory or zoning plan. It does not change the existing uses permitted on a site or allow for new uses. This can occur only after an amendment to statutory planning schemes which are currently limited to local government town planning schemes. The Structure Plan is part of the process of continually refining and detailing planning proposals for the area.

10.2 Regional Planning Scheme

Town planning legislation now contains provisions enabling regional planning schemes to be produced. The Mid-West Region, of which the Geraldton Region is a part, is one of the WAPC's planning regions. At present there is only one regional planning scheme in the State - the Perth Metropolitan Region Town Planning Scheme-which covers the Perth Metropolitan Region.

It is envisaged that new regional planning schemes outside the Perth Metropolitan Region will be modelled on the principles established by the Metropolitan Region Scheme. The enabling legislation refers to sections of the *Town Planning and Development Act* for the process of formulating and establishing regional planning schemes. The Greater Geraldton Structure Plan could be used to form the basis of a regional planning scheme.

10.3 The Implementation Process

The process of producing a regional planning scheme will take some time to complete. In the interim period, rezonings and subdivision should not be delayed. Applications should take into account the intentions of the Greater Geraldton Structure Plan. The regional planning scheme, once finalised, will be a blueprint for regional land use decisions.

The more detailed zoning in town planning schemes which shows residential areas, shopping centres, local parks etc. will continue to be shown on local town planning schemes prepared by local governments. However it would be a requirement that local government schemes are consistent with the broad zones and reserves in the regional planning scheme.

The legislation makes provision for the amendment of the regional planning schemes. The major amendment process allows for extensive community consultation and is put before Parliament before a final decision is made. The process also means that from time to time the local governments will have to amend their town planning schemes to ensure that they concur with any changes to the regional planning scheme.

10.4 Reserving Land and Compensation Issues

At present, outside the Perth Metropolitan Region, the only method of acquiring land for reservations for roads, open space and other public purposes has been through local government town planning schemes. The practice has been that the local government, acting on the advice of State agencies such as the Ministry for Planning, Main Roads WA or the Education Department, would show reservations for future roads, high schools etc. in the town planning scheme. Once in the schemes, the provisions for compensation under the Local Government Ordinance would apply. If action for compensation was being triggered by an affected landowner, the local government would normally rely on the originating agency to fund acquisition of the land.

Under the revised legislation it is intended that regional planning schemes make provision for the comprehensive planning and mechanisms for the acquisition of regional reservations for regional open space, regional roads, infrastructure or any other regional reservation required for public purposes. Generally the acquisition of all the reservations (as opposed to zones) in regional planning schemes will be the responsibility of the State Government. Compensation dealings will therefore be with the State rather than the local governments. The regional planning schemes will be financed from the Consolidated Fund.

The Structure Plan is not a statutory plan and, as such, has no provisions for the reservation or acquisition of land.

Until the proposals in the Structure Plan are formally incorporated into a statutory town planning scheme, they remain proposals and statutory mechanisms for compensation and do not operate beyond local government town planning schemes.

10.5 Roads in the Region Scheme

The roads shown on the Greater Geraldton Structure Plan are divided into two categories - Primary Distributor Roads and District Distributor Roads - based on the anticipated function of each road in the long-term planning horizon of the Structure Plan.

When the proposed Geraldton Regional Planning Scheme is formulated it will adopt the same system of regional road reservations currently being implemented in Perth's Metropolitan Region Scheme and in other proposed region schemes within WA.

"Primary Regional Roads" will be those roads of regional significance in the planned road network which are currently or proposed to be declared under the *Main Roads Act, 1930*.

"Other Regional Roads" will be those roads of regional significance in the planned road network for which the planning responsibilities are shared by the WAPC and local governments.

Not all the roads shown on the Greater Geraldton Structure Plan would be reserved in a regional planning scheme. Only those which are considered to be of regional significance (and therefore warrant responsibility for long-term planning and compensation to be carried at the State Government level, either by Main Roads or by the WAPC) will be reserved in the scheme.

Some of the roads shown in red on the Greater Geraldton Structure Plan (i.e. some future primary distributor roads) will initially be shown in the scheme as "Other Regional Roads" because they will not be declared under the *Main Roads Act* for many years and responsibilities for these roads will be shared by the WAPC and local governments in the interim. When these roads are declared under the *Main Roads Act* in the future, the scheme will then be amended to show them as "Primary Regional Roads".

Similarly, some of the roads shown in blue on the Greater Geraldton Structure Plan are currently declared under the *Main Roads Act* and will initially be shown as "Primary Regional Roads" in the scheme.

10.6 Staging of Development

The Structure Plan does not have a time scale for completion. It depends to some degree on development pressures and demand locally and regionally, landowners' intentions, the priorities of servicing agencies and the local governments. To implement the Structure Plan it will be necessary to ensure that new urban land is released in a logical sequence from a servicing point of view and that an adequate land supply is always available.

Similar considerations will apply to the development of industrial land. It will be necessary that industrial land development takes into account existing and forecast industrial land needs and the efficient provision of infrastructure as development proceeds.

10.7 Monitoring and Review

The Structure Plan which is designed for the long term, will be a long-term process. The plan will need to be updated and reviewed from time to time as circumstances and priorities change. It must be capable of changing to reflect the current and future needs of the community, therefore, it is not a fixed and rigid blueprint for the future, but a flexible statement establishing the broad principles for future development in the Geraldton Region. The plan will be progressively refined through more detailed planning and, where appropriate, modified to suit particular local circumstances and community needs.

10.8 Land Development Program

The *Geraldton Land Development Program* was released in April 1998. The program was prepared by the Ministry for Planning on behalf of the Western Australian Planning Commission. The program focuses on land development and major infrastructure issues for the majority of the Greater Geraldton Structure Plan from Buller River in the north, to Greenough River in the south and east to Moonyoonooka. The annual update and review of the program will assist in implementation of the Structure Plan.

The principal objectives of the Land Development Program (LDP) are:

- To monitor land supply to ensure there is an adequate supply of zoned land available to be developed and serviced to meet the anticipated demand for housing and other land uses for a five-year period.
- To facilitate the actions of State and local government agencies for the early planning, budgeting and efficient provision of physical and human services infrastructure such as water, power, schools, health and public transport services to support land development.

In addition to the principal objectives, the Country Land Development Program has embraced the following objectives that were defined in 1987 as part of formulating the Metropolitan Development Program for the Perth Metropolitan Region. These include:

- To provide and promote leadership in the planning, coordination and budgeting of government activity in new land development and redevelopment.
- To facilitate orderly and economic development by the timely provision of land and infrastructure.
- To ensure an adequate supply of serviced land for housing development to meet anticipated demand in a range of locations and at a reasonable price.
- To ensure the availability of community services and facilities in accessible locations to serve the essential needs of the population of the region.

- To contain public sector costs by the planned and coordinated provision of infrastructure to service new and existing developments by facilitating the staged release of land.
- To ensure landuse plans and infrastructure programs are consistent with the State's overall budgetary objectives and guidelines.
- To prevent premature and unnecessary commitments to inappropriate sequences or forms of urban development or major capital projects.

10.9 Further Studies

The Region Plan includes an assessment of studies concluded during the life of the draft Geraldton Region Plan.



Bibliography and Appendices

Geraldton Acknowledgements

Geraldton Region Planning Committee

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Geraldton

Bibliography

Abrolhos Islands Task Force (1988)

Abrolhos Islands Planning Strategy: A report prepared by the Abrolhos Islands Task Force for the Abrolhos Islands Consultative Committee

Alan Tingay & Associates, Halpern Glick Maunsell and Lancon Resources (1993)

A Planning, Engineering, Landscape and Environmental Study of the Narngulu Industrial Estate at Geraldton. Prepared for the Narngulu Industrial Committee

Arup Transportation Planning (1993)

Geraldton Transportation Study: Final Report
Prepared for City of Geraldton

BSD Consultants Pty Ltd (1997)

Geraldton Region Traffic Modelling
Prepared for Ministry for Planning

Chalmers, C.E. & Department of Conservation and the Environment (1983)

Coastal Management Plan Kalbarri Townsite: Prepared by the Department of Conservation and the Environment and the Coastal Management Coordinating Committee

Connell Wagner (1997)

Geraldton Region Plan Review: Southern Transport and Services (Port Access) Corridor Study: Final Report
Prepared for Ministry for Planning

Connell Wagner (1998)

Geraldton Southern Transport and Services Access Corridor Master Plan Report

Department of Commerce and Trade & Mid West Development Commission (1996)

Mid West Economic Perspective: An update on the economy of Western Australia's Mid West Region

Department of Conservation and Land Management (1996-97)

Annual Report

Department of Planning and Urban Development (1992)

Kalbarri Plan

Environmental Protection Authority 1996/97

Annual Report

Geraldton Region Planning Committee (1996)

Geraldton Region Plan Review 1996 : Public Forum Proceedings - March/April 1996
(Seven public workshops held at Chapman Valley, Geraldton, Greenough, Irwin, Kalbarri, Mullewa and Northampton)

Geraldton Regional Planning Study Group (1976)

Geraldton Region Planning Study

Geraldton Region Plan Review Taskforce, with assistance of ERM Mitchell McCotter (1996)
Geraldton Region Plan Review: Industry and Port Sites Study

Halpern Glick Maunsell (1995)
Narngulu Transportation Access Study (Mid West Iron & Steel Project)
(Report T4010/Stage 1)
Report to the Inter-Departmental Committee

Halpern Glick Maunsell & Ann Reid (1996)
Narngulu Industrial Estate Study (Report E2403B)
Prepared for the Geraldton Region Plan Review Technical Committee (1997)

Halpern Glick Maunsell (March 1997)
Wizard Peak Industrial Site Selection Study (Report E4203A)
Prepared for the Geraldton Region Plan Review Technical Committee

Hames Sharley (1996)
Geraldton - Greenough Retail and Services Strategy: Draft
Prepared for City of Geraldton and Shire of Greenough

Main Roads Western Australia (1997)
Roads 2020 Regional Road Development Strategy: Mid-West Region

Mid West Development Commission (1996)
Towards 2010: An Economic Development Strategy for Western Australia's Mid-West Region

Naralup Associates (1998)
Geraldton Regional Infrastructure Study - For Mid West Industry Development Consultative Council

Report of the Marine Parks and Reserves Selection Working Group (June 1994)
A Representative Marine Reserve System for Western Australia
Published by the Department of Conservation and Land Management

Russell Taylor & William Burrell (1994)
Geraldton Region Plan: Residential Land Supply Review: Geraldton - Greenough Urban Area
Prepared for Department of Planning and Urban Development

Sinclair Knight & Partners (1990)
North - South Road Study Geraldton: Discussion Paper

State Planning Commission (1989)
Geraldton Region Plan

State Planning Commission (1989)
Kalbarri Planning Study: for public comment

Town Planning Department (1966)
Geraldton Region Plan

Uloth & Associates (1988)
Geraldton Regional Roads Study: Traffic Forecasting and Operational Evaluation
Prepared for the State Planning Commission

Western Australian Planning Commission (1996)

Central Coast Regional Strategy: A Strategy to Guide Land Use in the Next Decade: Final Report

Western Australian Planning Commission (1997)

State Planning Strategy

Western Australian Planning Commission (1998)

Geraldton Land Development Program 1998 to 2002

Western Australian Planning Commission (1998)

Geraldton Land Use Survey 1998

Western Australian Planning Commission and Agriculture Western Australia (1997)

Planning for Agricultural and Rural Land Use - Discussion Paper

Working Bodies (1997)

Geraldton Region Cultural Plan

Prepared for City of Geraldton

Geraldton

Appendix One

Glossary of Acronyms and Abbreviations

ABC	Australian Broadcasting Corporation	MRWA	Main Roads Western Australia
ABS	Australian Bureau of Statistics	mT	million tonnes
AgWA	Agriculture Western Australia	MWDC	Mid West Development Commission
AIMAC	Abrolhos Islands Management Advisory Committee	NPNC	National Parks and Nature Conservation Authority
CALM	Department of Conservation and Land Management	NWCH	North West Coastal Highway
CBD	Central Business District	OTC	Overseas Telecommunications
CBH	Cooperative Bulk Handling	STD	Subscriber Trunk Dialling
CSBP	Wesfarmers CSBP Limited	TAFE	Department of Technical and Further Education
DEP	Department of Environmental Protection	tph	tonnes per hour
DOLA	Department of Land Administration	WAM	Western Australian Museum
DOT	Department of Transport	WAPC	Western Australian Planning Commission
DME	Department of Minerals and Energy	WAPET	West Australian Petroleum Pty Ltd
DRD	Department of Resources Development	WATC	Western Australian Tourism Commission
EDWA	Education Department of WA	WC	Water Corporation
EPA	Environmental Protection Authority	WRC	Water and Rivers Commission
EPP	Environmental Protection Policy		
E.R.P.	Estimated resident population		
FWA	Fisheries WA		
GL	gigalitre		
GPA	Geraldton Port Authority		
GWN	Golden West Network		
ha	hectare		
HCWA	Heritage Council of Western Australia		
HGM	Halpern Glick Maunsell		
ISD	International Subscriber Dialling (now IDD - International Direct Dialling)		
kl	kilolitre		
km	kilometre		
kV	kilovolt		
LCDC	Land Conservation District Committee		
LISWA	Library and Information Service of WA		
LG	Local Government		
MfP	Ministry for Planning		

Geraldton

Appendix Two

Summary of Issues Identified at the Community Workshops

Issues identified at the Geraldton Community Workshop

- Coordination between local governments to facilitate decision-making on regional matters.
- Selection of a strategic industrial area and necessary infrastructure, situated away from residential and potential tourist areas.
- Integration of local and regional area planning by a coordinated approach to local, State and Commonwealth government departments and authorities and their community stakeholders.
- Maintenance and enhancement of quality of life for all by focusing on pro-active and creative programs to generate racial harmony, valuing young and old and overcoming difficulties with law and order.
- Acquisition and establishment of a system of recreation reserves and corridors suitable to the needs of Geraldton and tourists to the region.
- Balance between economic (including industry), social and environmental issues in a sustainable fashion.
- Development of tourism.
- Revitalisation and enhancement of the coast, as a way of focusing on the region and the sea.
- Equality of access to communications and technology for people living in Geraldton and the region.
- Provision of all levels of education to maintain local employability of regional youth.

Issues identified at the Greenough Community Workshop

- Outline future road and other transport needs and evaluate options for meeting these needs.
- Strengthen family and community values and responsibilities to enable local communities to address social issues.
- Expand TAFE offering and build a high profile (incorporating maritime) university to retain and encourage youth to come to the region.
- Enhance lifestyle, health care and amenity services for the various age and cultural groups in the region.
- Establish a process for long-term planning based on community consultation - oneness, fairness and which incorporates heritage issues.
- Enhance and encourage tourism in the Geraldton/Greenough Region.
- Identify appropriate sites and create incentives that encourage economic and industrial development while ensuring financial viability and environmental security.
- Ensure that for urban development there are adequate buffers between uses and the development of integrated residential hamlets.

Greenough - Vision Statement

To make Greenough a better place for all to live, work and visit.

Issues identified at the Dongara - Port Denison Community Workshop

- Support and encourage the development of economic activity that brings money back into the community and that is focused on generating employment for the community and young people.
- Enhancement of the unique aspects of Dongara-Denison for tourism by promotion of its facilities.
- Opportunities for community participation in decision-making and for cooperation between organisations to build a more cohesive community in the future.
- Enhance and increase the sustainability of the environment by ensuring that any development is fully compatible with its unique character.
- Expand and improve educational facilities, further education for senior, high and TAFE to help keep our younger generation in town.

- Ensure that we capitalise on all opportunities to make the voice of Irwin heard within government and that a fair return of government spending occurs in this community.
- Improve access to technology, including Internet, mobile phones and support services.
- Encourage priority development of new roads to enhance tourism, promote industry and better meet the needs of the local community.

Dongara - Port Denison - Vision Statement

The Irwin District - a vibrant, cooperative and industrious community. Developing an enjoyable place for individuals and families, visiting, living and working which builds upon our unique heritage and environment with the community and a sustainable future for all.

Issues identified at the Northampton Community Workshop

- Improve the effectiveness and availability of finance for local community development projects, services and facilities.
- Encourage local support to develop new and sustainable industries and retailing so as to retain local money and develop net exports from this community.
- Create a wider range of youth employment business and programs aimed at sustainable jobs for all young people in the community.
- Encourage the development of better facilities and promotion to attract tourism, e.g. accommodation, etc.
- Improve water supplies within the shire area for residential and horticultural purposes.
- Develop a higher standard of community services and amenities to meet the needs of all age groups in the community.
- Develop environmental management programs to preserve our unique flora and fauna, which enhance our coasts and provide an attractive and healthy living environment for all.
- Support and encourage community involvement in all council activities to ensure appropriate planning and policies.
- Upgrade main link roads and provide a better road network for all areas of the shire.

Northampton - Vision Statement

Northampton Townsite - To inspire development of finance for sustainable new business and employment which would enhance the enjoyment of life and opportunity for all for the future of Northampton.

Northampton District - developing as a prosperous community, enhancing business and employment opportunities, preserving its unique environment and increasing the quality of life in a sustainable way for all of its present and future residents and visitors.

Issues identified at the Mullewa Community Workshop

- Create a positive attitude to the future of the community for all members of the community.
- Convince Government of the importance of inland social and economic growth and ensure appropriate incentive structures are created.
- Create a dynamic inland tourist industry that attracts people to the area all year round.
- Develop the sustainable use of natural resources in ways that promote diversification and prosperity of agriculture.
- Remove all Government constraints to local decision-making and implementation in matters of local concern.
- Enhance and develop those local environmental characteristics that maintain positive quality of life.
- Use improved communication to find ways of enhancing local health, education and housing.
- Broaden the range of industry development to benefit inland communities particularly in Mullewa and Mingenew.

Mullewa - Vision Statement

Creation of committed and caring inland communities which take action now to develop prosperity of the economy, social cohesion, and sustainability of their environment in the Mid-West Region, with the continuous support of all levels of government.

Issues identified at the Chapman Valley Community Workshop

- Develop a town planning scheme that caters for and accurately reflects the changing lifestyles of its inhabitants.
- Examine what Chapman Valley has to offer recreation and tourism, ensuring its own promotion and the development of facilities and events to support local tourism development.
- Support and ensure that the development of any future industrial centre has the highest environmental standards and safeguards.
- Diversify agriculture, including the development of agroforestry and wood lotting.
- Establish a higher education facility in the Shire of Chapman Valley.
- Gain government support for the infrastructure needed for a satellite city for Chapman Valley Shire.
- Preserve natural and human heritage areas and establish a national park over the Moresby Range.
- Encourage the development of local incentives for small business in the Chapman Valley Shire.

Chapman Valley - Vision Statement

Unique, scenic Chapman Valley is planned to create a broad, diverse economy, including tourism, agriculture and industry, that promotes sustainable social, cultural and environmental harmony and that offers a clean lifestyle to the families of its community.

Issues identified at the Kalbarri Community Workshop

- Construct an airport capable of handling larger planes required for the tourist industry and permit export of local products.
- Acquire the land that permits town expansion and encourage a wider range of diversified tourist and other activities.
- Establish an attractive dual purpose marina integrating tourism and crayfish processing within a local development enterprise.
- Upgrade roads and facilities within the national park as part of a total economic development plan that integrates park and town with common themes.
- Construct roads north and south to facilitate connections to other tourist locations.
- Fast-track the development of the medical centre to cater for the needs of tourists and to service the requirements of a developing retirement population.
- Improve the current information infrastructure to Kalbarri.

Kalbarri - Vision Statement

Kalbarri - Let's all work together to put in the required infrastructure and amenities for sustainable development and with new employment we can all share the opportunity for its lovely pristine environment.

Appendix Three - Register of Heritage Places

SHIRE OF CHAPMAN VALLEY

PLACE NO	PLACE NAME	STREET No	STREET NAME	SUBURB OR TOWN REGISTRATION	DATE OF INTERIM REGISTRATION	DATE OF PERMANENT	OTHER LISTING
00473	Our Lady of Fatima Church (RC)		Geraldton-Yuna Rd	Nanson	00/00/00	00/00/00	Local Government MI
00473	Our Lady of Fatima Church (RC)		Geraldton-Yuna Rd	Nanson	00/00/00	00/00/00	National Trust Classified
00474	Former Roads Board Office		East Terrace	Nanson	2/9/97	12/12/97	Register- National Estate
00474	Former Roads Board Office		East Terrace	Nanson	2/9/97	12/12/97	National Trust Classified
00474	Former Roads Board Office		East Terrace	Nanson	2/9/97	12/12/97	Local Government MI
00475	The Coffee Pot and Waggrakine Well		Geraldton-Yuna Rd	Waggrakine	00/00/00	00/00/00	Local Government MI
00476	C.W.A. Room		Geraldton-Yuna Rd	Yuna	00/00/00	00/00/00	Local Government MI
00477	Church		Geraldton-Yuna Rd	Naraling	00/00/00	00/00/00	Local Government MI
03406	McDonald Homestead			Nanson	00/00/00	00/00/00	
03407	Hanlons Staging Post (Ruins)		Geraldton-Yuna Rd	Chapman Valley	00/00/00	00/00/00	HCWA Assesst (<Threshold)
06352	Narra Tarra Homestead and Outbuildings		Fmr East Chapman Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06353	Narra Tarra Cemetery		Off East Chapman Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06354	White Peak Homestead		White Peak Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06355	White Peak Quarry		North West Coastal Hwy	Howatharra	00/00/00	00/00/00	Local Government MI
06356	Lime Kiln - Brick Lined		Adjacent to Oakajee River	Howatharra	00/00/00	00/00/00	Local Government MI
06357	Lime Kiln - Stone Walled		Adjacent to Oakajee River	Howatharra	00/00/00	00/00/0	Local Government MI
06358	Chinaman House - Stone Ruins		Adjacent to Oakajee River	Howatharra	00/00/00	00/00/00	Local Government MI
06359	Cottage - Stone Ruins		Coronation Beach Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06360	Howatharra Townsite		Northwest Coastal Hwy	Howatharra	00/00/00	00/00/00	Local Government MI
06361	Site of Yetna Siding		Geraldton-Nabawa Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06362	Yetna School		Geraldton-Yuna Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06363	Residence - Stone		Murphy Yetna Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06364	Residence - Rendered stone ruins		Murphy Yetna Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06365	Chatanooka - Residence		Murphy Yetna Rd	Howatharra	00/00/00	00/00/00	Local Government MI
06366	Nanson Convent		Geraldton-Yuna Rd	Nanson	00/00/00	00/00/00	Local Government MI
06367	St Lukes Anglican Church		Geraldton Yuna Rd	Nanson	00/00/00	00/00/00	Local Government MI
06368	East Terrace Nanson - Streetscape & Residence		East Terrace	Nanson	00/00/00	00/00/00	Local Government MI

SHIRE OF CHAPMAN VALLEY CONTINUED

06369	Residence - Weatherboard and Iron		East Terrace	Nanson	00/00/00	00/00/00	Local Government MI
06370	Nanson Siding and Railway Bridge		East Terrace	Nanson	00/00/00	00/00/00	Local Government MI
06371	Mt Erin Estate and Outbuildings		Durawah Rd	Nanson	00/00/00	00/00/00	Local Government MI
06372	Mt Erin Headmasters House - Ruins		Durawah Rd	Nanson	00/00/00	00/00/00	Local Government MI
06373	Mt Erin School - Ruins		Durawah Rd	Nanson	00/00/00	00/00/00	Local Government MI
06374	Residence - Stone Ruins		Durawah Rd	Nanson	00/00/00	00/00/00	Local Government MI
06375	Wicka - Farmhouse and Outbuildings		Wicka Rd	Nanson	00/00/00	00/00/00	Local Government MI
06376	Government Well		Forrester/Newmarracarra Rds	Nanson	00/00/00	00/00/00	Local Government MI
06377	Narra Tarra Mine & Protheroe Townsite		Protheroe Rd	Nanson	00/00/00	00/00/00	Local Government MI
06378	Nabawa Townsite		Geraldton-Yuna Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06379	Site of Agricultural Hall		Geraldton-Yuna Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06380	Nabawa Cemetery & War Memorial		Geraldton-Yuna Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06381	Rammed Earth Ruins		Geraldton-Yuna/Indialla Spur Rds	Nabawa	00/00/00	00/00/00	Local Government MI
06382	Residence - Stone		Geraldton-Yuna Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06383	Nabawa Railway Siding		Geraldton-Yuna Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06384	Chapman Valley Shire Office		Geraldton-Yuna Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06385	Chapman Valley Primary School		Geraldton-Yuna Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06386	The Mining Arms Hotel		Northampton-Nabawa Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06387	Residence - Stone & Iron		Northampton-Nabawa Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06388	Head Teachers Residence		Indialla Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06389	Chapman Valley Experimental Farm - Shearing Shed		Nabawa- Northampton Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06390	Dindiloa School Site		McNaught/Mazzucchelli Rds	Nabawa	00/00/00	00/00/00	Local Government MI
06391	Residence - Stone & Iron Ruins		McNaught/Mazzucchelli Rds	Nolba	00/00/00	00/00/00	Local Government MI
06392	Addika - Stone Ruins of Barn		Nabawa- Northampton Rd	Nabawa	00/00/00	00/00/00	Local Government MI
06393	Naraling Streetscape		Geraldton-Yuna Rd	Naraling	00/00/00	00/00/00	Local Government MI
06394	Naraling Church Hall		Geraldton-Yuna Rd	Naraling	00/00/00	00/00/00	Local Government MI
06395	Naraling Exchange/Post Office/Store		Geraldton-Yuna Rd	Naraling	00/00/00	00/00/00	Local Government MI
06396	Naraling Post Office Ruins		Geraldton-Yuna Rd	Naraling	00/00/00	00/00/00	Local Government MI
06397	Residence - Cement Block & Iron		Geraldton-Yuna Rd	Naraling	00/00/00	00/00/00	Local Government MI
06398	Nolba Post Office/ Exchange & Outbuildings		Nolba Rd	Nolba	00/00/00	00/00/00	Local Government MI
06399	Plough and Harrow Hotel Site		Geraldton-Yuna Rd, Rockwell	Nolba	00/00/00	00/00/00	Local Government MI
06400	Rockwell Townsite		Geraldton-Yuna Rd, Rockwell	Nolba	00/00/00	00/00/00	Local Government MI
06401	Sunderland Farmhouse		Balla Whelarra Rd, Yuna	Nolba	00/00/00	00/00/00	Local Government MI
06402	Annan - Stone farmhouse ruins		Balla Whelarra Rd, Yuna	Nolba	00/00/00	00/00/00	Local Government MI

SHIRE OF CHAPMAN VALLEY CONTINUED

06403	Roskams Homestead		Balla Whelarra Rd, Yuna	Nolba	00/00/00	00/00/00	Local Government MI
06404	Whelara Dam		Geraldton-Yuna Rd, Yuna	Nolba	00/00/00	00/00/00	Local Government MI
06405	Yuna Old Townsite		Balla Whelarra Rd, Yuna	Nolba	00/00/00	00/00/00	Local Government MI
06406	Yuna Townsite		Geraldton-Yuna Rd	Yuna	00/00/00	00/00/00	Local Government MI
06407	Yuna CBH Silos		Geraldton-Yuna Rd	Yuna	00/00/00	00/00/00	Local Government MI
06408	Yuna School		Geraldton-Yuna Rd	Yuna	00/00/00	00/00/00	Local Government MI
06409	Yuna Memorial Hall		Off the Geraldton-Yuna Rd	Yuna	00/00/00	00/00/00	Local Government MI
06410	Yuna Tavern		Geraldton-Yuna Rd	Yuna	00/00/00	00/00/00	Local Government MI
06411	Our Lady Queen of Peace Roman Catholic Church		Geraldton-Yuna Rd	Yuna	00/00/00	00/00/00	Local Government MI
06412	St Bartholomew's Anglican Church		Geraldton-Yuna Rd	Nabawa	00/00/00	00/00/00	Local Government MI

CITY OF GERALDTON

PLACE NO	PLACE NAME	STREET No	STREET NAME	SUBURB OR TOWN REGISTRATION	DATE OF INTERIM REGISTRATION	DATE OF PERMANENT	OTHER LISTING
01046	Masonic Hall		Augustus St	Geraldton	00/00/00	00/00/00	
01047	Railway House		Chapman Rd	Geraldton	00/00/00	00/00/00	
01048	Bill Sewell Community Recreation Complex		Chapman Rd/Bayley St	Geraldton	30/08/94	10/10/95	National Trust Classified
01048	Bill Sewell Community Recreation Complex		Chapman Rd/Bayley St	Geraldton	30/08/94	10/10/95	Statutory Data Base
01049	Birdwood House RSL Hall	Cnr	Chapman Rd/Forrest St	Geraldton	00/00/00	00/00/00	Local Government MI
01050	Railway Institute		Chapman Rd/Forrest St	Geraldton	00/00/00	00/00/00	
01051	The Hermitage		Hermitage St	Geraldton	00/00/00	00/00/00	National Trust Classified
01052	The Hermitage		Hermitage St	Geraldton	00/00/00	00/00/00	Register-National Estate
01052	Geraldton Railway Station (fmr)		Chapman Rd	Geraldton	27/2/98	15/5/98	
01053	Bishop's House	43	Cathedral Av	Geraldton	00/00/00	00/00/00	
01054	Church of St. Lawrence the Martyr (RC)		Chapman Rd	Geraldton	00/00/00	00/00/00	National Trust Classified
01055	Nazareth House		Frederick St	Geraldton	00/00/00	00/00/00	
01056	Fmr Burns Philp and Co. Premises	54-56	Durlacher St	Geraldton	00/00/00	00/00/00	
01057	Commercial Premises	28-32	Durlacher St	Geraldton	00/00/00	00/00/00	
01058	Geraldton Town Hall (fmr)	Cnr	Durlacher St & Chapman Rd	Geraldton	2/9/97	12/12/97	Register - National Estate
01058	Geraldton Town Hall (fmr)	Cnr	Durlacher St & Chapman Rd	Geraldton	2/9/97	12/12/97	National Trust Classified
01059	Druids Hall		Durlacher St./Sandford St	Geraldton	00/00/00	00/00/00	
01060	Radio Theatre		Marine Terrace/Fitzgerald St	Geraldton	00/00/00	00/00/00	National Trust Classified
01061	Community Education Centre	24	Gregory St	Geraldton	00/00/00	00/00/00	

CITY OF GERALDTON CONTINUED

01062	Police Barracks	205-215	Lester Ave	Geraldton	00/00/00	00/00/00	
01063	St John's Uniting Church (fmr)		Lester Ave	Geraldton	6/9/96	21/1/97	National Trust Classified
01064	St Francis Xavier Cathedral	Cnr	Cathedral Ave/Maitland St	Geraldton	25/11/94	10/10/95	Statutory Data Base
01064	St Francis Xavier Cathedral	Cnr	Cathedral Ave/Maitland St	Geraldton	25/11/94	10/10/95	Register - National Estate
01064	St Francis Xavier Cathedral	Cnr	Cathedral Ave/Maitland St	Geraldton	25/11/94	10/10/95	National Trust Classified
01065	Drill Hall		Lester Ave./Cathedral Ave	Geraldton	00/00/00	00/00/00	
01066	Old Police Wall		Lester Ave./Marine Tce.	Geraldton	00/00/00	00/00/00	
01067	Homeswest Office		Marine Terrace	Geraldton	00/00/00	00/00/00	
01068	Original Railway Station (1879-93), Geraldton		Marine Terrace	Geraldton	9/1/98	7/4/98	National Trust Classified
01069	Geraldton Club	158	Marine Terrace	Geraldton	00/00/00	00/00/00	
01070	RAOB Lodge	283	Marine Terrace	Geraldton	00/00/00	00/00/00	
01071	Mission to Seaman		Marine Terrace	Geraldton	00/00/00	00/00/00	National Trust Classified
01072	Court House & Govt. Offices	Cnr	Marine Tce & Forrest St	Geraldton	00/00/00	00/00/00	
01073	Chapel of San Spirito			Utakarra	25/11/94	10/10/95	Statutory Data Base
01073	Chapel of San Spirito			Utakarra	25/11/94	10/10/95	Register-National Estate
01073	Chapel of San Spirito			Utakarra	25/11/94	10/10/95	National Trust Classified
01074	Geraldton Lighthouse Tower and Quarters	353-355	Chapman Rd (cnr Elphick)	Bluff Point	3/7/92	9/7/93	Register-National Estate
01074	Geraldton Lighthouse Tower and Quarters	353-355	Chapman Rd (cnr Elphick)	Bluff Point	3/7/92	9/7/93	National Trust Classified
01074	Geraldton Lighthouse Tower and Quarters	353-355	Chapman Rd (cnr Elphick)	Bluff Point	3/7/92	9/7/93	Statutory Trust Classified
01075	St George's Anglican Church		Chapman Rd/Elphick Ave.	Bluff Point	00/00/00	00/00/00	National Trust Classified
03387	Houtman Abrolhos Islands			W of Geraldton	00/00/00	00/00/00	National Trust Classified
03390	Station Masters Residence (Former)		Edward Rd	Narngulu	00/00/00	00/00/00	
03410	Chapman River Bridge		North West Coastal Highway	Geraldton	00/00/00	00/00/00	
03458	Rosella House	Corner	George & Bayley Sts	Geraldton	13/12/96	9/5/97	
03513	St Georges Building		Marine Tce/Cathedral Ave	Geraldton	00/00/00	00/00/00	
03529	Shepherds Hotel		Marine Tce/Cathedral Ave	Geraldton	00/00/00	00/00/00	
03714	fmr Old Urch Street Cemetery Reserve	Cnr	Chapman & Phelps Rd	Geraldton	00/00/00	00/00/00	National Trust Classified
03715	Geraldton Residency	Cnr	Marine Terrace & Cunningham St	Geraldton	9/1/98	7/4/98	
03927	Moore Point Lighthouse		Willcock Drive	Geraldton	00/00/00	00/00/00	
03990	Ruins of Two Stone Huts		Houtman Abrolhos Islands	Wst Wallaby Island	00/00/00	00/00/00	National Trust Classified
03990	Ruins of Two Stone Huts		Houtman Abrolhos Islands	Wst Wallaby Island	00/00/00	00/00/00	Register - National Estate
04228	Geraldton Railway Jetty		Durlacher St	Geraldton	00/00/00	00/00/00	
04321	Freemasons Hotel	Cnr	Marine Tce & Durlacher St	Geraldton	00/00/00	00/00/00	

CITY OF GERALDTON CONTINUED

04366	Moreton Bay Fig		Lewis St	Geraldton	00/00/00	00/00/00	National Trust Classified
04561	Railway Workers Cottage		Chapman Rd	Geraldton	00/00/00	00/00/00	National Trust Classified

SHIRE OF GREENOUGH

PLACE NO	PLACE NAME	STREET No	STREET NAME	SUBURB OR TOWN REGISTRATION	DATE OF INTERIM REGISTRATION	DATE OF PERMANENT	OTHER LISTING
01133	Greenough Pioneer Cemetery		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01133	Greenough Pioneer Cemetery		Brand Hwy	Greenough	00/00/00	00/00/00	Register-National Estate
01134	Corringle		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01135	Cottage		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01136	Old Walkaway Cottage		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01136	Old Walkaway Cottage		Brand Hwy	Greenough	00/00/00	00/00/00	Register-National Estate
01137	Greenough Historic Hamlet		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01138	McNeece's Cottage		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01138	McNeece's Cottage		Brand Hwy	Greenough	00/00/00	00/00/00	Register-National Estate
01139	Greenough Farmers Club Hall		Brand Hwy	Greenough	00/00/00	00/00/00	Register-National Estate
01139	Greenough Farmers Club Hall		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01140	Bell Cottage and Outbuildings		Brand Hwy	Greenough	00/00/00	00/00/00	Register-National Estate
01140	Bell Cottage and Outbuildings		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01141	Farmhouse Ruin		Brand Hwy	Greenough	00/00/00	00/00/00	Register-National Estate
01141	Farmhouse Ruin		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01142	Dominican Convent (Former)		Clinch Place	Greenough	17/7/92	9/7/93	Statutory Data Base
01142	Dominican Convent (Former)		Clinch Place	Greenough	17/7/92	9/7/93	Register-National Estate
01142	Dominican Convent (Former)		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified
01143	Greenough Hotel (Former)		Clinch Place	Greenough	17/7/92	9/7/93	Statutory Data Base
01143	Greenough Hotel (Former)		Clinch Place	Greenough	17/7/92	9/7/93	Register - National Estate
01143	Greenough Hotel (Former)		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified
01144	Hacketts Cottage		Geraldton Hwy	Greenough	00/00/00	00/00/00	Register - National Estate
01144	Hacketts Cottage		Geraldton Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01145	St James Church		Brand Hwy	Greenough	00/00/00	00/00/00	Register - National Estate
01145	St James Church		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
01146	Clinch's Mill		Clinch Place	Greenough	17/7/92	9/7/93	Statutory Data Base
01146	Clinch's Mill		Clinch Place	Greenough	17/7/92	9/7/93	Register - National Estate
01146	Clinch's Mill		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified
01147	Rocks House Ruin and Outbuildings		Company Rd	Greenough	00/00/00	00/00/00	Register - National Estate

SHIRE OF GREENOUGH CONTINUED

01147	Rocks House Ruin and Outbuildings		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
01148	Mt. Pleasant Farmhouse		Company Rd	Greenough	00/00/00	00/00/00	Register-National Estate
01148	Mt. Pleasant Farmhouse		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
00149	Raphoe Farmhouse and Outbuildings		Company Road	Greenough	00/00/00	00/00/00	Register - National Estate
00149	Raphoe Farmhouse and Outbuildings		Company Road	Greenough	00/00/00	00/00/00	National Trust Classified
01150	Three Bottle Farmhouse & Outbuildings		Company Road	Greenough	00/00/00	00/00/00	National Trust Classified
01150	Three Bottle Farmhouse & Outbuildings		Company Road	Greenough	00/00/00	00/00/00	Register - National Estate
01151	Fmr Hampton Arms Hotel		Company Road	Greenough	00/00/00	00/00/00	Register - National Estate
01151	Fmr Hampton Arms Hotel		Company Road	Greenough	00/00/00	00/00/00	National Trust Classified
01152	Old Store		Clinch PlaceGreenough		17/7/92	9/7/93	Statutory Data Base
01152	Old Store		Clinch Place	Greenough	17/7/92	9/7/93	Register - National Estate
01152	Old Store		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified
01153	Gray's Store		Company/McCartney Rd	Greenough	17/7/92	9/7/93	Register - National Estate
0115	Gray's Store		Company/McCartney Rd	Greenough	17/7/92	9/7/93	Statutory Data Base
01153	Gray's Store		Company/McCartney Rd	Greenough	17/7/92	9/7/93	National Trust Classified
01154	Cliff Grange Farmhouse		Clinch Place	Greenough	17/7/92	9/7/93	Statutory Data Base
01154	Cliff Grange Farmhouse		Clinch Place	Greenough	17/7/92	9/7/93	Register - National Estate
01154	Cliff Grange Farmhouse		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified
01155	Delowe's Cottage		Crowther Rd	Greenough	00/00/00	00/00/00	Register - National Estate
01155	Delowe's Cottage		Crowther Rd	Greenough	00/00/00	00/00/00	National Trust Classified
01156	Central Greenough School Building		Clinch Place	Greenough	17/7/92	9/7/93	Statutory Data Base
01156	Central Greenough School Building		Clinch Place	Greenough	17/7/92	9/7/93	Register - National Estate
01156	Central Greenough School Building		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified
01157	Greenough Courthouse, Police Station and Gaol		Clinch Place	Greenough	17.7/92	9/7/93	Register - National Estate
01157	Greenough Courthouse, Police Station and Gaol		Clinch Place	Greenough	17.7/92	9/7/93	Statutory Data Base
01157	Greenough Courthouse, Police Station and Gaol		Clinch Place	Greenough	17.7/92	9/7/93	National Trust Classified
01158	Priest's House (Former)		Clinch Place	Greenough	17/7/92	9/7/93	Statutory Data Base
01158	Priest's House (Former)		Clinch Place	Greenough	17/7/92	9/7/93	Register- National Estate
01158	Priest's House (Former)		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified
01159	Fmr Road Board Office			Greenough	00/00/00	00/00/00	National Trust Classified
01159	Fmr Road Board Office			Greenough	00/00/00	00/00/00	Restrictive Covenant
01160	St Catherine's Church Hall		Clinch Place	Greenough	17/7/92	9/7/93	Register - national Estate
01160	St Catherine's Church Hall		Clinch Place	Greenough	17/7/92	9/7/93	Statutory Data Base
01160	St Catherine's Church Hall		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified

SHIRE OF GREENOUGH CONTINUED

01161	St Catherine's Church (Anglican)		Clinch Place	Greenough	00/00/00	00/00/00	Register - National Estate
01161	St Catherine's Church (Anglican)		Clinch Place	Greenough	00/00/00	00/00/00	National Trust Classified
01162	Saint Peter's Catholic Church		Clinch Place	Greenough	11/3/97	2/9/97	National Trust Classified
01162	Saint Peter's Catholic Church		Clinch Place	Greenough	11/3/97	2/9/97	Register - National Estate
01164	Stone Barn		McCartney Rd.	Greenough	00/00/00	00/00/00	National Trust Classified
01164	St Joseph's School (Former)		Clinch Place	Greenough	17/7/92	9/7/93	Statutory Data Base
01164	St Joseph's School (Former)		Clinch Place	Greenough	17/7/92	9/7/93	Register - National Estate
01164	St Joseph's School (Former)		Clinch Place	Greenough	17/7/92	9/7/93	National Trust Classified
01165	Fmr Maley's Mill & Pioneer Museum Group		Phillips Rd	Greenough	00/00/00	00/00/00	Register - National Estate
01165	Fmr Maley's Mill & Pioneer Museum Group		Phillips Rd	Greenough	00/00/00	00/00/00	National Trust Classified
01166	Maley's Bridge		McCartney Rd	Greenough	17/7/92	16/7/93	Register - National Estate
01166	Maley's Bridge		McCartney Rd	Greenough	17/7/92	16/7/93	Statutory Data Base
01166	Maley's Bridge		McCartney Rd	Greenough	17/7/92	16/7/93	National Trust Classified
01167	Wesley Church (Former)		McCartney/Company Rds.	Greenough	00/00/00	00/00/00	Register - National Estate
01167	Wesley Church (Former)		McCartney/Company Rds.	Greenough	00/00/00	00/00/00	National Trust Classified
01168	Anglican Church		Walkaway - Nangetty Rd	Walkaway	00/00/00	00/00/00	
01169	Public Hall		Padbury Rd	Walkaway	00/00/00	00/00/00	
01170	Walkaway Railway Station Museum		Padbury Rd	Walkaway	00/00/00	00/00/00	National Trust Classified
01171	Roman Catholic Church		Kojorena		00/00/00	00/00/00	
03249	Bringo Railway Cutting		Bringo		00/00/00	00/00/00	National Trust Classified
03443	Newmarracarra		Kojareena via	Geraldton	27/6/97	7/10/97	National Trust Classified
03724	Rose Cottage	Cnr	Phillips & Company	Greenough	00/00/00	00/00/00	National Trust Classified
03725	Ellendale Homestead		Ellendale Rd	Walkaway	00/00/00	00/00/00	National Trust Classified
03726	Glengarry Station		Glengarry Rd	Moonyoonooka	00/00/00	00/00/00	
03727	St Joseph's Church (RC)			Greenough	00/00/00	00/00/00	Register - National Estate
03727	St Joseph's Church (RC)			Greenough	00/00/00	00/00/00	National Trust Classified
03728	Old Post Office			Greenough	00/00/00	00/00/00	National Trust Classified
03729	Lodge		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03730	Barn Cottage		McCartney Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03731	Pensioner Kelly Cottage/Barn		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
03732	Farmhouse & Outbuildings		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
03733	Reakes Cottage		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
03734	Leverman Cottage		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
03735	Cottage and 7 Outbuildings		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
03736	Cottage		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified

SHIRE OF GREENOUGH CONTINUED

03737	Farmhouse Ruin		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
07378	Farmhouse Ruin inc Outbuildings Ruins		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
03739	School House Ruin		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
03740	Farm Site		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03741	"Ironbarks" Farm & Outbuildings		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03742	Maley Cottage Ruin		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03743	Bishop Cottage Ruin		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03744	Backchall's House Ruin		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03745	Rectory Ruin		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03746	Smith Cottage Ruin		Company Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03747	"Collolly" House/Barn		Crampton Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03748	Barn		Crampton Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03749	Wilton House Ruin		Crampton Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03750	"Rumble" House/Outbuildings		Crampton Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03751	Cottage		Henry St	Greenough	00/00/00	00/00/00	National Trust Classified
03752	Cottage Ruin		Jandanol Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03753	Ahearn Cottage		McCartney Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03754	Bridgeman's Cottage Ruin		Mc Cartney Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03755	Harrison Cottage & Outbuildings		Phillips Rd	Greenough	00/00/00	00/00/00	National Trust Classified
03802	Captain Drummonds Cottage	Cnr	Bayside Boulevard & NW Hwy	Drummonds Cove	00/00/00	00/00/00	
04205	Anderson's Cottage & Outbuildings		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
04206	Stone Cottage	Cnr	Brand Hwy & Phillips Rd	Greenough	00/00/00	00/00/00	
04207	Cottage Ruin		Brand Hwy	Greenough	00/00/00	00/00/00	National Trust Classified
04359	Olive Tree Group			Greenough	00/00/00	00/00/00	National Trust Classified
04453	Burma Road Reserve			Greenough	00/00/00	00/00/00	Register-National Estate
04453	Burma Road Reserve			Greenough	00/00/00	00/00/00	National Trust Classified
04454	Greenough River/Bootenal Spring			Greenough	00/00/00	00/00/00	National Trust Classified
04454	Greenough River/Bootenal Spring			Greenough	00/00/00	00/00/00	Register-National Estate
04455	Greenough Dunes System			Greenough	00/00/00	00/00/00	National Trust Classified
04630	Tibradden Station		Ellendale Pool Rd	Kojarena	00/00/00	00/00/00	National Trust Classified
09241	Ironbarks		Company Rd	Walkaway	00/00/00	00/00/00	
09243	James Carson's Cottage & Well		Brand Hwy	Walkaway	00/00/00	00/00/00	
09244	Site of Golden Sheaf Hotel	Cnr	Brand Hwy & Georgina Rd	Walkaway	00/00/00	00/00/00	
09245	Site of North Greenough State School	Cnr	Brand Hwy & Georgina Rd	Walkaway	00/00/00	00/00/00	
09246	Walkaway Cemetery		Brand Hwy	Walkaway	00/00/00	00/00/00	

SHIRE OF IRWIN

PLACE NO	PLACE NAME	STREET No	STREET NAME	SUBURB OR TOWN REGISTRATION	DATE OF INTERIM REGISTRATION	DATE OF PERMANENT	OTHER LISTING
01209	Wimpool Farmhouse and Well		Bonniefield East Rd	Dongara	00/00/00	00/00/00	National Trust Classified
01209	Wimpool Farmhouse and Well		Bonniefield East Rd	Dongara	00/00/00	00/00/00	Register - National Estate
01210	Royal Steam Roller Flour Mill	12	Brand Hwy/Waldeck St	Dongara	17/7/92	2/7/93	Restrictive Covenant
01210	Royal Steam Roller Flour Mill	12	Brand Hwy/Waldeck St	Dongara	17/7/92	2/7/93	Statutory Data Base
01210	Royal Steam Roller Flour Mill	12	Brand Hwy/Waldeck St	Dongara	17/7/92	2/7/93	Register - National Estate
01210	Royal Steam Roller Flour Mill	12	Brand Hwy/Waldeck St	Dongara	17/7/92	2/7/93	National Trust Classified
01211	Cemetery		Church St	Dongara	00/00/00	00/00/00	Register - National Estate
01211	Cemetery		Church St	Dongara	00/00/00	00/00/00	National Trust Classified
01212	St John the Baptist Church	Cnr	Church St &Waldeck St.	Dongara	00/00/00	00/00/00	Register - National Estate
01212	St John the Baptist Church	Cnr	Church St &Waldeck St.	Dongara	00/00/00	00/00/00	National Trust Classified
01213	Cottage	6	Criddle Rd	Dongara	00/00/00	00/00/00	National Trust Classified
01213	Cottage	6	Criddle Rd	Dongara	00/00/00	00/00/00	Register - National Estate
01214	Farm Building, Grave and Historic Site		Brand Hwy	Dongara	00/00/00	00/00/00	National Trust Classified
01214	Farm Building, Grave and Historic Site		Brand Hwy	Dongara	00/00/00	00/00/00	Register - National Estate
01215	The Grange (orig) Farmhouse and Cookhouse		Brand Hwy	Dongara	00/00/00	00/00/00	Register - National Estate
01215	The Grange (orig) Farmhouse and Cookhouse'		Brand Hwy	Dongara	00/00/00	00/00/00	National Trust Classified
01216	Obawarra Farmhouse		Brand Hwy	Dongara	00/00/00	00/00/00	Register - National Estate
01216	Obawarra Farmhouse		Brand Hwy	Dongara	00/00/00	00/00/00	National Trust Classified
01217	Group of Farm Buildings		Brand Hwy	Dongara	00/00/00	00/00/00	Register - National Estate
01217	Group of Farm Buildings		Brand Hwy	Dongara	00/00/00	00/00/00	National Trust Classified
01218	Six Chimneys House and Cottage		Brand Hwy	Dongara	00/00/00	00/00/00	National Trust Classified
01218	Six Chimneys House and Cottage		Brand Hwy	Dongara	00/00/00	00/00/00	Register - National Estate
01219	Tyford Farm Complex		Brand Hwy	Dongara	00/00/00	00/00/00	Register - National Estate
01219	Tyford Farm Complex		Brand Hwy	Dongara	00/00/00	00/00/00	National Trust Classified
01220	Nhargo Farmhouse		Brand Hwy	Dongara	00/00/00	00/00/00	Register - National Trust
01220	Nhargo Farmhouse		Brand Hwy	Dongara	00/00/00	00/00/00	National Trust Classified
01221	House and Grounds			Dongara	00/00/00	00/00/00	National Trust Classified
01222	Cottage	20	Hunts Rd	Dongara	00/00/00	00/00/00	National Trust Classified
01222	Cottage	20	Hunts Rd	Dongara	00/00/00	00/00/00	Register - National Estate
01223	House and Grounds	12	Hunts Rd	Dongara	00/00/00	00/00/00	Register - National Estate
01223	House and Grounds	12	Hunts Rd	Dongara	00/00/00	00/00/00	National Trust Classified
01224	Fmr Pearsse House	2	Hunts Rd	Dongara	00/00/00	00/00/00	National Trust Classified
01224	Fmr Pearsse House	2	Hunts Rd	Dongara	00/00/00	00/00/00	Register - National Estate

SHIRE OF IRWIN CONTINUED

01225	Dongara Hotel	12	Moreton Terrace	Dongara	00/00/00	00/00/00	Register - National Estate
01225	Dongara Hotel	12	Moreton Terrace	Dongara	00/00/00	00/00/00	National Trust Classified
01226	CWA Centre		Moreton Terrace	Dongara	00/00/00	00/00/00	
01227	RSL Hall		Point Leander Dv/Moreton	Dongara	00/00/00	00/00/00	National Trust Classified
01228	Shop	38	Moreton Tce/Pt. Leander Dv	Dongara	00/00/00	00/00/00	National Trust Classified
01228	Shop	38	Moreton Tce/Pt. Leander Dv	Dongara	00/00/00	00/00/00	Register - National Estate
01229	Priory Lodge and Grounds	9	St. Dominic's Rd	Dongara	00/00/00	00/00/00	Register - National Estate
01229	Priory Lodge and Grounds	9	St. Dominic's Rd	Dongara	00/00/00	00/00/00	National Trust Classified
01230	Russ Cottage		St Dominic's Rd	Dongara	00/00/00	00/00/00	Register - National Estate
01230	Russ Cottage		St Dominic's Rd	Dongara	00/00/00	00/00/00	National Trust Classified
01231	House	50	Waldeck St	Dongara	00/00/00	00/00/00	Register - National Estate
01231	House	50	Waldeck St	Dongara	00/00/00	00/00/00	National Trust Classified
01232	House (fmr Methodist Manse)		Waldeck St/Lecaille Sts	Dongara	00/00/00	00/00/00	Register-National Estate
01232	House (fmr Methodist Manse)		Waldeck St/Lecaille Sts	Dongara	00/00/00	00/00/00	National Trust Classified
01233	School Masters House (Fmr)	22	Waldeck St (cnr Smith St)	Dongara	00/00/00	00/00/00	National Trust Classified
01233	School Masters House (Fmr)	22	Waldeck St (cnr Smith St)	Dongara	00/00/00	00/00/00	Register - National Estate
01234	Dongara Uniting Church	Cnr	Waldeck St & Moreton Tce	Dongara	6/9/96	21/1/97	National Trust Classified
01234	Dongara Uniting Church	Cnr	Waldeck St & Moreton Tce	Dongara	6/9/96	21/1/97	Register - National Estate
01235	Dongara Police Station (Fmr)	3	Waldeck St	Dongara	19/5/92	16/12/94	Register - National Estate
01235	Dongara Police Station (Fmr)	3	Waldeck St	Dongara	19/5/92	16/12/94	Statutory Data Base
01235	Dongara Police Station (Fmr)	3	Waldeck St	Dongara	19/5/92	16/12/94	National Trust Classified
01236	Post Office		Waldeck St	Dongara	00/00/00	00/00/00	National Trust Classified
01236	Post Office		Waldeck St	Dongara	00/00/00	00/00/00	Register - National Estate
01237	Anglican Rectory (Fmr)	19	Waldeck St	Dongara	00/00/00	00/00/00	National Trust Classified
01237	Anglican Rectory (Fmr)	19	Waldeck St	Dongara	00/00/00	00/00/00	Register - National Estate
01238	House (fmr. Bank & Quarters)		Waldeck St/Hunts Rd	Dongara	00/00/00	00/00/00	Register - National Estate
01238	House (fmr. Bank & Quarters)		Waldeck St/Hunts Rd	Dongara	00/00/00	00/00/00	National Trust Classified
01239	Fmr Travellers' Rest Inn (ruin)		Brand Hwy	Bookara	00/00/00	00/00/00	Register - National Estate
01239	Fmr Travellers' Rest Inn (ruin)		Brand Hwy	Bookara	00/00/00	00/00/00	National Trust Classified
01240	Fmr Church		Brand Hwy	Bookara	00/00/00	00/00/00	National Trust Classified
01240	Fmr Church		Brand Hwy	Bookara	00/00/00	00/00/00	Register - National Estate
01241	Port Denison and Old Irwin Jetty			Denison	00/00/00	00/00/00	Register - National Estate
01241	Port Denison and Old Irwin Jetty			Denison	00/00/00	00/00/00	National Trust Classified
01242	Two Obelisks and Commemorative Plaque		Leander Point	Denison	19/5/92	00/00/00	Statutory Data Base
01242	Two Obelisks and Commemorative Plaque		Leander Point	Denison	19/5/92	00/00/00	Register - National Estate

SHIRE OF IRWIN CONTINUED

01242	Two Obelisks and Commemorative Plaque		Leander Point	Denison	19/5/92	00/00/00	National Trust Classified
01243	Munderra Farmhouse		Milo Rd	Irwin	00/00/00	00/00/00	National Trust Classified
01243	Munderra Farmhouse		Milo Rd	Irwin	00/00/00	00/00/00	Register - National Estate
01244	Irwin Park - Two Farmhouses		Near Piggery Lane	Irwin	00/00/00	00/00/00	National Trust Classified
01245	Fmr Yardarino School		School Rd	Irwin	00/00/00	00/00/00	National Trust Classified
01245	Fmr Yardarino School		School Rd	Irwin	00/00/00	00/00/00	Register - National Estate
01246	Fmr Allanooka Inn			Allanooka	00/00/00	00/00/00	
03561	Irwin Common			Dongara	00/00/00	00/00/00	
03790	Moreton Bay Fig Trees		Moreton Terrace	Dongara	00/00/00	00/00/00	Register - National Estate
03790	Moreton Bay Fig Trees		Moreton Terrace	Dongara	00/00/00	00/00/00	National Trust Classified
04367	Port Jackson & Moreton Bay Fig Trees		Moreton Terrace	Dongara	00/00/00	00/00/00	National Trust Classified

SHIRE OF MULLEWA

PLACE NO	PLACE NAME	STREET No	STREET NAME	SUBURB OR TOWN REGISTRATION	DATE OF INTERIM REGISTRATION	DATE OF PERMANENT	OTHER LISTING
01656	Church of Our Lady of Mount Carmel		4 Doney Sts	Mullewa	25/11/94	10/10/95	Restrictive Covenant
01656	Church of Our Lady of Mount Carmel		4 Doney Sts	Mullewa	25/11/94	10/10/95	Register - National Estate
01656	Church of Our Lady of Mount Carmel		4 Doney Sts	Mullewa	25/11/94	10/10/95	National Trust Classified
01656	Church of Our Lady of Mount Carmel		4 Doney Sts	Mullewa	25/11/94	10/10/95	Local Government MI
01656	Church of Our Lady of Mount Carmel		4 Doney Sts	Mullewa	25/11/94	10/10/95	Statutory Data Base
01657	Priest House		Bowes St	Mullewa	00/00/00	00/00/00	Local Government MI
01657	Priest House		Bowes St	Mullewa	00/00/00	00/00/00	National Trust Classified
01657	Priest House		Bowes St	Mullewa	00/00/00	00/00/00	Register - National Estate
01658	Mullewa District Hospital		Elder St	Mullewa	00/00/00	00/00/00	Local Government MI
01659	Railway Hotel		Jose St	Mullewa	00/00/00	00/00/00	Local Government MI
01660	Bank of NSW	25	Jose St	Mullewa	00/00/00	00/00/00	Local Government MI
01661	Fmr Post Office	Cnr	Jose/Maitland Sts	Mullewa	00/00/00	00/00/00	Local Government MI
01662	Masonic Hall	43	Jose Sts	Mullewa	00/00/00	00/00/00	Local Government MI
01663	Country Women's Association	45	Jose St	Mullewa	00/00/00	00/00/00	Local Government MI
01664	Mullewa Town Hall		Maitland Rd	Mullewa	00/00/00	00/00/00	Local Government MI
01665	Site of Uniting Church		Mills St	Mullewa	00/00/00	00/00/00	Local Government MI
01666	St Andrew's Anglican Church & Rectory		Padbury St	Mullewa	00/00/00	00/00/00	National Trust Classified
01666	St Andrew's Anglican Church & Rectory		Padbury St	Mullewa	00/00/00	00/00/00	Register - National Estate
01666	St Andrew's Anglican Church & Rectory		Padbury St	Mullewa	00/00/00	00/00/00	HCWA Assesst {<Threshold}
01666	St Andrew's Anglican Church & Rectory		Padbury St	Mullewa	00/00/00	00/00/00	Local Government MI

SHIRE OF MULLEWA CONTINUED

01667	Wandina Station Homestead		Mullewa - Carnarvon Rd	Wandina	00/00/00	00/00/00	Local Government MI
01668	Pindar Garage	Cnr	Sharpe/Adams Sts	Pindar	00/00/00	00/00/00	Local Government MI
01669	Pindar Hotel (Fmr)	Cnr	Giles and Sharpe St	Pindar	00/00/00	00/00/00	National Trust Classified
01669	Pindar Hotel (Fmr)	Cnr	Giles and Sharpe St	Pindar	00/00/00	00/00/00	Local Government MI
01669	Pindar Hotel (Fmr)	Cnr	Giles and Sharpe St	Pindar	00/00/00	00/00/00	Register - National Estate
01670	Wongoondy Hall		Mullewa-Mingenew Rd	Wongoondy	00/00/00	00/00/00	Local Government MI
01671	St Mary's Christian Brothers Agricultural School		Kelly Rd	Tardun	00/00/00	00/00/00	Local Government MI
01672	Christian Brothers Agricultural School		Pallotine Rd	Tardun	00/00/00	00/00/00	Local Government MI
01673	Pallotine Mission School		Pallotine Rd	Tardun	00/00/00	00/00/00	Local Government MI
01705	Pinegrove Homestead		Yallagong Rd	Mullewa	00/00/00	00/00/00	National Trust Classified
01705	Pinegrove Homestead		Yallagong Rd	Mullewa	00/00/00	00/00/00	Local Government MI
03400	Concrete Road Bridge		Carnarvon - Mullewa Rd	Ballynoo Springs	00/00/00	00/00/00	Local Government MI
03490	Concrete Road Bridge			Ballynoo Springs	00/00/00	00/00/00	
04478	Bindoo Springs			Mullewa	00/00/00	00/00/00	National Trust Classified
04478	Bindoo Springs			Mullewa	00/00/00	00/00/00	Register - National Estate
05100	Tardun Store		Railway Parade	Tardun	00/00/00	00/00/00	Local Government MI
05101	Tardun Hall			Tardun	00/00/00	00/00/00	Local Government MI
05102	Pioneer Cemetery		Mullewa-Carnarvon Rd	Mullewa	00/00/00	00/00/00	Local Government MI
05103	Recreation Ground and Buildings		Main Rd	Mullewa	00/00/00	00/00/00	Local Government MI
05104	Golf Club		Mullewa - Mingenew Rd	Mullewa	00/00/00	00/00/00	Local Government MI
05105	Club Hotel		Maitland Rd	Mullewa	00/00/00	00/00/00	Local Government MI
05106	O'Brien's House		Geraldton - Mullewa Rd	Ardingly	00/00/00	00/00/00	Local Government MI
05107	House at Devil's Creek Road		Devil's Creek Rd (Butterabby Rd)	Devil's Creek	00/00/00	00/00/00	Local Government MI
05108	Aunty Mary's House		Devil's Creek Rd (Butterabby Rd)	Devil's Creek	00/00/00	00/00/00	Local Government MI
05109	Butterabby Graves		Devil's Creek Rd (Butterabby Rd)	Devil's Creek	00/00/00	00/00/00	Local Government MI
05110	Well between Mullewa and Pindar		Mullewa Rd	Mullewa to Pindar	00/00/00	00/00/00	Local Government MI
05111	Chapel of Our Lady of Perpetual Help		Kelly Rd	Tardun	00/00/00	00/00/00	Local Government MI
05112	Presentation Convent		Doney St	Mullewa	00/00/00	00/00/00	Local Government MI
05113	De-Grey - Mullewa Stock Route No. 9701				00/00/00	00/00/00	Local Government MI
06103	Devil's Creek Hall		Mullewa - Mingenew Rd	Mullewa	00/00/00	00/00/00	Local Government MI
06104	Railway Goods Sheds and Yards		Grey St	Mullewa	00/00/00	00/00/00	Local Government MI
06105	Railway Station		Maley St	Mullewa	00/00/00	00/00/00	Local Government MI
06106	Railway Water Tank and Column		Maley St	Mullewa	00/00/00	00/00/00	Local Government MI
06107	Police Station and Court House		Mills St	Mullewa	00/00/00	00/00/00	Local Government MI
06108	Bowtell Buildings	Cnr	Maitland Rod and Stock St	Mullewa	00/00/00	00/00/00	Local Government MI

SHIRE OF MULLEWA CONTINUED

06109	Kurrajong Building		Jose St	Mullewa	00/00/00	00/00/00	Local Government MI
06110	Infant Health Centre		Jose St	Mullewa	00/00/00	00/00/00	Local Government MI
06111	Swimming Pool		Jose St (East side)	Mullewa	00/00/00	00/00/00	Local Government MI
06112	Mullewa District High School		Jose St (East side)	Mullewa	00/00/00	00/00/00	Local Government MI
06113	Nurses Quarters		Elder St	Mullewa	00/00/00	00/00/00	Local Government MI
06114	Tenindewa School Site and Well		Yuna - Tenindewa Rd	Tenindewa	00/00/00	00/00/00	Local Government MI
06115	Tenindewa Store		Tenindewa - Indarra	Tenindewa	00/00/00	00/00/00	Local Government MI

SHIRE OF NORTHAMPTON

PLACE No	PLACE NAME	STREET No	STREET NAME	SUBURB OR TOWN REGISTRATION	DATE OF INTERIM REGISTRATION	DATE OF PERMANENT REGISTRATION	OTHER LISTING
01900	Warribanno Smelter Complex Ruin		Waribanno Chimney Rd	Northampton	28/6/96	13/12/96	Register - National Estate
01900	Warribanno Smelter Complex Ruin		Waribanno Chimney Rd	Northampton	28/6/96	13/12/96	National Trust Classified
01900	Warribanno Smelter Complex Ruin		Waribanno Chimney Rd	Northampton	28/6/96	13/12/96	Local Government MI
01901	Old Gwalla Church (Ruins)		Gwalla St	Northampton	00/00/00	00/00/00	Local Government MI
01902	Gwalla Cemetery		Gwalla St	Northampton	00/00/00	00/00/00	Local Government MI
01903	Convent of Sacred Heart	51	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
01904	St Mary's in Ara Coeli Church	49-51	Hampton Rd	Northampton	8/4/94	28/2/95	Statutory Data Base
01904	St Mary's in Ara Coeli Church	49-51	Hampton Rd	Northampton	8/4/94	28/2/95	National Trust Classified
01904	St Mary's in Ara Coeli Church	49-51	Hampton Rd	Northampton	8/4/94	28/2/95	Local Government MI
01905	Railway Tavern		Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
01905	Railway Tavern		Hampton Rd	Northampton	00/00/00	00/00/00	National Trust Classified
01906	Former Police Station & Court House		Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
01907	Public Library	53	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
01908	Masonic Hall	67	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
01909	Holy Trinity Church (Angl)	65	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
01910	Shops		Mary St	Northampton	00/00/00	00/00/00	
01911	Northampton Railway Station and Rest Room		Mary St	Northampton	00/00/00	00/00/00	Local Government MI
01912	Chiverton House Complex	80	Hampton Rd	Northampton	30/8/94	11/8/95	Local Government MI
01912	Chiverton House Complex	80	Hampton Rd	Northampton	30/8/94	11/8/95	Statutory Data Base
01912	Chiverton House Complex	80	Hampton Rd	Northampton	30/8/94	11/8/95	National Trust Classified
01912	Chiverton House Complex	80	Hampton Rd	Northampton	30/8/94	11/8/95	Register - National Estate
01913	Alma School Building		Rob Rd	Northampton	30/8/94	11/8/95	Statutory Data Base
01913	Alma School Building		Rob Rd	Northampton	30/8/94	11/8/95	Local Government MI
01914	Willow Gully Homestead and Outbuildings		Horrocks Beach Rd	Northampton	23/1/96	28/6/96	Register - National Estate

SHIRE OF NORTHAMPTON CONTINUED

01914	Willow Gully Homestead and Outbuildings		Horrocks Beach Rd	Northampton	23/1/96	28/6/96	National Trust Classified
01914	Willow Gully Homestead and Outbuildings		Horrocks Beach Rd	Northampton	23/1/96	28/6/96	Local Government MI
01915	Lynton Convict Hiring Depot (Ruins)		Henderson Terrace	Lynton	1/7/94	2/6/95	Statutory Data Base
01915	Lynton Convict Hiring Depot (Ruins)		Henderson Terrace	Lynton	1/7/94	2/6/95	Register - National Estate
01915	Lynton Convict Hiring Depot (Ruins)		Henderson Terrace	Lynton	1/7/94	2/6/95	Local Government MI
01915	Lynton Convict Hiring Depot (Ruins)		Henderson Terrace	Lynton	1/7/94	2/6/95	National Trust Classified
03269	Girl Guide Hall	25	Guide St	Northampton	00/00/00	00/00/00	Local Government MI
03270	Bowes Homestead (Knockbrack)		Northampton to Nabawa Rd	Northampton	00/00/00	00/00/00	Local Government MI
03271	Oakabella		Starling Rd	Northampton	8/12/95	28/6/96	Local Government MI
03272	Trevenson Outbuildings		Trevenson Rd	Hutt River	00/00/00	00/00/00	Local Government MI
03380	Isseka Reserves		Northampton	00/00/00	00/00/00		
03439	Northampton Townsite		Northampton	Northampton	00/00/00	00/00/00	National Trust Classified
03455	Geraldton Lead Mine Site		off Warribanno Chimney Rd	Galena	7/4/98	00/00/00	Local Government MI
04259	Original Cottage			Horrocks Beach	00/00/00	00/00/00	National Trust Classified
04259	Original Cottage			Horrocks Beach	00/00/00	00/00/00	Register - National Estate
04260	Three Outbuildings with stone walls			Horrocks Beach	00/00/00	00/00/00	National Trust Classified
04260	Three Outbuildings with stone walls			Horrocks Beach	00/00/00	00/00/00	Register - National Estate
04491	Murchison River Gorge			Kalbarri	00/00/00	00/00/00	Register - National Estate
04491	Murchison River Gorge			Kalbarri	00/00/00	00/00/00	National Trust Classified
04492	Shell House Cliffs			Kalbarri	00/00/00	00/00/00	Register - National Estate
04492	Shell House Cliffs			Kalbarri	00/00/00	00/00/00	National Trust Classified
04493	Pencell Pool / 10 Mile Pool			Riverside Station	00/00/00	00/00/00	National Trust Classified
04493	Pencell Pool / 10 Mile Pool			Riverside Station	00/00/00	00/00/00	Register - National Estate
04494	Stone Wall			Northampton	00/00/00	00/00/00	Register - National Estate
04494	Stone Wall			Northampton	00/00/00	00/00/00	National Trust Classified
04621	Northampton Post Office	58	Hampton Rd	Northampton	00/00/00	00/00/00	HCWA Assesst (<Threshold)
04621	Northampton Post Office	58	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
04625	Gwalla Mine Site		Seventh Av	Gwalla	00/00/00	00/00/00	Local Government MI
04658	Wanerenooka Mine Site	North	West Coastal Hwy, at the N boundary	Northampton Townsite	7/4/98	00/00/00	Local Government MI
05022	Rabbit Proof Fence No 2		Northampton to Ravensthorpe		00/00/00	00/00/00	Local Government MI
05114	Northampton State Battery		Horrocks Rd	Northampton	24/3/98	2/6/98	Local Government MI
05522	Murchison House Station - Outbuildings and Graveyard		Ajana - Kalbarri Rd	Northampton	00/00/00	00/00/00	Local Government MI
05524	Wheal Fortune Mine (Ruins)		Port Gregory Rd	Northampton	00/00/00	00/00/00	Local Government MI
05525	Northampton Motor Hotel	52	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI

SHIRE OF NORTHAMPTON CONTINUED

05526	Galena Cottage (Ruins)		North West Coastal Highway	Northampton	00/00/00	00/00/00	Local Government MI
05527	Yarra Homestead and Outbuildings (Ruins)		North West Coastal Highway	Northampton	00/00/00	00/00/00	Local Government MI
06197	Grey's Springs		Kalbarri Lions Park	Kalbarri	00/00/00	00/00/00	Local Government MI
08026	Northampton Bakery	41	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08771	Murchison Bridges		North West Coastal Hwy	Northampton	00/00/00	00/00/00	Local Government MI
08801	Water Corporation Depot (Old)	Lot 2	Seventh Av	Northampton	00/00/00	00/00/00	
08901	Murchison Dam		Murchison River	Northampton	00/00/00	00/00/00	Local Government MI
08902	Surprise & South Surprise Lead Mines (Ruins)			Galena	00/00/00	00/00/00	Local Government MI
08903	Mount View Homestead and Outbuildings (Ruins)		Ajana - Kalbarri Rd	Ajana	00/00/00	00/00/00	Local Government MI
08905	Barrel Well		Binnu Rd West	Ajana	00/00/00	00/00/00	Local Government MI
08906	Geraldine - Port Gregory Stock Route			Northampton	00/00/00	00/00/00	Local Government MI
08907	Ajana Townsite			Ajana	00/00/00	00/00/00	Local Government MI
08908	Ajana Hall		Croton St	Ajana	00/00/00	00/00/00	Local Government MI
08909	Corrugated Iron Shed			Ajana	00/00/00	00/00/00	Local Government MI
08910	Ruffin's House			Ajana	00/00/00	00/00/00	Local Government MI
08911	Residence			Ajana	00/00/00	00/00/00	Local Government MI
08912	Railway Tank and Dam		Ajana Back Rd	Ajana	00/00/00	00/00/00	Local Government MI
08913	Binnu Townsite and wheat bins		North West Coastal Highway	Binnu	00/00/00	00/00/00	Local Government MI
08914	Binnu Hall		North West Coastal Highway	Binnu	00/00/00	00/00/00	Local Government MI
08915	Binnu School			Binnu	00/00/00	00/00/00	Local Government MI
08916	Port Gregory Townsite		Port St	Port Gregory	00/00/00	00/00/00	Local Government MI
08917	Pensioner Guard Cottages (Ruins)		Grey Rd	Lynton / Port Gregory	00/00/00	00/00/00	Local Government MI
08918	Site of Lime Kiln and Quarry		Grey Rd	Lynton / Port Gregory	00/00/00	00/00/00	Local Government MI
08919	Hutt River Road Bridge			Hutt River	00/00/00	00/00/00	Local Government MI
08920	Horrocks Beach		Horrocks Rd	Horrocks	00/00/00	00/00/00	Local Government MI
08921	Brookside (Ruins)		off Port Gregory Rd	Undandarra Gully	00/00/00	00/00/00	Local Government MI
08922	Hillview		off Port Gregory Rd	Undandarra Gully	00/00/00	00/00/00	Local Government MI
08923	Spring Valley Homestead		Port Gregory Rd	Northampton	00/00/00	00/00/00	Local Government MI
08924	Baddera Mine Site			Northampton	00/00/00	00/00/00	Local Government MI
08925	Wundi Outstation - Shearing Shed and Well		Wundi Rd	Northampton	00/00/00	00/00/00	Local Government MI
08926	Wheal May Mine Site		Wundi Rd	Northampton	00/00/00	00/00/00	Local Government MI
08927	Hill View		Wundi Rd	Northampton	00/00/00	00/00/00	Local Government MI
08928	Hill Crest		off Pigeon Well Rd	Northampton	00/00/00	00/00/00	Local Government MI

SHIRE OF NORTHAMPTON CONTINUED

08929	Town Cemetery	Cnr	Onslow and Stone Sts	Northampton	00/00/00	00/00/00	Local Government MI
08930	Residence	4	Carson St	Northampton	00/00/00	00/00/00	Local Government MI
08931	Residence	3	Howe St	Northampton	00/00/00	00/00/00	Local Government MI
08932	Cottage	5	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08933	Cottage	11	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08934	Northampton Drive-In Cinema Site	6	Wanerenooka St	Northampton	00/00/00	00/00/00	Local Government MI
08935	Northampton Police Station	28	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08936	Cuneo's	19	Robinson St	Northampton	00/00/00	00/00/00	Local Government MI
08937	House	16	Essex St	Northampton	00/00/00	00/00/00	Local Government MI
08938	House	3	Essex St	Northampton	00/00/00	00/00/00	Local Government MI
08939	Child Health Centre	2	Essex St	Northampton	00/00/00	00/00/00	Local Government MI
08940	CWA Centre	2	Essex St	Northampton	00/00/00	00/00/00	Local Government MI
08941	Kings Hall Site	Cnr	Hampton Rd / Essex St	Northampton	00/00/00	00/00/00	Local Government MI
08942	RSL Hall and War Memorial	31	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08943	Stone House	18	Bateman St	Northampton	00/00/00	00/00/00	Local Government MI
08944	Cottage	21	Barlow St	Northampton	00/00/00	00/00/00	Local Government MI
08945	Miner's Arms Hotel	38	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08946	National Bank Site	40	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08947	Alan Cripps Real Estate		Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08948	Haselby's	48	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08949	Haselby's Residence	50	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08950	Northampton Cafe/Fruit & Veg	37	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08951	Wesfarmers Shop	39	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08953	Lockyer's Wildflowers/ Red Cross Shop/Video Shop	43	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08954	Draper and Residence	45	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08955	Northampton Newsagency/ TAB and attached house	47	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08956	Mary Street Centre	23-25	Mary St	Northampton	00/00/00	00/00/00	Local Government MI
08957	House	29	Mary St	Northampton	00/00/00	00/00/00	Local Government MI
08958	Cottage	26	Mary St	Northampton	00/00/00	00/00/00	Local Government MI
08959	Cottage	31	Robinson St	Northampton	00/00/00	00/00/00	Local Government MI
08960	House	47-49	Robinson St	Northampton	00/00/00	00/00/00	Local Government MI
08961	Station Master's House	39	Mary St	Northampton	00/00/00	00/00/00	Local Government MI
08962	Site of old stock saleyards	Cnr	Robinson St & Essex Sts	Northampton	00/00/00	00/00/00	Local Government MI
08963	Site of old wheat bin/weigh bridge site and railway turntable		Robinson St	Northampton	00/00/00	00/00/00	Local Government MI

SHIRE OF NORTHAMPTON CONTINUED

08964	Catholic Presbytery	10	Mary St	Northampton	00/00/00	00/00/00	Local Government MI
08965	Roman Catholic Cemetery	Cnr	West and Stephen Sts	Northampton	00/00/00	00/00/00	Local Government MI
08966	Northampton Shire Offices	57	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08968	Date Palms		Horrocks Beach Rd	Northampton	00/00/00	00/00/00	Local Government MI
08969	House	59-61	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08970	Methodist Church	37	Stephen St	Northampton	00/00/00	00/00/00	Local Government MI
08971	Mooniemia Aboriginal Group Community Centre		Robinson St	Northampton	00/00/00	00/00/00	Local Government MI
08972	Cottage	47	Stephen St	Northampton	00/00/00	00/00/00	Local Government MI
08973	Lockyer's	57	Stephen St	Northampton	00/00/00	00/00/00	Local Government MI
08974	Residence	56	Stephen St	Northampton	00/00/00	00/00/00	Local Government MI
08975	The Grange	62	Stephen St	Northampton	00/00/00	00/00/00	Local Government MI
08976	House	61	Stephen St	Northampton	00/00/00	00/00/00	Local Government MI
08977	Agga Farm		Harvey St	Northampton	00/00/00	00/00/00	Local Government MI
08978	Northampton Exhibition Hall		Harvey St	Northampton	00/00/00	00/00/00	Local Government MI
08979	Anglican Rectory	24	West St	Northampton	00/00/00	00/00/00	Local Government MI
08980	Former Post Office	75	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08981	The Barn	76	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08982	Cottage	84	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08983	House	Lot 29	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08984	Residence	92	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08985	Residence	87	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08986	Residence	89	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08987	Cottage	11	Gwalla St	Northampton	00/00/00	00/00/00	Local Government MI
08988	Gwalla State School Site	1	Gwalla St	Northampton	00/00/00	00/00/00	Local Government MI
08990	Cottage		Drage Rd	Northampton	00/00/00	00/00/00	Local Government MI
08991	Wheat Ellen Mine Site		Drage Rd	Northampton	00/00/00	00/00/00	Local Government MI
08992	Residence	7	Gwalla St	Northampton	00/00/00	00/00/00	Local Government MI
08993	Residence	95	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
08994	Residence	5	Fifth Av	Northampton	00/00/00	00/00/00	Local Government MI
08995	Residence	9	Fourth Av	Northampton	00/00/00	00/00/00	Local Government MI
08996	Residence	7	Fifth Av	Northampton	00/00/00	00/00/00	Local Government MI
08997	Residence	4	Fourth Av	Northampton	00/00/00	00/00/00	Local Government MI
08998	Residence	21	Fifth Av	Northampton	00/00/00	00/00/00	Local Government MI
08999	Residence	2	Fourth Av	Northampton	00/00/00	00/00/00	Local Government MI
09000	House	18	Gwalla St	Northampton	00/00/00	00/00/00	Local Government MI

SHIRE OF NORTHAMPTON CONTINUED

09001	Moyle's Cottage	16	Brook St	Northampton	00/00/00	00/00/00	Local Government MI
09002	The Long cottage	14	Brook St	Northampton	00/00/00	00/00/00	Local Government MI
09003	The Old Manse	19	Gwalla St	Northampton	00/00/00	00/00/00	Local Government MI
09004	Gwalla Stone Ruins	15	Brook St	Northampton	00/00/00	00/00/00	Local Government MI
09005	Site of Gwalla Town Park	119	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
09006	Former Gwalla Railway Station and associated sites			Northampton	00/00/00	00/00/00	Local Government MI
09007	Railway Abutments			Northampton	00/00/00	00/00/00	Local Government MI
09050	Horrocks Walls	Cnr	Seventh Av/Gwalla St	Northampton	00/00/00	00/00/00	Local Government MI
09051	Residence	101	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
09052	The Bungalow	123-125	Hampton Rd	Northampton	00/00/00	00/00/00	Local Government MI
09053	CBH Silos		North West Coastal Hwy	Northampton	00/00/00	00/00/00	Local Government MI
09054	Railway Bridge (Ruins)			Northampton	00/00/00	00/00/00	Local Government MI
09055	Railway Bridge			Northampton	00/00/00	00/00/00	Local Government MI
09056	Isseka Lead Mine Site			Northampton	00/00/00	00/00/00	Local Government MI
09057	Mugawa (Ruins)		North West Coastal Hwy	Northampton	00/00/00	00/00/00	Local Government MI
09058	Lindisferne		Teakle Rd	Northampton	00/00/00	00/00/00	Local Government MI
09059	Square Well		Teakle Rd	Isseka	00/00/00	00/00/00	Local Government MI
09060	Kaburie			Isseka	00/00/00	00/00/00	Local Government MI
09061	Inglewood		Teakle Rd	Isseka	00/00/00	00/00/00	Local Government MI
09062	Stradbroke		North West Coastal Hwy	Isseka	00/00/00	00/00/00	Local Government MI
09063	Pigeon Well			Northampton	00/00/00	00/00/00	Local Government MI
09064	Flanagans		Walsh Rd	Isseka	00/00/00	00/00/00	Local Government MI
09065	Railway Siding				00/00/00	00/00/00	Local Government MI