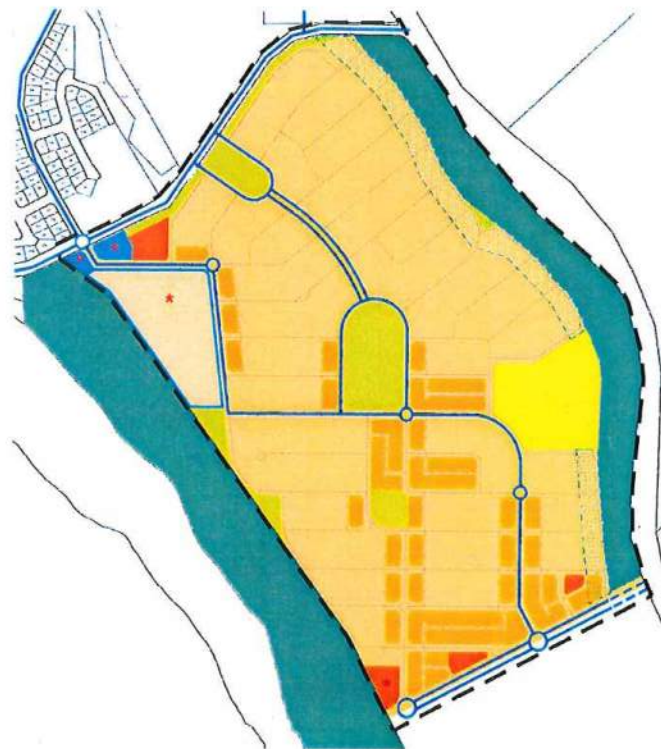


JUNE 2010

GREENOUGH RIVER ESTATE SOUTH

OUTLINE DEVELOPMENT PLAN



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received: 22/6/10

Greenough River Estate – South

Outline Development Plan



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ENDORSEMENT PAGE

This structure plan is prepared under the provisions of the City of Greater Geraldton Local Planning Scheme No.1

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

4 May 2011

In accordance with Schedule 2, Part 4, Clause 28 (2) and refer to Part 1, 2. (b) of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

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1.0 INTRODUCTION

1.1 Report Purpose & Structure

The purpose of this report is to introduce, explain and support the Greenough River Estate – South Outline Development Plan. It provides an overview of relevant statutory and strategic planning, an analysis of the context of the proposal, a review of environmental considerations and service availability, an explanation of the Outline Development Plan, and information on proposed community development initiatives proposed to support the proposal. It concludes that the site is zoned, capable and suitable for development immediately, notes the very strong demand for residential land in and around Geraldton, and demonstrates how the proposal fits into the ultimate development context anticipated.

1.2 Project Area

The Greenough River Estate – South (the subject site) covers an area of approximately 98ha, generally bounded by the Brand Highway to the west, Greenough River Road to the north, the Greenough River to the east and south to the boundary of Town Planning Scheme No.'s 1A and 4 (Figure 1). The site comprises the following lots:

LOT	OWNERSHIP	SITE AREA - HA
Lot 100 Dover Court	SIN-AUS – Greenough Pty Ltd	8.5435
Road to be closed	Crown	0.5077
Portion Victoria Location 2466	Bayform Holdings Pty Ltd	89.1474
TOTAL:		98.1986

The site forms a component of a larger landholding (the 'parent' site) with total area of approximately 850ha, as shown on Figures 2 and 3. There is a current State Agreement in place with the site owner, Bayform Holdings Pty Ltd, to enact the land exchange of Lot 2584 (being a 422.4918ha portion of land between the Greenough River and Indian Ocean, south of Greenough River Road), and Unallocated Crown Land 11939 (being a

213.8984ha portion of land north of Greenough River Road, adjacent to the Indian Ocean).

1.3 Proposal Overview

The Greenough River Estate – South Outline Development Plan (Figure 4) and accompanying reports (this, and Appendices 1 to 8) have been prepared to facilitate the residential development of the subject site.

The site and its parent property are covered by two separate Town Planning Schemes (No's. 1 and 4), and are subject to Scheme Amendments to zone the area to 'Development'. The Amendments are supported by an overall draft Structure Plan (Figure 5) to facilitate full residential development (though this is subject to its own assessment process and may be subject to change). The subject site is, however, already zoned and suitable for residential and tourism development, consolidating the existing Cape Burney settlement and providing for much needed serviced residential land in this locality.

The Outline Development Plan (ODP) proposes a predominantly residential development providing a range of densities and housing choice, in a form consistent with the sustainability-based Liveable Neighbourhood Community Design Code (WAPC). It incorporates a small commercial centre to service the daily shopping needs of the local community, a primary school, areas of passive and active open space and retention and upgrade of the existing resort. The Plan takes into account environmental, landscape and service provision issues (including a concerted focus on sustainable water management) and provides for improvements to the Greenough River Foreshore (subject to its own Management Strategy), which seek to balance conservation of the natural environment with the provision of improved access to and appreciation of the river for the benefit of all. The estate design is based on 'new urbanist' principles and would represent an exceptionally high quality addition to the Geraldton conurbation. Further details on the design and issues informing it are contained in the body of the report.

With regards to the long-term vision for the larger landholding, the draft Structure Plan provides a longer term context for this Outline Development Plan. This will be subject to separate assessment and statutory processes, but is highlighted here to demonstrate the

holistic planning in train, and the capacity for this proposal to fit comfortably into a more regional plan. Equally, the ODP has been designed to operate successfully in isolation, and so is not dependent on the more comprehensive development being contemplated.

The development of this land will provide an attractive southern entrance into Geraldton and will effectively book-end the City, while consolidating the Cape Burney locality, and supplying much needed developable residential land within the Geraldton region.

1.4 Project Team

This report has been prepared with the professional input of the following team of consultants, in consultation with the Shire of Greenough, Department for Planning and Infrastructure, key stakeholders and other government agencies:

- Prestige Project Management;
- Chappell Lambert Everett – Town Planning and Urban Design;
- ATA Environmental – Environmental Scientists;
- Van Der Meer Consulting/Ewings Consulting – Civil Engineers;
- Riley Consulting – Traffic and Transport;
- JDA Consulting – Hydrologists;
- EpCad – Landscape Architects;
- Herring Storer Acoustics – Noise;
- MP Rogers & Associates – Coastal Engineers;
- Quartermaine Consultants – Aboriginal Heritage;
- William James Landscape Architects – Visual Amenity.

The report addresses the overall development concept for the landholding, identifying opportunities and constraints at a regional and district level, while providing local context to the development of the subject land. The report addresses all planning, engineering,



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hydrological, environmental, aboriginal heritage and traffic considerations relevant to supporting development of the Outline Development Plan area, as a self sufficient and wholly contained Estate.



2.0 STRATEGIC AND STATUTORY PLANNING FRAMEWORK

The following information provides an overview of relevant strategic and statutory planning documents and places the Outline Development Plan in this context, demonstrating how the proposal is consistent with the intent of State and Local Government policy for the locality.

2.1 Geraldton Region Plan 1999

The Geraldton Region Plan (which incorporates the Greater Geraldton Structure Plan) was adopted by the Western Australian Planning Commission (WAPC) in June 1999. The Plan and associated document provides a regional framework for guiding strategic planning and development decisions for the greater Geraldton Region. Geraldton is recognised as the focal point for commercial and administrative activity for the Mid-West Region with the Plan providing a framework for coordinating its development in this role. Its key objectives are to identify the extent and location of urban land, regional open space, future transport networks and infrastructure, future community infrastructure, service corridors and the location of regional activity nodes.

The majority of the parent site to this ODP is identified as 'Future Urban' under the Region Plan, with two areas south of Greenough River Road, including the subject land, being identified as 'Future Tourism' and 'Potential Rural Residential' (refer Figure 6). Within the landholding there is a Waste Water Treatment Plant (WWTP) and associated buffer indicated on the Region Plan, with areas of 'Open Space and Recreation Reserve' connecting the WWTP to the existing settlement and its immediate surrounds, as well as a secondary reserve adjoining Brand Highway.

With regard to future residential areas, the Region Plan supports the preparation of local structure plans, based on contemporary planning principles consistent with the Liveable Neighbourhoods: Community Design Code, to coordinate district and regional development.



2.2 Geraldton Land Development Program 1998 - 2002 & Draft Country Land Development Program

The Geraldton Land Development Program focuses on land development and major infrastructure issues for the majority of the Geraldton Region Plan area, extending from the Buller River in the North, to Greenough River in the south and east to Moonyoonooka. The program includes the entire City of Geraldton, the most populous parts of the Shire of Greenough, and the southern portion of the Shire of Chapman Valley.

The Program projects populations in the Geraldton Region to increase from 31,000 in 1996 to 38,000 by 2001 and to 41,000 by 2011. It further highlights that the combined populations of the City of Geraldton and Shire of Greenough will be affected in the short term by the construction of two steel production plants and associated downstream developments, which could see the population increase to 46,200 by 2011.

Short term indicators in the Program suggest that demand for additional housing could vary from 1100 to 2600 dwelling units over a five-year period, resulting in a potential upward swing in the local land development and housing industries. Average lot uptake for the five-year period from 1993 to 1998 indicates an underlying housing demand of 100 lots per year in the City of Geraldton, and up to 250 lots in the Shire of Greenough.

The Program notes that there is potential for further short-term impacts with potential increases of up to 3,500 temporary residents, to assist with resource development projects being undertaken in the region. It further notes that major Government commitments for the significant upgrading of infrastructure in and around Geraldton will assist and, in some cases, enhance the forecast growth of Geraldton as the primary regional centre and activity node for the entire Mid-West Region.

Although the Land Development Program is now somewhat out of date, recent resource development projects coupled with major infrastructure projects have significantly increased the Region's commercial activity and population, and there have consequently been substantial increases in land take up since 2003, with demand reported to remain very high.

Of specific relevance to this project is the Program's recognition of the future development potential of the Cape Burney locality, both north and south of Greenough River Road. Further subdivision of the existing Cape Burney settlement is projected in the

Program, as is the development of Rudds Gully, east of the Brand Highway), consistent with the current Shire of Greenough's Town Planning Scheme No. 1A zonings.

2.3 State Planning Policy No. 3 – Urban Growth and Settlement 2006

The WAPC's Urban Growth and Settlement Planning Policy seeks to guide planning for urban growth and new settlements throughout Western Australia. The Policy notes that a high proportion of the population of WA (over 90%) live in towns and cities throughout the State, reflecting the varying economic and social development drivers of the different regions.

The Policy promotes well planned and coherent settlement patterns through careful management of urban growth, and the delivery of social, economic and environmental objectives, noting that in the past 30 years, the State's population has almost doubled to around 2 million people, with an expected increase in the population to 2.9 million by 2031.

One of the key objectives of the Policy is to encourage development to build on existing communities with well established local and regional economic bases, in order to concentrate investment in the improvement of services and infrastructure, and to enhance the quality of life in those communities. It further notes that coastal developments need to be particularly carefully planned to ensure beaches, dunes, estuaries and coastal wetlands are protected, and urban development is located where it is feasible to provide essential infrastructure, employment and services.

As households are becoming smaller and more diverse, and with an aging in the population, there is a growing demand for smaller and more diverse housing. The Policy requires that new settlements and town site expansions provide for this, and be supported by a sound economic and employment opportunities, as well as to be efficiently serviced by local and regional infrastructure such as roads, water supply, sewerage, drainage, energy, local parks, schools, shops, recreational facilities and so forth.

The Outline Development Plan (and, indeed, the draft Structure Plan for its parent site) is consistent with the intent of the Commission's Policy, providing a framework for creating a sustainable community, building upon existing settlement and complimenting the regional role of Geraldton. It is underpinned by the economic and employment boom



the region is experiencing, and provides for a diversity of fully serviced residential lots, supported by local parks, shops, school sites and recreation facilities.

2.4 Shire of Greenough Town Planning Scheme No. 1A

The Shire of Greenough Town Planning Scheme No. 1A specifically relates to the Cape Burney area (including the subject site), and is known as the Greenough River Resort Scheme. The Scheme was gazetted in May 1986 under the provisions of the Town Planning and Development Act 1928, and was established to facilitate and coordinate the progressive development of the Cape Burney locality. Under the Scheme, the site is zoned 'Resort Development' and 'Residential Development' (refer Figure 7), both of which allow for the preparation and adoption of an Outline Development Plan to support 'urban' development.

As part of the overarching planning occurring for the parent site, an Amendment (No. 4) to the Scheme has been prepared which proposes the rezoning of this and adjoining land to a newly created 'Development' zone. Development within this would not be permitted unless an agreed Structure Plan (similar to an Outline Development Plan) were in place outlining the development concept and requirements. The Amendment is currently subject to formal environmental review. The Outline Development Plan and the anticipated urban development of the site are, however, consistent with both the current and proposed zonings.

2.5 Draft Local Planning Strategy and Draft Town Planning Scheme No 5 - 2006

A draft Shire of Greenough Local Planning Strategy (draft LPS) has been prepared as a basis for the preparation of the Shire's new, draft Town Planning Scheme No. 5. The draft LPS currently proposes the removal of the 'Residential Development' and 'Resort Development' zonings over the subject site and its reversion back to a 'Rural' classification, with the exception of the existing resort site, where the Resort Development ('Urban', as defined by the draft LSP) is maintained. The land north of Greenough River Road has, however, been included in the 'Urban' classification and is acknowledged under the document as a future urban node.

In contradiction to this, draft Town Planning Scheme No.5 maintains similar zonings to those currently in place for the subject land. In considering previous reports on the site, the Council indicated that there was merit in maintaining the current zoning, being



'Residential Development' and 'Resort Development', in support urbanisation of the land, and that it was prepared to review the draft document recommendations to support this.

Both documents remain drafts, only, and so hold no formal status. This information is nevertheless provided for the sake of completeness.

2.6 Geraldton-Greenough Retail & Service Strategy 1996

In 1996, a report was produced by Hames Sharley on behalf of the City of Geraldton and Shire of Greenough to provide a strategic planning framework to guide future retail and commercial developments within the City, and Shires of Greenough and Chapman Valley. The Strategy recognised the importance of the Geraldton CBD as a regional focus for comparison goods retailing, office and tourist activity. However, it also recognised that the majority of new residential development would occur in the Shire of Greenough and would require additional commercial services.

The Strategy noted that the allocation of supermarket-based centres within the heart of the residential area would provide the greatest benefit to new communities within the Shire of Greenough. The localities of Wandina and Glenfield were identified as suitable locations for neighbourhood centres with proposed floorspaces of 5,000m² each. The Strategy also identified the potential for three new centres, each with a floorspace of 2,500m², at Buller, Wokarena and Cape Burney. Additionally, future showroom retailing demand was identified in the Strategy, and recommended to be located either within the city centre or within a district centre.

The Outline Development Plan responds to the Strategy recommendations by providing a local centre to service local community needs. This is proposed to be ultimately supported by future neighbourhood and district recreation, retail, mixed use, coastal and tourist node opportunities within the overarching Structure Plan. However, the necessary commercial facilities to support the development of the subject site are provided through the proposed new Centre and the facilities provided in Geraldton.



2.7 Assessment of Commercial Centre and Community Facility Requirements in Growth Precincts North and South of Geraldton 2005

Geraldton is currently experiencing elongated growth along the coast, with the majority of growth occurring in the Shire of Greenough. The 'Assessment of Commercial Centres and Community Facilities Requirement in Growth Precincts North and South of Geraldton' study was commissioned by the Department for Planning and Infrastructure (DPI) to guide future structure planning in areas north and south of Geraldton, by identifying floorspace and land use requirements for commercial centres and community facilities. The purpose of the documents is to provide guidance for the siting and ultimate size of new commercial and community facilities and centres, to be incorporated into the Shire of Greenough Draft Local Planning Strategy and the draft Northern Geraldton District Structure Plan.

The report is divided into 15 precincts, based on expected urban growth patterns, with the Cape Burney locality within Precinct 13. The report projects a future population of approximately 3400 people in Cape Burney, within approximately 1200 dwelling units. These figures are based on the current zoning for the locality and did not account for the current Town Planning Scheme Amendments being progressed through the Shire of Greenough at present. The report does acknowledge that should further land be made available for urban development, then additional commercial floorspace and community facilities will be required, which would be subject to further detailed modelling and assessment. To this end, further input has been obtained from Shrapnel Urban Planning to the area planning.

The report recognises the existing 200m² Corner Store within Cape Burney, as well as the need for additional private and public primary and high school sites. The Outline Development Plan area provides for a local centre, a primary school site and associated community infrastructure, as well as recognising the existing corner store, and is therefore consistent with the Strategy. The retail floorspace supplied is supported by additional retail analysis undertaken for the project.



2.8 Draft Batavia Coast Strategy 2001

The draft Batavia Coast Strategy was prepared in 2001 in response to growing pressure on the coast and near-shore environment in the Mid West Region, acknowledging the significant economic and environmental values of the Batavia Coast. The Strategy provides for an integrated approach to the planning and management of the Mid West at both a local and regional level.

The Strategy supports the extension of the Geraldton urban area to the north and south, consistent with the recommendation of the Geraldton Region Plan, on the proviso that the distinct coastal nodes (such as Cape Burney) retain their identity as a feature of the new coastal development. The Strategy recommends that Drummond Cove (in the north) and Cape Burney (in the south) develop as coastal 'villages', providing an opportunity to 'bookend' coastal development for Geraldton, by defined commercial/community centres and residential development.

In regards to the marine environment at Cape Burney, the Strategy notes a demand for boat launching facilities both on the northern and southern ends of the parent landholding. It recommends that the current arrangements of informal boat launching be retained for the present, but supports further investigation into the upgrade of such facilities. Further to this, a site south of Greenough River Road, within the subject land, was identified in the Strategy for minor recreational uses, with possible boat launching facilities to be provided.

Off-road recreational vehicle areas within the parent landholding, particularly to the north of Greenough River Road and around the Greenough River, were recommended for restricted use to assist in the long term stabilisation and rehabilitation of the dune system.

The Strategy recommends further investigation and review of the Batavia Coast through the preparation of local Coastal Management Strategies and Foreshore Management Plans, as well as reflecting updated management frameworks within the Shire's Coastal Management Strategy.



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Foreshore Management Plans are being developed for both the coastal and riverine foreshores abutting the parent landholding, with the recommendations of these being integrated into planning for the sites. The Outline Development Plan for the subject site seeks proposes a balanced approach to foreshore management, providing for some improved access to and use and enjoyment of the foreshore, whilst minimising adverse environmental impact. The upgrade of existing nodes, paths and access points are all proposed, and consideration is being given to the provision of a small boat launch facility. Both foreshore management plans will be subject to independent assessment but fit well into the development proposal being advanced.



3. SITE CONTEXT

3.1 Existing Land Uses

As depicted in aerial photography (refer Figure 3), the site is surrounded by a mix of rural, general farming, residential development and recreation reserves, as the urban development front extends from Tarcoola and Wandina in the north to Cape Burney in the south.

The western boundary of the subject site abuts the Greenough River and associated Parks and Recreation reservation (Figure 7). The eastern boundary of the site also abuts a Parks and Recreation reservation, adjacent to the Brand Highway, which is used for drainage purposes. This reserve is still within Bayform Holding Pty Ltd ownership however will be ceded to the Crown as a Reserve for Recreation upon development of the site.

The subject site includes an existing short stay accommodation resort on Lot 100, while the balance of the land (Pt Vic Loc 2466) has been substantially cleared and has been used for grazing of livestock for a number of years. There are no buildings on this portion of the site.

Three settlement precincts exist within the immediate locality, being the existing Cape Burney residential subdivision, consisting of 169 lots, a caravan park and camping area, and a strip of 23 leasehold cottages, as well as the Resort on the subject site. Associated with these are also a number of services and facilities, including a corner store, car parking facilities, boat launching facilities, walk trails, lookout points and a designated recreational off-road 4WD area.

There is a current subdivision approval over Lot 6852 (WAPC Ref: 131110) for the creation of 50 residential lots. This represents the final stage of the Cape Burney landholding, which is immediately north of the ODP area, off Greenough River Road. Additionally, there is a current 78 lot subdivision approval (WAPC Ref: 127132) over Lot 708, Pt Victoria Location 4201 & 200, being the land immediately west of the existing caravan park. Both subdivision approvals are expected to be acted upon in the near future.



3.2 District Context

Liveable Neighbourhoods (WAPC) indicate that the purpose of context analysis "... is to ensure that new subdivisions and development are connected to, and integrated with surrounding natural and developed areas, including planned and committed developments for adjacent site."

At a district level, the subject land is well located in terms of local employment opportunities, planned road connections and new residential developments.

Only 5km south of Geraldton, connected by the Brand Highway, it has easy access to the range of retail, commercial, recreational, civic and employment opportunities provided in the city centre. These will be supplemented by local facilities proposed to be provided as part of the proposal, which are likely ultimately to be further added to as the surrounding area develops.

To the east is located the Rudds' Gully area, which is also subject to plans for urban development. This is considered to be secondary to the development of the Cape Burney area, due to its fragmented ownership, and the need to resolve some significant environmental issues such as the impact of the Narngalu Industrial buffer. It nevertheless adds to the urbanised framework evolving around the Geraldton centre and provides for a complete picture of the future urban landscape in this region.

Further east is the Narngulu Industrial Area, located approximately 10km from the site. This will satisfy industrial needs and requirements, as well as providing important employment opportunities. The potential development of Oakagee provides further possible employment opportunities, as do the mining and farming operations occurring in the surrounding areas.

Brand Highway provides a direct north-south route, connecting the site to Geraldton and, to the south, to Perth. The proposed construction of a bypass around Geraldton would see a reduction in traffic (particularly heavy traffic) along this section of the road and a consequent improvement in its function of a district arterial.

Rudds Gully Road provides a good east-west connection between the Brand Highway and Edward Road and the Narngulu Industrial Area. Verita Road, to the north of



Greenough River Road, also provides an east-west linkage. Although currently unconstructed, future development of the Rudds Gully area may see it being built, providing an important east-west link for Cape Burney, as well as linking into the Southern Transport Corridor.

3.3 Local Context

The proposed development at Greenough River - South seeks to address the guiding development principles for the locality by managing urban growth through the consolidation of the existing Cape Burney settlement, creating a sense of place and context for the subject land, the integration of transport and land uses, the provision of housing choices and affordability, the creation of activity centres and activity nodes, as well as addressing urban stormwater management through integrated public open space and drainage, and the efficient provision of services and infrastructure.

Figures 2 and 3 locate the site within its local and regional context, demonstrating its relationship with surrounding developed and natural areas, whilst Figure 5 demonstrates its potential integration with developments planned for nearby sites (discussed below).

3.3 Overall Development Concept Plan

An overall development Concept Plan has been prepared for the parent landholding, which demonstrates the long term intentions for this, as well as providing a framework to support the implementation of the Outline Development Plan for the subject site, by way of an overall draft Structure Plan (Figure 5). This is not being submitted for formal consideration as part of this report, but is discussed here to give an indication of how the subject site fits in with a longer term, more comprehensive development scenario. Modifications to these to reflect the final form of this ODP, if altered, will occur as a matter of course.

The Concept and draft Structure Plan for the landholding has been designed to reflect Liveable Neighbourhood principles which promote community development and diversity. It proposes the development of a district centre (in accordance with the Geraldton-Greenough Retail and Service Strategy) with associated showroom, office and mixed use developments, district recreational and community facilities, coastal node and neighbourhood centre developments, a range of residential densities, as well as four primary school sites (one private) and a high school site.



The overall development seeks to address the management of urban growth by consolidating settlement development around the existing Cape Burney Estate, as well as by nominating manageable growth boundaries for staged development, such as the development of the subject land as the first phase of development of the landholding.

The Plan instils a 'sense of place' by providing a legible and robust design, focusing on the ocean, river, future district centre, school sites, district and local open spaces, and activity nodes. There is proposed to be a conscious use of energy and water efficiency within the design and ultimate development, which in turn will facilitate a sustainable environment. An economically efficient service and infrastructure base is also proposed for the development, through the use of such initiatives as the reuse of treated waste water.

Travel patterns and movements within the landholding will also support sustainability principles by integrating transport and land uses both within the landholding and with the surrounding locality.

The proposed draft Structure Plan respects the Geraldton City Centre as the primary commercial and servicing heart of the Mid-West Region, by providing complementary retail, mixed use, business and associated commercial opportunities, within not only the future district centre, but also through the proposed local neighbourhood centres and activity nodes, such as the resort site and future coastal nodes.

There has been considerable thought given to maximising urban stormwater management initiatives within the design of the landholding, specifically within the subject site where some areas of public open space as well as the Brand Highway reserve will collect stormwater runoff which, in turn, will be used for irrigation purposes throughout the landholding.

A variety of residential densities and lot sizes are proposed within the overall Concept Plan, and on the subject land, which promote housing choice and affordability options for future residents.

It is anticipated that the overall development of the landholding will accommodate in the order of 7000 new lots and up to 25,000 new residents.



C H A P P E L L
L A M B E R T
E V E R E T T

The Outline Development Plan for the subject land sits comfortably within this context, and equally well in isolation. As such, it is neither dependent on the implementation of the broader development being proposed, nor in conflict with it.



4.0 ENVIRONMENTAL CONSIDERATION

The following section provides an examination of the environmental opportunities and constraints of the subject land, within the context of the overall landholding.

4.1 Climate

The Geraldton region experiences a temperate climate which is characterised by hot, dry summers and cool, wet winters. Data from the Bureau of Meteorology indicate the region experiences an annual average maximum temperature of 25°C to 26°C. Mean daily temperature ranges between 19°C to 21°C in winter and 29°C to 32°C during summer. Mean minimum temperatures are between 9°C to 11°C in winter, while summer minimums are typically 16°C to 19°C.

Average annual rainfall for the region is approximately 470mm, the majority of which falls between the months of May and August. Rainfall for the year typically occurs over 87 days. The annual evaporation figure for the area is 2464mm. Evaporation exceeds rainfall during all months except June and July.

4.2 Topography, Geology and Soils

The landholding is located in the northern section of the Perth Basin on the coastal belt of the Swan Coastal Plain. The area is underlain and backed by Pleistocene Tamala Limestone which comprises consolidated eolian and marine sediments. More recently in geological time, Holocene eolian-derived sediments of calcareous sands have been deposited over the limestone, forming dunes that form part of the Quindalup Dune System.

The Quindalup Dune System contains a complex association of parabolic dunes, blowouts and deflation basin. The study area is comprised of three geological units, two of which are Holocene eolian-derived sediments of the Quindalup Dune System and the other unit is derived from the Greenough Alluvium System:

- **QuE2** (adjoining the Greenough River) described as an older dunefield comprised of eolian shell and quartz sand;
- **QuE3** (located between QuE2 and GaAc) described as a deflated older dunefield comprised of weakly lithified eolian shell and quartz sand; and



- **GaAc** (a narrow strip of alluvial sediments lying parallel with the Brand Highway) described as an alluvial stream channel; that is seasonally water-filled, comprised of silty sandy clay.

The subject land rises relatively steeply from the Greenough River foreshore to a ridgeline, at approximately 26m AHD, and then falls steeply towards the Brand Highway. Although there is a ridge within the subject land, the balance of the site undulates and varies in height.

4.3 Surface Hydrology and Groundwater

JDA Consultant Hydrologists have prepared an investigative report on behalf of ATA Environmental for the Cape Burney locality, to assist with progressing development of the site (refer Appendix 4). The key findings of the report are summarised as follows:

The major watercourse in the vicinity of the subject land is the Greenough River (catchment 19,500 km²) which runs along the western and southern boundaries of the site, and Rudds Gully, a minor tributary of the Greenough River located on eastern edge of the subject land bordering Brand Highway (catchment 195 km²).

The Greenough River is an intermittently estuarine river, with the mouth blocked by sand dunes during dry summer months but with winter flows breaching the sandbar. The estuarine reach extends upstream of the subject land, and at other times the Greenough River is classified as moderately saline, with an average salinity of 3,700mg/L.

Department of Water's (DoW's) peak flow estimate for the mouth of the Greenough River is 800 m³/s, which results in 100 year flood levels adjacent to the subject land ranging from 1.0m AHD at the river mouth to 4.5m AHD at the upstream boundary (confluence of Rudds Gully).

Rudds Gully is known to flood Brand Highway regularly and, based on Main Roads analysis, will flood for events as frequent as 1 in 5 year ARI (average recurrence interval). JDA estimated 10 and 50 year ARI flow for Rudds Gully, based on the rational method are 27m³/s and 138m³/s respectively.



With respect to the superficial aquifer, the regional groundwater flow direction is west toward the Indian Ocean, and the maximum recorded groundwater level in the subject land is likely to be below 5m AHD. Given that existing topography is typically greater than 10m AHD, separation between the groundwater table and the natural surface is likely to be greater than 5m over the majority of the development area, ranging to over 25m in elevated areas.

With respect to groundwater quality, the superficial aquifer salinity is likely to exceed 1500 mg/L, but dune sands along the coast may supply small quantities of freshwater from shallow wells or spears. Water supply potential in terms of deeper confined aquifer systems is likely to be limited, and brackish or saline. The only source of fresh groundwater of regional significance is south east of the subject land, where Yarragadee aquifer water from the Allanooka borefield is piped to Geraldton for its town water supply scheme. The Water Corporation is currently licensed to extract approximately 12 GL/year from the Allanooka scheme.

The proposed Water Management System for the subject land is consistent with water sensitive design practices and meets the key DoW and Shire of Greenough objectives and criteria.

Given the natural surface elevation, surface geology, superficial groundwater elevation, and water supply considerations, the subject land provides good opportunities for infiltration of stormwater both at local (soakwell) and regional (basin) scale, consistent with DoW and Shire of Greenough principles and objectives for stormwater management. As the vast majority of stormwater generated from the site will be infiltrated, application of non structural source controls will be used for water quality management including planning practices (POS locations and configuration, plantings), maintenance practices (street sweeping, stormwater system, POS areas), educational and participatory practices (capacity building programs, community education).

Regional flood management will be achieved through recognition of existing flow paths through the subject land and overall landholding for upstream catchments, and provision of adequate widths to accommodate safe passage of the 100 year flood. With respect to Greenough River, this will be achieved by development consistent with DoW floodplain mapping and the associated floodplain management strategy.



With respect to Rudds Gully, current conceptual development sketches allow for a landscaped buffer (typical width 75 m) along Brand Highway where Rudds Gully currently flows. For preliminary planning purposes, it is recommended that no filling of the buffer occur for areas where existing natural surface is less than 5m AHD, with building levels set 0.5m above the current 100 year flood level estimates. More detailed studies will, however, be required in due course to provide 100 year flow estimates, 100 year floodplain mapping of Rudds Gully adjacent to the subject land, and to assess the impact of any proposed filling within the currently landscaped buffer adjacent to Brand Highway.

With respect to local stormwater management, the current proposed POS area within the subject land appears to be sufficient in broad scale terms to address local stormwater drainage requirements. Detailed site-specific investigations will be required in due course to determine key infiltration parameters for the site for modeling of individual basin size and storage requirements.

Based on indicative POS areas, a preliminary estimate of irrigation water requirements for the subject land is 1 million kl/yr (or 1 Gl/yr). It is considered likely that a combination of alternative sources and demand reduction initiatives will be required to provide a secure irrigation source for the subject land, with an emphasis on utilising the superficial aquifer and stormwater reuse. A local drilling program will be required in due course to determine available local superficial yield and quality.

4.4 Flora and Vegetation

The subject land is located within the Irwin Botanical District of the Northern Sandplains Region, which is generally characterised by scrub heath on sandplains near the coast and *Acacia* scrub thickets further inland. More specifically, according to mapping of the Geraldton area by Beard 1976, the subject land may contain vegetation of *Acacia rostellifera* low forest.

ATA environmental conducted a flora and vegetation survey of the subject land in October 2005, which confirmed that approximately 98% of the site has been substantially cleared of vegetation, and is currently being used for wheat farming and stock grazing. A copy of the report is at Appendix 2. The survey was undertaken to determine if any of



the significant species of identified by Department of Conservation and Land Management (CALM) actually occur or are likely to occur on the site, of which there were none found.

One vegetation type was described and mapped in the subject land, *Acacia rosellifera* Open to Closed Heath. This vegetation mainly occurs in a triangular patch in the northern portion of the site. A small patch of this vegetation is also located in the south-west corner of the site. In addition, a minor cleared area consisting of scattered *Lycium ferrocissimum* and *Alyogyne hakeifolia* is located adjacent to the northern boundary of the main patch of *Acacia rosellifera* Open and Closed Heath (refer Figures 8).

The condition of the vegetation was assessed using the rating scale of Keighery (as published in Bush Forever 2000) and ranges from 'Degraded' to 'Completely Degraded'. A total of ten species were recorded within the subject land, which included four native species and six introduced (weed) species. The dominant family was the Poaceae (Grass family) with three introduced species. The very low number of native species reflects the parkland cleared and weed-infested condition of the majority of the site.

No species of 'Declared Rare or Priority Flora' were recorded within the subject land during the survey, and no 'Threatened Ecological Communities' were recorded.

ATA Environmental therefore recommends that as the remnant vegetation within the subject land is in degraded or worse condition, it is not worthy of retention. Control of weeds should be a priority during development activities, however no management measures are required.

4.5 Fauna

ATA Environmental undertook a Level 2 fauna assessment of the subject land in November 2005. A copy of the report is at Appendix 1. The findings of the survey confirm that approximately 98% of the site has been substantially cleared of vegetation, and is currently being used for wheat farming and stock grazing.

The survey was designed to identify any Specially Protected (Threatened) Fauna and other significant fauna, which may utilise the subject land or immediately adjacent areas that may be directly or indirectly impacted by the proposed development. The results of the survey have been used to identify and assess the potential impacts (direct and

indirect) on Specially Protected (Threatened) Fauna and other significant fauna as a result of the proposed development of the subject land.

There are no faunal assemblage that will be impacted on during development of the subject land. The faunal assemblage is species poor compared with other intact mesic assemblages in Western Australia and other coastal areas, although it contained a high number of *D. psammophis*. This may be due to the high number of mice and feral predators (e.g. cats) present on site. On this basis, ATA Environmental concluded that the subject land did not contain habitat of high ecological significance from a faunal perspective or contain faunal assemblages that were ecologically significant.

No species listed as 'Endangered' or 'Vulnerable' under the *EPBC Act 1999* were recorded in the study area. ATA Environmental's assessment is that the proposed development may result in the loss of a small patch of remnant degraded fauna habitat, however this will have minimal impact, if any, on fauna assemblages within the locality.

4.6 Archaeological and Aboriginal Heritage

An archaeological investigation for Aboriginal heritage significance of the Cape Burney landholding was prepared by Quartermaine Consultants on behalf of ATA Environmental. A copy of the report is at Appendix 3.

The investigation involved the assembly of data from previous work in the region, including information from the Heritage and Cultural Division, Department of Indigenous Affairs Aboriginal site files, previous survey reports, maps and environmental information.

As a result of previous surveys and independent research, it was established that 17 Aboriginal sites have been registered with the DIA within a five kilometre radius of the project area. Sixteen of these sites are archaeological sites or contain archaeological material. Seven of the archaeological sites are within the project area, but none are located within the ODP area (refer Figure 9).

4.7 Visual Amenity

William James Landscape Architect was commissioned by ATA Environmental to prepare a visual amenity assessment for the subject land, and overall landholding. A summary of the findings is as follows:



The landscape at larger Greenough River Estate landholding comprises ocean beaches, river foreshore, coastal dunes, existing small settlements and a large mobile dune (Refer Figure 10). The stabilisation of this mobile dune is the subject of an agreement between the developers of the land and the State Government, however is outside of the current stages of development, and will be subsequently further examined as development proceed north of Greenough River Road (refer 12). The principle landscape of the subject land, however, comprises the river foreshore.

The purpose of the assessment is to:

- determines existing landscape values and the likely impacts of proposed land use changes;
- evaluates the impacts of these changes against visual aesthetic objectives derived from existing local and state government policies and from common public perceptions; and
- propose strategies for meeting these objectives.

The assessment considers four aspects of landscape: character, visual aesthetic significance, wilderness values and views.

The assessment concludes that:

- The proposed Greenough River Estate landholding satisfies visual aesthetic management objectives derived from local and state government policies and from the application of commonly accepted community standards.
- The existing landscape character will be respected through the retention of typical dunal landforms during the earthworks program; through the integration of indigenous vegetation into the future open space system; and through the retention and enhancement of the natural character of the river foreshore and the natural drainage line running parallel to Brand Highway.
- Visual aesthetic significance and wilderness values will be protected through the conservation and sensitive development of river foreshore reserves.
- Views to the river will be enhanced by the introduction of new viewing opportunities within the foreshore reserve and the proposed east-west access roads into the development from Brand Highway.

- To avoid the appearance of Geraldton spreading into the countryside, through strip development along the Brand Highway, screening vegetation should be established on the western edge of the highway except at the road entrances to the development.

4.8 Acoustic Assessment

Herring Storer Acoustics was commissioned by ATA Environmental to prepare an acoustic study for the subject land. A copy of the report is at Appendix 5 the findings of which are summarised as follows:

The noise received at residences is dependant on the distance from the source (in this instance, the Brand Highway), screening and, in the case of road noise, the surface type and speed of vehicles upon it. The buffer distances required to comply with accepted standards vary as follows:

Speed Limit (km/hr)	Road Surface / Buffer Distance (m)	
	Chip Seal	Dense Graded Asphalt
70	90	60
90	150	90
110	220	130

The proposed landscaping between the edge of the road reserve and the closest residence would, for the majority of the development, provides a sufficient buffer with respect to traffic noise, particularly if the road surface of Brand Highway were upgraded to dense graded asphalt.

Even with the inclusion of noise amelioration, however, it is recommended that the first row of residence adjacent to the Brand Highway be designed so internal noise levels during the night period do not exceed an L_{Aeq} of 35 dB(A) in a bedroom or 40 dB(A) in a living space. Outdoor entertainment areas should be designed or located such that



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they comply with an L_{Aeq} noise level during the night period of 50 dB(A). To achieve the required internal noise level, 'Quiet House' design is to be used for those residences located adjacent to the Brand Highway.

In addition, it is recommended that the first row of residences adjacent to the Brand Highway be registered with notification on the respective certificates of title advising of likely vehicle noise from the Brand Highway, and that the proponent satisfy the 'Appropriate Authorities' that acceptable internal noise levels can be achieved.



5.0 SERVICING AND INFRASTRUCTURE

A detailed Engineering and Infrastructure report has been prepared by Ewing Consulting Engineers, outlining preliminary engineering aspects of the proposed urbanisation of the subject land and demonstrating its capacity to support development (refer Appendix 7). The following provides a summary of the principle findings of the report.

5.1 Earthworks

The landform is primarily calcareous sand weathered from Tamala Limestone with a parabolic dune system ranging from low dunes with moderate slopes about 10% up to steep, high dunes with slopes up to 65%.

The topography varies from RL 2m AHD to approximately 26m AHD within the subject land. To shape the land adequately to render it suitable for the proposed urban residential development, it is proposed that the whole site be earthworked and reshaped to maximise the opportunities for river and seaward views whilst providing interest to lots with inland views to the east.

A number of alternative earthwork development strategies have been developed and analysed to best achieve a desired outcome with that currently recommended for the Outline Development Plan detailed in Figure 11 - WP06-0466 SK19. The final earthworks shape will be dependant on the outcome of detailed design as the project progresses.

The earthworks strategy, particularly in the western part of the site adjacent to the Greenough River foreshore reserve, will be subject of detailed design to best suit proposed foreshore upgrading and management proposals. The existing ridgeline on the site is proposed to be move westwards to allow for developable grades on the Brand Highway side of the site (grade between 10-12%). Grades on the western side of the ridge are proposed to be approximately 4-6%.

The earthworking concept proposed would yield an excess of material. This is proposed to be placed on land north and south of the site to suit future development on adjacent areas.

As the project progresses, detailed geotechnical investigations will be carried out over relevant sections of the site to further assist with earthworks planning strategies.

Clearing, earthworks and land re-stabilisation following earthworks will be carried out to suit timing and other constraints as imposed by the Shire of Greenough on major earthworks for land development projects. It is understood that there is a general requirement that bulk earthworks in the Shire be limited to the "winter" months - 1 March to 1 October in any year. In this regard, dust and sand drift control will be carried out to meet Department of Environment and Conservation requirements.

5.2 Drainage and Stormwater Management

Stormwater management for the Estate will be significantly influenced by predicted flood levels of the adjacent Greenough River and Rudd's Gully. Minimum development levels will be set to ensure that development levels are in excess of 0.5m above predicted 100 year flood levels in adjacent flood ways. Generally, minimum development levels will be above RL 5m AHD.

Maximum groundwater levels within the subject land are expected to be well below minimum building development levels. The soil types are such that on-site disposal of stormwater run-off will be possible for all home sites to be developed within the Estate.

Stormwater run-off from road reserves and pavements will be collected into piped drainage systems constructed to meet Shire of Greenough development standards. Collected stormwater will be piped to localised swale absorption areas, distributed throughout the Estate. It is proposed that the existing reserve adjacent to the Brand Highway will accommodate the majority of overland flow from the Estate and the adjoining Rudd's Gully area. Areas of public open space within the development will also accommodate a component of drainage within open swales, and in turn be used for irrigation purposes throughout the Estate.

The management and disposal concepts for stormwater are set out in detail in the JDA Hydrological Report (Appendix 4). That report also includes an excerpt of relevant Shire of Greenough Development Guidelines (2005). Key requirements include that:



- An overall drainage plan be developed showing catchment boundaries and the estimated run-off from the overall catchment and sub-catchment.
- Developments within common catchments have a shared responsibility for ensuring the whole of the catchment is drained. Where a development is staged an overall plan for the whole of the catchment is required.
- Stormwater disposal is to be in such a way as to promote maximum possible recharge of the groundwater aquifer.
- Stormwater drainage calculations are to be consistent with Australian Rainfall and run-off – A Guide to Flood Estimation (Institution of Engineers Aust, 2000).
- Stormwater infiltration/compensating basins are to be sized for 10 year average recurrence interval stormwater events.
- Escape paths for drainage basins are to be sized to accommodate 100 year ARI storm events.
- Stormwater basins and compensating structures are not to impair recreational amenity and are to be limited to maximum 25% of public open space area.
- Maximum water depth for the 100 year event is not to exceed 500mm and not to retain water for more than 48 hours.

Detailed stormwater management within the Estate will be governed by these development criteria and subject to separate approval as part of the subdivision process.

5.3 Irrigation Strategy

As previously discussed, the existing lake and water courses within the Brand Highway reserve will be re-profiled to create a series of interlocking lined lakes which will in turn be used for irrigation purposes, as well as performing the function of drainage and a floodway route from the adjoining Rudd's Gully area to the Greenough River. In addition, a series of bores will be constructed within the reserve to assist in irrigating the development.

Re-profiling of the watercourse and extension of the lake system within the reserve will also provide additional storage capacity to improve management of stormwater drainage which runs through this zone, as well as assisting in the passive irrigation strategy for the landholding.



It is anticipated that irrigation water will be provided through a series of shallow aquifer bores constructed across the reserve adjacent to the Brand Highway. Current preliminary investigations indicate that a groundwater source suitable for irrigation of landscape areas will be difficult to locate and that the existing groundwater at depth is highly saline due to the site's proximity to the Greenough River. Previous studies undertaken in the region surrounding the development area indicate that a groundwater lens with salinity readings suitable for irrigation applications on landscape areas may exist below the natural surface level.

The flow rate expected from these shallow bores will not be at a rate required to allow for one or two bores to irrigate numerous open spaces across a large area. As a result, the likely scenario will be numerous bores interconnected with a ring mainline between open space areas 'skimming' the water from the first few metres of the groundwater for irrigation purposes. Current investigations will confirm if this proposal is viable.

Further, the reconfigured water bodies within the Brand Highway reserve will act as holding reservoirs for irrigation purposes for the landscape areas. A bore will pump water into the water body as a top up function and irrigation water will be subsequently drawn from this water body for landscape purposes.

All irrigation shall be installed to the local authorities' standard specifications and industry best practice. Maintenance minimisation processes will apply in all circumstances. Controllers shall be keyed and accessed in accordance with the local authorities standards. Irrigation shall be designed to incorporate stations that can be terminated as agreed upon planting establishment and maintenance handover to the Council in accordance with relevant policies.

The mandatory developer funded and managed landscape and irrigation maintenance period of two years will apply to all public open space areas following completion of landscape construction works. Typically the first year is an establishment period, followed by a second year of consolidation.

After the two year period, public open space, landscape and irrigation maintenance will be handed over to the Shire of Greenough. As part of the ongoing approval process, every public open space landscape and irrigation design will be submitted to and



approved by the Shire of Greenough prior to construction commencing. Landscape design will incorporate recreation and environmental requirements, whilst focusing on maintenance minimisation principles and techniques.

Discussions will also be held with the Department of Environment and Conservation and Water Corporation for the possible reuse of treated waste water to irrigate open space areas within the Estate, and overall landholding, due to the limited water supply for the site.

The developer is committed to undertaking water sensitive urban design principles and is working with the Shire to deliver outcomes in this process to reflect best practice throughout the development.

5.4 Water

The Water Corporation has advised that the existing water infrastructure is designed to cater only for the present townsite and the area currently zoned for residential purposes north of Greenough River Road (refer Figure 12).

Existing infrastructure may be able to be extended to accommodate relatively limited areas of additional development of this Estate, but this would depend on the location of development stages. Staging information and timing has been provided separately to the Water Corporation.

As previously detailed, potable water for Greenough and Geraldton is provided by piping water from the Allanoooka Borefield some 20km from the site. The primary water supply main is an 800mm diameter pipeline with some capacity for supply to the proposed expanded townsite. This supply will also need to be expanded to meet the demands of a proposed separate 1,000 lot development currently being planned adjacent to Rudds Gully east of the Brand Highway.

The developer will be expected to contribute standard headworks charges per lot for residential development. The need for upgrading of the existing main 800mm pipeline to accommodate this development will be dependant on other developments in the Geraldton and Greenough areas. Dependant on timing and demand, the developer may be requested to pre-fund some aspects of any upgrading required. Interim solutions

may include duplication of parts of the line in places of low pressure to provide staged upgrading.

There is a townsite water storage reservoir to store water piped from the borefield. It is unlikely that this existing reservoir has the capacity to service this development. The existing reservoir has a service capacity at present for 220 lots. Whilst this reservoir will ultimately need to be upgraded, the timing and funding of such an upgrade will be determined by Water Corporation from time to time as development in the area progresses. Under current policy the reservoir upgrading will be funded by the Water Corporation however, dependant on timing, the developer may be asked to contribute by pre-funding some or all of the upgrade requirements.

Internal water reticulation to service each individual lot will be designed and constructed to meet Water Corporation of WA standards.

The Estate is proposed to be provided with fully reticulated water supply system. Fire management will be provided by construction of fire hydrants within the Estate to meet FESA standards and requirements.

5.5 Waste Water

It is expected that the Western Australian Planning Commission will require that each lot within the proposed development be provided with a wastewater connection linked to a reticulated wastewater system. The Water Corporation has an operating licence for a wastewater system in the Greenough townsite, and has planning in place to cater for the existing zoned land.

An existing sewage pump station within the Greenough townsite collects wastewater as shown on plan (Figure 13). The pumping station and reticulation network has some capacity to accept part of the subject land. This pump station delivers wastewater to an existing wastewater treatment facility within the landholding, north of Greenough River Road (being the existing Waste Water Treatment Plant site). This existing treatment facility is at approximately 1/3 of capacity. That is, it has the capacity to accept wastewater from about a further 300 lots.



The Water Corporation is at present constructing the Narngulu Wastewater Treatment Plant as a regional wastewater treatment facility. This plant is due for completion and commissioning by about end 2007. At this time, it would be able to accept wastewater diverted from the existing Greenough treatment plant.

Diversion of wastewater will be triggered either by reaching the capacity of the existing plant, or by breaching buffer zones.

The developer will be expected to contribute standard headworks charges upon development of each residential lot. The Water Corporation policy allows that pumping stations, pressure mains and wastewater treatment facilities are ultimately funded by the Water Corporation from headworks charges and other sources, however, dependant on timing, there may be a need to pre-fund some wastewater works.

The existing reticulation and pump station within Greenough will not cater for all the proposed subject land's development. Possibly two Type 90 sewage pump stations and associated pressure mains will be required to be constructed for the subject land with locations dependant on ultimate Estate planning and earthworks levels.

It is likely that the developer will be required to enter into a Customer Constructed Works Agreement with the Water Corporation to pre-fund the cost of construction of these pumping stations and pressure mains with Water Corporation providing refunds progressively as development takes place and in accordance with an agreement yet to be determined with the Water Corporation.

Internal reticulation systems will be constructed to meet Water Corporation standards.

5.6 Electricity, Gas and Communications

Existing facilities are available to provide electricity, gas and telecommunications to the site.

For each service, the proposed development is likely to trigger the requirement for upgrade and/or construction of new facilities to meet project demands.



Internal electricity cabling will be constructed underground to meet Western Power development standards and in accordance with established policies for construction of new power facilities for such estates.

Whilst AlintaGas provides supply to Geraldton, there are no existing facilities in Greenough. Supply of gas from the Alinta network will be considered and will be subject of further negotiations between the developer and AlintaGas.

Telstra has indicated that it can extend services to the site, provided that the developer pays for all trenching (to its standards) within the Estates, pays for any network relocation that may be required as a result of this subdivision or headworks to the subdivision, and provides a suitable trench for the initial stage of development to opposite the corner of Rudd's Gully Road and Brand Highway.

Telstra offers higher levels of communication services for developments such as that proposed for. These services can include broadband, fibre to the home, and the like.



6.0 OUTLINE DEVELOPMENT PLAN

This Greenough River Estate - South Outline Development Plan (ODP) has been prepared and lodged pursuant to Clause 6.1.1 of the Shire of Greenough Town Planning Scheme No 1A. It represents the first phase of development of the Greenough River Estate project, which is expected to be progressively developed over the next 5-10 years. It is supported by both the existing zoning of the land and extensive research which has been conducted into the development potential and associated issues as detailed in this report.

6.1 Project Area

The subject land is bound by existing Greenough River Road to the north, the Greenough River to the west, the Brand Highway to the east and the Town Planning Scheme No.'s 1A and 4 boundaries to the south. The subject land has an area of approximately 98ha.

6.2 Project Vision

To create an integrated but distinct village community with linkages to urban area to the north, providing a broad based and diverse residential environment, supported by appropriate employment and recreational opportunities, achieving the highest standards in urban design, environmental performance management and sustainability.

6.3 Project Objectives

To:

- Provide a framework for urban land uses within the ODP area, supporting and accommodating a self contained residential community;
- Provide a framework for subdivision approvals within the ODP area;
- Provide for a variety of housing through a range of densities, predominately at an R25 density with higher codings up to R60, within and around the existing resort, centre and river nodes;
- Define a neighbourhood connector network reflecting and accommodating public and private transport priorities;



- Provide a local / village centre accommodating retail floorspace and mixed uses development;
- Provide a 4.0 hectare primary school site, within a central location ;
- Develop an integrated open space, conservation and drainage network, balancing environmental, recreational and engineering objectives;
- Provide for a sustainable land use and lot design;
- Reflect and integrate the development area with surrounding land uses and interfaces;
- Provide a logical progression of development from the existing residential area;
- Create a robust and legible street design which integrates future development north and south with the ODP area;
- Provide opportunities to access and utilise the river and associated foreshore while maximising and focusing development around the river;
- Create a road network which capitalises on view corridors to the river and ocean, while maximising solar orientation of lots; and
- Provide an Estate with the highest quality public infrastructure, in the form of retaining walls, road pavement and kerbing, street trees, architecturally designed open spaces, themed street signs and precincts.

6.4 Design Principles

The design of the Estate is based on WAPC 'Liveable Neighbourhood' sustainability-based principles and objectives, which encourage permeability and walkability within the cell, as well as creating a self contained development by proposing local commercial centres, community facilities, well developed open space as well as a variety of lot sizes and densities. Early development of the subject lands services, facilities and local infrastructure, will provide the foundation for the development of a distinctive community, whilst capitalising on and consolidating the existing Cape Burney area.

6.5 Overview

Development of the site will consist of approximately 900 residential lots at a density of between Residential R25 and R60. While the base density coding is proposed at R25, the actual lot sizes will be more reflective of the R17.5 – R20 density codings (being between 550m² and 650m²). The purpose for base coding the site R25 is to allow for some flexibility within the design, while minimising unnecessary minor amendments to the Shire's Town Planning Scheme to modify density codings for the site, should these alter slightly. It is envisaged that approximately 70% of lots within the ODP area will be coded R25 with lot sizes anticipated to be predominantly between 550m² and 650m².

The development of the site will also include a centrally located 4ha Primary School site, a tourist node consisting of the existing resort site and additional area abutting the river, a small, 'main street' style local centre integrating with the river foreshore, and areas of open space, including foreshore, a new community park, Brand Highway buffer/reserve and local pocket parks and playing fields.

Development is to commence immediately south of Greenough River Road, adjacent to the existing Cape Burney settlement, utilising existing services and infrastructure. The development of this portion of the Greenough River Estate is considered to be a logical extension of the existing settlement north of Greenough River Road and will consolidate this by providing new opportunities for community infrastructure, schooling and shopping facilities, as well as residential and tourism opportunities.

The existing Cape Burney caravan park is to remain in the short to medium term, given its local and regional significance, and may form the basis for a future tourism precinct as development north of Greenough River Road progresses. A possible alternative future location for a Caravan Park has been identified south of the site, off Devlin Pool Road, adjacent to the Greenough River with good access from Brand Highway though pursuit of this, if and when it occurs, would be subject to a separate statutory process.

There is a strong relationship between the Greenough River and the proposed development, with key activity nodes proposed to be strategically located within the site and adjacent to the river foreshore, which will act to preserve and enhance the natural beauty of the area, while providing areas of interest and controlled access to the foreshore.



The Estate has been designed to focus development on the river, with an interconnected street network and legible road hierarchy, with the majority of lots achieving passive solar orientation. There is a strong presence of boulevard style streets as distributor roads within the cell, with a new east-west connection to the Brand Highway proposed on the southern boundary of the Estate where Town Planning Scheme No.'s 1A and 4 abut.

Due to the slope of the land and the proposed recontouring of the site to achieve a suitable development grade, the Estate has been designed to maximise view sheds of the river and ocean wherever possible. There is a current ridge line traversing the site, which is proposed to be reduced in overall height and moved slightly westward to allow for more even grades to be constructed on both the Brand Highway side and Greenough River side of the site.

Environmental sustainability and water wise initiatives will be employed in the development of the Estate, due to a limited water supply. Discussions are currently underway with the Water Corporation for the possible re-use of treated waste water for the reticulation of the sites landscaped areas.

In addition, alternative methods of water sourcing and harvesting will be used within the Estate, such as the utilisation of water stored in man-made lakes adjacent to the Brand Highway, the use of strategically located groundwater bores in the Brand Highway reserve to augment and refill the lakes, as well as the collection of stormwater runoff from road reserves and pavements being collected into piped drainage systems and directed to localised swale absorption areas distributed throughout the Estate.

The ODP will guide development of phase one of the anticipated overall development project and will be used as the basis for further subdivision applications and preparation of Detailed Area Plans for the subject land.



6.6 Outline Development Plan Features

6.6.1 Land Use

The following table provides a land use summary for the Outline Development Plan area.

Table 1: Land Use Schedule – Greenough River Estate South - Outline Development Plan

	Sub Total (ha)	Total (ha)
GROSS (Outline Development Plan) AREA (GA)		98.20
Non Residential Land Uses (NRLU)		
Resort	4.59	
Primary School	4.01	
Local Centre	0.52	
Total NRLU	9.12	
GROSS RESIDENTIAL AREA (GRA) (GA less NRLU)		89.08
Public Open Space Required	8.91	
Public Open Space Provided	15.96	
NETT RESIDENTIAL AREA (NRA) (NRA less POS)		73.12

6.6.2 Residential Densities

It is intended that subject land will ultimately comprise a range of residential densities and housing types, to be developed and refined through the subdivision process. Higher densities will generally be promoted within and around the future village centre/main street, as well as around the existing resort site, and areas of amenity such as public open space and the river foreshore nodes.

The ODP shows a base coding range of Residential R25 with the majority of lots currently being proposed between 550m² and 650m². The remainder of lots within the ODP area (approximately 30%) will consist of medium to high density, with density codings reflecting R40 to R60, comprising a mix of single residential cottage lot product with lot sizes ranging from 300m² to 350m², and strategically located grouped housing sites, with densities of up to R60. In recognition of the ageing population, some of these grouped housing sites could be developed as lifestyle villages/aged persons retirement village. Proposed residential densities are shown on the Outline Development Plan, and will be refined and



updated with each subdivision application, in accordance with the location criteria below.

6.6.2.2 Residential Medium Density Location Criteria

Residential Density Codings:	Residential R40 to R60
Dwelling Types:	Single, grouped and multiple dwellings
Development Controls:	Detailed Area Plans (to be prepared following subdivision approval for lots smaller than 350m ²) Residential Design Codes Town Planning Scheme No 1A and Council Policies
Location Criteria:	

- Generally adjoining surrounding areas of high amenity, such as public open space, river foreshore nodes, resort, and the future local centre;
- Generally R60 development will be located within 400m of the local centre;
- Located to maximise access and use of services and facilities;
- Located to enhance passive surveillance of public spaces; and
- Cottage lots generally accessed by rear laneway.

6.6.3 Commercial Facilities

A Local Centre, in traditional 'main street' form, is strategically located on the northern boundary of the site, along the new entry road from Greenough River Road, abutting and complementing the tourist site and adjacent river foreshore. The Centre is intended to service the local commercial / daily convenience needs of the subdivision and existing Cape Burney settlement, and also to provide an amenity and community focus, connecting the site with the river foreshore.

A site of 5235m² has been provided which will cater for the 400-460m² retail floorspace (approximately 1600m² site area) anticipated by retailing modelling undertaken to be required. The Centre is expected to include a range of commercial uses such as a deli / convenience store, café/restaurant, newsagent, possibly some medical, specialist retail or other commercial uses, with the opportunity for surplus land area to accommodate

residential apartments / units. There is also opportunity to develop two storey grouped dwellings on sites around the Centre, to assist in creating a 'main street' style of development. Larger commercial functions will be catered for by Geraldton in the short to medium term, and will potentially be supplemented by neighbourhood and district facilities proposed to the north of the site as and when this develops.

The location of the Centre adjacent to the resort site and neighbourhood park proposed abutting the river foreshore will allow for a strong activity node and focal point for the community to be developed.

The provision of commercial, retail and medical facilities is consistent with the recommendations of the 'Assessment of Commercial Centre and Community Facility Requirements in Growth Precincts North and South of Geraldton 2005', and the 'Geraldton-Greenough Retail and Service Strategy 1996', as well as the WAPC's Liveable Neighbourhood Policy and will supplement the regional and district services existing and planned to be provided elsewhere in the locality, and provide additional employment opportunities. Opportunities for home-based business will also support this objective.

6.6.3.1 Commercial Centre Design

Amenity uses (eg potential café) will be closely integrated with the proposed river node at the western end of the Centre, creating an active, vibrant public space at the river's edge. The river will add considerable amenity, interest and viability to the Centre consolidating its role as a focus for the development.

Car parking for the Centre is proposed to be located to the rear of the sites to allow for the developments to be constructed up to the boundary, and will be provided in accordance with the Shire of Greenough Town Planning Scheme car parking requirements.

At subdivision stage, Detailed Area Plans will be prepared for the Local Centre, setting out detailed development standards and design requirements for uses within this node to ensure it develop in a form consistent with the vision. This may make development of the Centre's commercial component a prerequisite of any residential part to ensure the provision of its primary function to the community.

Final floorspace allocations for commercial areas will be further developed and refined as part of the overall area structure planning, currently in train.

6.6.4 Tourist Precinct

A 4.5ha tourism site has been designated in the location of the existing resort. Details of development options for the site will emerge following further market analysis however it is currently proposed to retain and significantly enhance the existing resort as a focal point for the Estate. It is proposed to consist of a number of short stay accommodation units, restaurant and conference facilities, as well as tennis courts, swimming pools and associated infrastructure. The resort facilities will be made available to the future residents of the estate, which will enhance the amenity of the area by providing a range of community and social infrastructure.

There is an opportunity to locate higher density development around the resort, due to the amenity it affords, as well as its strategic location abutting the Greenough River. The land immediately surrounding the resort, in addition to the resort itself, will form the Resort Precinct. A Detailed Area Plan is proposed to be prepared at the subdivision stage, setting out development standards and design requirements for the Precinct.

The foreshore adjoining the resort will be enhanced through the development of a new community park, at the intersection of Greenough River Road and the Greenough River. This will assist in providing a high amenity recreational destination for not only the resort, and for the Estate, but for the existing and wider community as well.

6.6.5 Primary School

The development of this site with around 900 dwelling units in addition to the existing settlement at Cape Burney and the proposed development immediately north of Greenough River Road necessitate provision of a primary school.

A 4.0ha school site has been located centrally within the southern precinct, and fully within the subject site, to allow the Estate to be self contained and for planning for this facility to progress without hindrance. The primary school is located within walking distance to all lots within the ODP, and has road frontage on three sides. The size of the new school site is consistent with the Department of Education and Training requirements and its location accords with its stated preference.

Dependant on the rate of sale of lots within the site, there may be opportunity to commence the new school on a temporary basis, similar to the concept of 'schools in shop's, until such time as there is either a critical mass of students to warrant the construction of the new school, or alternatively to meet a stop gap in the Department of Education and Trainings school construction program. Options for the construction of the new school will continue with the Department of Education and Training as this development proceeds.

Further primary school and high school sites will be provided within the overall Cape Burney development, based on Department of Education and Training requirements and future catchments, and have been evenly distributed throughout the northern landholding. Further discussion on the final location and size of these school sites is currently being negotiated with the Department of Education and Training, and will be updated on the Structure Plan for the northern precinct.

6.6.6 Public Open Space Provision

Public open space has been strategically located within the Outline Development Plan to meet recreational, environmental and drainage objectives. The following Public Open Space Schedule summarises open space provision within the development area.

Table 3: Public Open Space Schedule

POS Area	Gross Area (Ha)	Credited Area (Ha)
1	2.6602	2.6602
2	0.8793	0.8793
3	0.5670	0.5670
4	0.4172	0.4172
5	0.3222	0.3222
6	0.0988	0.0988
7	0.3353	0.3353
8	0.4290	0.4290
9	10.2527	5.12635
TOTAL	15.9617	10.83535
% NRA	17.92	14.82



Even providing only 50% credit for the Rudd's Gully POS corridor (some of which may be subject to permanent inundation), this represents provision of well in excess of the 10% of Net Residential Area required under the Commission's Policy.

In addition to the provision of approximately 16ha of public open space area, considerable development of the open space is proposed, as discussed further below.

6.6.7 Landscape Strategy, and Public Open Space Location and Treatment

Development of the areas of public open space will extend to include the development of the Brand Highway reserve with a series of interlocking lined lakes and localised swale absorption areas, as well as the creation of a community park on the Greenough River foreshore reserve.

There are 4 different categories of open space described within the subject land, which include:

- Public Open Spaces (within the outline development plan area)
- Streetscapes
- River Foreshore
- Landscape Buffer (adjoining the Brand Highway)

A draft sketch book has been prepared by EpCad, to demonstrate amongst other things, the principles and indicative theming of the above areas of open space within the Estate (refer Appendix 8).

The landscape strategy behind public open space development for the subject land is to provide a readily useable, highly aesthetic and liveable environment for future residents from day one. The character of the site will relate to the strong landscape feature of the river foreshore to the west as well as creating sub-precincts related to the topography and retained natural features of the area.

The key objectives for the landscape are to:

- Preserve the topographic features and associated vegetation assemblages in regional open spaces;



- Provide a network of pedestrian movement routes which incorporate pathways and dual use paths;
- Provide a balance of passive and active recreational opportunities;
- Establish landscape corridors, linkages and greenways;
- Establish primary landscape character areas that reflect the site's unique characteristics;
- Create a sustainable and lasting landscape;
- Promote water harvesting, passive irrigation, integrated urban irrigation and stormwater management;
- Use natives as a dominant species, with exotic planting to complement; and
- Retain existing mature vegetation where practical.

The Public Open Spaces will be arranged to ensure all of the community has easy and direct access to a park system, with no lot being further than 400 metres from a public open space site. The park system will accommodate a series of walking and cycling routes throughout the Estate that provide diverse recreational route and circuit walks within and to outside the development.

The retained areas of existing vegetation, particularly along the river foreshore, will be enhanced with supplementary planting of locally native species as well as exotic species and will be made accessible to the community. This strategy will deliver a maintainable, manageable, quality landscape that focuses maintenance and requirements on key areas, in turn creating environmentally responsive landscapes. The landscape approach recognises the importance of native vegetation and the value that a strong 'enhanced natural' landscape structure creates as a recreational, aesthetic and functional local environment.

The open spaces will vary in content from low key village greens with informal seating areas, recreational open spaces and tree and shrub planting to formal high specification urban 'squares' which will combine paved seating areas with recreational spaces and ornamental tree and shrub planting. Shrub plantings are planned to strategic areas to



provide spatial definition and colour where required. Shrub planting shall primarily consist of lower growing species to enable clear vision and security through passive surveillance. It is proposed that the shrubs will consist of a mix of exotic and native species, with strong consideration and adherence given to Waterwise principles.

Local Parks

An entry statement park is proposed on the intersection of Greenough River Road and the Estate. The park will be developed as a focal point, and contain an ornamental open water body, which will be used in the long term irrigation strategy for both the Estate and overall landholding.

The central park has been specifically designed to accommodate active recreation opportunities. It is anticipated that sporting ovals (football and rugby/soccer) will form the majority of the open space, however it will not preclude the use of the space for more passive forms of recreation, such as BBQ and picnic shelters and informal kick about areas. The park will be fringed with native vegetation, and shrubs to enable passive surveillance by surrounding lots. A series of dual use and pedestrian path systems shall provide smooth and easy access to all features of the open space and link accordingly into adjoining residential areas.

A series of pocket parks ranging in size shall incorporate such elements as hard edge treatments walling (between 300-500mm high), as well as soft edge grassed, planted and paved areas. Children's playground equipment and BBQ facilities will be strategically provided in the pocket parks, as required by Council.

Formal active recreation facilities will primarily be associated with the proposed Primary School on the southern boundary of the site, adjacent to Brand Highway.

Brand Highway Reserve

It is proposed to utilise the linear open space corridor adjacent to Brand Highway to create a landscape buffer between the Brand Highway and the development. The 10.33ha portion of land (ranging from approximately 60 metres to 100 metres wide where it adjoins the subject site) will be ceded as part of the subdivision of the land. The land is currently reserved for Parks and Recreation under the Shire's TPS No. 1A.

The existing lake and water courses within the Brand Highway reserve will be re-profiled to create a series of interlocking lined lakes which will in turn be used for irrigation purposes, as well as performing the function of drainage and a floodway route from the adjoining Rudd's Gully area to the Greenough River. In addition, a series of bores will be constructed within the reserve to assist in irrigating the development.

Re-profiling of the watercourse and extension of the lake system within the reserve will also provide additional storage capacity to improve management of stormwater drainage which runs through this zone, as well as assisting in the passive irrigation strategy for the landholding.

The vegetation within this corridor will be retained and enhanced to provide a natural parkland setting, and will be accessible through a dual use path system connecting to the development area. This landscape buffer spine will also assist in mitigating noise resulting from vehicle traffic on the Highway, as well as providing an aesthetically pleasing environment for passing motorists.

In addition, this open space will provide the gateway into the estate and works will be carried out to the intersection of Greenough River Road, and the proposed southern access road to Brand Highway to create entrance features. It is proposed that sculptures and/or entry statements will be used to announce the access points onto Brand Highway.

6.6.7 River Foreshore

The Greenough River foreshore forms the entire western boundary of the site. The land is currently reserved for Parks and Recreation under the Shire's TPS No. 1, has been ceded as a Crown Reserve and is vested in the Shire of Greenough.

The River foreshore is between 100 - 200 metres wide where it adjoins the site, and has an important value for both the Estate, as well as wider community. It is also a typical example of the river edge vegetation and has remained largely unaffected by larger scale clearance. This buffer between the river and the development area will form an important element of the site's character, and care will be taken to preserve this character and the existing vegetation therein.

In accordance with WA Planning Commission Policy, a boundary road is provided along the foreshore for the majority of its length, excepting abutting the Tourist site, where Tourism WA have specifically requested direct access to allow integration between the site and the river, and abutting a Grouped Housing site at the south of the development. This latter site has been proposed with direct frontage to the river foreshore to deter use of the boundary road as a 'through route', reducing the foreshore's amenity and diminishing the quality of the pedestrian environment. The site's configuration allows its interface with the foreshore to be developed in a complimentary fashion, providing for dwellings to be developed addressing the foreshore, providing direct surveillance and a positive relationship between the two areas (controlled by Detailed Area Plan if needs be).

Although not within Bayform Holding Pty Ltd ownership, the River foreshore is proposed to be enhanced as a linear open space. This park will link 'activity nodes', which are proposed to be located in strategic positions at the northern and southern ends of the site, in addition to a third central node, adjacent to the southern east-west boulevard off Brand Highway.

The protection of this foreshore reserve will complement urban design principles within the Estate, as well as ensuring development of the foreshore only takes place in areas with poorer vegetation conservation value. The proposed landscape will reinforce the destination at these nodes through species change and urban form.

The linear park will comprise a dual use path network with seating areas at viewpoints in strategic locations. The activity nodes will comprise high quality landscape areas with viewing platforms, shade structures and steps accessing the lower foreshore area along the river bank. At these nodes decking and landings will be provided on the rivers edge to provide further recreational opportunities, for both on water and land based recreational pursuits.

Access paths and boardwalks will be located along the rivers edge and will link the upper and lower areas of the foreshore itself. These connections will be provided with the aim of controlling access to the retained native vegetation and ensuring its long term preservation. It is proposed that a series of jetties or floating landings be strategically provided along the rivers edge, to allow for further recreational pursuits within the Greenough River to occur in a safe environment.

It is also proposed that a new community park be located on the north-western corner of the subject land abutting the Greenough River Road and the existing resort site. Some earthworking and clearing of degraded vegetation will occur in this location, adjoining the resort site, with preservation of existing mature vegetation where appropriate, in order to provide both passive and active recreational opportunities for the local and wider community.

A Foreshore Management Plan (FMP) has been prepared to assist in refining activity nodes, clearing, earthworking, species planting, boardwalk and dual use path locations, jetty/landing locations, as well as the integration of the foreshore with the adjoining residential and resort sites, specifically from an earthwork and levels perspective (Figure 14). This will inform the detail of proposed improvements and management and will be subject to separate assessment and approval.

6.6.8 Streetscapes

In addition to open space design, the streetscapes of the development will play a critical role in defining identity and enhancing appeal. The streetscape definition will utilise native species augmented with Australian natives and selected exotics as highlights and where solar access to development is appropriate.

The exotic range will be drawn from species that are tolerant of local conditions, low water users and have references to the species traditionally established in the area, and may include fruit trees.

A hierarchy of diverse streetscapes is proposed that creates distinctive places ranging from informal street planting to formal avenues of large trees with monocultures of native ground covers. It is intended that each sub-neighbourhood within the Estate has a distinctive character that is created from the topography, relationship to open space and street tree planting.

The landscape treatment of the streets will reinforce the hierarchy of roads. Species, planting types and verge treatments will create a diverse range of experiences and integrate drainage within the landscape. Verge and median swales will manage surface drainage while providing opportunities for passive irrigation to the landscape.

The timing for installation of landscape treatments within the development will be pre-construction, so that the majority of proposed community infrastructure, services and

landscaping will be in place prior to the first occupation of dwellings by new residents to the Estate. Street trees shall be allocated at one per lot and two per lot for corner blocks.

There has been significant thought given to the overall theming of the landholding, with specific focus given to the subject land. Theming will enhance the amenity of the Estate by reinforcing local identity, as well as delivering an Estate with the highest quality and standard of development. Further detail on the theming of the Estate, such as road naming, the use of vibrant colours and materials, road pavement treatments, street trees and tree guards, retaining walls and entry statements will be developed as development proceeds.

6.6.9 Roads

An assessment of the proposed road network for the draft Outline Development Plan has been prepared by Riley Consulting (refer Appendix 6). A summary of the findings is as follows.

The subject site is well serviced by the existing road network, including the Brand Highway on the sites eastern boundary and Greenough River Road on the sites northern boundary.

The Brand Highway is a primary regional road linking the site to the Geraldton City Centre, and is currently constructed as a rural road with a typical 9.0 metre sealed pavement and 1.0 metre edge strips within a 40 metre reservation where it abuts the subject land. The current post speed is 90km/hr adjacent to Greenough River Road.

A new alignment of the Brand Highway is proposed to be constructed sometime in the future, linking to the Southern Transport Corridor. This will significantly reduce traffic movements on the Highway where it abuts the subject site. At this time there is no timing proposed for the realignment of the Highway. However, once the new alignment is constructed it would be expected that the existing Brand Highway adjacent to the site would be downgraded to form a district level road. Based on current modelling, there is sufficient capacity on Brand Highway at present to accommodate the full development of the subject site, without the need to upgrade the road.

Existing Greenough River Road is proposed to be widened by 10 metres and upgraded to a minimum road reserve width of 25 metres as part of the development of the site.

The road will be enhanced and treated as a 2 lane divided boulevard-style road, and act as the primary entrance off Brand Highway to the Estate.

A secondary access point was originally proposed to Brand Highway on the southern boundary of the Estate, in the form of a 25 metres wide boulevard. However, following the identification of concerns by Main Roads WA in relation to sight lines at this location, this access point has been deleted unless and until these concerns can be resolved. As a consequence, the ODP depends on Greenough River Road as the sole access point to the estate. This will have a 5.5 metre wide median and two 4.1 – 4.5 metre wide carriageways, in addition to 5.1 metre wide verges, which will accommodate services and footpaths/dual use paths.

The existing intersection of Greenough River Road and the Brand Highway is suitable to accommodate the proposed development, and Austroads Standards would be achieved. The proposed southern access to Brand Highway, in the event that this is ever approved, will be designed to accommodate suitable sightlines and stopping distances, and may include turning lanes from Brand Highway to the site and from the site to Brand Highway.

A total of four access points are proposed to Greenough River Road from the Estate. Two are at the central U shaped public open space, one on the eastern boundary of the Estate adjoining the Reserve for Recreation on Brand Highway, and one to the western edge of the subject land abutting the Local Centre, Resort Precinct and future community park. The intersections are sufficiently spaced along Greenough River Road, so as not to require additional turning lanes.

A round-about is proposed on the western most access road to Greenough River Road, to address the four-way intersection with the existing Estate to the north of Greenough River Road (River Drive). The round-about will also act as a terminus for the proposed boulevard treatment on Greenough River Road.

The local street network has been planned to incorporate a highly interconnected and legible street pattern which effectively disperses traffic throughout the network and provides for a permeable urban structure conducive to pedestrian and cyclist movements. The road network has been designed to maximise view corridors to the river and ocean, as well as enhancing linkages and vistas to area of public open space.

A road hierarchy has been developed for the subject site (Figure 15) which is consistent with Liveable Neighbourhood principles and objectives as well as Western Australian Planning Commission Policy 2.6 and Shire of Greenough standards.

A central neighbourhood connector off Greenough River Road, in the form of a 2-lane divided road terminating at the central public open space will act as the primary entry boulevard within the Estate, and be designed at a width of 25 metres (similar to the proposed upgrading of Greenough River Road).

The remainder of the neighbourhood connectors within the Estate will be designed at a minimum road reserved width of 18.0 metres, and act to connect Greenough River Road to the proposed southern east-west boulevard, and east to the Resort Precinct.

Access streets are the main residential streets within the Estate and provide direct access to proposed lots. A standard carriageway of between 6.0 and 7.0 metres (with road reserve widths varying between 15.0 metres and 18.0 metres) can be accommodated for higher order access street where traffic volumes are expected to be higher, such as around the primary school, and on those roads connecting to public open spaces, and will provide for on-street parking without the need for additional parking embayments.

For those streets not supporting such traffic volumes, the carriageway widths will be reduced to between 5.5 metres to 6.0 metres to lower speeds within the development. These streets are known as standard access streets accommodating less than 1000 vehicles/day, and are generally quiet residential streets. The width of these roads will still allow for two-way traffic movement and occasional on-street parking.

Laneways are proposed to be constructed with a minimum carriageway of 6.0 metres consistent with road planning policies.

In order to differentiate between neighbourhood connectors, higher order access streets, access streets and laneways, the type of pavement surfaces will be altered, and may include the use of red oxide pavement and brick paving. Street trees will also be used to differentiate the road hierarchy. All roads will be marked, kerbed and sealed to the highest standard, which will further enhance the amenity of the Estate.

Pedestrian and cyclist facilities will be strategically provided throughout the Estate (refer Figure 16). Footpaths will be provided on all streets, but may be omitted on one side

where traffic flows are relatively low, and major pedestrian movement is unlikely to occur.

Cycling will be permitted on-street where traffic flows are less than 3000 vehicles/day, in accordance with Liveable Neighbourhoods. In addition, a series of dual use paths will be located throughout the Estate, and connect key features such as the primary school, local centre to the Greenough River foreshore, and Brand Highway.

Public transport is unlikely to be provided to the Estate in the short to medium term, however the road hierarchy of the Estate has been designed to accommodate a bus service in the event a service is provided.

6.7 Conclusion

This Outline Development Plan demonstrates the capability and suitability of the site to be developed as a high quality residential estate, with enhanced tourist and recreation facilities, a local primary school and local centre. The design concept has been developed based on best-practice urban design principles and will guide and support the development of a residential precinct based around and enhancing the character of the existing Cape Burney settlement, at the gateway to the City of Geraldton. It sits well within the framework of the developing City and Shire, supported by and contributing to local infrastructure, and sitting comfortably within both current and anticipated land use pattern, and providing strongly demanding housing responsive to evolving community need.

7.0 COMMUNITY DEVELOPMENT

Assuming the development of the site progresses, the development of a community will need to follow. The following section, prepared by Bayform Holding Pty Ltd in conjunction with a community development group, provides a summary of key community development initiatives proposed for the development to support this progress and achieve optimum social outcomes.

7.1 Communication

The implementation of relevant forms of communication will be the driver ensuring a continued dissemination of community information regarding the development of the Estate and other key initiatives that are associated with this. The communication strategy is proposed to include:

- Development of a website that incorporates a main community development heading for the Greenough River Estate, with relevant links to key stakeholders aims to commence some localised community development;
- Development and production of local community newsletter on a quarterly basis leading to ownership from the local Association to provide this service; and
- Development of welcome kits for all new residents to the Estate as a good will and welcoming gesture.

7.2 Physical Amenities, Event and Programs

The identification and provision of physical amenities including infrastructure (parks, playgrounds, physical activity opportunities etc) are crucial in the development of the community. The events/programs will complement the physical amenities and build a sense of community through usage of localised infrastructure within the Estate.

- The up-front provision of physical amenities including a venue for the community to utilise will be important to effective implementation of community development initiatives;
- Events will commence early in the life of the Estate; for example, a resident welcome night will 'kick off' the community development by providing an opportunity for new residents to 'meet and greet' each other, to share common

stories and to begin to develop a sense of community, relationship and belonging;

- Events and programs will then be on-going, encompassing all age bracket, and might include community barbeque days, environmental programs with local schools, arts and culture programs, school holiday activities, physical activity opportunities, theme nights, wine and cheese night etc will provide a basis to develop a sense of community.

7.3 Community Development

Community Development Plans endeavour to capture the spirit of the community and enhance this into key community initiatives. This will be achieved through a community survey and identified key community development areas including activities/events, youth, community services, education, environmental initiatives, economic development, recreational pursuits and crime prevention/community safety.

The following are key initiatives proposed:

- The formation of a positive Residents Association, building on the existing townsite, early in the development of the Estate will be crucial for sustainable community development;
- Build a strong and positive relationship with local key stakeholders, for example, Shire of Greenough etc;
- Conduct a detailed review of surrounding communities to provide an overview of existing opportunities for community development;
- Facilitate 'ownership' in community development initiatives of the Estate through the formation of sub-committees for example, event committee, youth committee, newsletter committee etc;
- Develop a dual use sales office which can provide the 'community space' to commence the localised community development (for example, resident association, playgroups, resident welcome nights, workshops etc.);
- Prepare a youth focused strategy to provide positive outcomes for youth well after the developer has finalised the Estate;
- Develop localised directories for trades, services, contacts etc.; and



C H A P P E L L
L A M B E R T
E V E R E T T

- Develop and utilise a 'point of sale' information gathering tool (a simple 1 or 2 page document) to provide essential community demographic information and an indication of the community desire to be involved in initiatives.

The importance of these programs cannot be overstated as the Estate's residents become its ambassadors, in both the short and long term, making them valuable allies for a bright future.



8.0 CONCLUSION & IMPLEMENTATION

The draft Concept Plan prepared for the parent site within which this Outline Development Plan (ODP) sits establishes the broad framework for the progressive urban development of the overall Cape Burney landholdings. This ODP provides a finer grain of detail, demonstrating how the land south of Greenough River Road, which is already zoned for and suitable for development, can be developed in a manner that is responsive to the local site conditions and consistent with relevant policies (including Liveable Neighbourhood). The ODP provides for a high quality residential estate, demonstrating urban design excellence and consistency with sustainability principles. It seeks to build on the existing Cape Burney settlement, providing much needed additional residential land in the Geraldton locality, responding to strong growth in the area, within a coherent and logical urban and regional planning framework.

Following approval of the ODP, a subdivision applications will be lodged with the Western Australian Planning Commission to enable staged development of the Estate to progress through construction, clearance, sale and the establishment of a new community.

Concurrent with this process, Town Planning Scheme Amendments for adjoining land are being progressed, to enable the remainder of the Estate to be rezoned and subsequently developed for urban purposes.

The development proposal, staging, servicing and earthworks strategy have all been prepared to integrate into the envisaged ultimate development of the area, without being depended on this occurring, or subject to a particular timeframe.

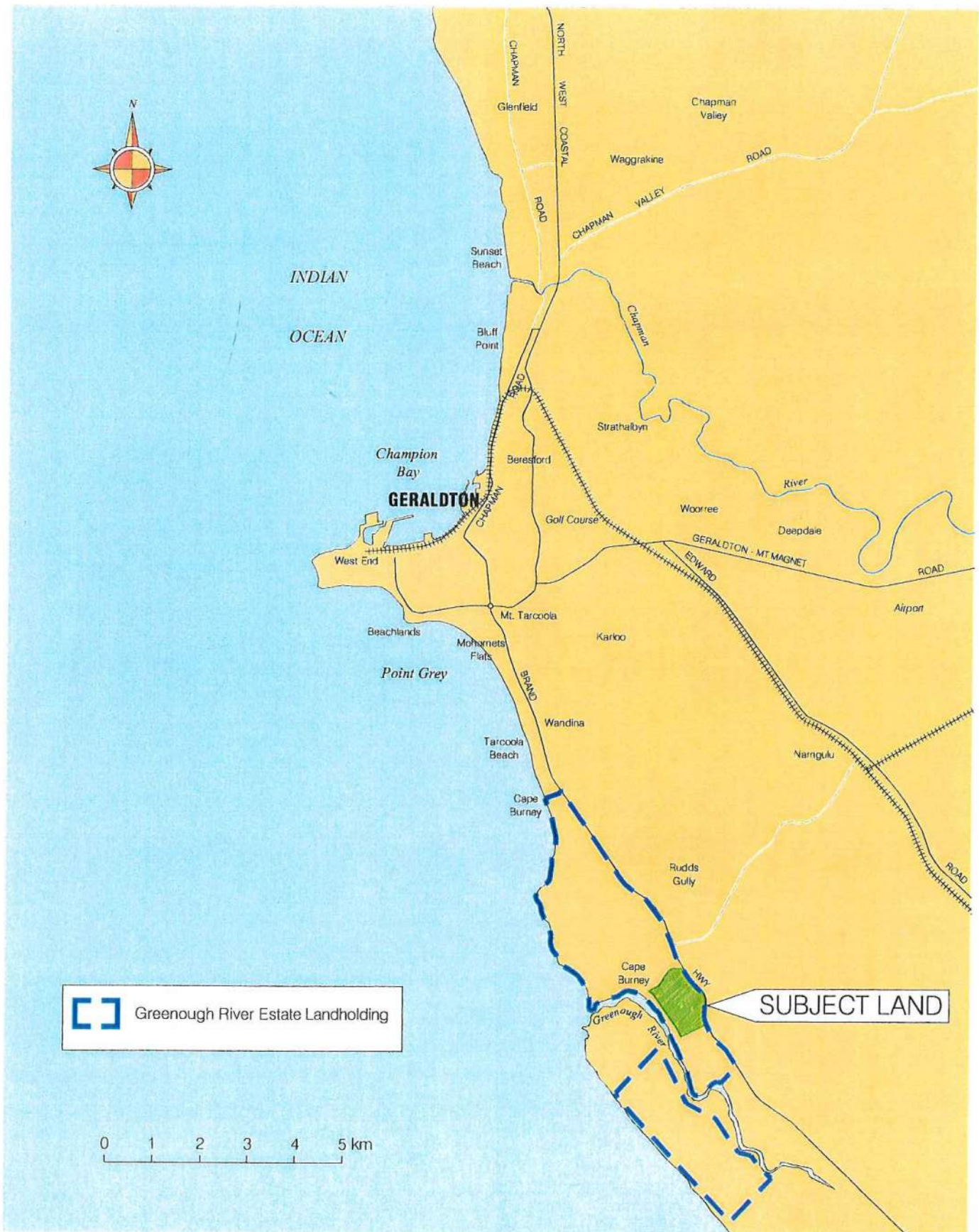
Lots in the site will most likely be developed commencing from the north of the Estate near to Greenough River Road. Subject to market demand it is expected that 250 lots will be developed by about December 2007, with 150 lots per stage to be developed in subsequent 6 monthly stages thereafter.

In order to facilitate this exciting new residential neighbourhood, Council and the WAPC are requested to assist in expediting the adoption of the Outline Development Plan.

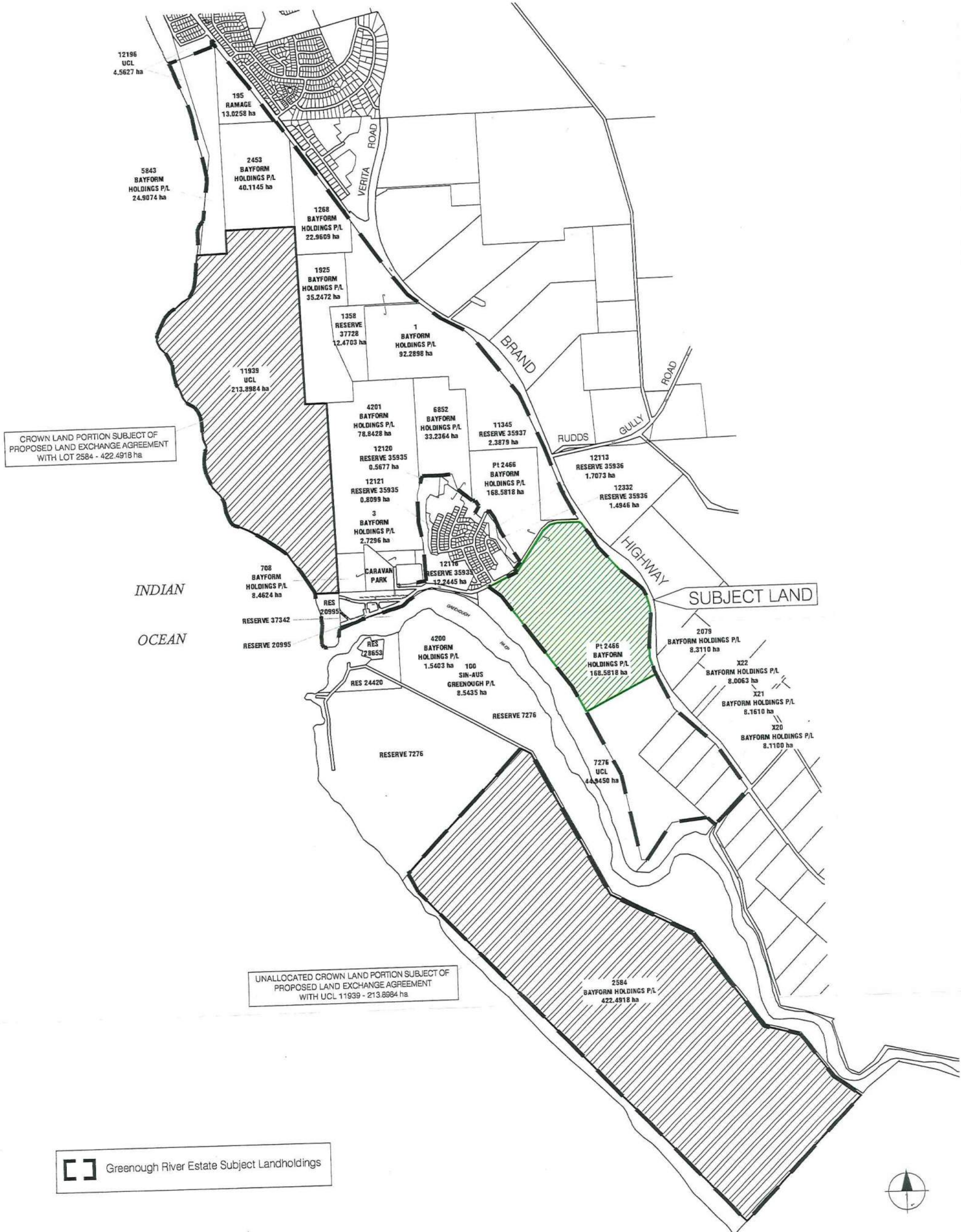


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FIGURES



Greenough River Estate - Locality Plan





ENDORSEMENT OF MODIFIED OUTLINE DEVELOPMENT PLAN
GREENOUGH RIVER ESTATE SOUTH

The Western Australian Planning Commission resolved on 28 April 2011 to endorse the modified Outline Development Plan received by the Department of Planning on 15 September 2010.

Signed for and on behalf of the Western Australian Planning Commission

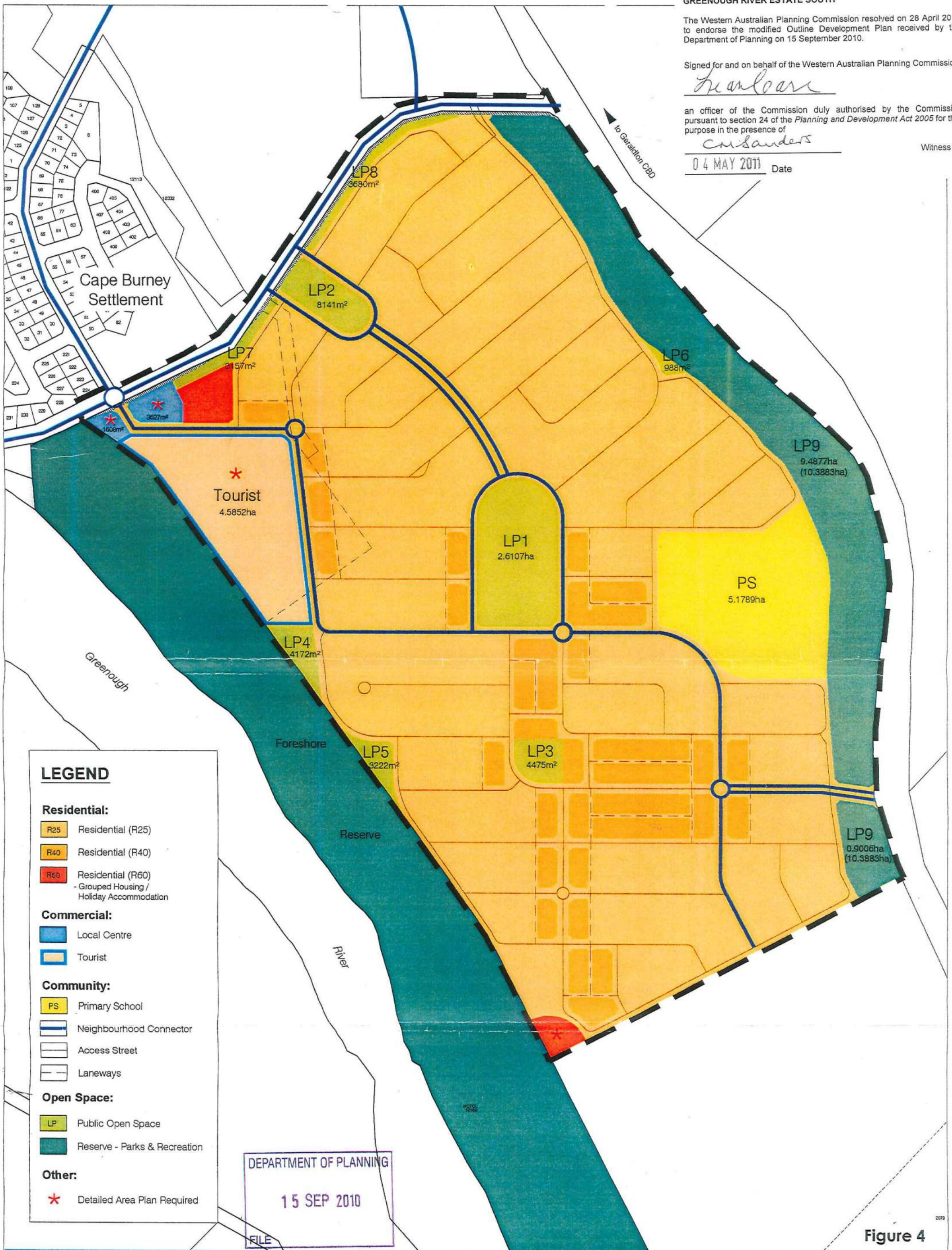
Heanloane

an officer of the Commission duly authorised by the Commission pursuant to section 24 of the Planning and Development Act 2005 for that purpose in the presence of

crisanders

Witness

04 MAY 2011 Date



OUTLINE DEVELOPMENT PLAN

Greenough River Estate South
Cape Burney - Geraldton

City of Geraldton-Greenough



plan no: 2088-121A-01

scale: 1:5000 @ A3

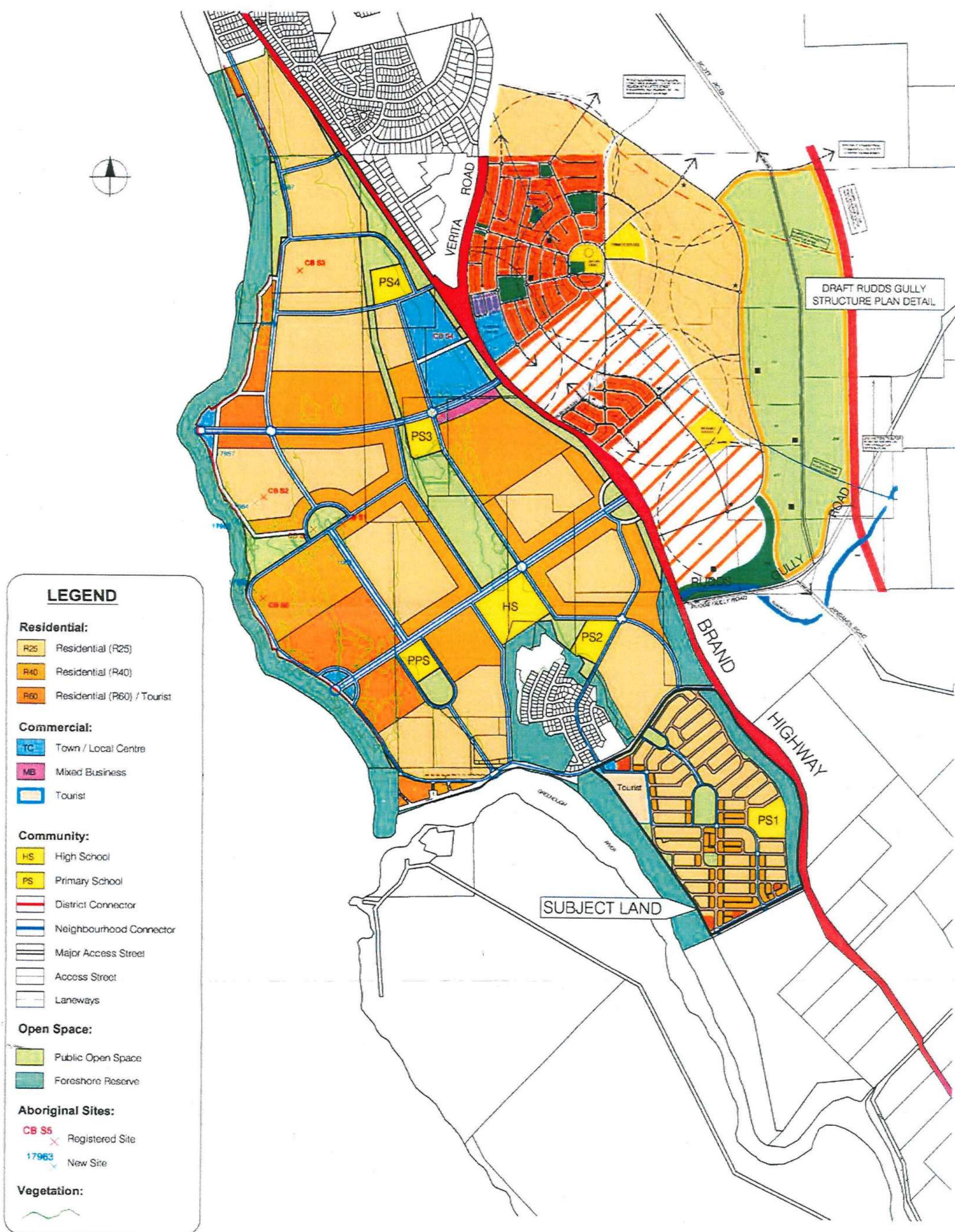
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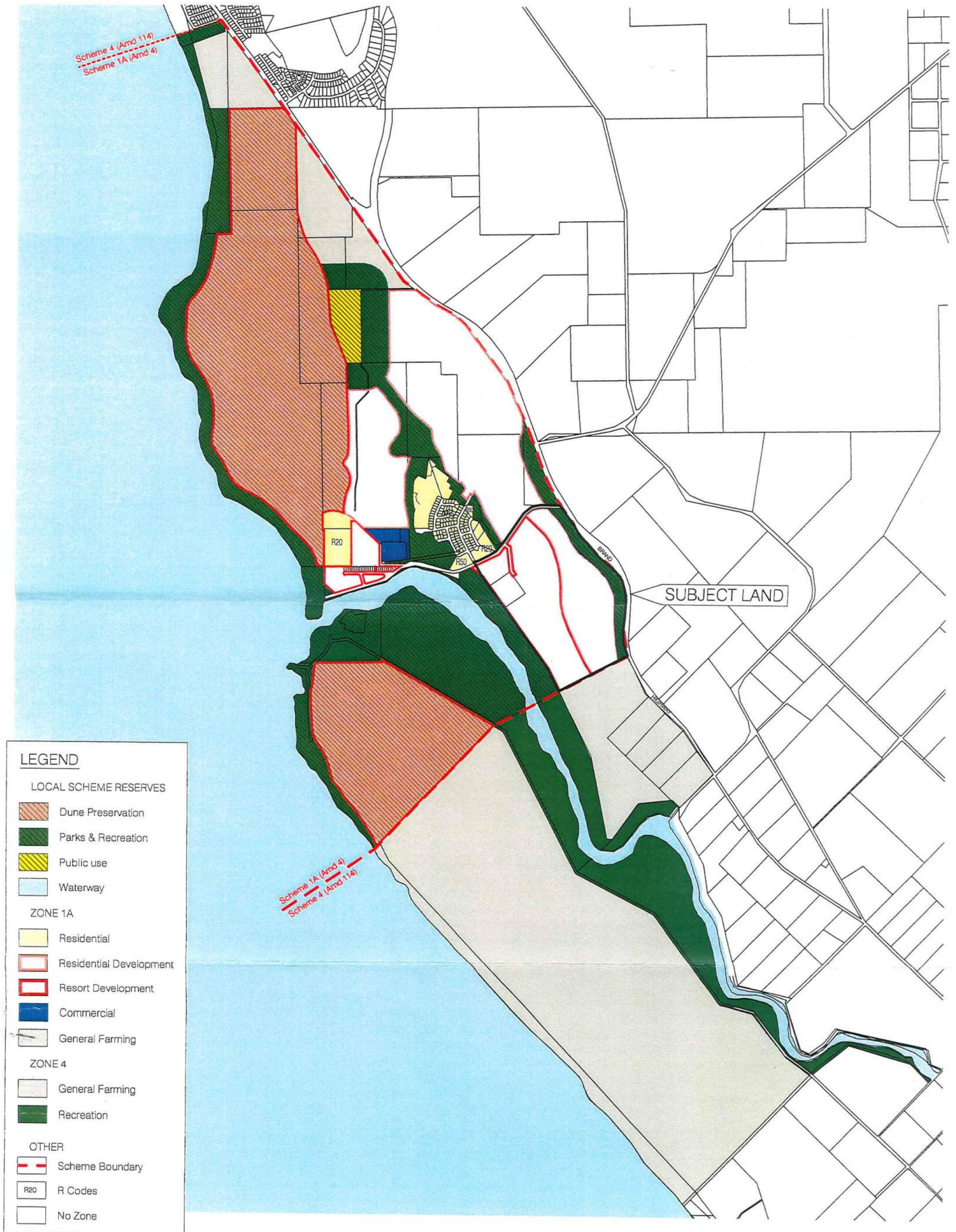
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This plan is current at the revised date & subject to approval, survey & engineering detail. This plan is the property of Chappell Lambert Everett ©







BHO-5-1/FLAS/25_241F2.dgn DATUM: AMG DRAWN BY: TE 19-1-05 CHECKED BY: CG 19-1-05

PRINTED: Fri 08 Sep 06



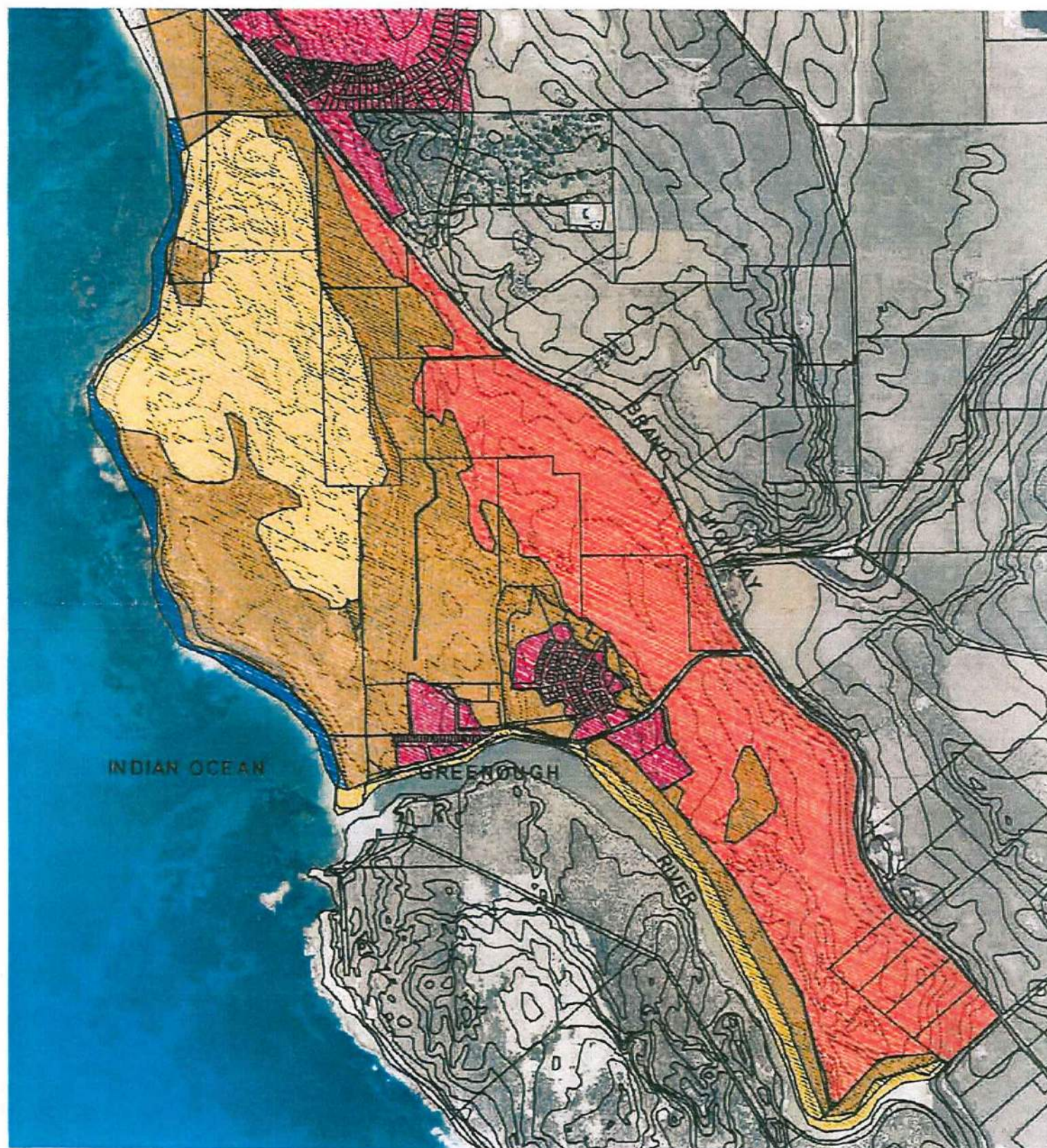
Vegetation Type and Location

BHO-5-1/ARCH/workplan.dgn DATUM: MGA DRAWN BY: TE 31-05-06 CHECKED BY: BvdW 31-05-06

PRINTED: Wed 31 May 06



Figure 6: Landscape Character Types



500 0 500 1000 1500 2000 2500 Meters

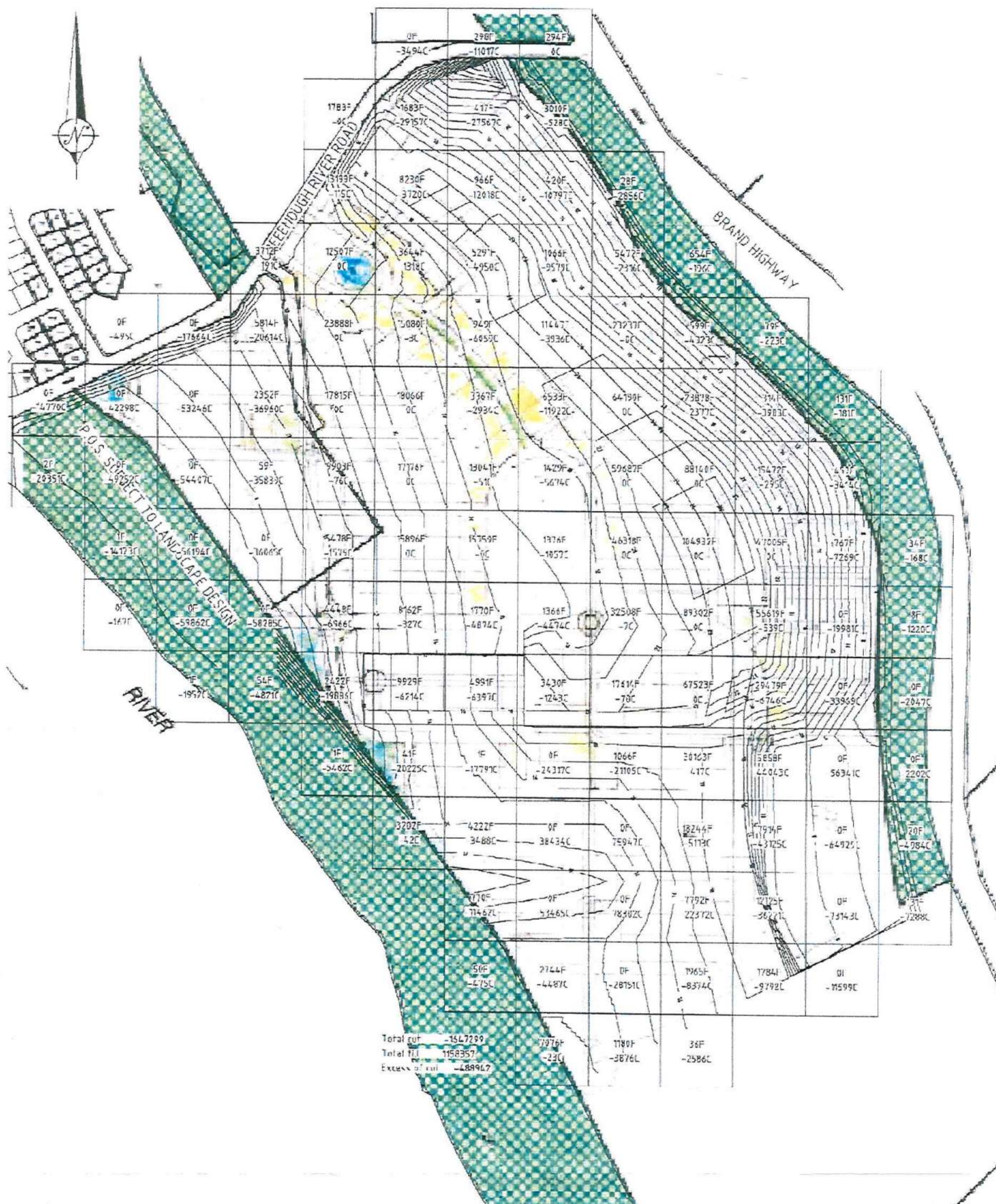


LEGEND

- Settlement
- Vegetated dune
- Cleared grazing
- Bare dune
- River foreshore
- Ocean foreshore

LANDSCAPE CHARACTER TYPES

SOUTH GATE - GERALDTON
LANDSCAPE MANAGEMENT



TOWNSITE REDEVELOPMENT (SOUTH) - GREENOUGH BULK EARTHWORKS PLAN

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WP06 0466 SK19

7 SEPTEMBER 2006

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DATE PLOTTED: 08 September, 2006 - 9:20am



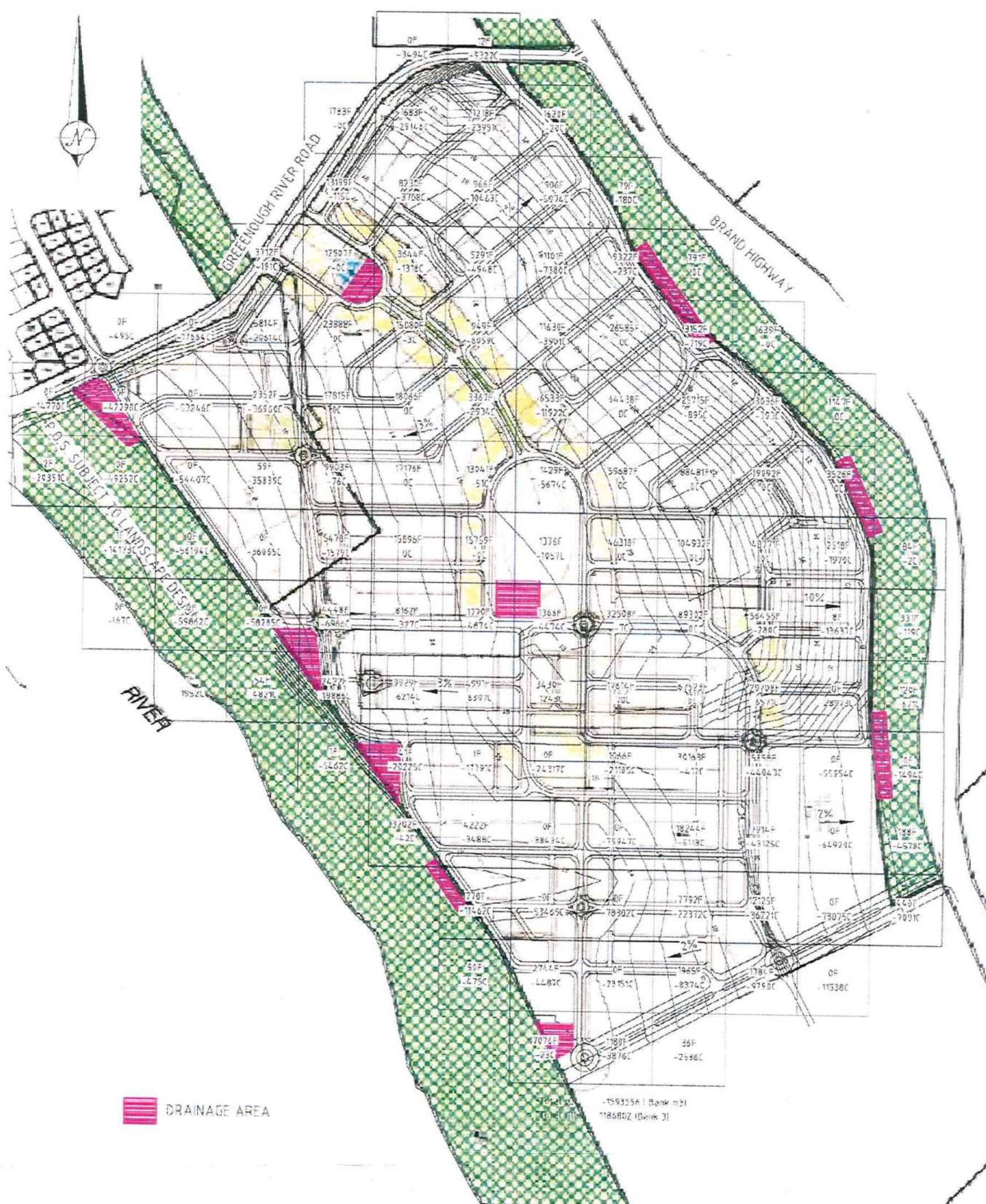
TOWNSITE REDEVELOPMENT (SOUTH) - GREENOUGH
EXISTING WATER CORPORATION INFRASTRUCTURE PLAN



WHS-01-00-01-07
19 JUNE 2006
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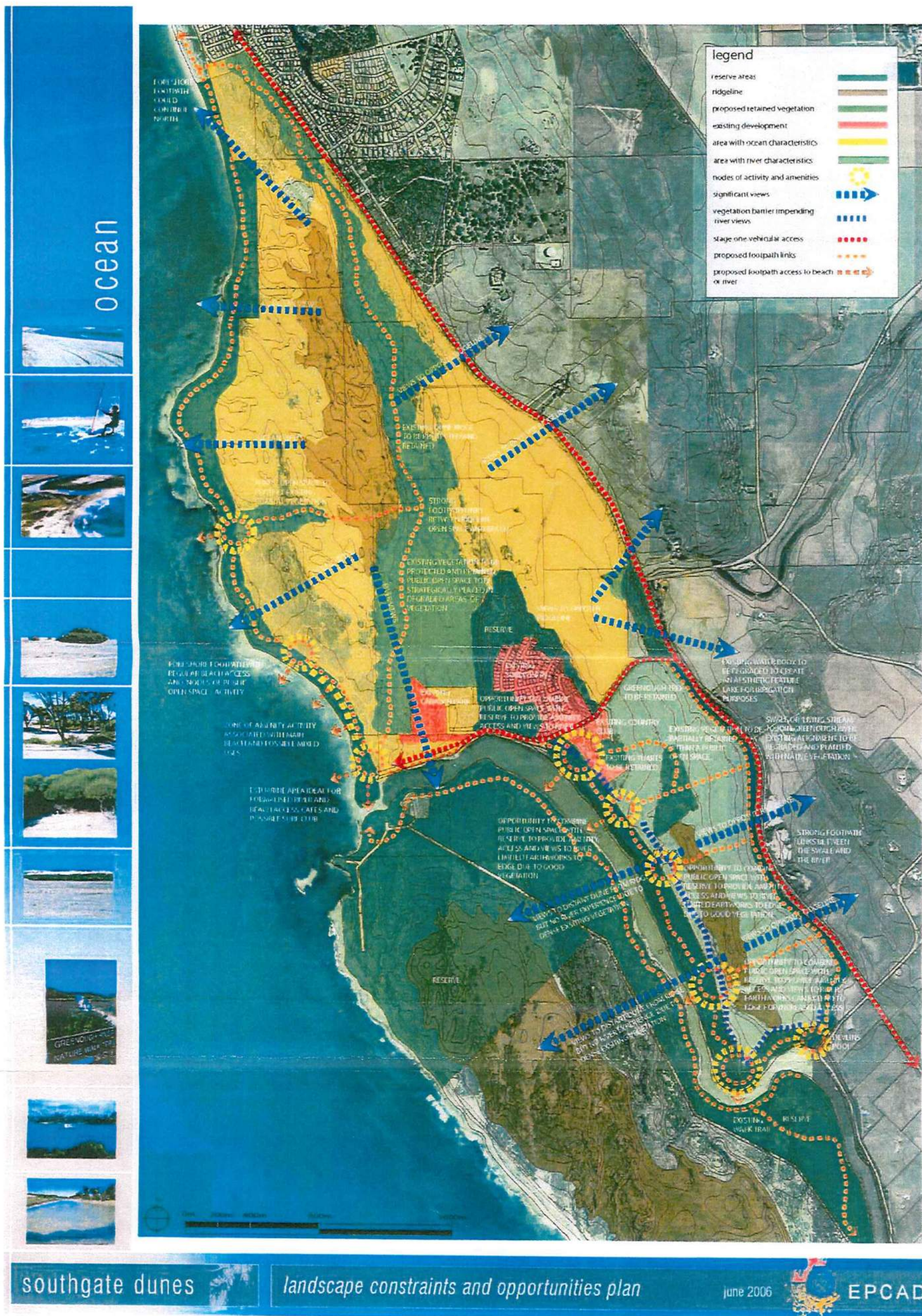
TOWNSITE REDEVELOPMENT (SOUTH) - GREENOUGH BULK EARTHWORKS PLAN

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ROAD HIERARCHY AND ROAD RESERVES



FOOTPATHS AND DUAL USE PATH PLAN

Figure 16