

MORESBY HEIGHTS

LOCAL STRUCTURE PLAN



JANUARY 2014

EXECUTIVE SUMMARY

Location of the Structure Plan Area

The structure plan area is located approximately 10km north east of the Geraldton CBD, 4km from the coast, at the foot of the Moresby Range.

Land uses proposed by the Structure Plan

The structure plan proposes development of the site for predominantly residential purposes, supported by a neighbourhood centre, primary school and public open space. It also proposes areas of regional and district open space, in support of the City of Greater Geraldton's planning strategies and requirements, and a tourism node at the top of the Moresby Range scarp.

Relationship to the Local Planning Scheme

The structure plan has been prepared under Clause 5.17 of the City of Greater Geraldton's Local Planning Scheme No. 5.

Item	
Total area covered by the structure plan	395.1ha
Area of specific land uses	
Residential	187.7
Commercial (Local Centre)	3.5
Primary School	4.0
Rural Residential	68.5
Public Open Space	130.5
Estimated lot yield	1,500 – 2,000
Estimated number of dwellings	1,500 - 2,000
Estimated population (du x 2.6)	3,900 – 5,200
Number of high schools	-
Number of primary schools	1
Estimated retail floor space	4,500-6,500m ²
Estimated employment provided	150-200 ¹
Number and area of public open space	
'Regional' Open Space	79.0
District Open Space	33.7
Local Open Space	19.3

NOTES: 1 - Based on assumption of 3.3 employees per 100m² retail floorspace.

PART 1 – STATUTORY SECTION

TABLE OF CONTENTS

ENDORSEMENT PAGE

TABLE OF MODIFICATIONS

- 1.0 STRUCTURE PLAN AREA**
- 2.0 STRUCTURE PLAN CONTENT**
- 3.0 INTERPRETATION AND SCHEME RELATIONSHIP**
- 4.0 OPERATION**
- 5.0 LAND USE AND SUBDIVISION REQUIREMENTS**
 - 5.1 Commercial Zone**
 - 5.2 Tourist Zone**
 - 5.3 Rural Residential Zone**
 - 5.4 Residential Zone**
 - 5.5 Public Open Space**
 - 5.6 Reports/Strategies Required Prior to Subdivision**
 - 5.7 Conditions of Subdivision Approval**
- 6.0 DEVELOPMENT REQUIREMENTS**
 - 6.1 Design Guidelines**
 - 6.2 Detailed Area Plans (DAPs)**
- 7.0 OTHER REQUIREMENTS**

MAP 1 – Local Structure Plan



ENDORSEMENT PAGE

CERTIFIED THAT THE MORESBY HEIGHTS LOCAL STRUCTURE PLAN WAS ADOPTED BY RESOLUTION
OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON

.....

Signed for and on behalf of the Western Australian Planning Commission

.....

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

..... Witness Date

AND BY RESOLUTION OF THE COUNCIL OF THE CITY OF GREATER GERALDTON ON

.....

AND THE SEAL OF THE MUNICIPALITY WAS PURSUANT TO THE COUNCIL'S RESOLUTION
HEREUNTO AFFIXED IN THE PRESENCE OF:

.....

Mayor, City of Greater Geraldton

.....

Chief Executive Officer, City of Greater Geraldton

.....

Date

This Structure Plan is prepared under the provisions of the City of Greater Geraldton Local
Planning Scheme No. 5

TABLE OF MODIFICATIONS

Modification No.	Description of Modification	Date Endorsed by Council	Date Endorsed by WAPC

PART 1 - STATUTORY SECTION

1.0 STRUCTURE PLAN AREA

This Structure Plan shall apply to lots 80 and 81 Hackett Road, and Lot 55 Cooper Street, Waggrakine being the land contained within the inner edge of the broken black line shown on the Structure Plan Map (Map 1).

2.0 STRUCTURE PLAN CONTENT

This Structure Plan comprises the:

- a) Statutory section (Part 1);
- b) Explanatory section (Part 2); and
- c) Appendices to Part 2 – Technical reports.

Part 1 includes the Structure Plan Map and provisions which require statutory effect.

Part 2 (and its appendices) justifies and explains the provisions contained in Part 1, and should be used as a reference guide to interpret and implement Part 1. It does not hold statutory effect.

3.0 INTERPRETATION AND SCHEME RELATIONSHIP

Unless otherwise specified in this part, the words and expressions used in this Structure Plan shall have the respective meanings given to them in the City of Greater Geraldton Local Planning Scheme No. 5 (Greenough) (the 'Scheme').

The Structure Plan Map outlines land uses, zones and reserves applicable within the Structure Plan area. The zones and reserves designated under this Structure Plan apply to land within it as if the zones and reserves were incorporated into the Scheme.

Pursuant to clause 5.17.12.2 of the Scheme, if a provision of this Structure Plan is inconsistent with a provision of the Scheme, then the provision of the Scheme prevails to the extent of the inconsistency.

Pursuant to clause 5.17.12.3 of the Scheme, the provisions this Structure Plan apply to the land as if its provisions were incorporated into the Scheme and it is binding and enforceable in the same way as corresponding provisions incorporated into the Scheme.

Part 2 of this Structure Plan and the Technical Appendices are to be used as a reference only to clarify and guide interpretation and implementation of Part 1.

4.0 OPERATION

In accordance with the sub-clause 5.17.12.1 of the Scheme, this Structure Plan shall come into operation when it is certified by the WAPC pursuant to clause 5.17.10.2 of the Scheme.

5.0 LAND USE AND SUBDIVISION REQUIREMENTS

The Structure Plan Map outlines land uses, zones and reserves applicable within the Structure Plan area. The zones and reserves designated under this Structure Plan apply to the land within it as if the zones and reserves were incorporated into the Scheme.

5.1 Commercial Zone

Land use permissibility shall be in accordance with the “Commercial” zone in the Scheme with the exception of the following variations:

<u>LAND USE</u>	<u>PERMISSIBILITY</u>
Aged and Dependent Persons Accommodation	D
Ancillary Accommodation	D
Bed and Breakfast	D
Home Business	D
Home Occupation	D
Home Office	P
Grouped Dwellings	D
Multiple Dwellings	D
Single House	D

‘P’ and ‘D’ shall have the same meaning as within the Scheme.

The ‘Commercial’ site may include retail floorspace up to 6,000m².

5.2 Tourist Zone

Land use permissibility shall be in accordance with the “Tourist” zone in the Scheme with the exception of the following restricted uses which are NOT PERMITTED:

- Aged and Dependant Persons Dwellings
- Fast Food Outlet
- Holiday Home
- Lunch Bar
- Residential Building
- Service Station.

A ‘Shop’ use may be permitted provided it is considered by the local government to be incidental to the predominant use.

Further subdivision of Tourist sites is not permitted except where:

- It has been fully developed, or an approved development plan has been prepared for the whole site, and provision has been made for the coordinated development of the site in accordance with the plan, to the satisfaction of Council; and
- An approved, enduring and enforceable management plan has been prepared to ensure the coordinated management, operation and maintenance of the site as a single tourism entity, to the satisfaction of Council.

5.3 Rural Residential Zone

Subdivision shall generally be in accordance with the Structure Plan Map with a minimum lot size of 1 hectare.

Stocking rates shall not exceed Agriculture Western Australia's standards and in any event no stock is permitted on 'Conservation Lots'.

At the time of subdivision a Detailed Area Plan shall be prepared for each lot and shall address the following:

- Identification of building envelopes and/or building exclusion areas;
- Sitting, materials and finishes for development; and
- Re-vegetation requirements.

For lots other than 'Conservation Lots' a minimum of 3% of the lot shall be re-vegetated, and thereafter maintained to the satisfaction of the local government, with a combination of trees, shrubs and ground covers consistent with the indigenous plant communities identified in the Geraldton Regional Flora and Vegetation Survey. The local government may accept a cash contribution in-lieu of revegetation.

No development or land use shall impede in any way the natural water flow along any creek line or water/drainage course.

'Conservation Lots' nominated on the Structure Plan Map shall be subject to a conservation covenant. The restrictive covenant will protect and preserve remnant or regenerated vegetation in perpetuity and should include among other things, provisions for:

- Prohibit further clearing;
- Clearly delineate a building envelope and/or building exclusion area;
- On-going weed management;
- Prohibit stocking; and
- Rehabilitate unstable/degraded areas with local provenance seedlings.

5.4 Residential Zone

Between 1000 and 2000 dwellings are anticipated within the Structure Plan area.

The Structure Plan Map defines the residential density ranges that apply to specific areas within the Structure Plan area.

5.5 Public Open Space

Public open space shall be provided generally in accordance with the Structure Plan Map and Table 1, with an updated public open space schedule to be provided at the time of subdivision for determination by the WAPC, upon the advice of the City of Greater Geraldton.

Table 1: Public Open Space Schedule

Regional Open Space	79.05 ha
District Open Space	21.16 ha
Neighbourhood Open Space	3.09 ha
Local Open Space	13.87 ha
Conservation	14.85 ha

Public open space management plans required as conditions of subdivision approval (refer 5.7 below) should address:

- Minimisation of clearing and vegetation disturbance during construction;
- Access control (during construction and post-construction);
- Revegetation species (incorporating native plant species with local provenance) and establishment;
- Invasive species control (weeds and pests);
- Stormwater management (including erosion control);
- Ongoing maintenance and management of the vegetated areas;
- Protection and improvement in the environmental condition of waterways and wetlands;
- Bushfire management;
- Interface management; and
- Public education.

5.6 Reports/Strategies Required Prior to Subdivision

Prior to lodgement of subdivision application to create the easternmost Tourist site, a Visual Landscape Assessment and Management Plan shall be prepared demonstrating to the satisfaction of the relevant authority how access to the site is to be provided in a manner which achieves visual integration and appropriate siting.

5.7 Conditions of Subdivision Approval

At the time of subdivision conditions may be recommended, as applicable, requiring the preparation and/or implementation of the following:

- a) Vegetation Management Plan identifying what areas of remnant vegetation are to be retained (the City of Greater Geraldton / Department of Parks and Wildlife);
- b) Bushfire Management Plan for land within 100m of significant areas of remnant vegetation proposed to be retained (City of Greater Geraldton / Department of Fire & Emergency Services);
- c) Public Open Space Landscape and Management Plan (City of Greater Geraldton);
- d) Urban Water Management Plan (including more detailed geotechnical assessment demonstrating soil permeability)(City of Greater Geraldton); and
- e) Waste Water Treatment Plan (in the event that on-site waste water treatment is approved) detailing the location of processing facilities either within or abutting POS (City of Greater Geraldton).

6.0 DEVELOPMENT REQUIREMENTS

6.1 Design Guidelines

Design Guidelines shall be recommended to be prepared as a condition of subdivision, to address the proposed Development Response detailed in section 7.2.1.2 of the Moresby Heights Visual and Landscape Assessment appended to Part 2 of the Structure Plan relating to building placement, design, materials and colours. These may be adopted and implemented as a Town Planning Scheme Policy under Clause 2.2 of the Scheme.

6.2 Detailed Area Plans (DAP's)

Detailed Area Plans shall be prepared and approved in accordance with Clause 5.17.15 of the Scheme for the following sites:

- Commercial site;
- Tourist sites;
- Rural Residential sites; and
- Lots with direct frontage to Public Open Space.

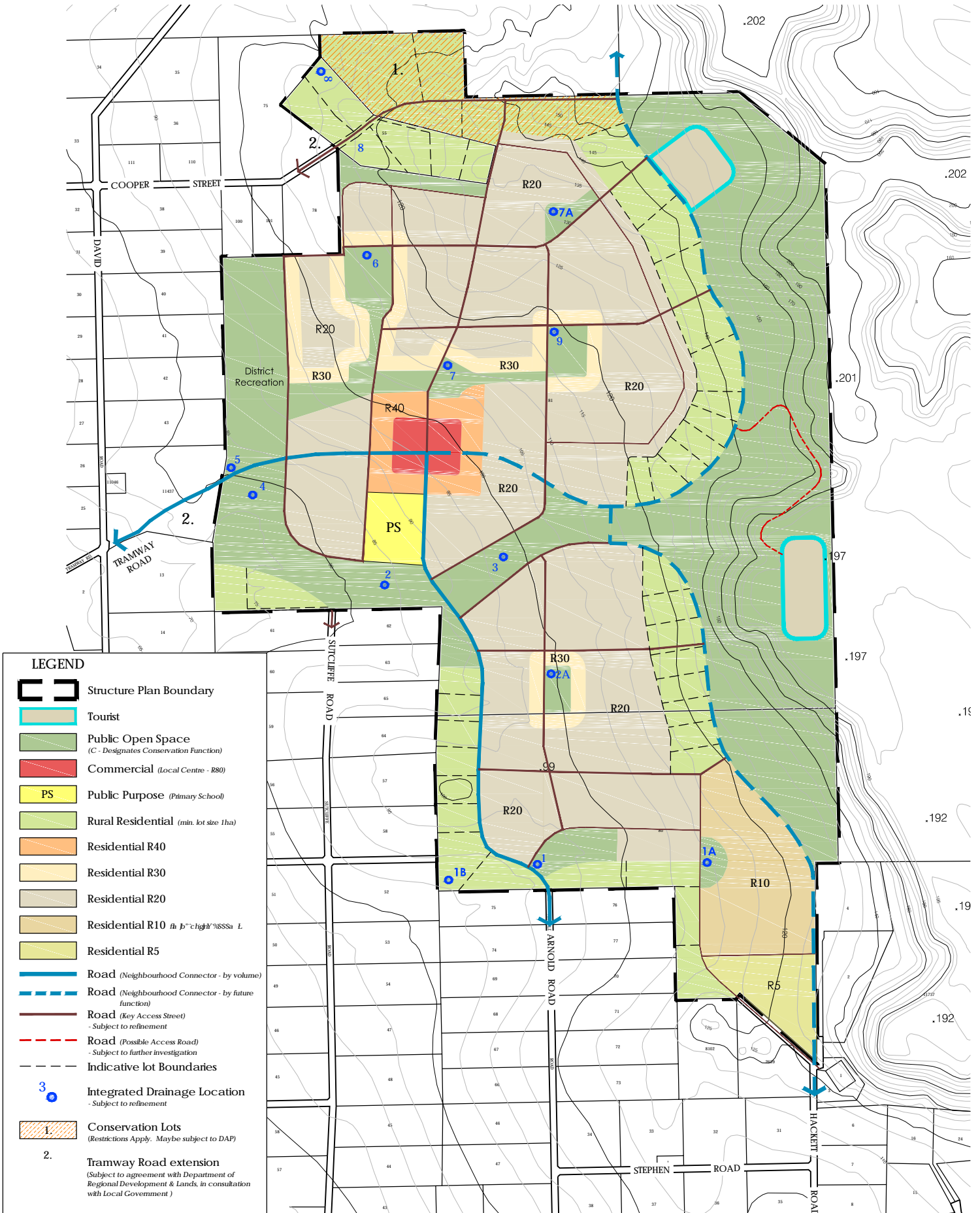
In addition, as a prerequisite to development, the 'Tourist' sites shall be required to prepare fire management plans which incorporate the aspects of bushfire protection, bushfire attack levels on buildings, access and egress to and from the sites in the event of bushfire, managing bushfire fuels adjacent to the sites and, for the site on the top of the Moresby Range, the potential for a shelter in place scenario.

7.0 OTHER REQUIREMENTS

Transfer of the District Open Space area to the City of Greater Geraldton shall occur at or before release of the 200th lot.

At least two permanent roads providing access to the southern portion of the development shall be provided at or before release of the 300th lot.

The construction of the Tramway Road extension to the development shall occur at or before release of the 300th lot. Deferral of the extension requirement up to a maximum of the 600th lot may occur with the approval of the City of Greater Geraldton, should the operation of Chapman Valley Road at the time be at a level acceptable to the City of Greater Geraldton.



MAP 1 - LOCAL STRUCTURE PLAN



PART 2 – EXPLANATORY REPORT

TABLE OF CONTENTS

- 1.0 INTRODUCTION AND PURPOSE**
- 2.0 LAND DESCRIPTION**
 - 2.1 Location**
 - 2.2 Area and Land Use**
 - 2.3 Legal Description and Ownership**
- 3.0 PLANNING FRAMEWORK**
 - 3.1 Zoning and Reservations**
 - 3.2 Regional and Sub-Regional Plans**
 - 3.2.1 Greater Geraldton Region Plan Update 2010 (WAPC)
 - 3.3 Policies**
 - 3.3.1 Moresby Range Management Strategy 2009 (WAPC)
 - 3.3.2 Moresby Range Management Plan 2010 (City of Geraldton Greenough & Shire of Chapman Valley)
 - 3.3.2.1 *Visual Impact Assessment*
 - 3.3.3 General WAPC Policies
 - 3.4 Other Approvals and Decisions**
- 4.0 SITE ANALYSIS**
 - 4.1 Landform, Topography and Soils**
 - 4.2 Conservation and Environmental Values**
 - 4.3 Bushfire Hazard**
 - 4.4 Heritage**
- 5.0 CONTEXT AND CONSTRAINTS ANALYSIS (REFER FIGURE 10)**
 - 5.1 Transport and access**
 - 5.2 Services and Infrastructure**
 - 5.3 Centres and Employment**
 - 5.4 Regional and District Open Space and Community Infrastructure**
 - 5.5 Land Use Context**
 - 5.6 Unexploded Ordinance**

6.0 STRUCTURE PLAN DESCRIPTION

6.1 Overview and Neighbourhood Structure

6.2 Commercial centres

6.3 Natural features

6.4 Street block layout

6.5 Movement network

6.6 Land use (including density and population estimates)

6.7 Schools and Community Facilities

6.8 Public Parklands (Refer Figure 16)

6.9 Urban Water Management

6.10 Infrastructure Coordination, Servicing and Staging

6.11 Visual Integration

7.0 BUSHFIRE MANAGEMENT

8.0 IMPLEMENTATION

FIGURES

Figure 1 - Structure Plan Area

Figure 2 - Location Plan

Figure 3 - Current Zoning (City of Greater Geraldton TPS 5)

Figure 4 - Greater Geraldton Region Plan Update 2010 (WAPC)

Figure 5 - Moresby Range Management Strategy 2010 – Map 8 (WAPC)

Figure 6 - Moresby Range Management Plan 2011 – Plan 3.1 (Shire of Chapman Valley – City of Greater Geraldton)

Figure 7 - Acid Sulphate Soil Overlay

Figure 8 - Vegetation Condition and Location of Priority Flora (Coterra)

Figure 9 - Wetland Locations (Coterra)

Figure 10 - Context and Constraints

Figure 11 - Development Concept

Figure 12 - Road Hierarchy (Jonathan Riley Traffic Consultant)

Figure 13 - Roads for Future Bus Service (Jonathan Riley Traffic Consultant)

Figure 14 - Footpaths and Cycle Paths (Jonathan Riley Traffic Consultant)

Figure 15 - Public Open Space Plan

Figure 16 - Landscape Hierarchy (EPCAD)

Figure 17 - Illustrative Landscape Plan (EPCAD)

Figure 18 - Landscape Concepts (EPCAD)

Figure 19 - Stormwater Catchment Plan (Aecom)

APPENDICES

Appendix 1 - Certificates of Title

Appendix 2 - Moresby Range Design Response (Ferart Design for Shire of Chapman Valley & City of Greater Geraldton, 2010)

Appendix 3 - Visual Impact Assessment Report (EPCAD, August 2013)

Appendix 4 - EPA Comments on Amendment 5 to Local Planning Scheme No. 5 (Oct 2011)

Appendix 5 - Environmental Assessment Report (Coterra, Jan 2013)

Appendix 6 - Traffic Report (Riley Consulting, Dec 2013)

Appendix 7 - Preliminary Engineering Servicing Report (including Local Water Management Strategy) (AECOM, Dec 2012)

Appendix 8 - UXO Clearance (Sept 2006)

1.0 INTRODUCTION AND PURPOSE

This structure plan seeks to provide a comprehensive planning framework to coordinate the subdivision and development of the Moresby Heights estate area (occasionally referred to as the Wavecrest Estate) as a new residential neighbourhood. It is prepared under section 5.17 of the City of Geraldton Greenough's Local Planning Scheme No. 5 and applies to 395ha north-east of Geraldton CBD (refer Figure 1 – Structure Plan Area).

2.0 LAND DESCRIPTION

2.1 Location

The structure plan area is located approximately 10km north-east of Geraldton CBD, on the foot and side slopes up to the Moresby Range, 4km from the coast (refer Figure 2 – Location Plan). It is located within the City of Geraldton Greenough and abuts the Shire of Chapman Valley boundary to the north and east.

2.2 Area and Land Use

The structure plan area totals 395.15ha. The majority is currently used for rural purposes, principally for pasture.

2.3 Legal Description and Ownership

The structure plan area comprises:

Lot No.	Certificate of Title (Appendix 1)	Area	Ownership
Lot 55	CT 136/190A	9.75ha	P J Dossetter & V L Neil
Lot 80	CT 2669/491 and 492	80.69ha	Caversham Property P/L Portstyle Nominees P/L
Lot 81	CT 2670/71, 72 and 73	304.67ha	VJ & JM Newman Seatone Nominees P/L Caversham Property P/L

3.0 PLANNING FRAMEWORK

Key planning instruments applicable to the site are summarised as follows:

3.1 Zoning and Reservations

The site is currently zoned 'Development' under the City of Geraldton-Greenough's Local Planning Scheme No. 5 (Greenough) (refer Figure 3 – Current Zoning). This zoning was put in place to facilitate its development by Amendment 6 to the Scheme, gazetted on 10 August 2012.

A portion of the site is subject to the Moresby Range Special Control Area provisions of Part 6 of the Scheme. This seeks to conserve the landscape values of the Range. Clause 6.3.4 (a) states that the Council may consider supporting development within the area which is responsive to the objective of the SCA, having regard to:

- The siting of the proposed development;
- The design and layout of the proposed development;
- The materials and finishes to be used in the proposed development;
- The protection of remnant native vegetation or revegetation located on the site; and
- The installation and maintenance of vegetation, retaining walls or other works to prevent erosion.

These issues are addressed by the Structure Plan, which is supported by a detailed Visual and Landscape Assessment, and are discussed further below.

3.2 Regional and Sub-Regional Plans

3.2.1 Greater Geraldton Region Plan Update 2010 (WAPC)

The Geraldton Region Plan (incorporating the Greater Geraldton Structure Plan) was adopted by the Western Australian Planning Commission in June 1999 to provide a regional framework to guide strategic planning and development decisions within the area. The Plan recognises that the greater Geraldton area is the focus of commercial and administrative activity for the Mid-West Region and, as such, aims to provide a framework for coordinating development and managing growth of the regional centre.

The Plan was subject to a review and update in 2010 which resulted in the subject site being identified as a Development Investigation Area (refer Figure 4). The text in relation to this Area states that:

- The site's location and proximity to Central Geraldton and the northern coastal corridor will be significant considerations in determining the most appropriate level of intensification;
- Whilst the site is largely cleared, some pockets of remnant vegetation remain;
- The surrounding area is of visual landscape value and any development will need to consider this context and its interface; and

- Any amendment will need to be supported by appropriate environmental studies and address the Geraldton Regional Flora and Vegetation Survey and the Moresby Range Management Strategy.

Development is therefore anticipated, subject to adequate response to key issues, most notably environmental and visual impact. These issues are addressed by the Structure Plan and are discussed further below. The proposal is consequently consistent with the Region Plan.

3.3 Policies

3.3.1 Moresby Range Management Strategy 2009 (WAPC)

The Moresby Range Management Strategy was prepared by the Western Australian Planning Commission and adopted in 2009. It recognises the high landscape significance of the Range, and seeks to:

- Protect, conserve and enhance its natural values;
- Protect the indigenous and non-indigenous cultural values;
- Improve public access and recreation opportunities;
- Manage the risk of erosion and bushfire; and
- Ensure a consistent and coordinated policy approach to the areas planning.

It makes a number of recommendations, some general and some specific in nature. Of particular relevance to this proposal are recommendations 11-17:

- *Ensure land use and development proposals maintain, and, where possible, enhance conservation values associated with the land... Consideration should be given to the potential to create conservation lots.* The recommendation has been complied with through the conservation of the Range face and tops within a reserve, the retention of vegetated areas and key linkages through the site in Public Open Space, and the application of graduating lot sizes and layout in a form responsive to the site's contours and attributes. Revegetation requirements on larger lots and remediation of local open spaces contributed to improved environmental outcomes. Creation of conservation lots is also proposed in the north of the site to allow retention of remnant vegetation on private land;
- Development management measures for land use or development proposals within or adjacent to nature reserves to protect and, where possible, enhance the conservation values of the nature reserve...: This recommendation has been complied with through the requirements for retention of vegetation on key sites, revegetation requirements for larger sites, retention of priority vegetation within local open space, and the requirement for all Public Open Space to be subject to an approved management strategy addressing a range of issues including conservation significance;
- *Promote revegetation of ... corridors identified in map 5...:* No vegetation corridors are identified on the site in map 5 of the Strategy, however an additional corridor or linkage is proposed through the site as part of the LSP to provide both a recreational and environmental link across the site to the Range tops;

- *Ensure that land use or development proposals over land containing or adjacent to an existing or potential vegetation corridor reasonably contribute to the provision and / or enhancement of the vegetation corridor:* as stated above, the site has not been identified as requiring a vegetation corridor however one has been provided as part of the overall open space strategy in part in response to the objectives of the Range Management Strategy. A road is proposed along this as stipulated as the preferred interface in most circumstances by WAPC policy, and revegetation and enhancement of the corridor will be achieved through the development and implementation of a POS management strategy required as a component of subdivision. This City's role in developing and approving all POS management strategies should ensure that its objectives, including those of the Range Management Strategy, are met;
- *Working with land owners, target and prioritise areas for revegetation...:* The landowner has, in this instance, approached and worked with the City to identify and prioritise areas for revegetation, consistent with the intent of this recommendation;
- *Seek expert advice from the DEC, DAFWA and NACC regarding revegetation...:* Expert environmental scientists Coterra Environments undertook analysis of the site, and sought the input of both the (then) DEC and City in their investigations, the recommendations of which have been incorporated into this proposal. Development of detailed plans for local open space will be undertaken at subdivision in accordance with WAPC processes and the requirements of the Structure Plan. At that time, further input from expert groups as to the detail of works required and species to be used can be undertaken;
- *Implement the recommendation of the Chapman River Foreshore Assessment Report...:* Application of integrated local water management principles should ensure that the development does not adversely affect, and indeed can improve the quality and maintain the quantity of its input into the catchment within which it is situated.

The Strategy Plan for Detailed Investigation (Map 8 reproduced in Figure 5) also indicates that the sideslopes on the subject site should be revegetated, with which recommendation the proposal accommodates. The Plan also indicates an area of 'Priority for Public Recreation' immediately south-east of the site, which outcome the proposal can also contribute to by providing complementary spaces and activities.

3.3.2 Moresby Range Management Plan 2010 (City of Geraldton Greenough & Shire of Chapman Valley)

The Moresby Range Management Plan was prepared for the Shire of Chapman Valley, City of Geraldton-Greenough and the Department of Planning to provide further direction on the implementation of the Range Management Strategy as it applies to the southern part of the Range (closest to Geraldton). It has been endorsed by both local governments, but not by the WAPC. Of particular relevance to the site, it defines the boundary of a proposed Regional Reserve incorporating the eastern portion of the site, within and to which rehabilitation and public access are promoted. The document states that current land owners are to receive a fair and reasonable exchange for their land through purchase, land swaps, and development opportunities.

The document also makes recommendations regarding appropriate forms of development to limit visual impact and promote an appropriate interface within the study area, suggesting that:

- the eastern portion of the site forms part of the '*broad landscape features that should be preserved and enhanced*';
- The northern portion of the lot is defined as a '*high visibility area, larger lots typically 2-4ha*';
- The south-western pocket forms a '*lower visibility area, lots typically larger than 1ha*'.

The Plan anticipated development in the area and, as such, this proposal is not at odds with it, albeit contemplating development at a higher density than is notionally indicated in the Plan. This should, however, be acceptable, subject to satisfactory demonstration that this will not undermine the associated objectives of managing the visual impact of new development.

The development proposal assists in achieving a number of other Management Plan objectives including:

- establishment of the Range Reserve, through provision of around 80ha of regional open space in the Range, in addition to local open space within the development;
- provision of public access to the scarp, with establishment of a strong green spine or link through the subdivision to the 'top', providing for integrated pedestrian and cycle access through a landscaped setting. Vehicular access would also be required to provide access to the tourism site, and would be subject to detailed location and site planning;
- creation of recreational opportunities associated with the Range, including walk and cycle trails and potentially other activities associated with the tourism site;
- preservation and enhancement of remnant vegetation within local open space and within the range parkland;
- retention and remediation of drainage lines within green open space links;
- revegetation of open space areas and through provision of landscaping along road reserves and within private land; and
- limitation of visual impact through careful development siting and design, and application of design controls on colours, materials and building location.

3.3.2.1 Visual Impact Assessment

Due to the sensitivity of the site and its relationship to the Range highlighted in the Management Plan, a detailed assessment was undertaken to more comprehensively assess its role in the landscape and the potential visual impact of development (Appendix 3). This was undertaken by EPCAD Landscape Architects and Environmental Planners and concludes that development can occur without detriment to the broader and contextual landscape, subject to application of a number of visual management measures detailed in section 7.2.1 of the report. These have been incorporated in the statutory component of the structure plan and include:

- Siting of higher density areas in areas of least visual exposure, and areas lower density in higher parts of the site;
- Preservation of the Range face;
- Retention of remnant vegetation where possible;
- Revegetation of public open space areas and the planting of street trees;
- Promotion of native plant species in both public and private areas of the site;
- Application of design guidelines to control the use of materials and colours in new buildings to ensure these complement the landscape and are non-intrusive; and
- Separate, detailed assessment of any development proposed on top of the escarpment, and the construction of a road up to it.

3.3.3 General WAPC Policies

A number of more general planning policies and guidelines apply to the zoning, development and subdivision of the land including:

- State Planning Policy 3 – Urban Growth & Settlement (WAPC);
- State Planning Policy No. 3.4 Natural Hazards and Disasters (WAPC);
- Liveable Neighbourhoods (WAPC);
- Planning for Bush Fire Protection Guidelines (Edition 2); and
- Better Urban Water Management Guidelines.

The Geraldton Regional Flora Survey 2010 and draft Biodiversity Strategy also provides useful background information and guidance.

The structure plan and its supporting documents respond to and generally accords with these.

3.4 Other Approvals and Decisions

The rezoning proposal for the site discussed above represents the only relevant and outstanding planning proposal affecting the site. Advice provided by the EPA in relation to the rezoning (provided in Appendix 4) indicated that:

- The environmental report submitted with the scheme amendment adequately documents environmental factors;
- The amendment report and supporting documentation demonstrate consideration of significant values in the area, and advance adequate management to preserve the majority of these values;
- The delineation of Public Open Space should occur, and provision for preparation of a Public Open Space Management Plan/s should be made as part of the site Structure Plan to formalise public open space provision and management measures.

This advice has been addressed in the Structure Plan through the formalisation of open space locations to coincide with areas of environmental value, and through inclusion of a requirement for preparation of management plans for all public open space, with consultation with the Department of Environment and Conservation to occur for those incorporating an environmental function (refer Clauses 6 and 8 of Part 1).

4.0 SITE ANALYSIS

4.1 Landform, Topography and Soils

The site's topography transitions from the flat coastal plain west of the site, through the foot and side slopes to the Moresby Range 'tops' on the very east of the site. Its elevation consequently rises from approximately 75m AHD up to 210m AHD at the highest point of the ranges on the eastern boundary (refer Figure 1). The contours show quite a steep rise in elevation however when viewed from the ground, the slope appears quite gradual, with the exception of the dramatic rise along the eastern edge of the site to the range 'tops' which appear almost cliff-like. The steepest portion of the site is generally not proposed to be developed, with the slope in the development area not posing any significant challenge to development. Access to the tops will, however, require careful analysis to achieve in a form acceptable from both an engineering and visual impact perspective.

Details of soil types are documented in the appended Environmental Assessment report (Appendix 5). It notes that the majority of the site contains primarily colluvial foot slopes, with silty sand over mottled sandy clay soils (WA Geological Survey, 2001, quoted in Coterra, 2010). The escarpment is composed of colluvial formed talus slope consisting of weathered rock, debris and gravel, shale, siltstone and sandstone with shelly sandy limestone (Coterra, 2010). These soil types are generally suitable for development and on-site effluent disposal, though with some management potentially required for erosion, particularly for the steeper sloped eastern area.

Geotechnical investigations will provide further detail and will inform the development of specific treatments and management strategies to support subdivision.

The site is generally identified as being at low risk of acid sulphate soils, though a small area around the dampland in the south and abutting the wetland in the west of the site poses some risk (refer Figure 7). For the most part, these areas are not proposed to be disturbed, however an Acid Sulphate Soils Investigation is being undertaken to further ascertain the risk, and to determine whether a Management Plan will be required in accordance with the requirements of the Department of Environment and Conservation (DEC) at subdivision stage.

4.2 Conservation and Environmental Values

The Environmental Assessment Report prepared for the site (Appendix 5) found that:

- The site consists of largely degraded agricultural grazing land;
- There is some remnant native vegetation of mixed Thicket of Acacia and Banksia shrub. Much of this has been impacted by historic grazing practices and for the most part, the vegetation exists as overstorey;
- One Priority 1 Flora species (*Melaleuca huttensis*) and one Priority 3 Flora species (*Grevillea triloba*) were located on the site (refer Figure 8);
- One individual *M. huttensis* was recorded within the northwest corner of the site;
- *G triloba* was recorded in three areas in the northern and northwest corners, in the areas classified as being in 'Good' to 'Excellent' condition, at densities of 20%, 5% and patches of 20% respectively;

- There are no recorded Environmentally Sensitive Areas (ESA's) within or near to the site. In addition, no known occurrences of Threatened Ecological Communities are known to exist within the site based on the surveyed vegetation associations;
- The proposed development is expected to have a limited impact on remnant vegetation. Over-storey vegetation will be mostly located within Public Open Space or retained in large covenanted lots, and individual and small clusters of trees will be retained where feasible. All areas with Priority Flora located in them will be retained in Open Space or within the large lots on the north in which vegetation located outside specified building envelopes will be required to be retained (subject to bushfire management requirements);
- Development of the site presents an opportunity to facilitate revegetation through site, open space and streetscape landscaping, with the use of native species promoted. Approximately 30% of the site is proposed for open space under the current Development Concept (discussed below), well above the 10% normally required of residential development, and far in excess of the 0% which could be achieved through maintenance of existing rural use, or even Rural Residential redevelopment. Further detail on precise areas, design, species to be used and management of open space proposed will be developed and submitted to approval agencies as part of the subdivision process;
- There are two seasonal wetlands on the site, located in the south-west and near the western edge of the site (refer Figure 9). The vegetation condition of both was assessed to be between 'Good to Degraded' to 'Degraded' (refer Figure 8). Neither are mapped as wetland areas by the DEC or EPA, and are not identified as having any conservation significance. Nevertheless they are proposed to be retained within open space given they represent natural drainage features and retain some vegetation, albeit degraded, thus retaining some environmental value;
- Three natural drainage lines are present through the site, which have been highly modified due to clearing. The Local Water Management Strategy prepared for the site incorporates these within multiple use open space corridors;
- Fauna habitat is limited across the bulk of the site due to the cleared nature of the site. Habitat for some species would be available in remnant vegetation, particularly in north west corner, however as these are generally degraded with limited understorey, they are of limited value. The vegetation within the very north west corner of the site will be retained outside of designated building envelopes and will not compromise habitat viability;
- Potential foraging habitat for Carnaby's and Baudin Cockatoo is present in some areas of existing vegetation (Coterra, 2011). Retention of these areas is proposed in the Development Concept prepared for the site, limiting potential impact on these species. Regeneration of existing vegetated areas and the provision of additional areas of open space, as well as plantings in road reserves and on private properties present opportunities to improve the environment for these and other native species.

4.3 Bushfire Hazard

A strategic analysis of the site and development proposal has been undertaken by ICS Group, the key findings and recommendations of which are summarised as follows:

- The site is largely cleared but some pockets of remnant vegetation remain;
- Adjoining properties have a mix of native vegetation and cleared land;
- The site has not been declared a Bushfire prone area. Nevertheless, fire does present a risk requiring consideration and response in the detailed planning of the site. Measures might include:
 - Maintenance of a minimum of two access points to development areas;
 - Provision of fire hydrants at appropriate intervals along roads adjacent to development areas;
 - Provision of roads or strategic firebreaks in appropriate locations;
 - Provision of appropriate hazard separation (setbacks) to reduce Bushfire Attack Levels on houses to BAL-29 or less;
 - If required, specific assessment of bushfire protection for on-site waste water treatment infrastructure;
 - Specific assessment of and planning for the proposed tourism facilities;
 - Where appropriate, provision of fire services access to and through open space areas in landscape planning;
 - Development of a bushfire protection plan for the Moresby Range reserve;
 - Consultation with the local government and / or DFES (as the case may be) with regards to the possibility of their wanting to locate a fire station within the development.

These recommendations have been incorporated into the Local Structure Plan where applicable. Further implementation will occur through the subdivision process (at which time more detailed site planning, hydrant placement planning etc will occur).

4.4 Heritage

A search conducted through the Department of Indigenous Affairs Register of Aboriginal Heritage Sites found that there are no sites of Aboriginal significance which have been recorded on the site (Coterra, 2011). The closest registered site is located approximately 3km north-west of the northern edge of the site. It is recognised that the Moresby Range is likely to have significance to the indigenous as well as the non-indigenous community, as is noted in the Moresby Range Management Plan: There is potential for development of the site to incorporate recognition of its cultural significance. This issue can be further considered and addressed in detailed site planning of the proposed tourism site on top of the Range.

There are no other places or features of known significance on the site.

5.0 CONTEXT AND CONSTRAINTS ANALYSIS (REFER FIGURE 10)

5.1 Transport and Access

Private vehicular access represents the most prevalent form of transport within Geraldton and will likely serve as the primary travel mode to and from the site. The landholding has very good access to the existing road network, being just north of Chapman Valley Road with existing access connections to Sutcliffe Road, Arnold Road, Hackett Road and Cooper Street. A further link is proposed through extension of Tramway Road, subject to the agreement of Council. Some upgrading of local roads and intersections is likely to be required to support the development, as detailed in the Traffic Report prepared by Riley Consulting (Appendix 6), and contributions towards regional upgrades of Chapman Valley Road and the North West Coastal Highway may also be required.

Only limited public transport is currently available within Geraldton, and none to the subject site however this development will provide a strong catchment for the extension of services if and when the network is reviewed.

The new Oakajee infrastructure corridor is proposed to run around the back of the Moresby Range, with this site having good access to the port from both it and the Highway.

5.2 Services and Infrastructure

Preliminary investigation of service availability has indicated that all basic utilities should be available to service the site, subject to the usual upgrade requirements (refer Appendix 7). Extension of power, water and telecommunications will be required as conditions of subdivision and will occur as a matter of course. Sufficient water pressure may necessitate the provision of some pressure boosting: this will be confirmed following detailed design, in consultation with Council and Water Corp.

As an alternative to extension of sewer to the site, new sustainable water treatment technology is proposed to deal with waste water. This will see it pumped to one or two local treatment facilities (housed in buildings the size of a residential house – refer below examples) where it will be processed and grey water produced to provide reticulation to public open space. The establishment of this process and licensing of the facilities is subject to strict requirements and guidelines to ensure no risk to public health or amenity, and on-going responsible management of the system. This technology is currently being applied throughout the United States of America with a similar local example approved at Point Grey in Mandurah and at Lancelin. In the current context of water shortages and stretched services, this technology appears likely to become increasingly common, and represents an example of sustainable innovation.



Plates 1 & 2: Example Aqueonics WWT facilities, West Chester PA, & Truckee, CA

Extension of conventional deep sewerage to the site represents an alternative waste water treatment option, though would be likely to come at a high capital cost.

Preliminary geotechnical information suggests that Rural Residential lots will be capable of accommodating septic systems, with detailed investigations currently being undertaken to confirm this.

5.3 Centres and Employment

Geraldton is well provided for regional shopping, services and employments, with residents of the proposed development able to access these. In addition to the Geraldton CBD centre, a district activity centre is proposed at Glenfield Beach, with local facilities at Drummond Cove, Waggrakine, Glenfield and Strathbalyn. A neighbourhood centre is also proposed as part of the structure plan to provide local goods and services on-site. This can provide for a range of local services, such as a small supermarket or local store, GP, hairdressing etc. This will provide for excellent accessibility to convenience goods, reduce travel distances required, and will provide a focal point for the development and locally based social engagement.

The site's proximity to Oakajee is likely to make it attractive to employees at the port, and to mining and other enterprises north and east of Geraldton.

5.4 Regional and District Open Space and Community Infrastructure

Liveable Neighbourhoods states that an average of one primary school is required for 1500 residential lots, and one secondary school per 6500-7000 lots. A primary school is proposed to be provided in a central and accessible location abutting the neighbourhood centre. Consultation with the Department of Education has indicated the proposed plan is acceptable to them.

The City of Geraldton Greenough staff have identified a need for additional district recreation facilities to serve this area. 14ha of open space is consequently proposed along the southern boundary of the site, in close proximity to the proposed primary school and local centre.

No other community facilities have been identified as necessary to support the proposal, though there is potential for a community building to be located within the local centre, if necessary. Less formal but equally important community meeting spaces will be available within open spaces, a possible town square and within quality streetscapes.

5.5 Land Use Context

The site is surrounded by Rural Residential developments to the south and west, which are subject to the Waggrakine Rural Residential Structure Plan. Land to the north and east is zoned Rural and is subject to low intensity agricultural use.

The development of the site for urban purposes will require treatment of these areas to provide a transition in intensity of development. This has been addressed through the provision of rural residential and 'special residential' lots and / or open space around the periphery of the development. Increased traffic on local roads providing access to the site is likely to be of concern to some abutting residents however it will remain within the limits of their current designated function.

The development will essentially represent an expansion of Geraldton city. Its separation from existing urban areas by the Waggrakine Rural Residential area will give it something of a 'village' character, however its proximity to Geraldton means that it will effectively form a suburb of the city.

5.6 Unexploded Ordinance

The site has been identified as having potential unexploded ordinance, because the face of the Moresby Range could possibly have been used for target practice during training in the past. UXO investigations conducted in 2006 by FESA concluded that the site poses minimal risk, and consequently application of a standard advice note on subdivided titles is the only recommendation made (refer Appendix 8).

6.0 STRUCTURE PLAN DESCRIPTION

6.1 Overview and Neighbourhood Structure

The proposed Structure Plan and the Development Concept from which it has evolved (refer Figure 11) provide for development of the site to accommodate:

- 79 ha of 'regional' open space, protecting the Moresby Range tops;
- A neighbourhood commercial centre and abutting Primary School, roughly in the centre of the site;
- Urban residential neighbourhoods both north and south of the neighbourhood centre, with potential for higher density in close proximity to the centre;
- Low density and Rural Residential around the periphery of the residential neighbourhoods, providing for a diversity of lot types and a graduation in density from adjoining rural residential and rural areas;
- An integrated network of parkland throughout the development, protecting areas of environmental significance, providing for integrated urban water management, and providing for local recreation and amenity to service the subdivision;
- 33ha of District Open Space, provided in a linear spine through the development to link to the Moresby Range, and in a consolidated 14ha block in the south of the site, to provide for District Recreation (as requested by the City);
- Two potential tourism facilities, including one on the Range Tops, where a low profile development could be designed to nestle in behind the Range 'edge' where it would be visually unobtrusive, but could benefit from the magnificent ocean views this location affords. In addition to accommodation, the site might also accommodate a cafe or restaurant, or possibly even a small tavern similar to the Mundaring Hotel, which would provide an attraction to the local Geraldton community as well as more distant visitors. The second, lower site appears more suited to eco-chalets or similar self-contained, low intensity accommodation.

The design is based on a 'modified grid' layout, providing an interconnected, legible and walkable area. The centre and school are provided at a key intersection within the subdivision, maximising accessibility and reinforcing their role as a physical as well as psychological centrepiece. Linear open space abutting the centre has been incorporated to protect areas of environmental significance, provide for integration of natural drainage function, create a local community parkland, and to provide a strong open space link or spine running through the site and connecting up with the Moresby Range open space in the east. It will accommodate areas for both passive and active recreation, cycle and walk paths and provide a strong link to through the estate to the Range.

6.2 Commercial Centres

The commercial centre proposed is expected to be of a neighbourhood centre scale (up to 6,500m² of retail, subject to economic viability). It is intended to provide for convenience goods and services such as a small supermarket, hairdresser and the like, as well as providing a community focal point for the estate. It will not compete with the commercial primacy of Geraldton CBD which, 10km from the site, will continue to provide the primary destination for many commercial activities, but it can supplement it, providing local access to daily needs and increasing the self-sufficiency of the estate. It accords with the direction of SPP 4.2

which stipulates that Neighbourhood Centres can service catchments of between 2,000 and 15,000 people, within a radius of approximately 1km.

The centre has been co-located with the estate primary school, district open space and linear park to reinforce its role as an activity centre, in accordance with Liveable Neighbourhoods design requirements. It has also been located at a central cross roads to maximise its accessibility to the neighbourhoods it services.

Its design will be subject to a specific Detailed Area Plan as a condition of subdivision approval.

6.3 Natural Features

The design is highly responsive to natural features, facilitating the creation of a 'sense of place' within the community. The Plan:

- Provides for the protection of the Moresby Range face and tops, and provides for public access to these;
- Integrates natural drainage lines into an open space network, allowing for best practice stormwater management;
- Retains and enhances the local damp lands / wetlands in the southern portion of the site;
- Locates the majority of remnant vegetation within open space or, in the case of vegetation in the very north of the site, on large lots with restricting clearing; and
- Responds to the contours of the land, both with regards to road layout and in the concentration of residential densities in low lying areas and, placement of larger lots in higher areas where they may be more visible.

Earthworks required to implement the plan will be limited, ensuring that the natural topography is respected.

6.4 Street Block Layout

The street network is highly interconnected, building off the existing local network and extending routes in a modified grid through the subdivision. It provides a legible layout with good connectivity for local vehicles, pedestrians and cyclists, whilst avoiding long straight, unbroken routes which encourage high speeds.

The network promotes perimeter block development, creating conventional, safe and attractive streetscapes with good passive surveillance. Cul de sac have been minimised.

6.5 Movement Network

A traffic analysis of the proposal has been undertaken by Riley Consulting (refer Appendix 6).

This has found that:

- The site when fully developed can be expended to generate 16,200 vehicle movements per day, of which about 11,300 can be expected to access the external network;
- Projected traffic increases to the external network indicate that the North West Coastal Highway south of Chapman Valley road will require duplication;
- The intersection of North West Coastal Highway / Cooper Street is probably sufficient in its current layout but is recommended to be modified to include full standard left and right turn lanes;
- The intersection of North West Coastal Highway / Tramway Road will require a full standard right turn lane;
- The creation of four-way intersections on Tramway Road may require provision of small roundabouts or other forms of traffic management;
- Local roads providing access through to Chapman Valley Road can accommodate forecast volumes but may require some upgrading such as provision of kerbs and wider carriageways.

The details and timing of improvements is proposed to be further assessed and determined at subdivision.

The internal road network incorporates two Neighbourhood Connector roads extending from Tramway Road and Arnold Road, through to the town centre. The remainder of the network comprises Access and Higher Order Access Streets (refer Figure 12), though the Hackett Road connection may ultimately develop into a Neighbourhood Connector, should further links providing a continuous route along the foothills of the Moresby Range be developed as is recommended by the Moresby Range Management Plan. The majority of roads are expected to carry less than 1000 vehicles per day, with all but one (the Tramway Road extension) expected to carry less than 3000vpd. Indicative minimum cross sections for predominant street types are provided in Figure 12 – 17 of the traffic report, though will be subject to further development at subdivision.

The road network is in the form of a modified grid which provides for excellent levels of accessibility and permeability.

Traffic signals are not anticipated as necessary within the development however priority controls will be necessary in some locations. The details of treatment will be determined in consultation with the City as part of the subdivision planning process.

Provision for possible future bus services to the site is proposed through the provision of a wider (7.2m carriageway) route through the subdivision (refer Figure 13) however there is currently no timeframe for or commitment to the provision of such a service by PTA.

Provision for pedestrians and cyclists is proposed through:

- Recommended placement of footpaths on both sides of the road where traffic volumes are anticipated to exceed 1000 vehicles per day (refer Figure 14);
- Provision of shared paths as an alternative to on-street cycling on Neighbourhood Connectors.

Additional recreational walking and cycling routes are proposed through open space as part of the landscape planning process. Provision of some public parking to service the key terminus to this network (most likely abutting the village centre) may be appropriate.

6.6 Land Use (including density and population estimates)

The land use breakdown provided for by the structure plan is as follows:

TABLE 1: Land Use Schedule – Moresby Heights Local Structure Plan, January 2013 (2118-100E-01)

	Lot 55 (ha)	%	Lots 80 & 81 (ha)	%	Sub-Total (ha)	%	Total (ha)
GROSS AREA (GA)	9.75		385.40		395.15		395.15
Non Residential Land Uses (NRLU)							
Wetlands	0.00		1.51		1.51		
High School	0.00		0.00		0.00		
Primary School	0.00		4.00		4.00		
Village Centre	0.00		3.50		3.50		
Tourist	0.00		8.30		8.30		
Rural Residential	2.86		65.64		68.50		
Total NRLU	2.86		82.95		85.81		85.81
GROSS RESIDENTIAL AREA (GRA) [GA less NRLU]	6.89		302.45		309.34		309.34
Public Open Space							
Required @ 10%	0.69		30.25		30.93		30.93
Gross Open Space Proposed	0.00	0.00	130.52	43.16	130.52	42.19	130.52
Credit Open Space Proposed (refer POS Schedule)	0.00	0.00	124.40	41.13	124.40	40.22	
POS Surplus to 10%	-0.69		94.16		93.47		94.16
NET RESIDENTIAL AREA (NRA) [GRA less POS]	6.89		171.93		178.81		178.81

The Plan provides for approximately 2000 dwellings, at the following densities:

	Lot 55 (ha)	Lots 80 & 81 (ha)	Total Zoned Area (ha)	Assumed Yield / Ha¹	Estimated Yield
Rural Residential	8.77	65.64	68.50	As per LSP	45.00
Residential R5	0.00	5.99	11.90	3.00	35.71
Residential R10	0.00	15.40	15.40	5.00	77.00
Residential R20	0.00	129.60	129.60	10.38	1345.25
Residential R30	0.00	14.70	14.70	17.33	254.75
Residential R40	0.00	7.00	7.00	21.67	151.69
Total	8.77	238.33	247.10		1909.40
Notes:					
1. Assumes 20%, 25%, 25%, 32.5%, 35% & 35% respectively for roads etc, and av lot areas of 1ha, 2500m ² , 1,500m ² , 650m ² , 375m ² and 300m ² respectively.					

This yield estimate equates to a density yield of around 5 dwellings per gross hectare or 11 per net residential hectare. The yield per gross hectare is relatively low because of the high proportion of open space incorporated.

Actual yields are likely to vary this estimate, particularly if the market dictates larger lot sizes (as current indications suggest is probable), however it provides a reasonable indication of what could occur.

This could cater for up to 54,963 people assuming an average of 2.6 persons per household (as per 2011 national average).

Areas of higher residential density have been concentrated around the Neighbourhood Centre, maximising accessibility to local amenities as well as limiting visual impact (this area being identified as least visually intrusive). The lowest density areas have been located around the periphery of each neighbourhood, where they:

- Contribute to lot and lifestyle diversity;
- Provide for reduced visual impact;
- Allow for increased tree cover;
- Provide a transition to abutting rural and rural residential sites, reducing land use impact; and
- Allow for retention of vegetation, particularly on the lots in the very north of the site, where vegetation is to be retained through covenant.

6.7 Schools and Community Facilities

Based on the estimated lot yield, one primary school has been provided abutting the centre, in the middle of the development. This should service the entire subdivision.

Geraldton Senior College and John Willcock College will service secondary education demand, supplemented by private facilities.

The Department of Education and Training has indicated support for this proposal.

The nominated school site is 4ha in area, is surrounded by streets on three sides and abuts the linear open space spine on the fourth (east) side. The site is flat, highly accessible and meets the requirements of Liveable Neighbourhoods.

6.8 Public Parklands (Refer Figure 15)

A total of 130ha of public open space (POS) is shown in the Structure Plan. This substantially exceeds the 31ha required under WAPC Policy, but allows for:

- Retention of the Moresby Range side slopes and tops within a 'regional' park (approx. 79ha);
- Incorporation of a linear POS spine running through the estate from Tramway Road to the Range (approx. 15.5ha);
- Provision of 14ha of District Recreation, as requested by the City; and
- A network of local open space, providing for good access to parkland for all residents, and retention of remnant vegetation and environmental features in several locations (approx. 22ha).

Open space provision is illustrated in Figure 15 and is calculated against Liveable Neighbourhoods requirements in the Table 3, overleaf, which demonstrates provision well in excess of the minimum requirement, even if full credit is not extended to drainage areas outside the 1:1 year event swale area.

Precise areas and locations of POS may be refined at subdivision.

Sites with a 'conservation' function nominated provide for retention of some remnant vegetation and, within POS P3 and P11, the retention and enhancement of wetlands as part of integrated drainage areas. Those where the conservation function is more significant are designated as 'Conservation' in the LSP.

Development of the linear parkland and local open spaces (totalling around 37ha) would be required as a condition of subdivision under WAPC Policy, with the details of landscape treatment to be determined as part of POS Management Strategies required prior to development. It is, however, intended that open space:

- Retain remnant vegetation where feasible;
- Incorporate integrated drainage lines and swales;
- Provide for grassed areas, natural areas, recreational use and play equipment;
- Address state and local government requirements in regards to maintenance, and local government and / or DFES (as the case may be) requirements in relation to bushfire management.

TABLE 3: Public Open Space Schedule – Moresby Heights Local Structure Plan, January 2013
 2118-105-01 (based on Plan 2118-121-01 & Aecom LWMS Rev.C)

	Lot 55	Lots 80 & 81	Total LSP Area (lots 55, 80 & 81)	TOTALS
	(ha)	(ha)	(ha)	(ha)
Site Area (SA)	9.75	385.40	395.15	395.15
Less:				
Environmental Exclusions (EE)				
Wetlands ¹	0.00	1.51	1.51	
Total Environmental Exclusions	0.00	1.51	1.51	
Net Site Area (NSA = SA - EE)	9.75	383.89	393.64	
Less:				
Deductions (ha)				
High School	0.00	0.00		
Primary School	0.00	4.00	4.00	
Village Centre	0.00	3.50	3.50	
Tourist	0.00	8.30	8.30	
Rural Residential	2.86	65.64	68.50	
Deductions Subtotal	2.86	81.44	84.30	
Gross Subdivisible Area (GSA = NSA - Deductions)	6.89	302.45	309.34	309.34
Public Open Space Required @ 10% GSA	0.69	30.25	30.93	30.93
Public Open Space contribution (ha)				
May comprise:				
Minimum 80% unrestricted Public Open Space	0.55	24.20	24.75	
Maximum 20% restricted use Public Open Space	0.14	6.05	6.19	
Unrestricted Public Open Space sites (ha)				
P1 - Moresby Regional Parkland	0.00	79.05		
P2 - Linear Open Space (incorporating conservation function, excluding drainage area) ³	0.00	5.05		
P3 - Linear Open Space 2 (incorporating conservation function, excluding drainage area & wetland)	0.00	8.16		
P4 - District Recreation (excluding drainage area)	0.00	13.66		
P5 - Local Park (excluding drainage area)	0.00	4.63		
P6 - Local Park (excluding drainage area)	0.00	2.36		
P7 - Neighbourhood Park (excluding drainage area)	0.00	0.38		
P8 - Neighbourhood Park (excluding drainage area)	0.00	0.81		
P9 - Local Open Space (incorporating conservation function) ³	0.00	2.50		
P10 - Neighbourhood Park	0.00	0.38		
P11 - Local Park (incorporating conservation function, excluding drainage area & wetland)	0.00	1.23		
P12 - Neighbourhood Park	0.00	0.15		
Total Unrestricted Public Open Space sites	0.00	118.36	118.36	

Restricted Public Open Space sites ²				
P2 drainage area (catchment 3)	0.00	2.19		
P3 drainage area (catchment 2 & 4)	0.00	3.39		
P4 drainage area (catchment 5)	0.00	0.50		
P5 drainage area (catchment 6)	0.00	1.05		
P6 drainage area (catchment 7)	0.00	0.67		
P7 drainage area (catchment 9)	0.00	1.54		
P8 drainage area (catchment 7A)	0.00	0.38		
P10 -drainage area (catchment 2A)	0.00	0.80		
P11 drainage area (catchment 1)	0.00	0.75		
P12 drainage area (catchment 1A)	0.00	0.90		
Total Restricted Public Open Space sites	0.00	12.17	12.17	
Gross Public Open Space Provision	0.00	130.52	130.52	
Credited Public Open Space Provision (= Restricted Open Space plus up to 20% Unrestricted Open Space)	0.00	124.40	124.54	124.54
Surplus Open Space Provision	-0.69	94.16	93.61	

Notes:

- 1: Wetland areas as mapped in Landgate
- 2: Areas subject to inundation in 20% AEP Storm Events (1:5year events). Credit actually available to 1:1 year event, but calculation not yet available. To be detailed at subdivision.
- 3: Conservation Open Space: credit given to be determined at subdivision in consultation with Local Authority.

A landscape hierarchy and some indicative illustrations are provided in Figures 16-18.

The central linear open space is particularly significant for the development, providing for both a physical and psychological link to the Range, and encouraging better access to it, as so strongly promoted in the Moresby Range Management Strategy.

The City will be responsible for the development of the playing fields and any associated infrastructure, given that this facility services a much wider area than the development alone, and that the 14ha area is being given up above and beyond the requirements of WAPC POS requirements. Similarly, revegetation of the Range Reserve is proposed to be allocated to the Council and DEC, or the Range Management Authority proposed under the Moresby Range Management Plan. Again, this is because this regional open space provides a regional rather than local amenity, with its provision free of cost more than meeting the proponents’ responsibilities. All other POS areas are expected to attract the standard requirement for development in accordance with an approved management strategy, as per WAPC policy.

6.9 Urban Water Management

A Local Water Management Strategy (LWMS) has been prepared by AECOM to support the Structure Plan (Appendix D to the Preliminary Engineering Services Report – Appendix 7). The LWMS:

- Responds to the Better Urban Water Management Guidelines (DoW 2008b) as well as Council requirements and WAPC policies;

- Applies Integrated Water Cycle Management principles, including holistic consideration of all water resources in planning, sustainable and equitable use of water sources and whole of catchment integration of natural resource use and management;
- Proposes nine catchments (and 4 additional sub-catchments) and provides preliminary calculations for the storage requirements of each (to be incorporated into public open space) – refer Figure 19; and
- Confirms that development and implementation of the Strategy recommendations will occur through more detailed Urban Water Management Plans which will be prepared to support subdivision.

The Strategy generally reflects City of Greater Geraldton guidelines in relation to basin sizing however it should be noted that these conservatively assume that the ability of lots to dispose of stormwater on-site will be limited. As such, they incorporate a high assumption for lot and POS drainage, in addition to the usual road drainage. Preliminary information suggests that on-site permeability and water table levels will not inhibit the ability of lots to dispose of stormwater on site, and lot sizes are not so small as to restrict this either. It is therefore likely that basin sizes and infrastructure will be reduced to substantially reduce the private lot and POS component in the development of Urban Water Management Plans at subdivision, when detailed geotechnical (including deeper test pits) and lot size information will be available to confirm the appropriateness of this.

6.10 Infrastructure Coordination, Servicing and Staging

Preliminary investigation of servicing opportunities and constraints has been undertaken, as documented in Appendix 7. This confirms that upgrades to existing infrastructure will be necessary to service the development. Service agencies have indicated that upon approval of the site's rezoning or, in some cases, the structure plan, they will undertake the necessary planning to determine the details of service provision, and upgrades required. These may include a requirement to boost water pressure through installation of new or upgrade of the existing water tank on Hackett Road, to be determined in consultation with Council and Water Corp. The responsibilities and procedures for service provision are well established through the respective agencies.

Application of new waste water treatment technology, if this is pursued in lieu of conventional deep sewer, will require that all necessary approvals are in place (namely approval from the Economic Regulation Authority and Council approval for the development) prior to development. Additionally establishment of a binding and on-going operating agreement will be necessary. In principle agreement on this has already been reached with the City. Finalisation of the agreement should be a condition of subdivision. Location of the water treatment plant/s is proposed to be within open space, most probably in the west, at the bottom of the catchment, and will be subject to development approval. Because of the small size and self contained nature of these facilities, and the absence of odour issues generated by them, their location and development should not have any impact on surrounding areas.

The landscaping of local open space areas will be the responsibility of the developer as per Liveable Neighbourhoods requirements. The landscaping of POS areas will be undertaken in accordance with plans approved by the City, following consultation with the DEC, as documented in Part 1.

A preliminary indication of anticipated staging for early releases is detailed in Appendix C to Appendix 7, which will see development of Low Density / Special Residential areas in the south of the estate occur first, supplemented by a proposed Stage 2 just west of the Neighbourhood Centre. Further stages are planned to the north of this, abutting the District Recreation, providing for a range of residential lots types. Development of the Centre is planned as early as commercially feasible.

Provision of district recreation areas and Moresby Range Reserve are planned to occur prior to or upon completion of Stage 1, with Part 1 specifying that it is to occur prior to or upon creation of the first 200th lot, or as otherwise agreed between the City and the landowner.

To ensure adequate access and appropriate traffic management:

- Secondary access (additional to Hackett Road) is required at or before release of 300 lots;
- Extension of Tramway Road will be required at or before release of 600 lots.

6.11 Visual Integration

Visual impact measures have been incorporated into the structure plan in two ways:

- Firstly the design and layout limits impact by:
 - Retaining most of the Range side slopes and the tops in their natural form;
 - Locating more dense development within the lower, least visible portion of the site;
 - Locating larger lots are on the higher, more visible portions of the site; and
 - Making provision to retain much of the remnant vegetation.
- Secondly, statutory provision has been made in the LSP text to require:
 - Development and application of guidelines governing colours and finishes;
 - Landscaping and streetscaping with appropriate plant species to soften the impact of development; and
 - Detailed design assessment of those elements with greatest potential for visual intrusion, namely the tourism sites, and the access road to the eastern of these.

The plan was prepared with reference to the detailed Visual Impact Assessment conducted of it as part of the early planning process for the site, and has been subsequently reviewed by Epcad to ensure compliance.

7.0 BUSHFIRE MANAGEMENT

Fire management measures have been incorporated in the Structure Plan through:

- Provision of multiple access points to and through the development;
- Location of road interface abutting open space; and
- Incorporation of requirements in the Part 1 statutory provisions or as part of routine conditions of subdivision approval requiring:
 - Provision of detailed Fire Management Plans at subdivision;
 - Provision of fire hydrants at appropriate intervals along road;
 - Incorporation of fire access and planning within open space design and management; and
 - Application of AS3959 design requirements on buildings within bushfire prone areas.

8.0 IMPLEMENTATION

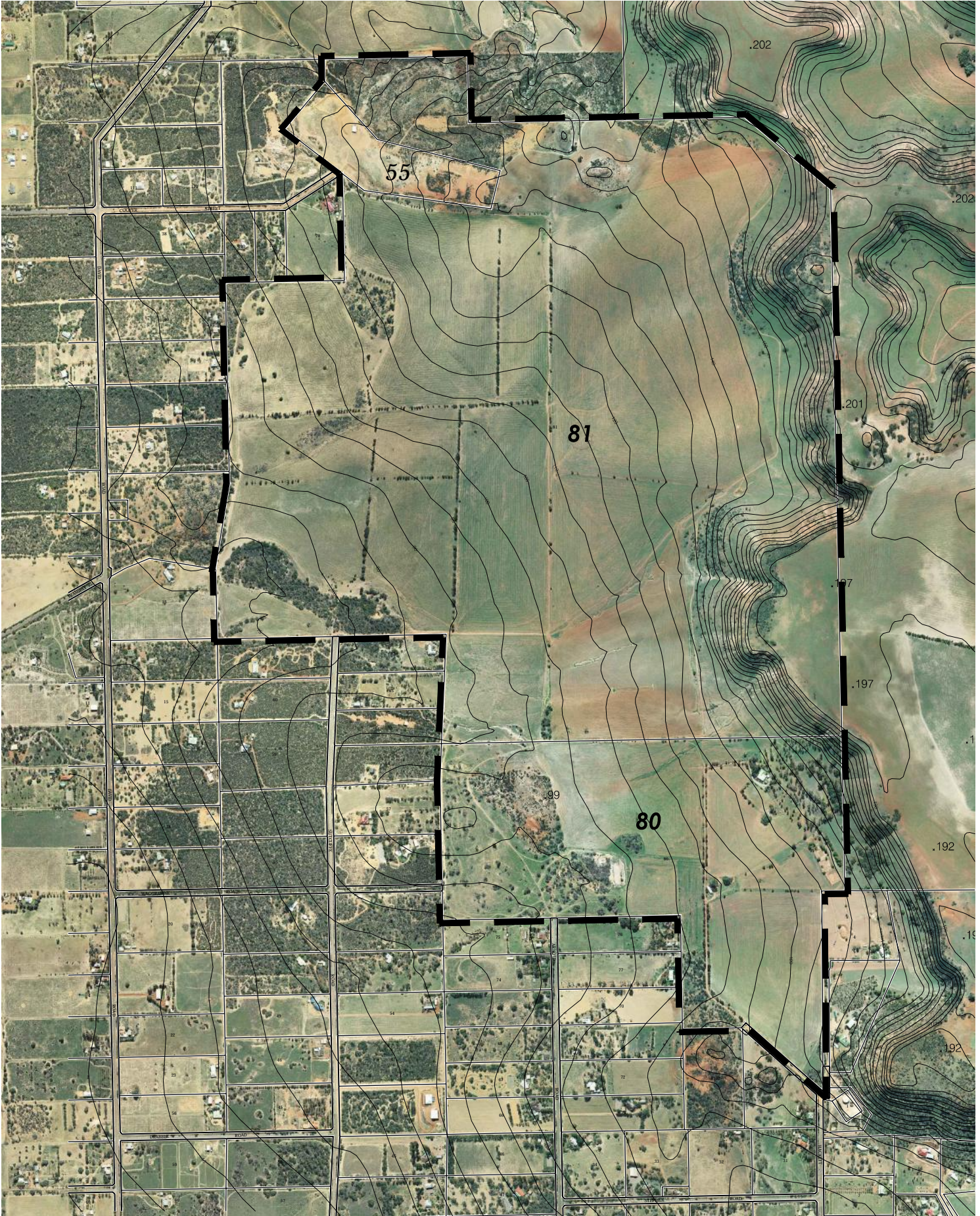
Implementation will be staged over a number of years (estimate 10-20). Construction is proposed to commence in the south of the site, taking access from Hackett Road. Provision has been made in the structure plan to ensure adequate provision of access to the development as it expands, as per the Traffic Report.

Provision of more detailed information in relation to service provision and design, and open space will occur as a matter of course, as part of the subdivision process, and will be enforced through standard subdivision conditions.

Schedule 1: Summary of Consultation

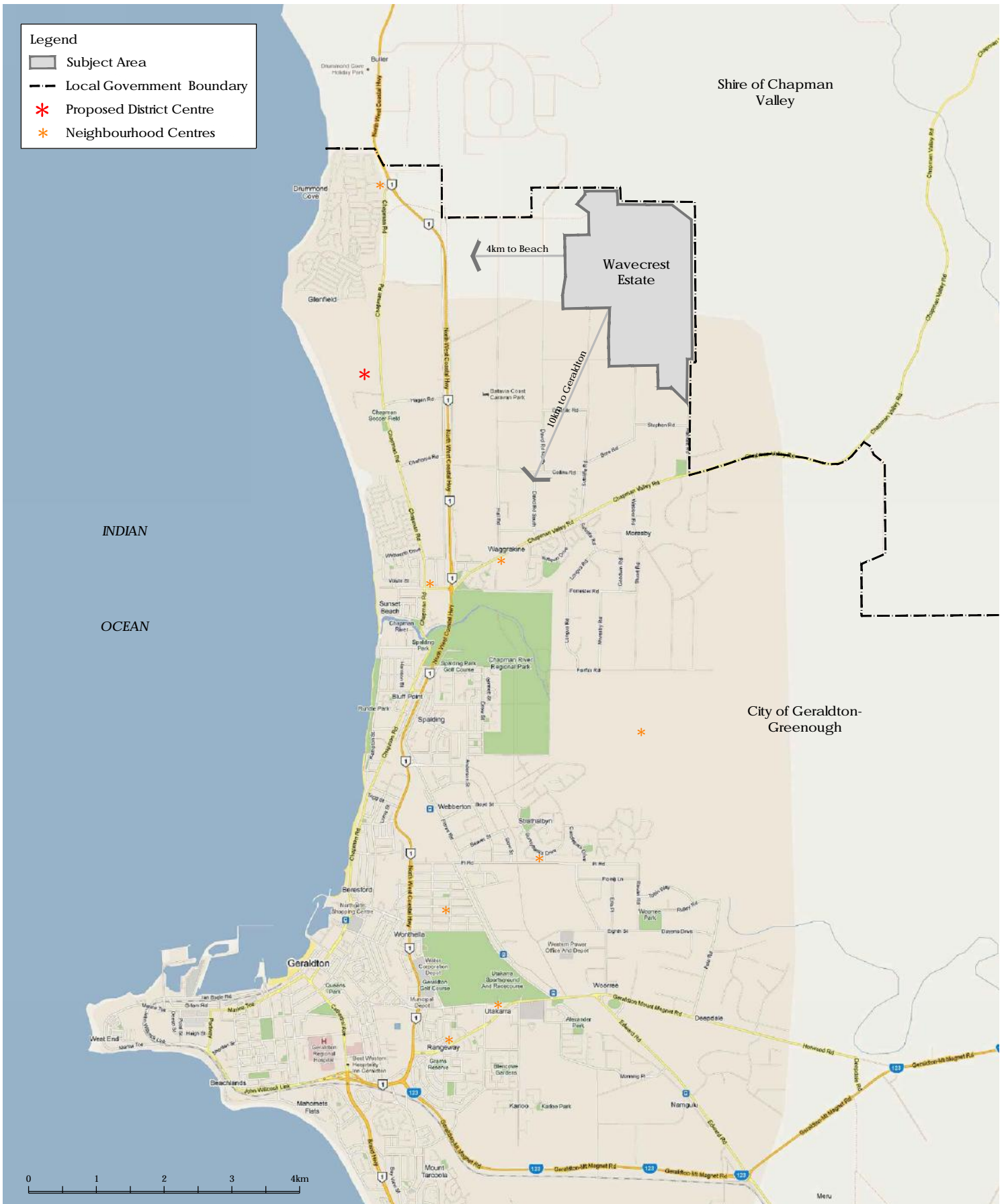
Agency	Date/s	Summary of Outcomes
Local Government	Various inc 22 Nov 2011, 10 May 2012, LSP consultation meeting 10 th May 2012, LSP update meeting 14 August 2012, March-Dec 2013	Incorporation of Lot 55 into plan, modification to residential densities, reconfiguration access to Rural Residential lots south of POS 3, conduct of preliminary geotech to confirm soil permeability. Earlier input into Development Concept, prior to rezoning. Input into draft LSP including requirement for additional assessment of visual impact, modifications to text, designation of Conservation areas and review of traffic estimates.
Dept of Planning	Various inc. 1 May 2012	Provision for the requirement of detailed POS Schedules as a component of subdivision to be included in LSP.
Dept of Water	January & February 2012	Kerry Wray, Simon Rodgers: LWMS to be submitted
Dept of Environment & Conservation	May 2011 - Amdt	Desire to retain majority remnant vegetation, particularly priority species, possible Carnaby habitat, retention & rehabilitation of Range desirable, POS management important.
Dept of Education	17 Nov 2011	1 Primary School on site acceptable. Size appears acceptable, though subject to confirmation of lot yield. Location & layout appear acceptable, subject to confirmation of grades (flat site required) and ability to extend roads around all four sides if required. Further comment to be provided following more detailed review of plan.
Western Power	Nov - Dec 2011	Feasibility Study supplied as documented in Engineering Services Rpt
Alinta Gas		Atco gas consulted August 2011 (response February 2012). WA Gas Network & Origin Energy consulted late 2011 as potential alternative suppliers.
Water Corporation	Nov 2011	As documented in Preliminary Engineering Services Rpt – Waste Water Planning yet to be undertaken for the precinct. Process for alternative service provider documented.
Telstra	Early 2012	N/A – Subject to NBN Co. – consulted early 2012
FESA (now DFES)	19 & 20 Oct 2011	Identification of key risks and strategies inc minimum setback distances for houses, density & building control, access & vegetation management
Adjoining landowners	Nov / Dec 2011 June 2012	Consultation as part of rezoning process. Provision of alternative development options and discussion with HLD occurred June 2012. Owners provided preferred concept through the City (March 13) which has been incorporated in LSP.

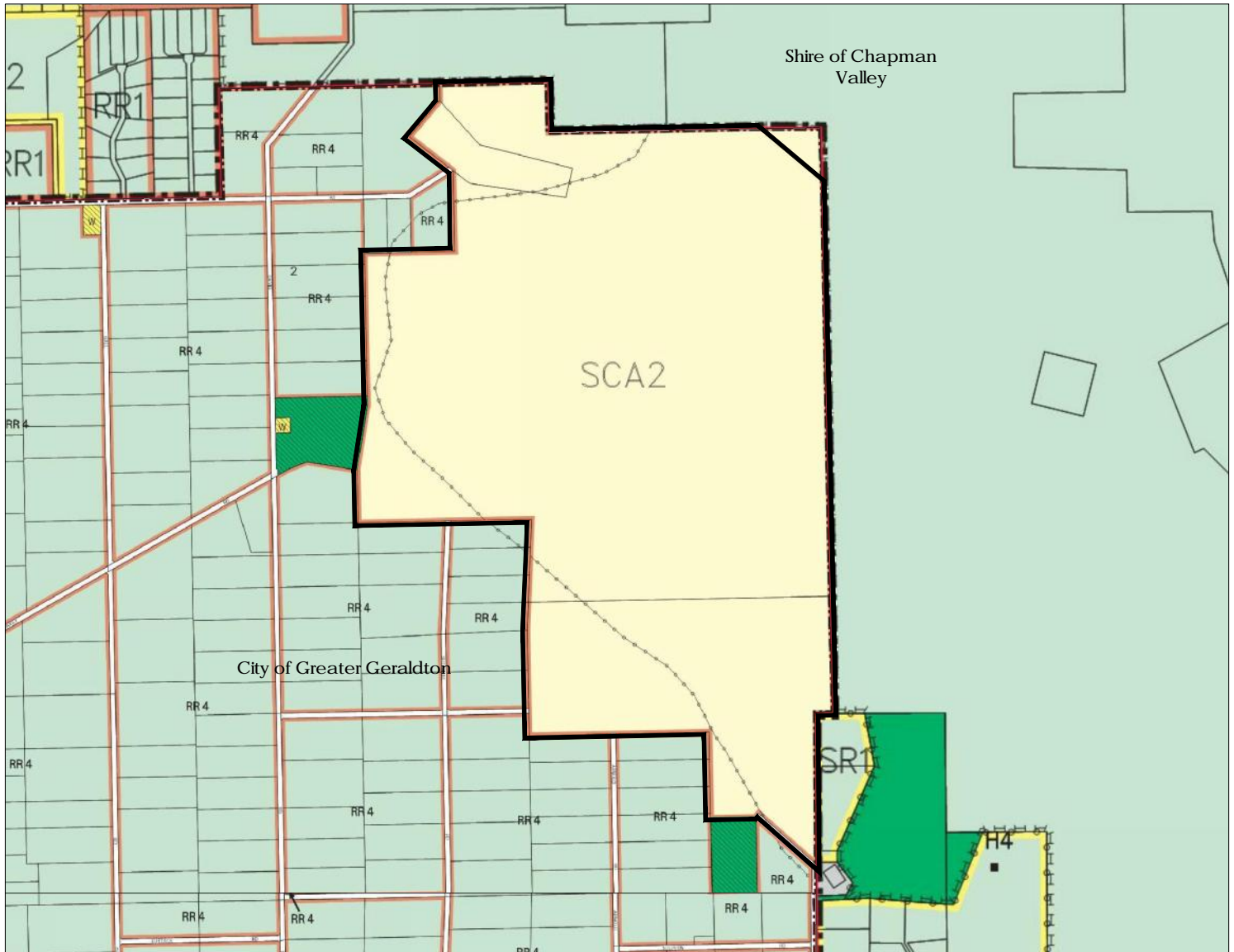
FIGURES



STRUCTURE PLAN AREA (AERIAL IMAGERY)







LEGEND

LOCAL SCHEME RESERVES

- MAJOR ROAD
- NATURE RESERVES
- PARKS AND RECREATION
- PUBLIC PURPOSES
- PUBLIC PURPOSES DENOTED AS FOLLOWS:
 - A AIRPORT
 - C CIVIC
 - CE CEMETERY
 - CF&F CONSERVATION OF FLORA & FAUNA
 - CP CAR PARK
 - D DRAINAGE
 - FF FIRE FIGHTING
 - G GRAVEL
 - H HALL
 - HS HIGH SCHOOL
 - M MUSEUM
 - P PRISON
 - PS PRIMARY SCHOOL
 - PS/HS PRIMARY & HIGH SCHOOL
 - RD RULBISH DISPOSAL
 - TS TRIG STATION
 - W WATER
 - WP WESTERN POWER
- ROAD
- WATERWAY
- SUBJECT SITE
- RAILWAY

ZONES

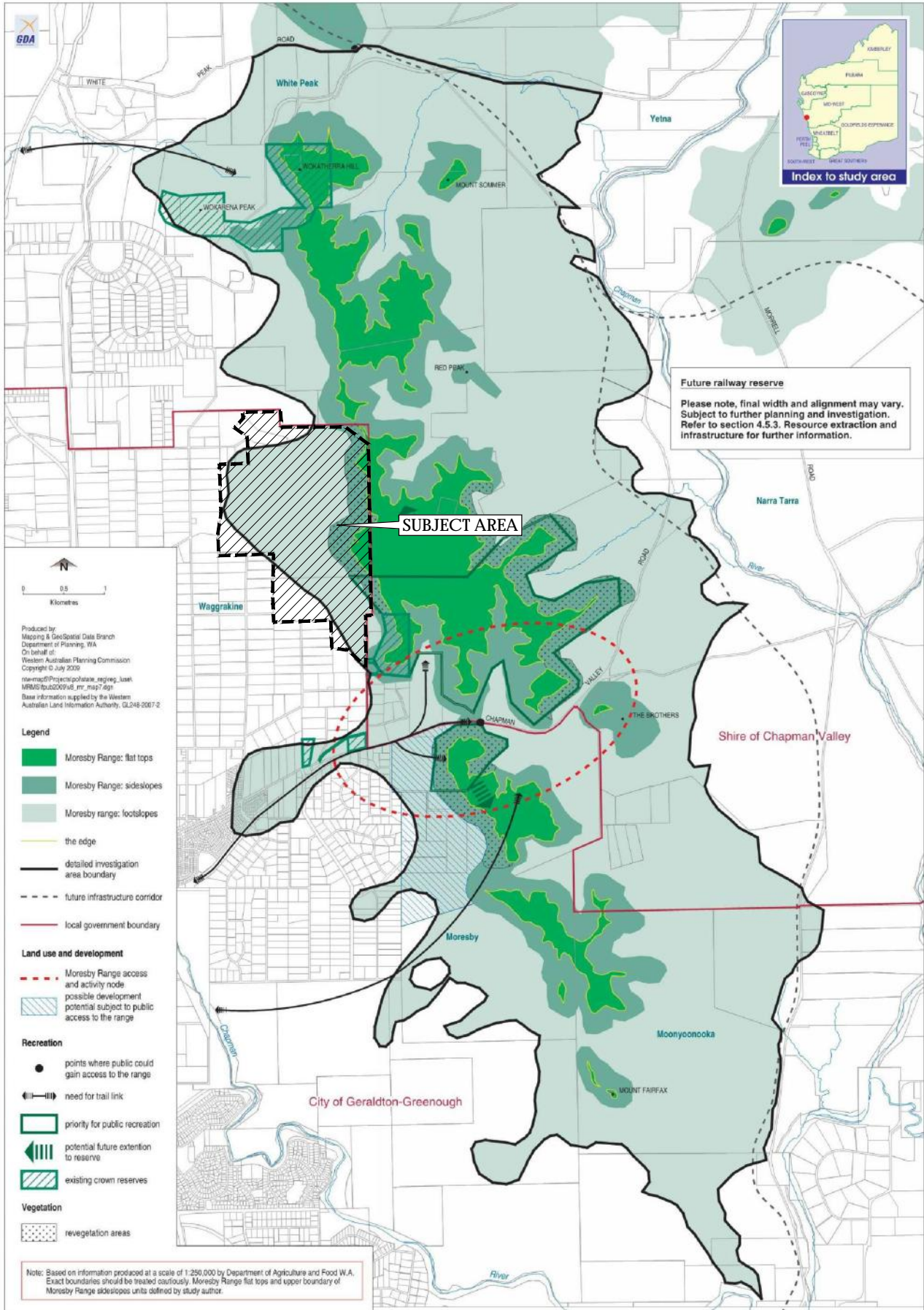
- DEVELOPMENT
- RESIDENTIAL
- TOURIST
- COMMERCIAL
- HIGHWAY COMMERCIAL
- SPECIAL USE
- CIVIC AND CULTURAL
- GENERAL INDUSTRY
- LIGHT INDUSTRY
- DUNE PRESERVATION
- RURAL
- RURAL RESIDENTIAL
- RURAL SMALLHOLDING

OTHER

- R CODES
- RESTRICTED USES
- SCHEME BOUNDARY
- LOCAL GOVERNMENT BOUNDARY
- TOWNSITE -- LAND ACT
- SPECIAL CONTROL AREA - MORESBY RANGE LANDSCAPE
- SPECIAL CONTROL AREA - GREENOUGH HERITAGE
- SCA-NARNGULU WASTEWATER TREATMENT PLANT
- SCA-NARNGULU WASTE DISPOSAL FACILITY
- SPECIAL USE AREA (SEE SCHEME TEXT)
- RURAL RESIDENTIAL AREA (SEE SCHEME TEXT)
- RURAL SMALLHOLDING AREA (SEE SCHEME TEXT)

CURRENT ZONING - CITY OF GREATER GERALDTON TPS No.5





MORESBY RANGE MANAGEMENT STRATEGY 2010
-STRATEGY PLAN FOR DETAILED INVESTIGATION AREA



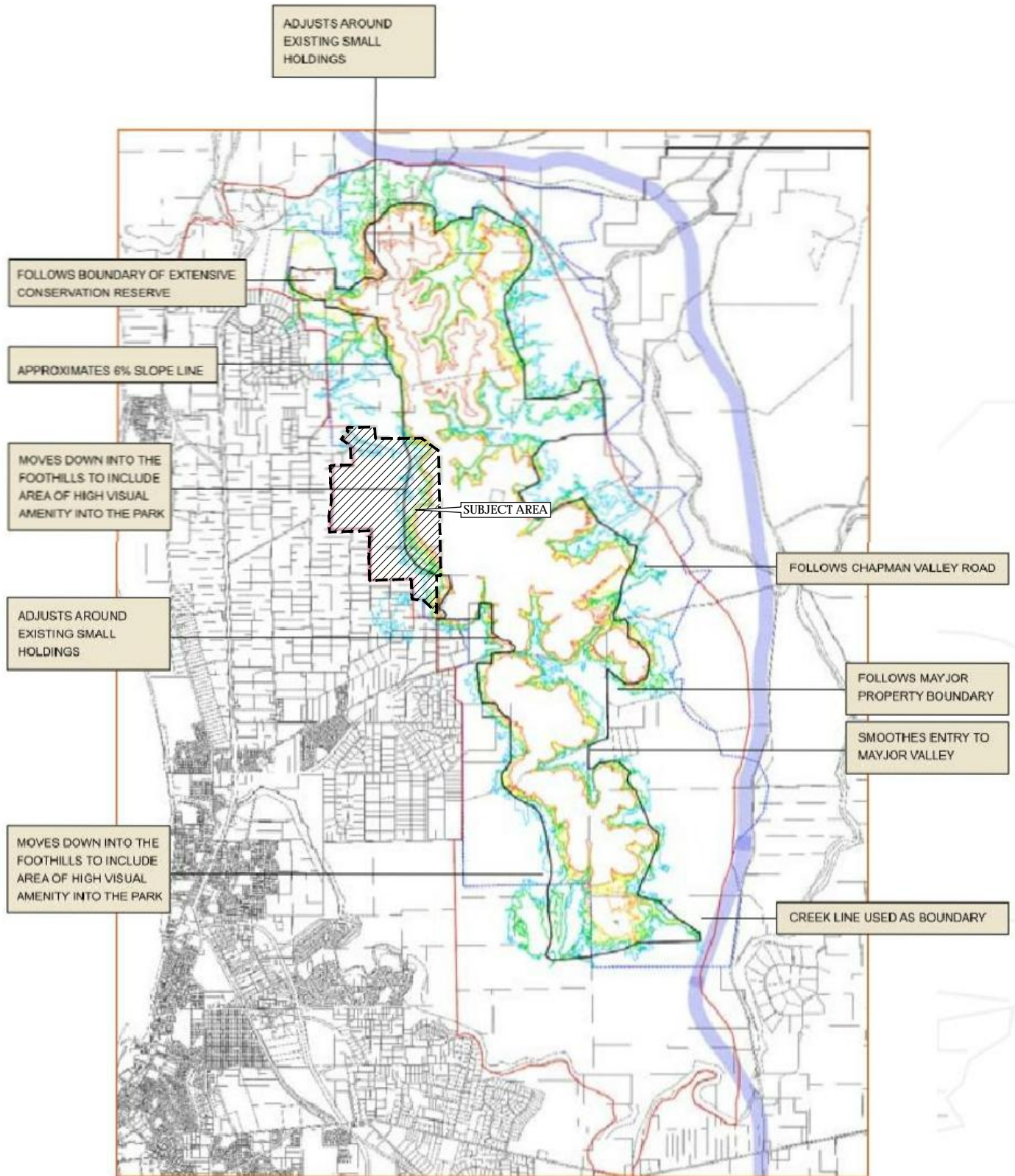
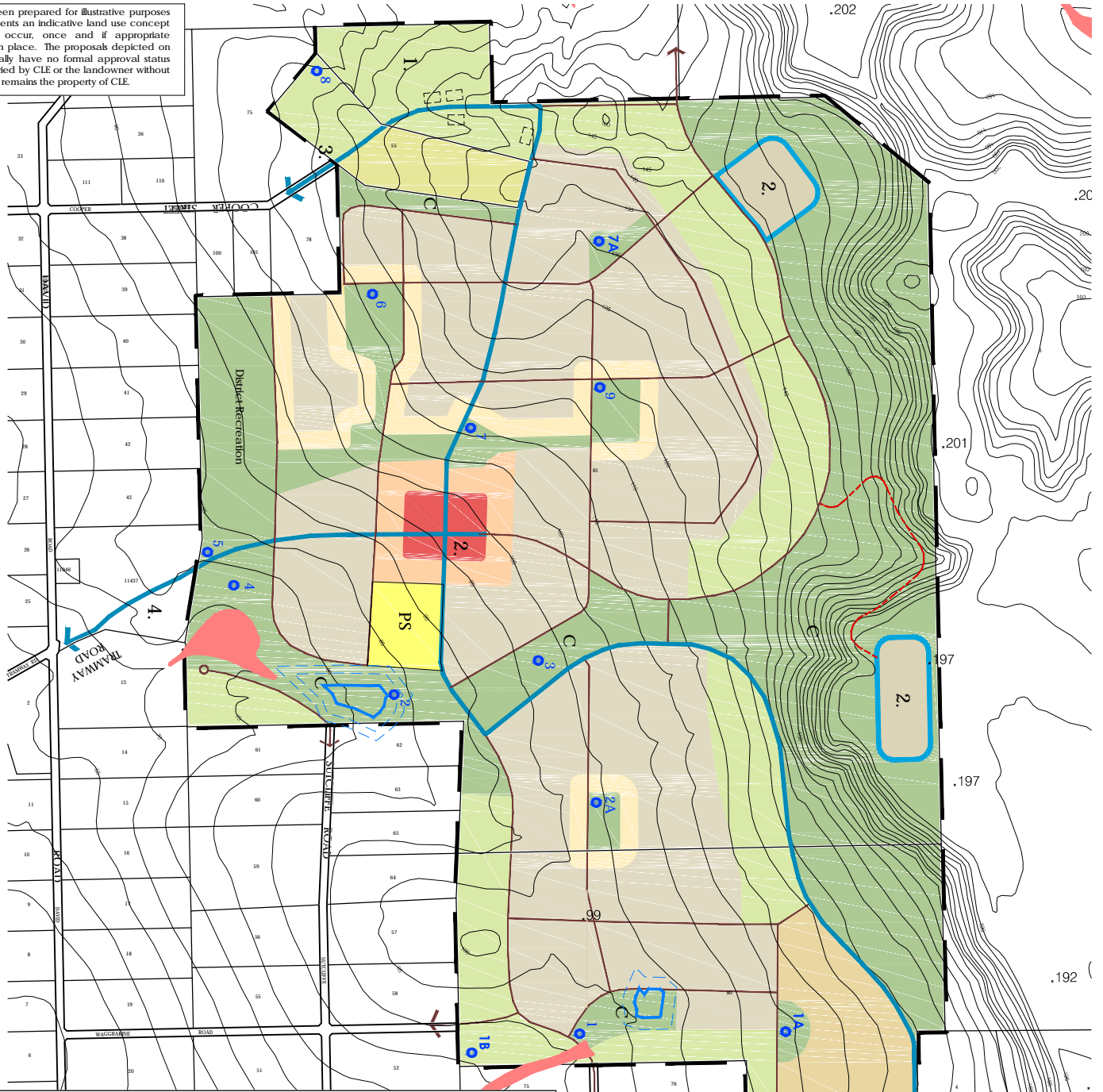


Figure 03.1 The Range Precinct boundary with examples of how the criteria in Section 3.2 were applied to identify the boundary.

- Cadastre — Study boundary Original study boundary — Range Precinct boundary
- Oakajee Narngulu Infrastructure Corridor at June 2010
- Slope classes — 5% — 6% — 7% — 8% — 10%



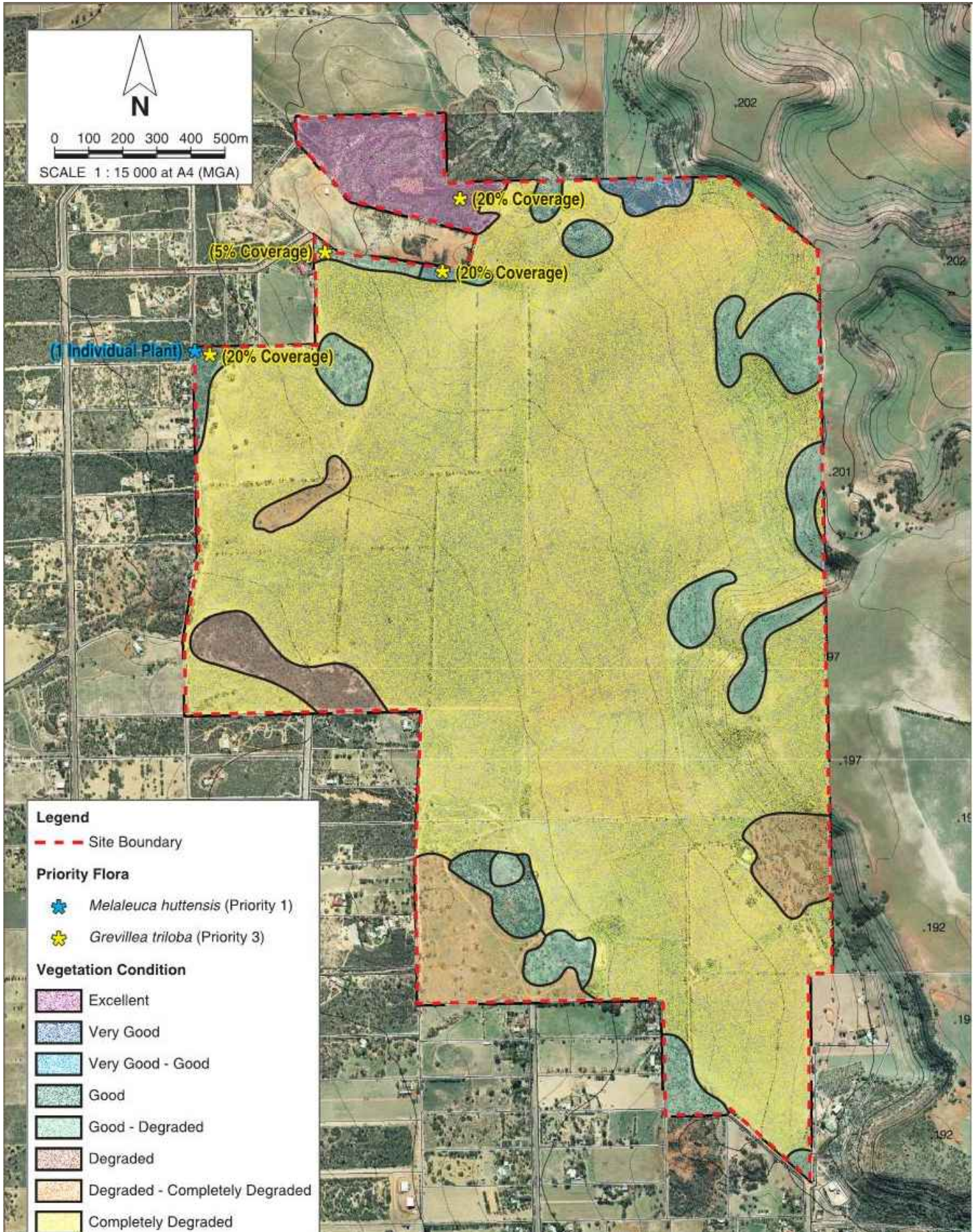
This Plan has been prepared for illustrative purposes only and represents an indicative land use concept of what may occur, once and if appropriate approvals are in place. The proposals depicted on this Plan generally have no formal approval status and can be varied by CLE or the landowner without notice. This Plan remains the property of CLE.

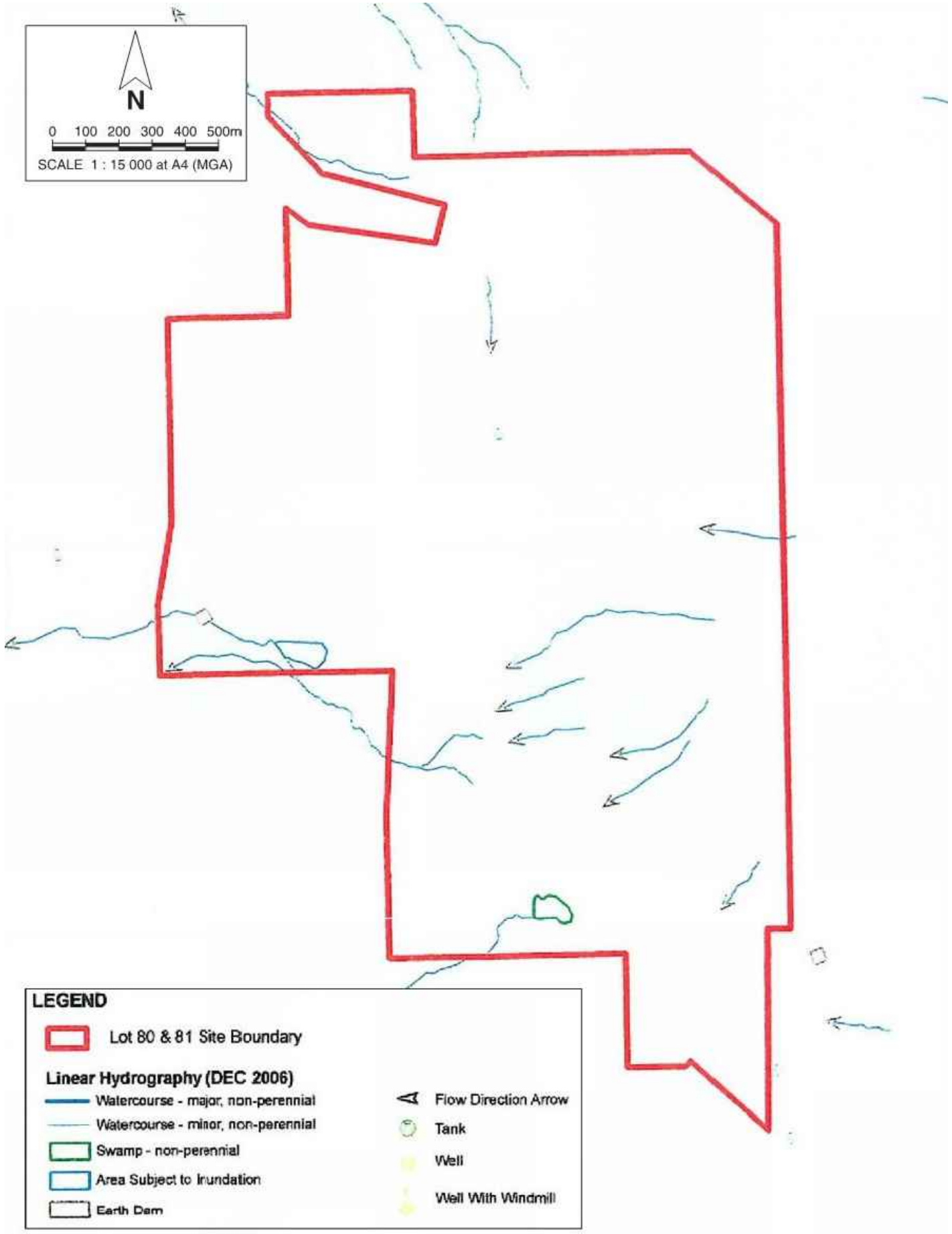


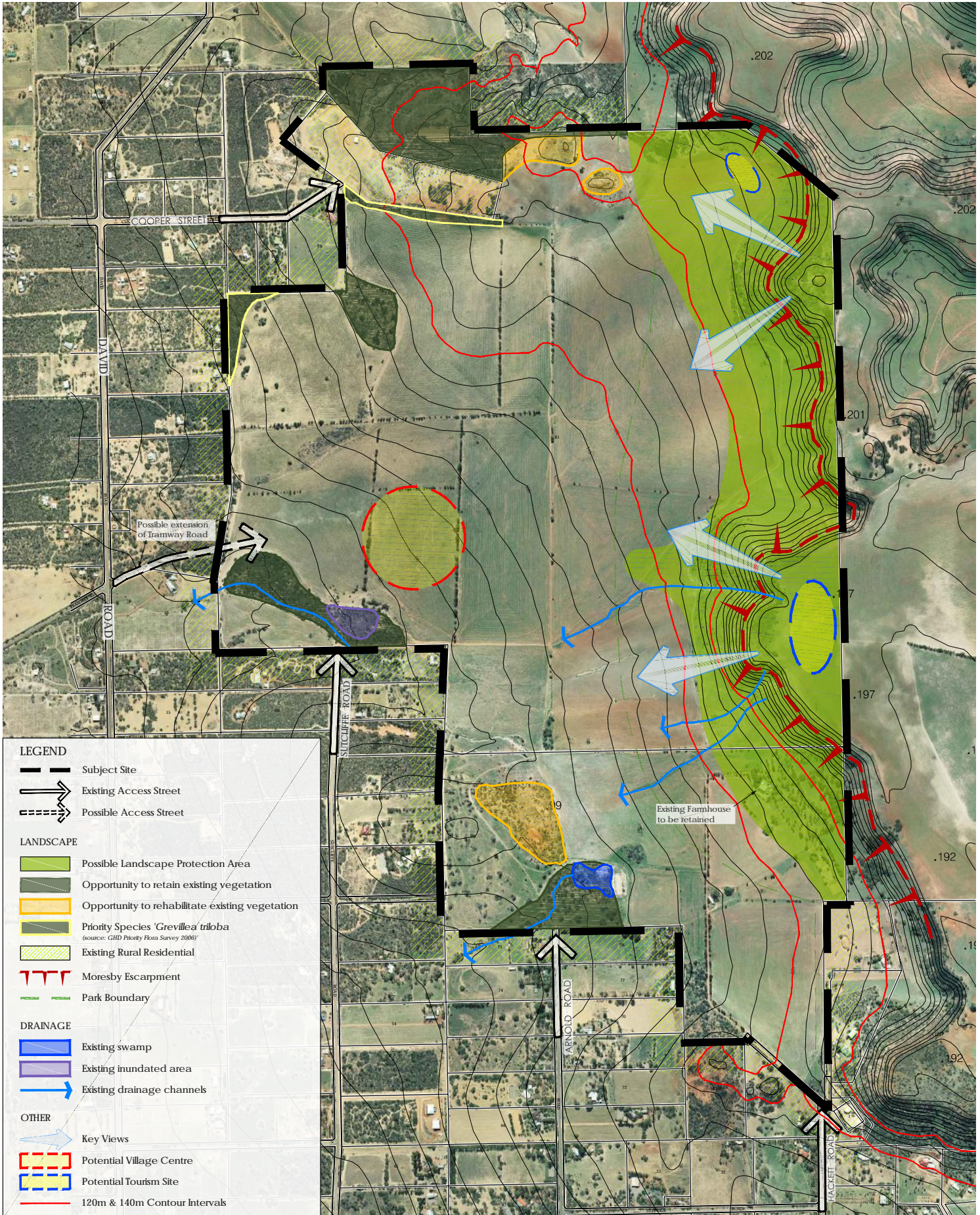
LEGEND	
	Tourist
	Public Open Space (C - Designates Conservation Function)
	Commercial (Local Centre - R80)
	Public Purpose (Primary School)
	Rural Residential (min. 1ha)
	Residential R40
	Residential R30
	Residential R20
	Residential R10
	Residential R5
	Acid Sulphate Soil Risk
	Structure Plan Boundary
	Road (Neighbourhood Connector)
	Road (Key Access Street) - Subject to refinement
	Road (Possible Access Road) - Subject to further investigation
	Integrated Drainage Location - Subject to refinement
	1. Conservation Lot (Restrictions Apply)
	2. Detailed Area Plan required
	3. Cooper Street Extension (Subject to agreement with local council & owner)
	4. Tramway Road extension (Subject to agreement with Local Council)

DRAFT LOCAL STRUCTURE PLAN - ACID SULPHATE OVERLAY





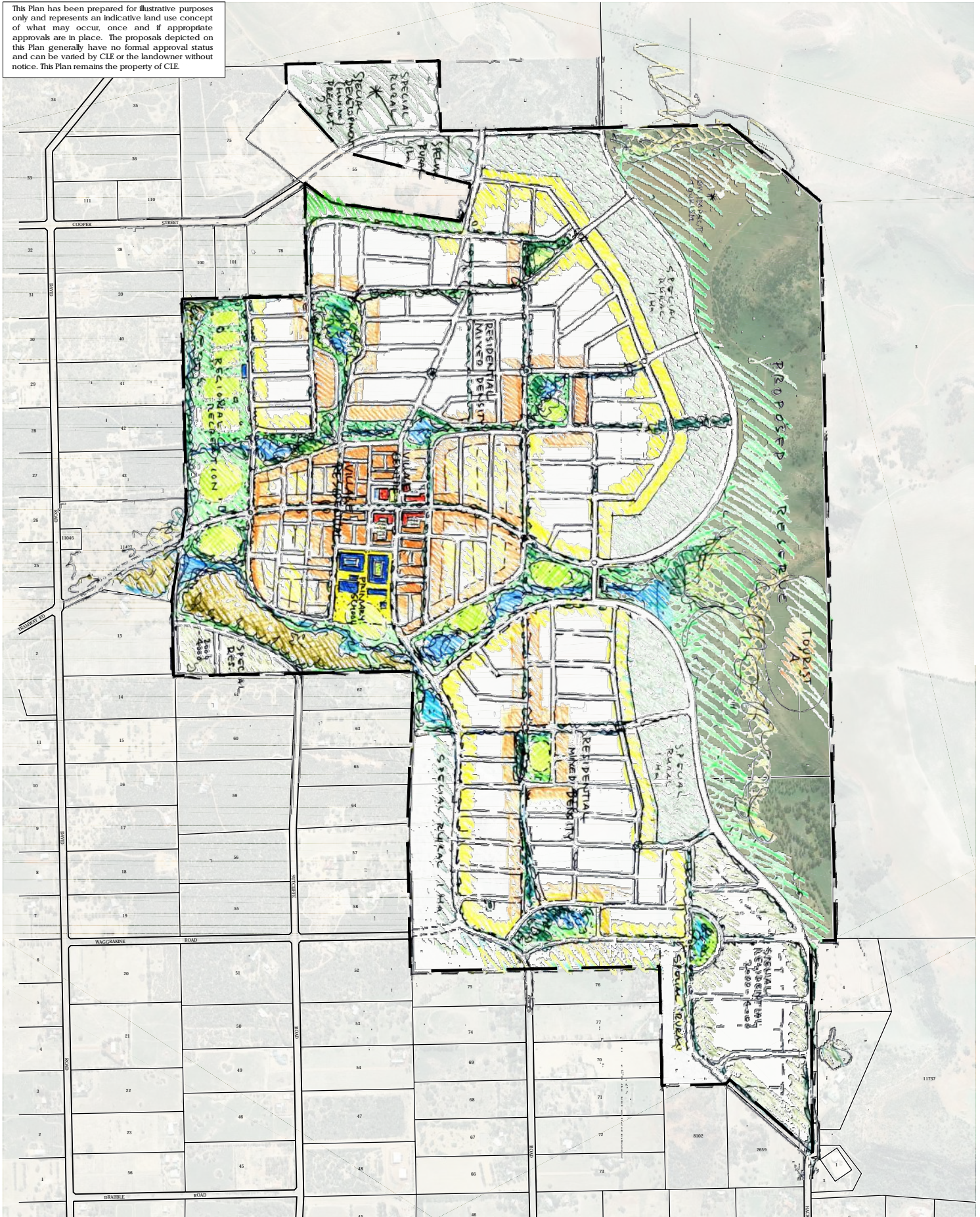


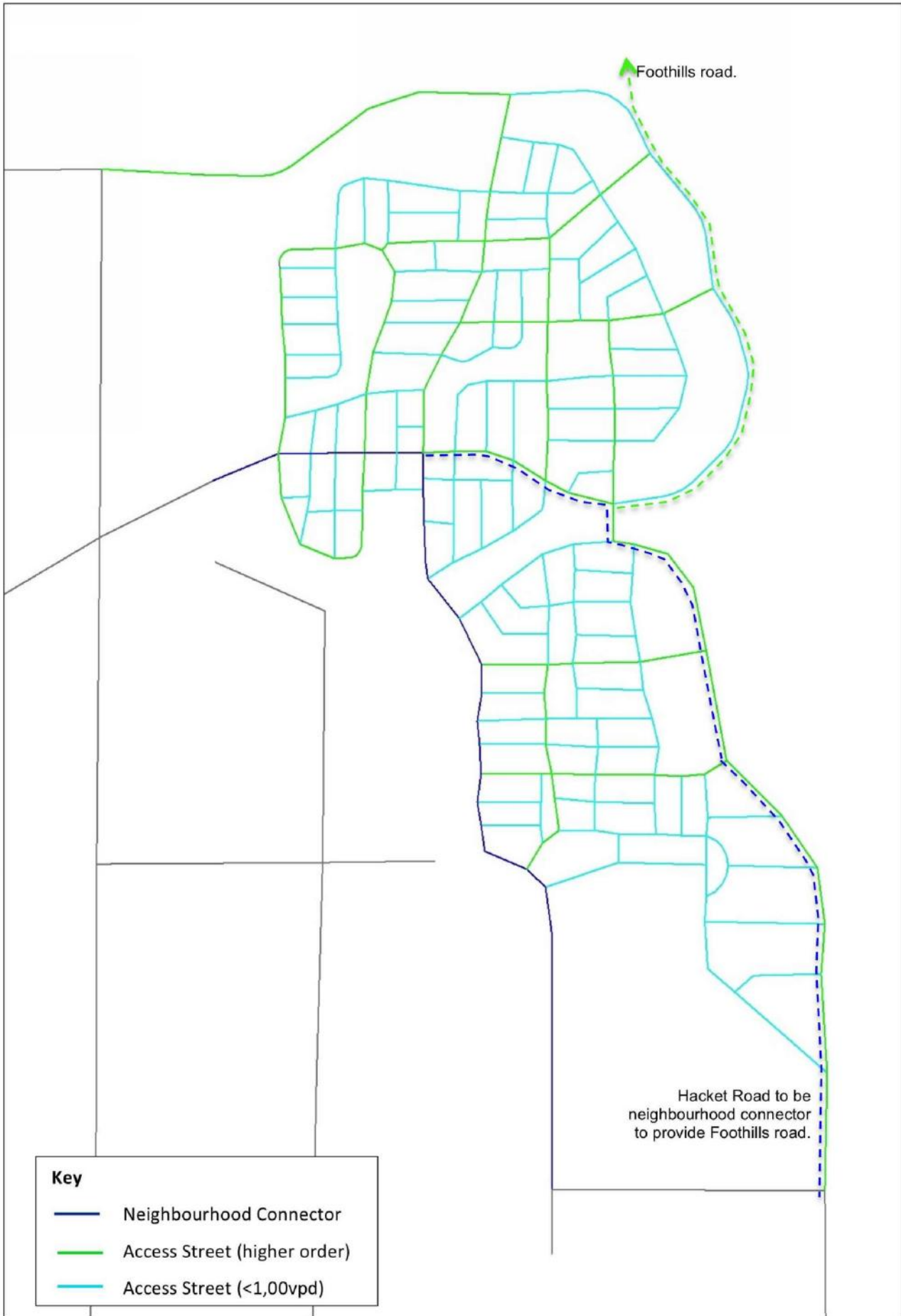


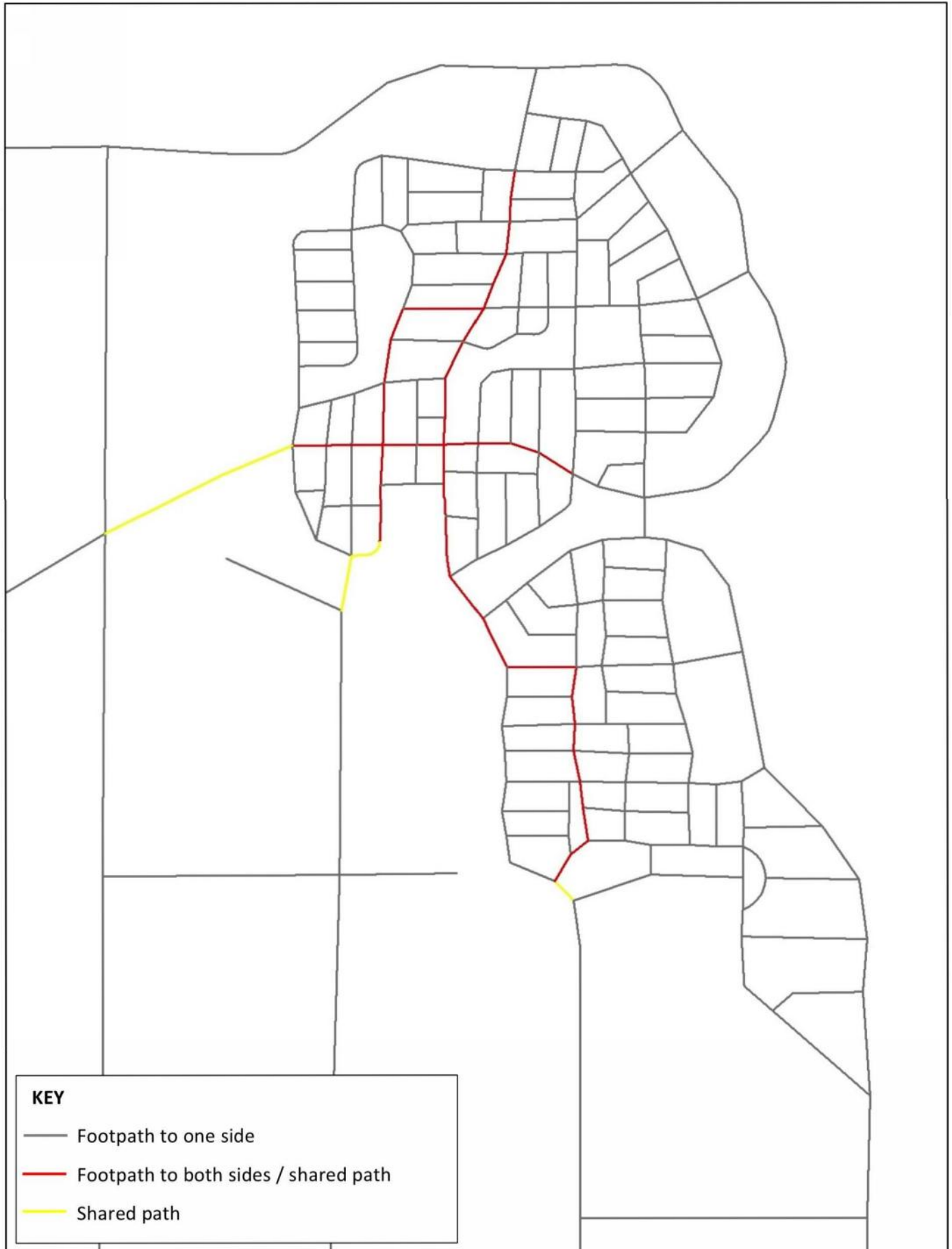
CONTEXT AND CONSTRAINTS



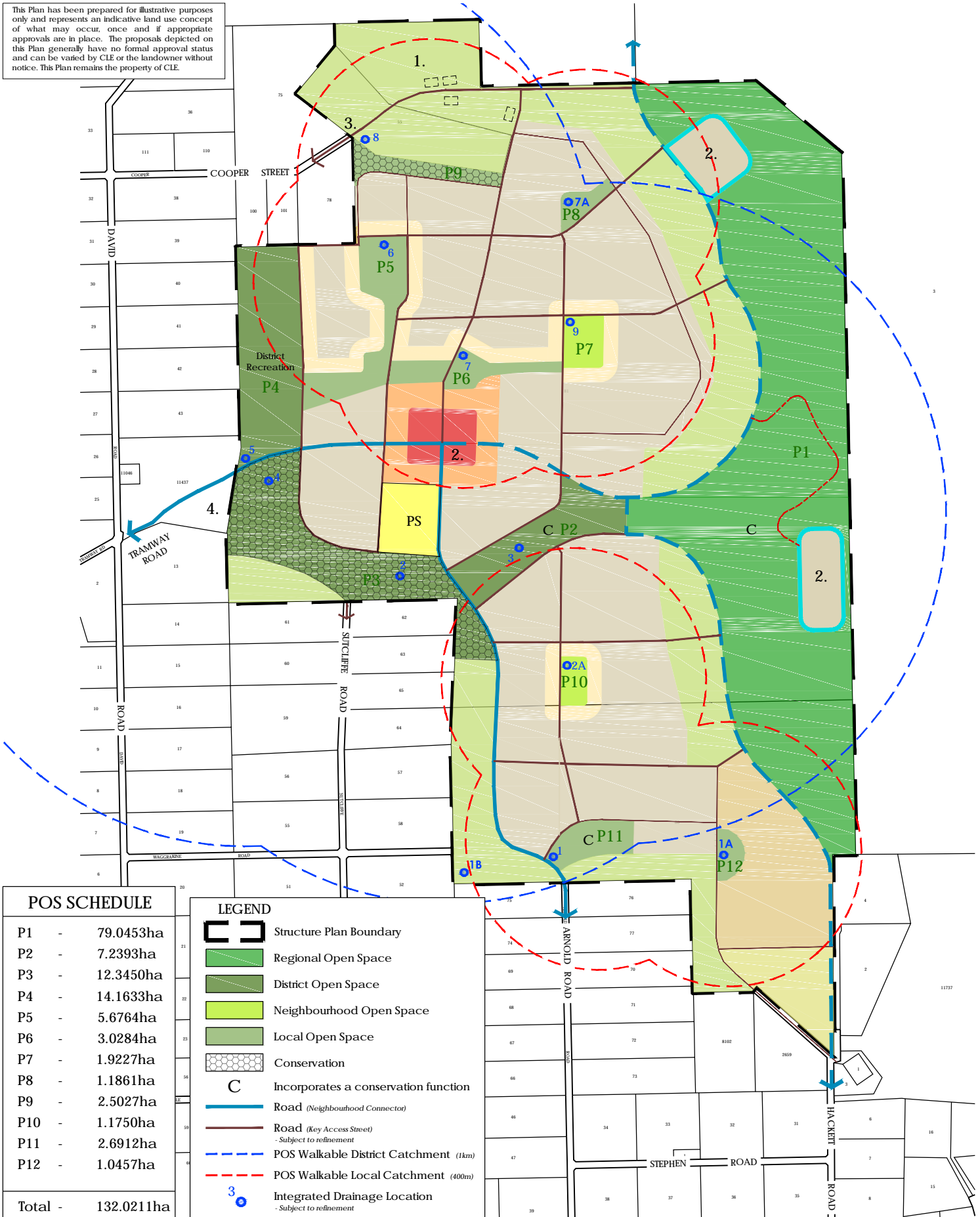
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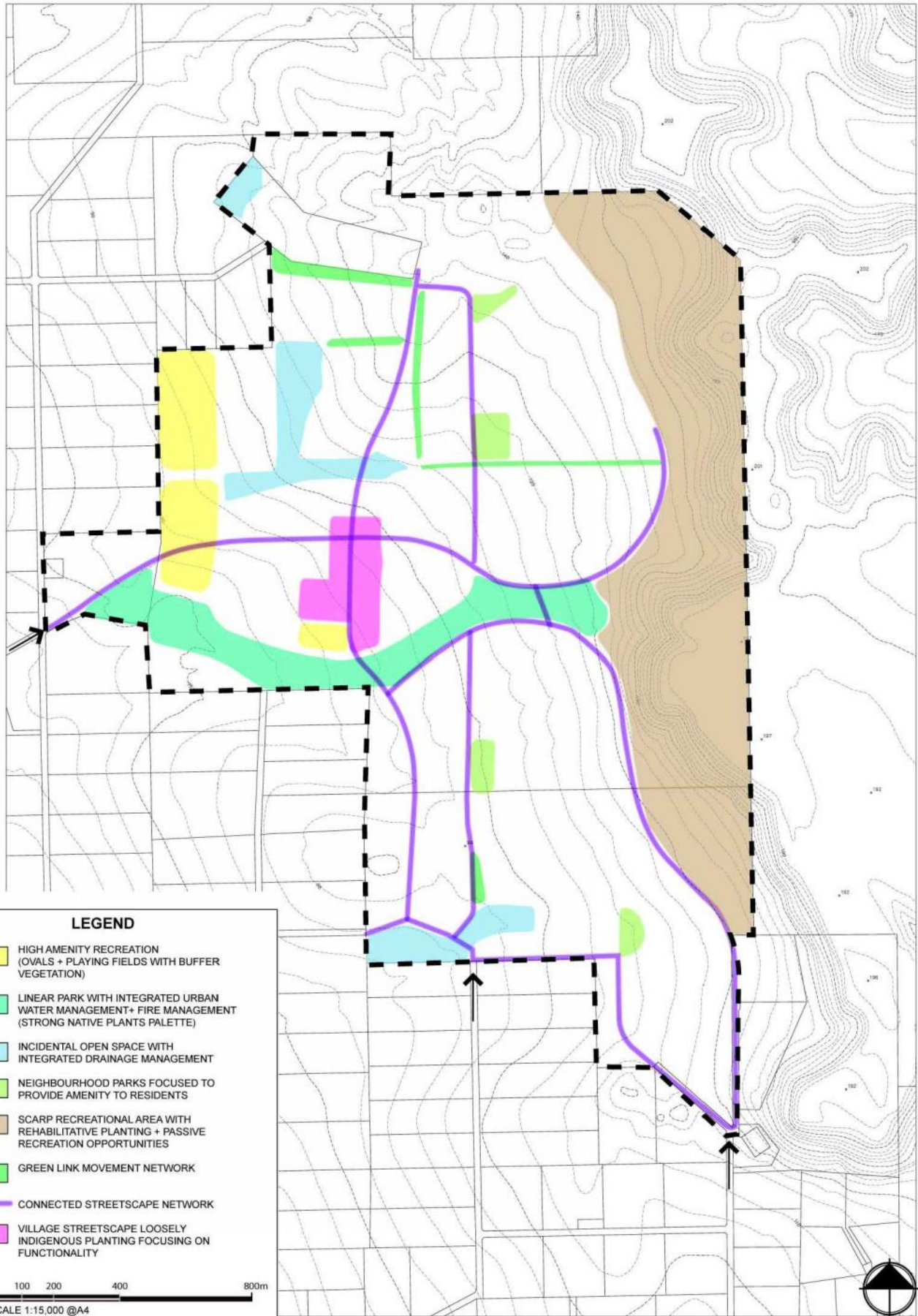


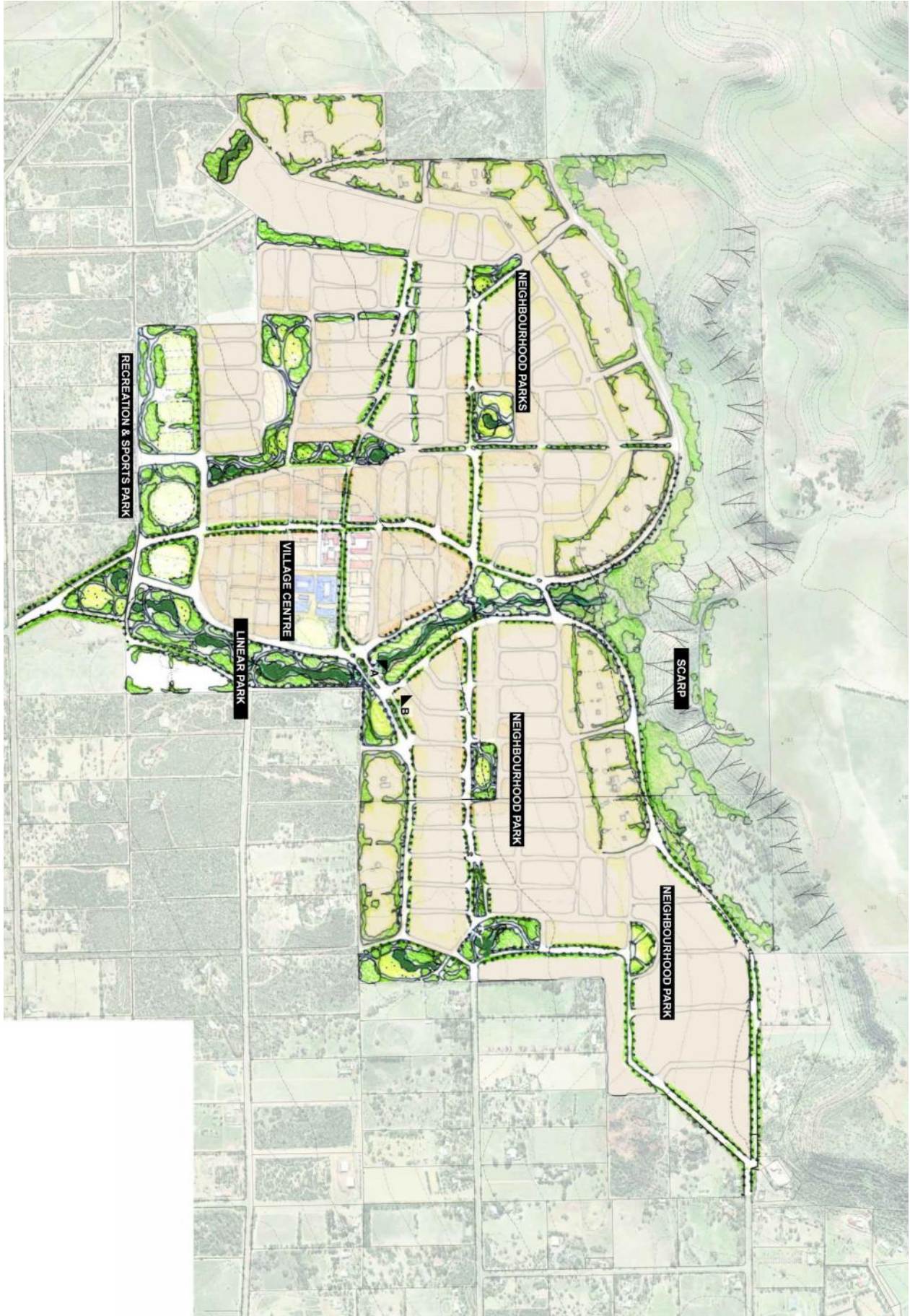


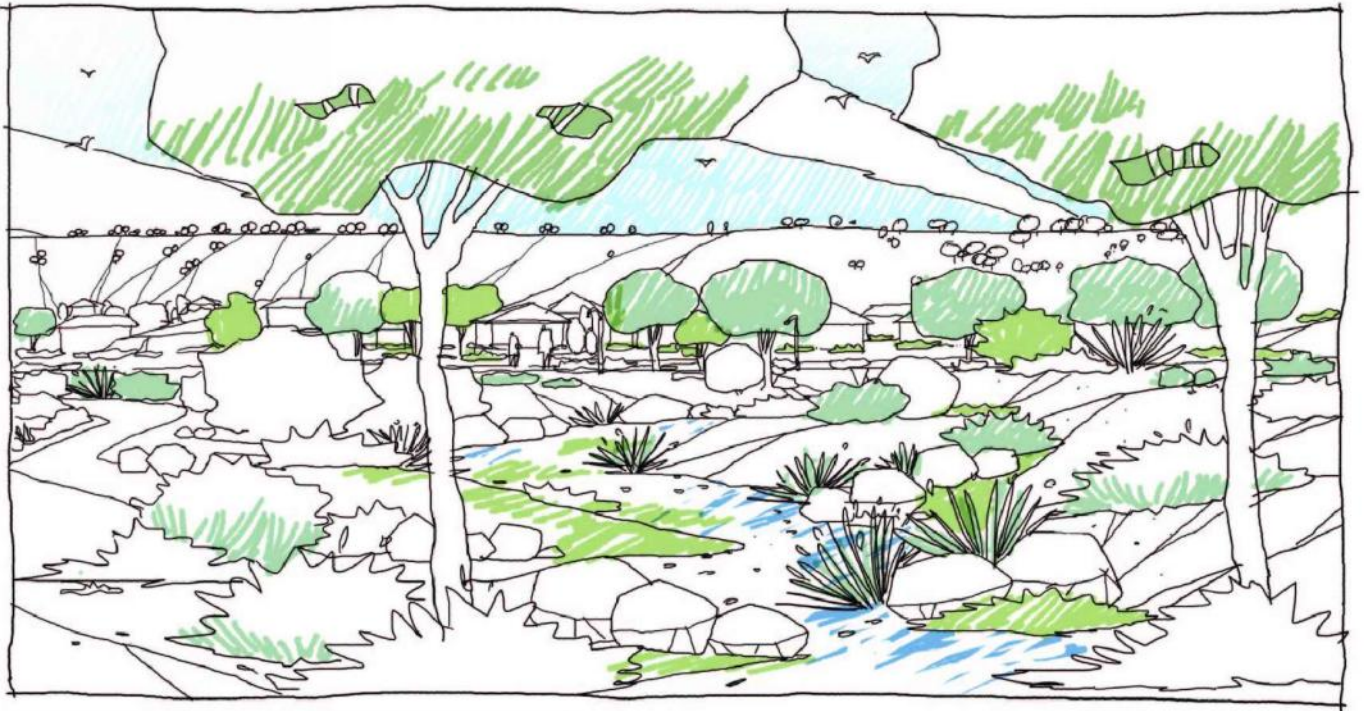
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PUBLIC OPEN SPACE (POS) PLAN





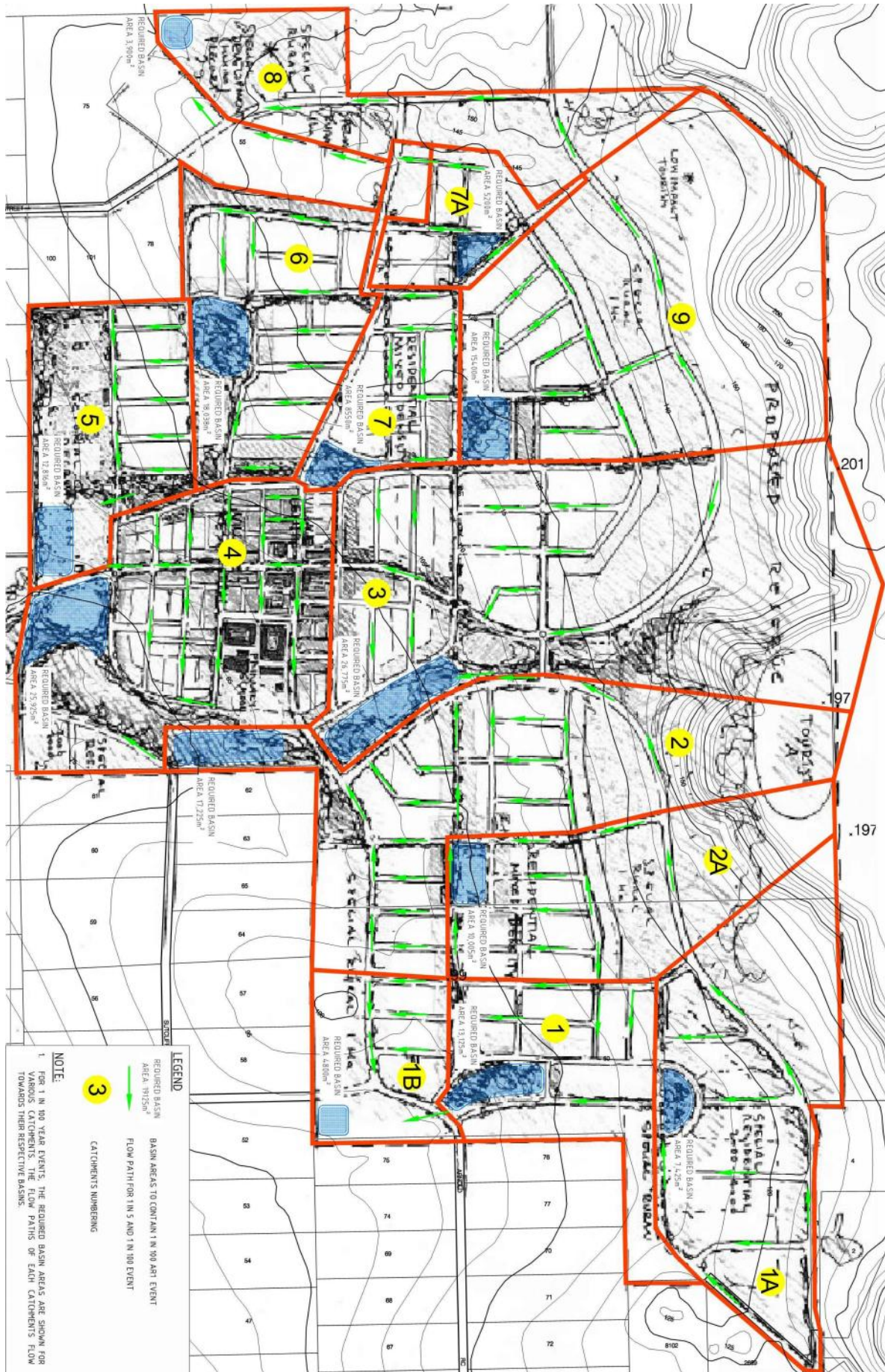


SKETCH IMPRESSION OF LINEAR PARK (LOCATION A)



SKETCH IMPRESSION OF WHERE VEHICLE CORRIDOR INTERSECTS LINEAR PARK (LOCATION B)





AECOM

STORMWATER CATCHMENT PLAN

MORESBY HEIGHTS

LOCAL STRUCTURE PLAN

APPENDICES



JANUARY 2014

APPENDICES