Shire of Cranbrook

Local Planning Strategy

GOVERNMENT OF WESTERN AUSTRALIA

Western Australian Planning Commission

Endorsed by the
Western Australian Planning Commission

21 July 2016

Disclaimer

This is a copy of the Local Planning Strategy at the date of endorsement produced from an electronic version of the Strategy held by the Department of Planning. Whilst all care has been taken to accurately portray the current Strategy provisions, no responsibility shall be taken for any omissions or errors in this documentation.

Consultation with the respective Local Government Authority should be made to view a current legal version of the Strategy.

Please advise the Department of Planning of any errors or omissions in this document.

Department of Planning
Gordon Stephenson House
140 William Street
Perth WA 6000

Locked Bag 2506
Perth WA 6001

website: www.planning.wa.gov.au
email: corporate@planning.wa.gov.au

tel: 08 6551 9000
fax: 08 6551 9001
National Relay Service: 13 36 77
infoline: 1800 626 477

Shire of Cranbrook
A Range of Opportunities

Local Planning Strategy

Shire of Cranbrook

Local Planning Strategy

2016 - 2023

Shire of Cranbrook Local Planning Strategy

Document Management	
Version	9
Status	Approved by WAPC subject to modifications
To be adopted	

Document Control Summary			
Version	Status	Issued to	Date Issued
1	Draft – (Superceded)	Senior Management / Council	2 June 2011
2	Draft – (Superceded)	Senior Management / Council	27 September 2011
3	Draft – (Superceded)	Reviewed by Council and Staff	27 September 2013
4.	Draft (Superceded)	Reviewed by Gray & Lewis Landuse Planners	11 October 2013
5.	Draft (Superceded)	Adopted by Shire of Cranbrook Council meeting 20.11.2013	Reprinted Version 4 5 December 2013
6.	Draft	Senior Management / Council with modifications requested by Department of Planning. Council Meeting 19.11.2014	Printed Version 5 30 January 2015
7.	Final	For Council consideration	Printed Version 7 3 June 2015
7.	Final	Council meeting 16 September 2015	Reprinted Version 7 25 November 2015
8.	Final – WAPC Modifications	Senior Management / Council WAPC	Printed 25 May 2016
9.	Final – refined WAPC Modifications	Senior Management	Printed 1 June 2016 Reprinted 1 July 2016

Prepared by: Gray and Lewis Landuse Planners and reviewed by Shire of Cranbrook

If you require further information on anything in this plan please contact:
Shire of Cranbrook
PO Box 21 Cranbrook WA 6321
Ph: 08 98261008 Fax: 08 98261090
Email: admin@cranbrook.wa.gov.au
www.cranbrook.wa.gov.au

Covers designed by Synergy Graphics, Albany Western Australia

A copy of this plan is available in alternate formats if required. Please contact the Shire on the above number if you require the plan in an alternate format. (Refer to Community Engagement and Social Justice Strategy and Disability Access and Inclusion Plan).

Shire of Cranbrook Local Planning Strategy
Statutory Page

Advertising

The Shire of Cranbrook Local Planning Strategy certified for advertising on the 8 day of July 2014.

Signed for and on behalf of the Western Australian Planning Commission

_____
An officer of the Commission duly authorised by the Commission
(pursuant to the Planning and Development Act 2005)

Date _____

_____

Adopted

The Shire of Cranbrook hereby adopts the Local Planning Strategy, at the Ordinary meeting of the Council held on the 16 day of September , 2015.

_____
SHIRE PRESIDENT

_____
CHIEF EXECUTIVE OFFICER

_____

Endorsement

Endorsed by the Western Australian Planning Commission on

_____
An officer of the Commission duly authorised by the Commission
(pursuant to the Planning and Development Act 2005)

Date _____

Table of Contents

LIST OF FIGURES:

APPENDICES:

TABLES:

COMMON ACRONYMS USED

ABS	Australian Bureau of Statistics
DAFWA	Department of Agriculture and Food WA
DER	Department of Environment Regulation
DET	Department of Education and Training
DIA	Department of Indigenous Affairs
DoP	Department of Planning
DoW	Department of Water
DPaW	Department of Parks and Wildlife
ERA	Economic Regulation Authority
GSDC	Great Southern Development Commission
LPS	Local Planning Strategy
NRM	Natural Resource Management
SCA	Special Control Area
SPP	State Planning Policy
UCL	Unallocated Crown Land
WALGA	Western Australian Local Government Association
WAPC	Western Australian Planning Commission
WMP	Water Management Plan
WWTP	Waste Water Treatment Plant
VROC	Southern Link Voluntary Regional Organisations of Councils (VROC)

Forward by Shire President

This Local Planning Strategy is a critical part of the integrated planning framework adopted by the Shire of Cranbrook in June 2013. Over the past 18 months this Shire has embarked upon a rigorous process of community engagement and consultation to produce a new Strategic Community Plan 2013-2023. The Strategic Community Plan, not only meets the legislative requirements of the Department of Local Government and Communities, but more importantly is an outstanding representation of the Aspirations and Objectives of our community and how it sees the future development of this Shire by 2023.

In order to deliver the aspirations of the Community in the Strategic Community Plan, it is imperative that the Local Planning Strategy is in complete alignment with the Community's vision for the growth of the Shire.

Throughout the Local Planning Strategy review process, it was recognised that this Shire has a unique set of assets and individual requirements that make it such an outstanding place to live, work play and visit. Each of our three towns, Cranbrook, Tenterden and Frankland River, offer different lifestyle choices to residents. The Council is very proactive in managing the needs of each individual community and the Shire as a whole.

Throughout the coming years there are significant opportunities to capitalise on our unique assets, location and agricultural quality. In Frankland River, viticulture is important, and in Cranbrook, location on the two highways and rail line, along with the large and expanding grain receival point offers unique opportunities for expansion. Tenterden offers an outstanding rural residential lifestyle as well as serving the needs of our agricultural community and a thriving small industrial area.
With some of the most productive agricultural land in Western Australia located in our Shire, both broad acre and intensive agriculture is well placed for continued growth and development into the future.

We see the opportunity to grow our economy on the basis of value adding to the Agricultural, Viticultural and Fertiliser industries. There is significant scope to develop a transport hub in Cranbrook due to its outstanding location on two major highways, Albany and Great Southern and the Southern Rail Line to the Port of Albany.

We will continue to seek opportunities for economic growth and job creation, creating a prosperous and growing economy. We are also mindful of the need for diversity in the economy and welcome and seek new opportunities. There is opportunity to further develop tourism in this area and our participation in regional tourism activities continues to strengthen our position.

The Shire of Cranbrook will continue to offer a range of lifestyles, employment options and community facilities and be a community of choice for its residents, new and existing.

Jan Pope
Shire President

1.0 INTRODUCTION

1.1 Background

Landuse planning provides a mechanism for the careful allocation and ordering of land for activities and purposes in a way to cater for strategic growth and to minimise landuse conflict.

The landuse planning system in Western Australian is based on the Planning and Development Act 2005.

The Shire of Cranbrook Town Planning Scheme No. 4 ('the Scheme') is the statutory document that currently controls zoning, residential densities, landuse permissibility and development control.

The Shire of Cranbrook has had an existing Local Planning Strategy in place since 2004 and has undertaken this review to ensure it remains current and reflects the aspirations of the Shire of Cranbrook Community as expressed in the new Strategic Community Plan 2013-2023.

1.2 The Role and Purpose of a Local Planning Strategy

Provision for preparation of a Local Planning Strategy exists under the Town Planning Regulations 1967.

Local Planning Strategies are non statutory, strategic planning tools which set out a Council's general objectives, aims and intentions for long term growth and development. Strategies should also provide a reflection of the community's aspirations and cater for identified and future population needs.

A Local Planning Strategy provides an overarching planning framework and clearly expresses a local government's vision and aspirations for future planning and development.

Strategies play a valuable role in outlining how long term objectives can be achieved, and act as a sound basis for future local planning scheme amendments and reviews.

This strategy looks ahead 10 years and will be reviewed after each full review of the Strategic Community Plan every four years.

1.3 The Format and Structure of the Local Planning Strategy

A review of the Model Scheme Text by the Western Australian Planning Commission (WAPC) has necessitated reassessment of the Planning Schemes Manual (2000).

As an interim measure the WAPC has released a Local Planning Manual (March 2010) which includes guidance on the preparation and format for new Local Planning Strategies.

The Shire's Local Strategy format was developed and approved in 2004. This review seeks to update the Strategy however maintains its basic format and focuses on the townsites of Cranbrook, Tenterden and Frankland River.

1.4 Strategy Area and Location

The Shire of Cranbrook covers an area of about 3,390 sq km located in the Great Southern Region of Western Australia. The administration centre of the Shire is the town of Cranbrook, 323 km from Perth and 96 km north of the regional centre at Albany.

Other established townsites in the Shire are Frankland River and Tenterden. Frankland River is at the centre of major viticulture, plantation forestry, and horticulture industries. Cranbrook, Frankland River and Tenterden all support extensive broad acre and increasing intensive agriculture across the Shire.

The location of the district is shown in **Figure 1**.

Figure 1

Shire of Cranbrook Regional Location

This Local Planning Strategy applies to all the land in the Shire of Cranbrook.

2.0 STATE AND REGIONAL PLANNING CONTEXT

2.1 State Planning Framework

The State Planning Framework unites existing State and regional policies, strategies and guidelines within a central framework which provides a context for decision-making on land use and development in Western Australia.

The Framework policy was initially gazetted on 22 December 1998 as Statement of Planning Policy No 8. Subsequently, a variation to the policy, Statement of Planning Policy No 1 (Variation No 1) State Planning Framework Policy, was gazetted on 30 May 2000.

The Statement of Planning Policy (renamed as State Planning Policy in the Planning and Development Act 2005) was further updated to include additional regional strategies, regional and sub-regional structure plans, strategic policies and operational policies that have been endorsed by the WAPC since May 2000.

The general principles for landuse and development which originally formed part of State Planning Policy No 1 have been incorporated into the more current State Planning Strategy.

2.2 State Planning Strategy 2050

The State Planning Strategy ('State Strategy') is the highest order planning instrument for Western Australia.

The State Strategy is directional, not directive, and seeks to build strategic planning capability and capacity around a State vision of sustained growth and prosperity, based on a set of State planning principles, strategic goals and objectives.

Population and economic growth are prioritised as the key drivers behind the sustainable use and development of land throughout the State.

The Strategy is a guide from which public and local authorities can express or frame their legislative responsibilities in land-use planning, land development, transport planning and related matters.

In providing a set of State planning principles, strategic goals and objectives this Strategy can be used as a basis to find synergies between competing, complex and often interrelated land-use planning and development issues.

Six interrelated and interdependent principles underpin and inform this strategy;

Community:	Enabling diverse, affordable, accessible and safe communities.
Economy:	Facilitating trade, investment, innovation, employment and community betterment.
Environment:	Conserving the State's natural assets through sustainable development.
Infrastructure:	Ensuring infrastructure supports development.

Regional development: Building the competitive and collaborative advantages of the regions.
Governance: Building community confidence in development processes and practices.

These principles apply across all regions, local government areas and communities.

The State Planning Strategy 2050 envisages a state wide network of regional centres, infrastructure bands and projected economic activity areas resulting from the application of the strategic goals and directions of the document.

The State Strategy identifies the following five strategic goals as pathways to achieving the vision of sustained growth and prosperity;
Global competitiveness: enhanced through continued economic diversification.
Strong and resilient regions built through economic expansion and inter-regional collaboration.
Sustainable communities enhanced by investment in infrastructure and social capital.
Infrastructure planning & co-ordination: achieving efficiencies and synergies in pursuit of economic growth.
Conservation of the environment: enhanced by sustainable development and efficient resource use.

The strategy considers Western Australia in the context of three sectors being the northern sector, central sector and south west sector. The Shire of Cranbrook forms part of the South West sector.

Characteristics of the South West sector that are particularly relevant to Cranbrook include:

- location within or in proximity to an international global biodiversity hotspot, the unique diversity of which provides significant economic opportunities; and
- the significance of agricultural, particularly food, production within the sector.

The State Strategy comprises five interrelated State strategic directions: Economic development, Physical infrastructure, Social infrastructure, Environment and Security.

The Strategy principle for economic development notes that '*common use facilities can provide strategic industrial, research and global infrastructure to support regional economic development*'. This is particularly relevant to the Shire's planned industrial Southern Link Transport Hub identified in this Local Planning Strategy.

The State Strategy identifies tourism as one of the areas of economic development with an objective '*to access and enhance a range of experiences unique to the State*'. Relevant to Cranbrook, examples of these tourism experiences include Aboriginal culture and iconic landscapes and the strategy notes that the infrastructure supporting these activities is an important contributor to the State's economy. Accordingly, State Tourism development priorities include regional infrastructure (such as caravan parks), ecotourism initiatives and improved cultural infrastructure and tourism opportunities.

Another aspect of economic development applicable to Cranbrook is agriculture and food. The State Strategy objective for which is *'to enable the State's food supply chains to meet the projected demands of its domestic and global food and fisheries market.'*

The Strategy's approach to planning for agriculture and food includes:

- Prime agricultural land - the identification and protection from encroachment and further fragmentation of existing and future land suitable for food production with associated aspirations including:
    - the assignment of economic value to the quality and quantity of agricultural land, and

- strategic food production areas well-serviced by key infrastructure to enable sustained activity

- Infrastructure - the demands and needs of both agrifood trade and commerce industry sectors are well-serviced by infrastructure, with aspirations including:
  - Regional and State transport hubs and intermodal terminals established.

The Strategy recognises that '*physical infrastructure with appropriate capacity is essential for the development of the State and the achievement of sustained growth*.' It takes a strategic approach to planning the movement of people, goods and services and identifies an outcome for freight logistics to '*move seamlessly on a freight network of infrastructure corridors, freight nodes, intermodal hubs and ports'*.

The Strategy also includes aspirations for freight logistics:

- a coordinated and efficient freight logistics system incorporating road, rail, air and sea transport, and
- smart technology and intermodal transportation improving the efficiency of the freight distribution network.

The Strategy's approach to environmental planning includes;

- Natural resources - conservation, utilisation and management for future generations, with aspirations including:
  - Natural resources such as water, agricultural land, energy and mineral resources and basic raw material deposits are conserved for best future use and development, and
  - The ancillary use of conservation areas for outdoor recreation and ecotourism, is considered a renewable resource.

2.3 Lower Great Southern Strategy 2016

The Lower Great Southern Strategy (LGS), originally published in 2007, provided guidance for the future planning of the lower Great Southern region and addressed broad planning considerations across the City of Albany and Shires of Denmark, Plantagenet and Cranbrook.

The region has grown and new challenges have emerged since the Lower Great Southern Strategy was first developed. The Lower Great Southern Strategy (2016) provides guidance and actions to help meet these challenges and balance economic, social and environmental considerations.

The Lower Great Southern region has potential for considerable population growth, economic development and infrastructure investment in the medium term. The key population centre of the City of Albany; and the Shires of Cranbrook, Denmark and Plantagenet, have economic, infrastructure and natural resource synergies to support future growth.

The purpose of the Strategy is to guide land use planning and provide strategic direction for the Lower Great Southern region over the next 20 years.

The Strategy set out a settlement hierarchy, which promotes Albany as a regional centre, Denmark and Mt Barker as sub-regional centres, Cranbrook and Frankland River as towns, and Tenterden as a village.

The strategy aims to:

- Provide guidance at a sub-regional level in the use of land to balance economic, social and environmental considerations;
- Assist local government in preparing, reviewing and implementing local planning strategies and schemes, and other local planning and development matters;

- Identify additional land of regional significance that may be required for regional open space purposes; and
- Ensure land required for important regional infrastructure, priority agricultural land, economic growth opportunities, water sources and basic raw materials is identified and retained for those purposes.

Actions to achieve these aims are provided and have been assigned short (3-5 years), medium (5-10 years) or long (10+ years) implementation timeframes.

The Strategy recognises that the Shire of Cranbrook's Strategic Community Plan 2013-2015 and Local Planning Strategy review identifies the Shire's intention to investigate establishment of an intermodal transport facility and industrial hub to the south west of Cranbrook townsite. It states:

> '*the purpose of the facility would be to stimulate economic activity in the Shire and capitalise on location and existing availability of regional transport linkages. This strategy supports designation of the site as an investigation area for the proposed intermodal facility.*'

The Strategy includes a number of objectives and related actions for implementation throughout the sub-region. Specific objectives and actions relating to the Shire of Cranbrook include:

Settlements			
Objective	Actions	Timeframe	Responsibility
Provide a comprehensive framework for the planning and development of identified settlements	Ensure that Albany is promoted as a regional centre; Mount Barker and Denmark are promoted as sub-regional centres; and Frankland River and Cranbrook are promoted as towns	Ongoing	State Government Local Government Community
	Zone sufficient land for light, general and service industry in accordance with endorsed local planning strategies	Ongoing	Local Government DoP WAPC
Rail			
Objective	Actions	Timeframe	Responsibility
Maximise the use of rail for freight haulage into the Port of Albany	Investigate alternative options to encourage the transfer of road freight to rail and evaluate their costs and benefits	Short term	DoP/WAPC GSDC Local Government
Infrastructure – Roads			
Objective	Actions	Timeframe	Responsibility
Develop an effective regional road network, including catering for the needs of freight, local and tourist traffic	Seal Salt River Road linking Cranbrook to Chester Pass Road along the northern boundary of the Stirling Range National Park	Medium term	Local Government MRWA
	Undertake road improvement and maintenance projects to enable safe and expedient transport of freight and agricultural commodities	Ongoing	Local Government MRWA

Strategic Industry			
Objective	Actions	Timeframe	Responsibility
Provide adequate, environmentally acceptable and suitably located strategic industrial areas to cater for future industrial development	Undertake studies to determine infrastructure and servicing requirements for the industrial investigation area at Cranbrook	Short term	Local Government GSDC
	Undertake studies to determine the feasibility of investigation areas at Cranbrook and Albany (Figure 2) for future intermodal facilities and/or other industrial land uses	Medium term	Local Government GSDC DoP WAPC
Regionally Significant Natural Areas			
Objective	Actions	Timeframe	Responsibility
Establish a network of regional open space in the Lower Great Southern	Undertake detailed investigation of the extent of the areas in Table 3 to be secured for regional open space, namely: Frankland River, Balicup west, Poorrarecup Lake Byenup Lagoon system	Long Term	DoP/WAPC DPaW DoW Local Government
	Investigate protection mechanisms for regionally significant areas	Medium term	DoP/WAPC DoW Local Government

The Strategy also identifies a key planning issue for Cranbrook is '*progressing the establishment of a proposed industrial transport hub near the townsite*'.

2.4 Great Southern Regional Planning & Infrastructure Framework

The Great Southern Regional Planning and Infrastructure Framework (GSRPIF) sets out a shared approach to planning. The region will experience a higher concentration of settlement, particularly in existing coastal towns, and a westward and coastal shift of the most productive agricultural areas due to changing rainfall patterns. Protecting land for food production while providing for urban, rural living and industrial growth is the key to sustaining growth in the region.

The Framework identifies regionally significant infrastructure and planning initiatives that would support the growth of established industries such as agriculture, forestry and tourism as well as investment in new enterprises. Strategic initiatives include planning to secure future water sources and investment in water supply infrastructure, upgrades and improvement at the Port of Albany, projects to meet regional demand for energy, and road upgrades to improve access and reduce road use conflicts.

The Framework recognises that agriculture will remain the predominant economic sector for at least the next 20 years and employment associated with this industry will continue to provide the greatest number of jobs.

2.4.1 Cranbrook Intermodal Facility

The GSRPIF identifies that '*while there are a number of areas identified for industrial land uses within the region and more specifically in the local government areas (LGAs) of Albany, Plantagenet, Katanning, Cranbrook and Denmark, considerable capital expenditure for service provision is required to make these areas project-ready*'.

Planning initiatives identified for the Shire of Cranbrook are as follows:

Strategy Reference:	Initiative	Details
A56	Cranbrook Intermodal facility – feasibility study (Shire of Cranbrook)	Assess the feasibility of establishing an intermodal transport hub in Cranbrook (100km north of Albany) to accommodate overflow from Albany Port. Consider the benefits and costs relative to the proposal to establish a similar facility on the CSBP site in Albany

2.4.2 Regional infrastructure

The anticipated directions for regional infrastructure that are most significant for the Shire of Cranbrook are:

Strategy Reference:	Initiative	Description / objective	Benefits to the Region
C8	Seal Salt River Road	Seal the road from Cranbrook to the Stirling Ranges	Facilitate tourist and regional traffic
C25	Extension of Integrated Water Supply Scheme to Denmark and Cranbrook	Connection of Cranbrook to the LGSTWS scheme (from Kendenup)	Improve water supply security and flexibility for Cranbrook
C27	Water supply upgrades for independent rural towns	Resealing catchments, dam covers and scheme upgrades for Borden, Frankland, Rocky Gully, Wellstead and Jerramungup	Improve water supply security

2.4.3 Essential Services

In regards to essential services, the Strategy states the following which is relevant to the Shire of Cranbrook:

- The inland towns of Rocky Gully, Frankland River, Cranbrook, Borden, Ongerup, Jerramungup, Wellstead and Bremer Bay are not serviced by an integrated scheme and in some instances have experienced water shortages and quality issues. If a new source for Albany is developed, Cranbrook could connect to the Lower GSTWS, however water carting to this and other towns remains an option to manage 'dry years', peak demand periods and quality issues.
- In the long-term, the Water Corporation may consider a regional water supply scheme based around extending the existing Lower GSTWS to improve water provision security and create greater flexibility of supply across the region. This would require an assessment of options based on available water sources, cost and the viability of piping water over considerable distances.
- Local governments in the Great Southern are working together to reduce the amount of waste generated in the region, increase the proportion of material recovered from the waste stream and limit the proportion of waste going to landfill.

- The Southern Link Voluntary Organisation of Councils or VROC (Shires of Plantagenet, Broomehill-Tambellup, Cranbrook and Kojonup) and the Eastern Agricultural Strategic Waste Management Alliance (Jerramungup, Katanning, Kent and Gnowangerup) are focussing on establishing standardised infrastructure for transfer stations in an effort to support better sub-regional waste recycling and achieve other environmental and safety benefits.

2.5 Great Southern Regional Investment Blueprint

The Great Southern Regional Investment Blueprint establishes the priorities for the development and growth of the Great Southern region. It provides not only the public sector but also private investors, businesses and the community with an aspirational, evidence-based strategic direction for the region.

A Regional Blueprint is a strategy that outlines regional growth and development aspirations, transformational projects and investment opportunities and an integrated and comprehensive approach to regional planning.

The Great Southern Regional Investment Blueprint complements the Western Australian Planning Commission's Great Southern Regional Planning and Infrastructure Framework. It aims to provide guidance to government agencies and local government on land use, supply and development, environmental protection, infrastructure investment and the delivery of physical and social infrastructure for the region. It also provides a framework for the preparation of subregional and local planning strategies.

A major purpose of the Regional Blueprint is to identify significant public and private sector investment opportunities. This includes identifying potential transformational projects that can help to prioritise Royalties for Regions funding.

Transformational project opportunities are defined as those with the capacity to either:

a) Initiate strategic regional activity (that is, to leverage emerging opportunities that build on regional comparative advantages), or

b) Remove current or anticipated strategic constraints (that is, to address regional challenges and their associated regional implications).

These transformational project opportunities both enable and draw on other projects listed in the full project inventory developed for this Blueprint.

There are a number of transformational projects relevant to the Shire of Cranbrook:

Transformational Project 2 - Access to Energy		
Rationale	Description	Potential Benefits
The capacity of the existing power infrastructure and the cost of upgrading feeder lines have the potential to limit major development at industrial sites in the region. Investment in power supply capacity has the	<u>Edge of Grid Upgrades</u> Electricity supply and distribution infrastructure has in some places in the Great Southern not kept pace with growth in electricity demands, for example Frankland River. Irregular and unreliable power is an impediment to business operations.	Potential benefits of this transformational project include: • Increased industrial and commercial investment • Economic diversification

potential to "future proof" the energy needs of the region. Major investment options for boosting the region's power supply include natural gas and/or transmission power lines.	There is a need to ensure core infrastructure is strengthened and enhanced to maintain the high level of security required by the region for its electricity supply	

Transformational Project 3 – Water for Growth		
Rationale	Description	Potential Benefits
The greatest potential constraint to growth in the Great Southern is securing future water sources for public drinking, industry and agriculture. The region needs more sustainable and reliable water supplies and improved water management. Securing sufficient water resources for the mid to long term presents challenges for certain areas of the Great Southern. Moreover, climate change is expected to have an impact on the water available for dry land agriculture.	<u>Extension and Upgrade to Water Supply Infrastructure</u> There is a need to improve existing water supply infrastructure to accommodate population growth and industrial expansion in the region. Works needed include expansion of the integrated water supply scheme to Tenterden and Cranbrook. <u>Independent Towns Water Supply</u> Develop sustainable water supply options for independent towns by: • Considering connections to regional water supply schemes • Supplying fit-for-purpose water • Improving constructed catchments to increase run-off • Investigating options to reduce evaporation from existing dams • Improving water efficiency. <u>Water Harvest and Reuse</u> Innovative water capture and efficiency measures are essential for long-term water security. Support individual and regional groupings of local government authorities to plan and implement water harvest and reuse initiatives storm water capture and reuse (e.g. Cranbrook CBH water harvesting program) and local planning policy	Potential benefits of this transformational project include: • Increased population growth • Improved access to business investment • Sustainability of rural communities

	to encourage the use of residential and industrial water capture and reuse in new developments.	

Transformational Project 4 – Avenues to Opportunity		
Rationale	Description	Potential Benefits
A diverse network of transport infrastructure serves the Great Southern. With further economic growth in the region, road infrastructure is expected to deteriorate significantly if there is no additional investment in maintenance and capacity development.	Cranbrook Intermodal Facility Assess the feasibility of establishing an intermodal transport hub in Cranbrook to accommodate overflow from Albany Port. Consider the benefits and costs relative to the proposal to establish a similar facility closer to the Port.	Potential benefits of this transformational project include: • Improved access to export markets • Improved attraction to new export businesses

Transformational Project 6 – Destination of Natural Choice		
Rationale	Description	Potential Benefits
The Great Southern currently has a comprehensive range of high value tourism assets. As well as having internationally recognised eco-tourism assets, the sector is supported by a range of major events, activities and attractions. There are opportunities to grow the overall level of activity in tourism, particularly in the international and business segments in a culturally and environmentally sustainable manner. This should be achieved through coordinated branding and marketing activity, development of quality accommodation options, improved air services, investments in ecotourism, events, arts and cultural heritage	Tourism Trails and Trail Hubs The objective is to complete, brand and market a Great Southern Regional Wine Trail incorporating Albany, Porongurup, Mount Barker, Frankland River and Denmark. The project will connect wineries and boutique food producers across the region with onsite and on-line information and interpretation through a drive trail. Where feasible, the regional wine trail experience should integrate with and complement plans to establish land and water trails and trail hubs (walking, cycling, diving and horse-riding) at various centres in the region. Centres on the trail circuits must also be serviced by adequate water, power and telecommunications. Tourism trails will link sites with biodiversity, heritage and recreational value. They will also cater for cyclists and will include subregional and specialty (for example, winery) loops.	Potential benefits of this transformational project include: • Increased private sector investment • Higher export income through tourism spend, visitor numbers and length of stay • Direct employment growth • Attraction of skilled workforce Improvement in the sustainability of tourism operators • Increased investment in conservation • Diversification of region's economic base • Increase in employment • Increase in population • Retention of young adults • Improved access to, and professional development of, artists and creative residents

assets and leading the way in best practice management of the region's natural assets.		

Transformational Project 6 – Destination of Natural Choice		
Rationale	Description	Potential Benefits
	<u>Cultural Connection and Biodiversity Trails</u> The overall project objective is to research and develop a high value tourism product by connecting, providing interpretation for, and marketing sites of outstanding biodiversity through a trail, or series of trails. The project will include sites of natural and cultural significance, and a network of regional botanical gardens. DPaW has plans to establish long and short distance trails linking the agricultural hinterland to the south coast. Under the Conservation and Land Management Act 1984, the Department of Parks and Wildlife is also committed to protecting Aboriginal heritage, facilitating customary activities and achieving joint management of its natural assets. All of these required actions assist in reducing Indigenous disadvantage. It is anticipated that the imminent finalisation of the SWNTS will provide further resources to include researched and agreed sites of Noongar cultural significance in the trails initiative. Specific product outcomes could include guided cultural tours and educational programs. The trails initiative will also complement the Gondwana Link program. Gondwana Link will take in connections either side of the Stirling Range National Park, to the Fitzgerald River National Park and south to the Porongurups. The aim is to restore the basic ecological	

	integrity and connectivity of biological assets.	

2.6 State Planning Policies

State planning policies are prepared and adopted by the WAPC under statutory procedures set out in Part 3 of the Planning and Development Act 2005. The process of preparing a state planning policy also includes public consultation and consideration by the Planning Minister and the Governor.

The WAPC and local governments must have regard to the provisions of state planning policies when preparing or amending local planning schemes, and when making decisions on planning matters. There are a wide range of state planning policies which guide subdivision and development.

There is no need to replicate the detail of information contained in State Planning Policies within this Strategy; however the Policies most relevant to the Strategy and Shire of Cranbrook are listed below for ease of reference;

- State Planning Policy 2.0 – Environment and Natural Resources
- State Planning Policy 2.4 – Basic Raw Materials
- State Planning Policy 2.5 – Landuse Planning in Rural Areas
- State Planning Policy 2.9 – Water Resources
- State Planning Policy 3.0 – Urban Growth and Settlement
- State Planning Policy 3.1 – Residential Design Codes
- State Planning Policy 3.4 – Natural Hazards and Disasters
- State Planning Policy 3.5 – Historic Heritage Conservation
- State Planning Policy 3.6 – Developer Contributions for Infrastructure
- State Planning Policy 3.7 – Planning in Bushfire Prone Areas
- State Planning Policy 4.1 – State Industrial Buffer Policy
- State Planning Policy 5.4 - Road and Rail Transport Noise and Freight Considerations in Land Use Planning

Policies are reviewed or revoked from time to time so current versions should be obtained by interested parties from the WAPC.

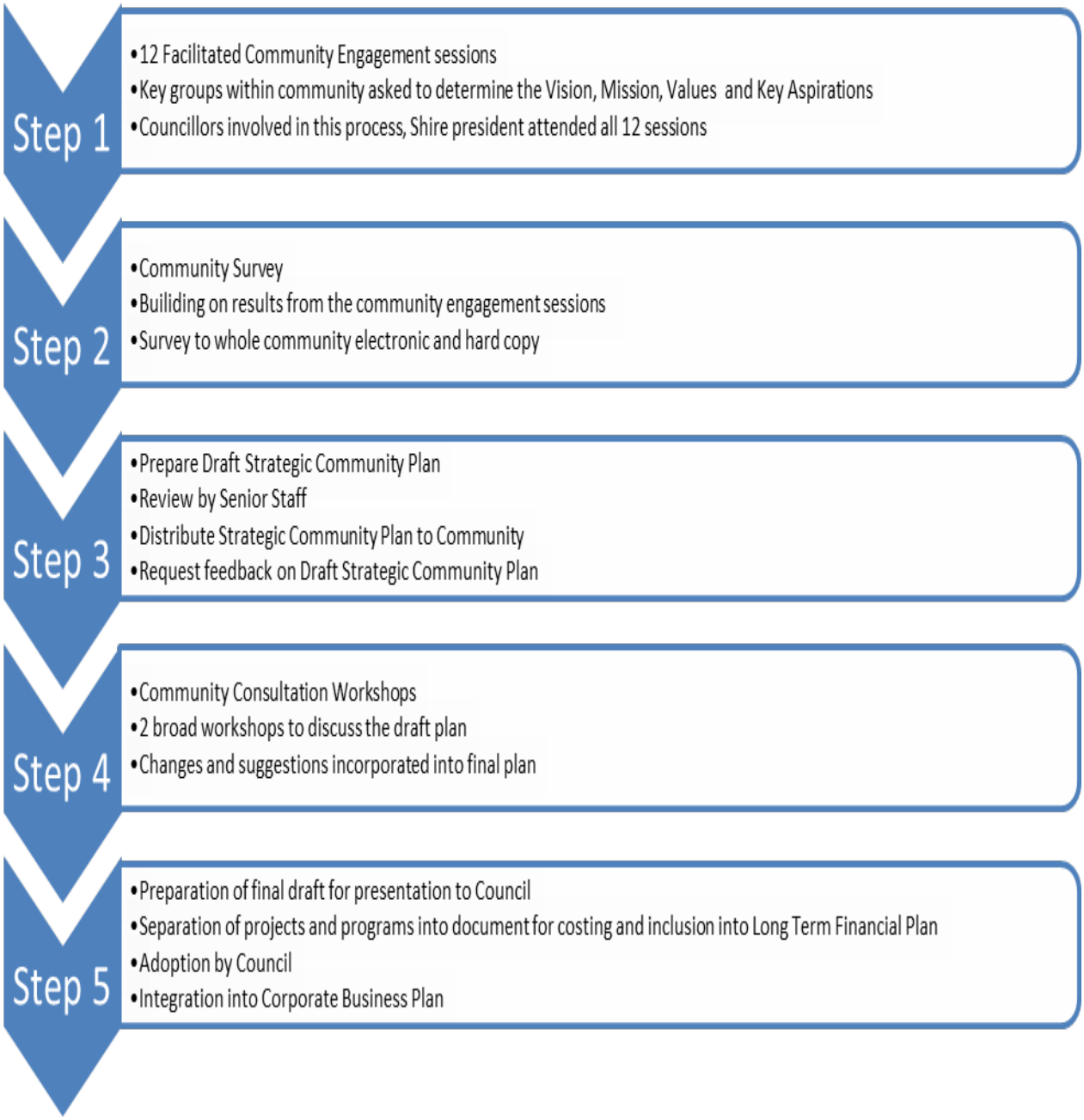
3.0 LOCAL PLANNING CONTEXT

The Shire of Cranbrook has been consulting with the community and preparing comprehensive strategic plans for its future since 2006. The last plan from 2008 – 2013 has been replaced by a comprehensive new Strategic Community Plan 2013 -2023.

3.1 Engagement and Consultation Process - Strategic Community Plan 2013-2023

To commence the Strategic Community Plan 2013-2023, the Shire of Cranbrook undertook a comprehensive Community Engagement Process. The development of the Strategic Community Plan reached more than 140 people and represented 15% of the Shire population. The outcome of such quality engagement is a Strategic Community Plan developed and owned by the community.

Process


Step 1
•12 Facilitated Community Engagement sessions
•Key groups within community asked to determine the Vision, Mission, Values and Key Aspirations
•Councillors involved in this process, Shire president attended all 12 sessions
Step 2
•Community Survey
•Builiding on results from the community engagement sessions
•Survey to whole community electronic and hard copy
Step 3
•Prepare Draft Strategic Community Plan
•Review by Senior Staff
•Distribute Strategic Community Plan to Community
•Request feedback on Draft Strategic Community Plan
Step 4
•Community Consultation Workshops
•2 broad workshops to discuss the draft plan
•Changes and suggestions incorporated into final plan
Step 5
•Preparation of final draft for presentation to Council
•Separation of projects and programs into document for costing and inclusion into Long Term Financial Plan
•Adoption by Council
•Integration into Corporate Business Plan

3.2 Strategic Community Plan 2013-2023

The Shire's Strategic Community Plan reflects a 10 year vision for the Shire of Cranbrook. Developed following a strong engagement and consultation process with the community, the plan reflects a diverse range of key aspirations and strategic objectives to deliver the plan. The Strategic Community Plan identifies the Vision, Mission, Values and five key Community Aspirations for the future of the Shire of Cranbrook.

This plan flows directly into the Shire's Corporate Business Plan, which further distils the aspirations and strategic objectives into a set of key specific, measurable activities. The strategies and actions in the Local Planning Strategy are consistent with those expressed in the Strategic Community Plan.

Our Vision

That the Shire of Cranbrook is a Proactive, Sustainable, Safe, Friendly and Prosperous place to be

Our Mission

To create this Shire as a place of choice for its;

- Community Participation and Respect
- Prosperous Economy with Sustainable Employment Opportunities
- Outstanding Infrastructure and Services
- Well Managed, Resilient Environment
- Positive and Proactive Council

Community Values

Trust	***Leadership***	***Cohesion***	***Respect***	***Safety***	***Inspiration***
Integrity	Courage	Fun	Compassionate	Secure	Creative
Honesty	Innovation	Friendly	Accepting	Protective	Artistic
	Vision	Welcoming	Empathy	Inclusive	Visionary
	Pride	Cooperative			

Aspirations for the future – by 2023 the Shire of Cranbrook will…

- Be respected for its Friendly, Vibrant, Connected and Safe Communities
- Have an Innovative, Diverse, Prosperous, and Growing Economy
- Maintain, Protect, Enhance and Promote its Environment
- Have Enviable, Quality Infrastructure, Roads and Facilities
- Demonstrate Strong Governance, Leadership and Organisational Growth

Extracted from the Strategic Community Plan 2013 - 2023

3.3 Southern Link Transport Hub Strategic Vision

In addition to the Strategic Community Plan, the Shire has an innovative and bold strategic vision to build on its existing Cranbrook industrial area and provide for the development of the Southern Link Transport Hub which would effectively act as an inland port and cater for future transport needs of the wider Great Southern Region – refer **Appendix 1**.

Cranbrook has many locational advantages with excellent transport links and has identified scope to build opportunities surrounding the existing CBH facility and railway line. The townsite is located at the intersection of two major highways and the railway line, 96km north of Albany.

The Shire has been proactive and undertaken a thorough study tour of similar intermodal facilities already established in Parkes, Dubbo, Blayney and Bathurst in New South Wales.

Curtin University was commissioned by the Shire of Cranbrook in 2012 to undertake a feasibility study into the viability of the proposed Southern Link Transport Hub (SLTH). The proposal to develop a strategic infrastructure hub emanated from a vision document prepared by the Shire in 2008 following a tour of intermodal facilities on the east coast of Australia.

The Southern Link Transport Hub could allow for the containerisation of grain for export as well as the transportation of other goods in and out of the Albany Port for distribution into the Great Southern Regional areas in the long term, as well as the development of subsidiary and complementary industries.

The report was prepared by senior academics from Curtin University's School of Information Systems that specialise in logistics and supply chain management. The report represents the culmination of 12 months of research and is intended to act as a catalyst for the development of future support and service businesses that can be expected to be attracted to Cranbrook.

The feasibility report quantifies costs and benefits of the SLTH in terms of physical inputs and outputs, and their associated social and financial impacts. A Supply Chain Economics approach was adopted and an extensive survey of stakeholders across the Shire was undertaken to understand their activities and the resources they consume and contribute to the Shire.

The feasibility report has identified very strong social and financial benefits that would flow from the development of a multi –modal transport hub in Cranbrook.

The modelling contained within the feasibility report demonstrates a compelling positive opportunity for Cranbrook and suggests that improved utilisation of existing rail and rolling stock resources would provide a highly cost-competitive rail freight service that could potentially generate additional revenue annually. To achieve this target and make use of surplus rail capacity, the involvement of existing operators, WATCO and CBH, would be required.

The research also suggests that significant secondary economic opportunities are possible, including;

- value add industries such as grain cleaning and feedstock production
- an expanded and low cost transport network
- large scale commercial utilisation of biomass,

- trailer exchange network
- creation of a bonded storage facility

The Shire seeks to incorporate its vision for a Southern Link Transport Hub into the Local Planning Strategy to allow for future planning as it forms part of the Shire's Strategic Community Plan and long term Economic Development Strategy.

This Shire takes a strong leadership role and seeks to plan for future industrial growth, cater for large industrial land requirements, build on existing infrastructure and create employment opportunities.

The Shire of Cranbrook works collaboratively with its surrounding Councils and is part of a Voluntary Regional Organisation of Councils (VROC) including the Shire of Broomehill Tambellup, Shire of Plantagenet, and Shire of Kojonup. The Southern Link Transport Hub is included in the VROC Strategy.

3.4 Southern Link Voluntary Regional Organisations of Councils (VROC)

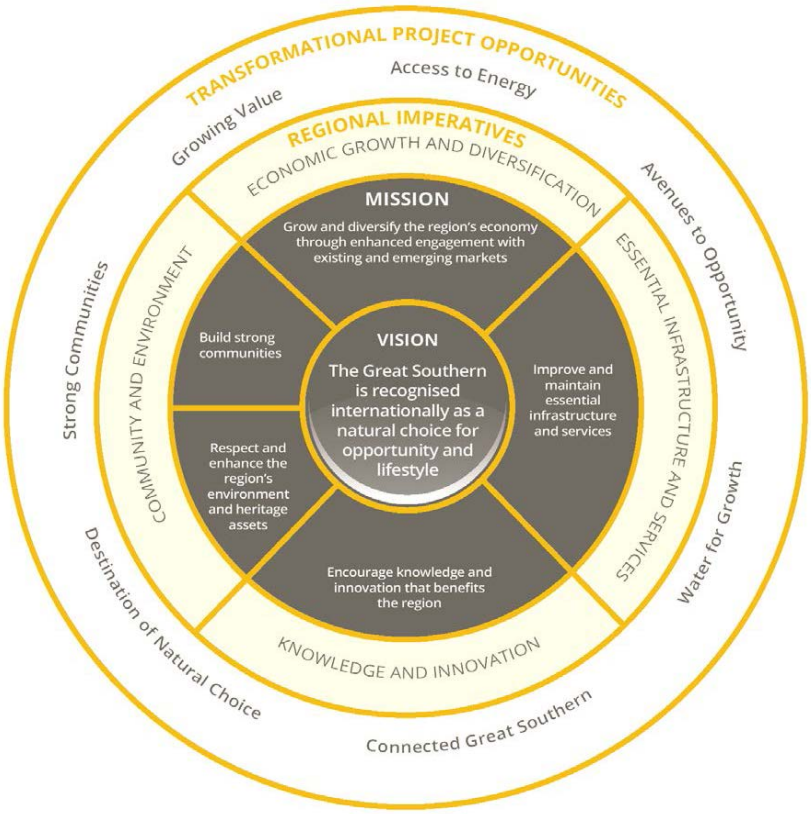
The Shire of Cranbrook is one of four shires which form the Southern Link VROC, a Voluntary Regional Organisation of Councils that share resources and equipment and work collaboratively on regional projects.

The Strategic Directions (2015 – 2020) of the Southern Link Voluntary Regional Organisation of Councils (VROC) is the framework for the excellent working relationship that has developed between the four local governments. This plan sets out the strategic directions for the VROC and identifies the priority initiatives.

The VROC represents independent communities working together to achieve mutually beneficial outcomes. This Strategic Plan at a Glance provides an overview of the goals, strategies and targets that the Southern Link VROC will seek to achieve over the next five years:

Vision: To sustain a collaborative partnership that serves as an exemplar to other Local Government groupings.				
Regional Economic Development	Governance	Environment	Human Resources	Regional Community Development
Goal: Stimulate economic growth and business opportunity.	Goal: Provide sub regional leadership through the VROC.	Goal: Value and protect the environment.	Goal: Increase capacity through collaboration.	Goal: Build capacity to enable communities to achieve.
S1: Support the implementation of wider regional initiatives. S2: Collaborate on safe and efficient road networks. S3: Improve the provision and maintenance of infrastructure. S4: Develop uniformity across planning schemes.	S1: Articulate a clear direction for the VROC. S2: Build wider support for the VROC from Elected Members and the community. S3: Build a culture of collaboration and trust.	S1: Plan for the potential impact of climate variability. S2: Encourage natural resource management. S3: Improve waste management.	S1: Share systems and processes between member LGAs. S2: Develop professional specialities for each LGA. S3: Share training and professional development at the officer level.	S1: Support skills development across the communities. S2: Collaborate on common community development projects.

The vision is that the Great Southern is recognised internationally as a natural choice for opportunity and lifestyle.



The Southern Link VROC Strategic Directions (2015 – 2020) provides a strategic analysis of critical trends, key challenges and critical success factors to implement the plan. It identifies clear goals, strategies and actions relating to regional economic development, governance, environment, human resources and regional community development.

Relevant to this Local Planning Strategy it is important to note that Strategic Directions document includes an action to '*advance the case for a Southern Link Transport Hub in Cranbrook*' in order to achieve the goal to '*stimulate economic growth and business opportunity*'.

From a planning perspective it is also significant that the local governments aim to develop uniformity across their local planning schemes through Strategy 4:

Strategy 4: Develop uniformity across planning schemes:	***Target***: Uniform planning schemes implemented within 2 years.
Actions	***Deliverables***
Action 1: Develop uniform definitions within Local Planning Schemes.	• Agreed list within 1 year.
Action 2: Develop uniform industry development standards for buffers, buildings and conditions.	• Agreed standards within 18 months.
Action 3: Liaise on regional planning initiatives.	• Mechanism for liaison established within 1 year.

3.5 Links with Regional Planning

The Shire of Cranbrook has also considered its future planning and growth in line with current Regional Plans. The table below provides a summary of existing relevant strategies.

Organisation	Plan Reference
Regional Development Australia Great Southern Regional Plan 2012 - 2020	***Promote and support investment in industry and infrastructure development.*** • Encourage improved regional infrastructure and access to new 'green' power alternatives. **(SCP Ref: 2.1)** ***Facilitate and work collaboratively with the providers of education, training and employment*.** • Improve industry participation and investment in postsecondary **(SCP Ref: 2.3.2)** ***Partner with others to, enhance, value, protect and manage the diverse and unique environment.*** • Aid in the identification and appropriate use of our natural resources to support tourism, agriculture and restoration. **(SCP Ref: 3.1 and 3.2)** • Support for more sustainable, reliable water supply and renewable energy. **(SCP Ref 3.3)** ***Advocate and encourage community development and social inclusion.*** • Endorse the development of a Regional Sport and Recreation Plan that provides greater sport and recreation opportunities for our residents. **(SCP Ref: 1.5.3)** • Support the expansion of the Southern Inland Health Initiative and development of a Regional Model of Mental Health. **(SCP Ref: 1.5.4)** • Support for nurse practitioners to have an increased role in inland areas to prescribe treatments, expand use of technology for training and treatment and provide drive-in/drive-out allied health services. **(SCP Ref: 1.5.4)**

Organisation	Plan Reference
Great Southern Development Commission *Regional Investment Blueprint 2015-2040*	**Economic Growth and Diversification** • Facilitate economic growth and development **(SCP Ref: 2.1.1)** • Identify future partnerships and other collaborative opportunities **(SCP Ref: 2.2.3)** • Capacity Building **(SCP Ref: 2.4.1)** • Encourage and promote tourism events **(SCP Ref: 2.2.4, 4.3.2)** **Essential Infrastructure and Services** • Explore alternative options for power and water provision **(SCP Ref: 2.4.1, 4.1.4)** • Development of Southern Link Transport Hub **(SCP Ref: 2.1.3)** • Develop quality roads and transport safety initiatives **(SCP Ref: 4.2.1, 4.2.2)** **Knowledge and Innovation** • Training **(SCP Ref: 2.3.2, 5.5.2)** • Support and encourage knowledge and information delivery **(SCP Ref: 5.6.1)** **Community and Environment** • Encourage community participation **(SCP Ref: 1.3.3, 1.1.3, 1.5.3, 5.6.2)** • Provide services for children and the aged **(SCP Ref: 1.5.1, 1.5.2, 1.1.2, 1.4.3)** • Develop cultural and heritage infrastructure **(SCP Ref: 4.3.3)** • Support sustainable agriculture, bushland protection and landcare **(SCP Ref: 3.2.1)** • Develop Best Practice Waste management **(SCP Ref: 3.3.1)**

Organisation	Plan Reference
Southern Link VROC *Strategic Directions 2015-2020*	The following projects are identified in the VROC Strategic Directions document and are considered of regional importance: • The implementation of wider regional initiatives **(SCP Ref: 5.6.3)** • Improving the provision and maintenance of infrastructure **(SCP Ref: 4.1.1, 4.1.2, 4.3.3, 4.3.4)** • Encouraging natural resource management **(SCP Ref: 3.1.1, 3.2.1)** • Improving waste management **(SCP Ref: 4.3.1)** • Sharing training and professional development at officer level **(SCP Ref: 5.5.1, 5.5.2)**

4.0 LOCAL PROFILE & KEY CHARACTERISTICS

4.1 Heritage

4.1.1 Brief History of Settlement

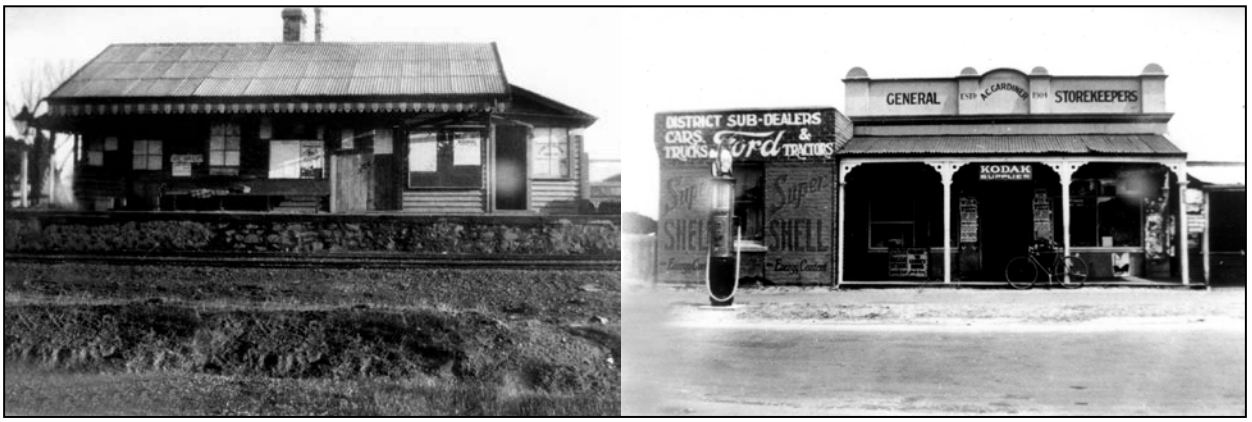
Cranbrook

As early as the 1850's farming leases were bought in the area after an overland route was established between the Swan River Colony (Perth) and King George Sound (Albany) passing through Round Swamp which is now Tenterden.

In 1886 works began on the railway line to connect Albany and Perth. Because of the lack of a suitable water catchment area at Round Swamp for a dam to provide water for the steam trains, the centre of the district moved to what is now known as Cranbrook.

The town was named by Hon JA Wright who was born in Cranbrook, England and Round Swamp was renamed Tenterden, a town six miles from his birthplace in Kent, England.

With the completion of the rail line the town soon flourished and became the central loading point for wool, sheep, sandalwood and grain.



Frankland River

One of the first families to settle in the Frankland River area was the Egerton-Warburtons, who took up “Yeriminup” in 1857. They were followed by the Moirs of “Wingebellup” and “Glen Valley”, shepherds for the Hassells of “Mongetup”, and the Mullins at “Westfield”.

A ticket-of-leave man, Anthony Walton, took up “Wonnenup” in 1862 and employed a team of convicts to build a home on the property. Typical of homes of that time it was constructed of bricks that were made on the property, timber felled and hewn with the broadaxe and, originally, a roof constructed of white gum shingles. The house is still occupied today.

John Hassell, a retired sea captain, owned large flocks of sheep which needed constant attention of shepherds. Many of these shepherds drove their flocks into the Frankland River area, which has many small creeks surrounded by natural pasture that provided good feed for sheep.
Gradually families followed the shepherds into the area, mainly looking for land.

Frankland River was one of the many districts to benefit from the completion of the Great Southern Railway in 1889. Although the line actually went through Cranbrook, timber workers in the Frankland River area were kept busy supplying railway sleepers for the line.

Settlement of the district expanded when some men who had worked on the railways later took up land in the area.



Tenterden

Tenterden is located on the Great Southern Railway, and although not one of the original sidings when the line was opened in 1889, a siding had been established here by 1891. Also in 1891 the government opened up agricultural land adjacent to the siding, by declaring the Tenterden Agricultural Area, and in 1893 part of this land was gazetted as the townsite of Tenterden.

4.1.2 Municipal Inventory

The Shire has a Municipal Heritage Inventory which includes a comprehensive history of the area with excellent photographic records of historical buildings.

4.1.3 State Register

No buildings or places are registered on the State register with the exception of the Tenterden Agricultural hall.

The hall was constructed in 1903 and unfortunately was destroyed in bushfires in December 2003.

Tenterden Hall approximately 1909

4.1.4 Aboriginal Heritage

The Shire of Cranbrook has conducted an Aboriginal Heritage Survey. Places of Aboriginal significance have not been included in the Municipal Inventory however this is an important heritage issue that the Shire considers as part of any scheme amendment or development proposal, in consultation with the Department of Aboriginal Affairs (DAA). The DAA has a range of key functions including preserving and protecting Indigenous heritage by supporting the work of the Aboriginal Cultural and Material Committee.

In regard to heritage places, the Department of Aboriginal Affairs has undertaken a search of its register system over the Shire area. The search shows 30 sites in the Shire of Cranbrook local government area (2011).

More sites are likely to exist than are recognised or entered on the Register system and all sites may not be known by the Department.

The Aboriginal Heritage Act 1972 ('the Act') protects and preserves Aboriginal Heritage and culture in Western Australia, including a site or object that is of significance to Aboriginal people, or has historical, anthropological or ethnographic interest.

The Act protects Aboriginal sites whether or not they have previously been reported or recorded. It is an offence under Section 17 of the Act to excavate, destroy, damage, conceal or in any way alter an Aboriginal site. Prosecution may incur fines of $20,000 for an individual or $50,000 for a company.

Areas near water, wetland and river systems are likely to have Aboriginal association or significance. The Department of Aboriginal Affairs prefers that development plans be modified to avoid damaging or altering any site. If this is not possible and in order to avoid a breach of the *Aboriginal Heritage Act 1972*, the land owner should submit a Notice under Section 18 of that Act to the Aboriginal Cultural Material Committee, seeking prior written consent from the Minister for Aboriginal Affairs to use the land.

The DAA has a 'Summary of Developers Obligations' under the Aboriginal Heritage Act 1972. The Shire can refer scheme amendments or developments to the DIA where appropriate.

4.2 Population

The population in the Cranbrook Shire (local government area) at the 2001 census was 1,049 persons which increased in the 2006 census to 1,062 persons. In 2011, it had increased to 1,079 of which 268 reside in the Cranbrook townsite (urban area).

Separate statistics are not available for the townsites of Frankland River and Tenterden from the 2001 Census but the population in these two townsites was estimated by the Shire to be about 90 and 105 respectively in October 2003.

The Australian Bureau of Statistics (ABS) has provided information for population and total dwellings in the Shire and Town of Cranbrook for each census from 1976 to 2011, as shown in **Tables 1 and 2.**

TABLE 1
Population and Total Dwellings
Shire of Cranbrook 1976 - 2011

Census	Population	Total Dwellings	Persons per Dwelling
	No.	No.	No.
1976	1240	430	2.9
1981	1228	456	2.7
1986	1286	489	2.6
1991	1129	499	2.3
1996	1121	493	2.3
2001	1049	508	2.1
2006	1,062	526	2.1
2011	1,079	525	2.4

TABLE 2
Population and Total Dwellings
Town of Cranbrook 1976 - 2011

Census	Population	Total Dwellings	Persons per Dwelling
	No.	No.	No.
1976	375	104	3.6
1981	316	106	3.0
1986	351	125	2.8
1991	306	115	2.7
1996	283	116	2.4
2001	270	122	2.2
2006	280	128	2.1
2011	268	131	2.3

Source: Australian Bureau of Statistics - Prepared by: Gray & Lewis

A total of 268 persons were recorded in the 2011 Census as residing in the Cranbrook townsite. The distribution of Shire population between Cranbrook and the rest of the district is shown in **Table 3**.

TABLE 3: Population Distribution Shire of Cranbrook - 1976-2011

Year	Cranbrook Town	Rest of District
1976	30.2%	69.8%
1981	25.7%	74.3%
1986	27.3%	72.7%
1991	27.1%	72.9%
1996	25.2%	74.8%
2001	25.7%	74.3%
2006	26.3%	73.7%
2011	24.8%	75.2%

Source: Australian Bureau of Statistics

4.2.1 Population Projections

Population in the Shire has been projected by the Western Australian Planning Commission (WAPC) to 2021. The WAPC predicted that the Shire's population would decline and then stabilise. The ABS statistics have shown a declining population between 1976 to 2001, however the 2006 statistics reflect a stabilising population with some growth.

The projections sourced from WAPC and ABS are summarised in **Table 4**.

TABLE 4
Projected Population - Shire of Cranbrook

	2004	2005	2006	2007	2009	2011	2016	2021
ABS Population Projections	1130	1135	1141	1133	1144	1173	-	-
WA Tomorrow Population Projections (WAPC)	1000	-	1000	-	-	1000	980	980

Source: WA Tomorrow produced by WAPC - Prepared by: Gray & Lewis
ABS Regional Population Growth / Estimated resident population

Populations statistics show that there has been declining numbers in the past for Cranbrook, however recent figures show a recovering population and there is potential for continued increases.

The proportion of Shire population living in the town of Cranbrook may remain relatively constant in the short term, however it is important to recognise that population changes often occur in regional areas as a reaction to new employment opportunities.

Cranbrook's population could grow dramatically as a direct result of new industries and the Southern Link Transport Hub. In 2011, Cranbrook showed the highest population growth in the Great Southern Region at 2.4%.

4.3 Recreation and Open Space

The Shire of Cranbrook supports a wide range of sporting activities, from water sports available at lakes within the Shire, to the more traditional sports such as tennis, bowls, cricket, golf, etc.

Lakes Nunijup and Poorrarecup lie within easy distance to the west of Cranbrook and southeast of Frankland River, while Lake Unicup is close to the far west border of the Shire. Lake Poorrarecup caters for swimming, skiing and sailing with toilet and change room facilities. Significant upgrades have been undertaken at Lake Poorrarecup, including a new boat ramp and toilet facilities.

The original Cranbrook sports ground was built in 1973 and had facilities for football, cricket, netball and basketball.

After years of planning and substantial investment, the Shire officially opened the new Frederick Square Pavilion in October 2010.

This is a state of the art facility and the new home of Cranbrook's junior sport, netball, bowls, cricket and tennis clubs. This is an exceptional model of co-location and community co-operation.

A range of other sporting activities are also catered for within the Shire. Golf courses are situated at Cranbrook and Frankland River. There are new tennis courts within the Cranbrook, Tenterden and Frankland River townsites. In Cranbrook a new motocross club continues to grow and develop, and already the club is looking to the future and seeking land for expansion. Currently the group use the old sporting complex for their track and clubrooms.

In Frankland River the community is well provided for by the Frankland River Country Club. There is a new bowling green and tennis courts. The oval, now reticulated also has new cricket nets and an amphitheatre for viewing sports.

4.4 Community Facilities and Services

In Cranbrook townsite, the civic and cultural facilities are located along Gathorne Street with the Shire's Administration Office, local Post Office and Town Hall on the western side of the road. The Police station is on Climie Street.

Frankland River has an excellent community centre and its community facilities are concentrated along Wingebellup Road and include; Council Library, Community Resource Centre, Amphitheatre, and Town Hall. The general store includes a Post Office agency.

A new hall and fire shed was opened in Tenterden in 2008 and was constructed to replace the original Tenterden Agricultural Hall lost in bushfires in December 2003.

Tenterden Hall

4.5 Schools

Cranbrook and Frankland River both have a Primary School accommodating K – Yr. 7 as follows;

- Cranbrook Primary School is on Crown Reserve 24466 of 2.6937 ha.
- Frankland Primary School is on Crown Reserve 22971 of 2.0158 ha.

The Department of Education and Training has advised of the following requirements for government schools (2010):

Primary School: 4.0 hectare site for every 1,500 single residential lots/dwellings.

Secondary School: 10.0 hectare site for every 4 to 5 primary schools (6,000 to 7,500 single residential lots/dwellings.

District High School: 6.0 hectare site to be provided in country areas where separate high and primary schools are not warranted.

It is not expected that provision of land for additional schools in the Shire will be required in the short term. Longer term requirements will be determined by the scale of future residential development in the Shire.

The nearest High School is Mt Barker Community College which caters for students from Kindergarten to Year 12. There is a bus which runs daily from Cranbrook and Tenterden.

Attendance at the primary schools are summarised in **Tables 5 and 6.**
Source: Department of Education and Training

TABLE 5

Cranbrook Primary School Enrolments 1993-2013

Year	Numbers of Students		
	Total	Pre-Primary	Primary
1993	122	11	111
1994	106	11	95
1995	98	19	79
1996	84	14	70
1997	86	12	74
1998	79	7	72
1999	78	17	61
2000	83	19	64
2001	82	22	60
2002	78	16	62
2003	83	22	61
2004	70	12	58
2005	63	8	55
2006	68	11	57
2007	60	6	54
2008	65	13	52
2009	64	10	54
2010	63	7	56
2011	77	20	57
2012	78	18	60
2013	79	18	61
2014	79	21	58
2015	65	20	45

TABLE 6

Frankland River Primary School Enrolments 1993 - 2013

Year	Numbers of Students		
	Total	Pre-Primary	Primary
1993	62	19	43
1994	60	12	48
1995	56	7	48
1996	47	8	39
1997	47	15	32
1998	47	16	31
1999	55	19	36
2000	54	20	34
2001	50	14	36
2002	62	16	46
2003	59	20	39
2004	76	14	62
2005	70	8	62
2006	65	5	60
2007	59	5	54
2008	65	13	52
2009	64	10	54
2010	63	7	56
2011	53	16	37
2012	53	17	36
2013	50	16	34
2014	48	9	39
2015	48	10	38

5.0 ECONOMY AND EMPLOYMENT

5.1 General Overview/Agriculture

The predominant land use in the district is for agricultural production.

In the 2011 Census, the most common industries of employment for persons aged 15 years and over usually resident in Cranbrook were Sheep, Beef Cattle and Grain Farming 41.4%, Beverage Manufacturing 6.2%, Fruit and Tree Nut Growing 6%, School Education 4.6% and Local Government Administration 3.4% - Table 7.

TABLE 7
Employment - Shire of Cranbrook

Employed people aged 15 years and over (top responses 1991 ABS)	Cranbrook (Local Government Area)	%
Sheep, Beef Cattle and Grain Farming	206	41.4%
Beverage Manufacturing	31	6.2%
Fruit and Tree Nut Growing	30	6.0%
School Education	23	4.6%
Local Government Administration	17	3.4%

Agricultural production has traditionally been focussed on cropping and sheep farms. With greater awareness of land capability as well as changing markets, pressures of increasing land values, and pressures from persons seeking lifestyle change, different forms of agriculture are now being practiced.

Traditional broad hectare farming is still vital to the local economy however there is increasing diversification of large scale agriculture activities including viticulture and plantations.

Successful vineyards have been established followed by wineries, which are expanding into tourist facilities. Many wineries in the area are well-established and have achieved very widespread recognition for the fine quality of their product. Frankland River has become well known for its significant production of premium Australian wine.

Commercial tree plantations are well established. There is potential for this land use to expand in the district as part of farm diversification or a single crop. Olives are also being cultivated in the district and appear to be well suited to local conditions.

5.2 Extensive (Free Range) Agriculture

The Shire has seen significant growth and increasing diversity of extensive agriculture in the last few years. The establishment of free range extensive agricultural industries have gained significant momentum, and there are a growing number of free range piggeries developing throughout the Shire. The need for the consideration of, in particular, free range extensive agriculture is very important.

Whilst the stocking rates of free range extensive agriculture are generally low, similar to broad acre sheep, the impacts of free range extensive agriculture can be different to more traditional forms of broad acre agriculture.

5.3 Retail

5.3.1 Cranbrook

The main retail and commercial activities are concentrated in the Cranbrook townsite. The existing commercial uses are spread out, with shops fronting Grantham, Climie, Gordon, and Gathorne Streets. Retail outlet examples are the Post Office Gift Shop, Supermarket/Newsagent, Agricultural Supply Store, and a second hand shop.

These provide a range of convenience goods, but customers for comparison goods must travel to the regional centres at Katanning, Mount Barker or Albany.

5.3.2 Frankland River

The General Store is located on the corner of Frankland Cranbrook Road and Rocky Gully Road in Frankland River. The General Store is an important local community hub and provides essential services catering for the day to day convenience needs of local residents, tourists and travellers. The Frankland River General Store provides groceries, hardware, liquor, fuel, and post office services.


Frankland River General Store & Post Office

Significant investment has resulted in the hall being rebuilt, upgraded and expanded to the benefit of the local community and general public.

A commercial complex known as 'Frankland River Village' is opposite the General store and contains a cafe and hairdresser with room for other businesses.


Frankland River Village

Residents who want a more extensive range of convenience goods or comparison goods travel to Mt. Barker, Kojonup, or Manjimup and Albany.

5.3.3 Tenterden

A roadhouse is established in Tenterden on Albany Highway and relies substantially on passing trade.

There is a small but established Industrial area to the immediate west of the roadhouse on the corner of Albany Highway and Nunijup Road.

A successful fertiliser industry has been established in Tenterden. This company is experiencing significant growth and development and may require the ability to expand.

5.3.3.1 Agricultural Supplies

In both Cranbrook and Frankland River the community is well serviced by two well established agricultural supply businesses. In Tenterden the community is also well provided for by agricultural and hardware supplies.

5.4 Tourism

The Shire of Cranbrook is recognised as the gateway to the Stirling Ranges. The Stirling Range National Park boasts 15 peaks over 900 metres and 50 peaks above 600 metres.

The drive through the Park is one of the wonders of Western Australia. It is an area of great diversity and is well known for its wide range of wildflowers as it contains over 1000 different species. In 2010, National Heritage listed The Stirling Range National Park as one of the top 10 biodiversity hotspots in the world.

Tourist accommodation in the Shire includes the Cranbrook Caravan Park with camping sites, as well as two new park homes. There is also the Cranbrook Hotel, Cranbrook Railway Carriage Accommodation and Cranbrook CBH Accommodation Units. In Frankland River, there is also a well-appointed Caravan Park. There are also various wineries in the region with chalets and Bed and Breakfasts.

Frankland River has been increasingly associated with premium wine production and attracts tourists to its wide range of scenic wineries.

6.0 PHYSICAL FEATURES AND THE ENVIRONMENT

6.1 Climate

The Shire of Cranbrook has a typical Mediterranean climate with hot dry summers and cool wet winters. The highest temperatures for this region are usually experienced in the month of January. Heat waves with temperatures exceeding 40 degrees can occur in February. The coldest temperatures are generally experienced in July.

The mean annual rainfall for Cranbrook in 2007 **was** 504mm (Department of Agriculture). Approximately 70% of this precipitation fell during the growing season, between the months of May and October 2007.

More recent mapping from 2015/2016 shows average rainfalls in excess of 400mm per year – **Figure 2**.

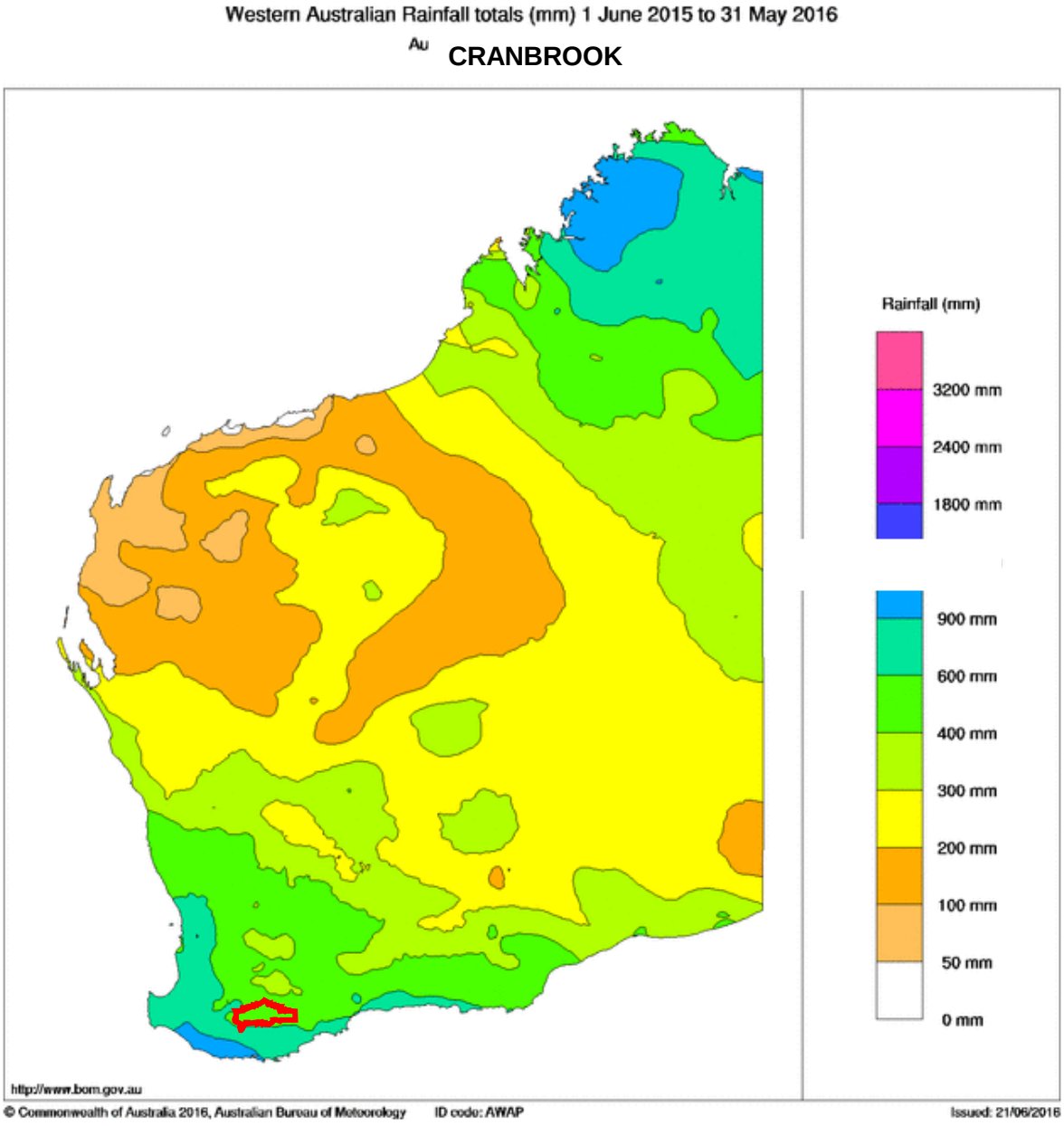


Figure 2 – Averages

There are rainfall variations between the 3 main townsites in the Shire of Cranbrook being Cranbrook, Tenterden and Frankland River as shown by more recent figures below:

2015 Monthly Rainfall												
Cranbrook												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total (mm)
3	24	27	72.5	21	42.5	58.5	59	42	28.2	15.8	44	434.5
Frankland River												
7.5	8.5	28.8	101.4	50.7	48.4	60.7	56.6	38	39.1	2.6	28	470.3
Tenterden												
+	11.2	29.6	91	30.9	43.2	85.5	56.9	42.8	+	7.5	44.8	443.5

+ Not completed or known
Source: On line climate data, Bureau of Meteorology http://www.bom.gov.au/climate/data

Winds are variable in winter with a north-westerly predominance. Still mornings are common in winter, which are conducive to occasional frosts. On summer mornings winds are commonly from the southeast with southerly afternoon sea breezes that are frequently strong and in excess of 20 kph.

6.2 Geology and Geomorphology

Geologically the Shire straddles the link between the southern edge of the Yilgarn Shield of Archaean age (>2,500 million years) and the Proterozoic rocks (600 – 2,000 million years) of the Birannup Complex to the south.

The underlying basement rocks of the northern Yilgarn portion are predominantly granites, with gneisses and other high grade metamorphic rocks and quartzite forming the Biranup Complex in the south. A small remnant area of folded sediments of the Stirling Range Formation forms the Stirling Ranges to the east and extends back into Geekabee Hill to the west of Cranbrook. The last formation of the ranges is Sukey Hill in Cranbrook.

The most significant late stage of landform development was in the Tertiary from perhaps 70 million years ago when large palaeo-channels formed, draining to the south.

These filled the valleys in the underlying basement, creating the flat planar surface. Elevation of the plain is near 250 metres. The exceptions to the plains are the folded Stirling Ranges that extend as a prominent line of peaks east from Cranbrook. These rise to over 1,000 metres in individual peaks. A number of small granite peaks occurring the west such as Trollup and Yerimup Hills.

The major valley fill deposit is the early Tertiary Werillup Formation that occurs across the Shire. Overlying this is a Quaternary valley fill of over 4 km in width centred on the Gordon River.

Widespread deep weathering formed during the Tertiary leading to the formation of ferricrete in the subsoils that is expressed as laterite when exposed by erosion on the tops of the ridges and hills. Underlying the ferricrete are deep kaolin clay based sub-soils over weathered basement rock.

A gentle warping of the land occurred late in the Tertiary, along the axis of the Stirling Ranges. This extended east-west along the southern portion of the Shire lifting the land to slightly over 300 metres. Streams to the south of the axis, such as the Kent were diverted south with the plain to the north of the low axis causing the westward flow of the Gordon River.

Restricted drainage over much of the Shire has led to the development of salt pans and lakes. In the west, the south flowing Frankland River has captured the Gordon River, draining surface water from the Shire to the south. From the steep Stirling Ranges drainage is to the east and south to the Pallinup River.

6.3 Soils

Soils in the western half are dominated by two main soil types, Yellow Podzolic soils consisting of shallow bleached sand over mottled olive to brown clays occur on the lower to medium slopes. These are typified by Marri (Corymbia calophylla) and Jam (Acacia acuminata). On the upper slopes are Lateritic Podzolic soils dominated by gravely sandy loam over clays that occupy or are influenced by laterite remnants. Powder bark (Eucalyptus accedens), Marri (Corymbia calophylla) and Jarrah (Eucalyptus marginata) are the major tree forms. On these soils the slow flowing valley floors are occupied by saline shallow sand over clay duplex with York Gum (Eucalyptus loxophleba) being most common.

East of Cranbrook is poorly drained and alkaline silty loams near lakes and swamps which are typified by Flat Topped Yate (Eucalyptus occidentalis).

6.4 Salinity

Cranbrook has been identified as a town at risk under the Rural Rescue Project, and as a result, has implemented a Water Management Strategy as illustrated in 6.5.2.4. The Town Hall and some dwellings have required remediation works due to groundwater capillary action.

Twenty monitoring bores have been established, and a Townsite Management Strategy prepared for the town.

The Council supports the strategy and has taken a number of steps towards its implementation, including the support of deep sewerage and reducing water loading on the soils.

The worst salinity occurs in the east near the salt lakes, although all valley soils are highly susceptible to rising water tables and, with evaporation, widespread salinity. Salt is also stored under the plateau remnants where increased recharge and rising groundwater has the potential to mobilise the salt. Salt stored on the deep soil profiles can be up to 2,000 t/ha on hill tops with 5,000 t/ha in valley soils.

The main techniques are to leave the salt in the soil profile, reduce the water loading and thus the recharge rate. This lowers the water table and allows salt stored in the surface soil horizons to gradually be displaced lower down the profile through the infiltration of precipitation. Lowering the water table is normally achieved through clearing restrictions, and the planting of vegetation, shelter belts, deep rooted pasture and establishing plantations, all of which use water through evapo-transpiration.

6.5 Natural Resource Management

Natural Resource Management (NRM) is the restoration and preservation of our region's unique natural assets – the land and water and the native flora and fauna that inhabit it. The goal is to achieve an environment strongly valued by present and future generations.

Natural Resource Management (NRM) regions are based on catchments or bioregions. The Shire of Cranbrook falls within 'The South Coast' natural resource management (NRM) region which covers approximately 5.4 million hectares. It includes the Shires of Denmark, Plantagenet, Cranbrook, Tambellup, Broomehill, Gnowangerup, Jerramungup, Ravensthorpe, Esperance and the City of Albany. It also includes parts of the Shires of Kojonup, Manjimup and Kent. The region is divided into six sub-regions on the basis of climate, drainage, soil landform and conservation values.

The Frankland River and Cranbrook townsites form part of the Kent Frankland precinct along with Rocky Gully, Tambellup, Walpole and Broomehill. It contains the high rainfall, forested catchments flowing into the Nornalup and Irwin Inlets, with rainfall dropping off from in excess of 1200mm per annum at Walpole in the south, to about 450mm per annum at Broomehill in the north.

Vegetation types in the region vary according to the soil type and annual rainfall. The soil types consist of several sand and loam mixes while the vegetation types vary from Wandoo and Yate woodlands near Tambellup, to Jarrah and Marri woodlands and Karri, Tingle and Jarrah forests between Walpole and Manjimup.

Industry in the Kent Frankland sub-region is predominantly agricultural consisting of mostly cereal crops and grazing with some viticulture and silviculture. Perennial pastures are more predominant in this sub-region and are grown in rotation with wheat, barley, canola, oats and other crops. Salinity, water repellence, acidic soils and erosion are major threats to industry in the Kent Frankland sub-region. Tourism is another major industry with attractions such as the Tree-top Walk, Valley of the Giants, heritage buildings and wineries attracting thousands of people each year.

6.5.1 South Coast Natural Resource Management region

South Coast NRM has funded several projects in the Kent Frankland sub-region. Funding has been provided to dryland farm forestry, biodiversity education and awareness raising, waterways, perennial pastures, Carnaby's Black Cockatoo, soil health and sustainable agriculture.

The South Coast NRM region takes in all the southerly flowing river catchments and some internally draining areas between Walpole in the west and Cape Arid in the east and to Broomehill, Mount Madden and Salmon gums in the north.

6.5.2 Gondwana Link

The Gondwana Link approach has been to restore the strategic connections by increasing the scale and quality of conservation management. Restoring connectivity in most cases involves restoring land that is too fragile to farm and will help species and communities to cope with changing climate conditions. By using sound ecological principles and building on practical experience, Gondwana Link ensures that high quality restoration provides additional habitat for species that have been restricted by clearing and logging to only small portions of their former distributions. It can help to off-set some of the disruptions to gene flows that fragmentation of the landscape has caused, and re-establish ecological functions that have been destroyed through salinity, erosion and other degrading processes.

6.6 Water Management

6.6.1 Hydrology

Water management is a key issue in the Shire, whether in terms of availability or for its potential to lead to increased soil salinity.

The eastern parts of the Shire are internally drained to a series of naturally saline lakes. This area features broad valley floors that are particularly susceptible to salinity. These lakes are impressive and have extensive lunette development on their eastern side.

Drainage is dominated by the west flowing Gordon River that drains most of the Shire westwards before emptying to the Frankland River. The Gordon originates to the north east of the Shire near Broomehill, collecting water from the overflow of some of the Pootenup salt lakes. Thus much of the flow of the Gordon River is saline at 3,000 to 10,000 mg/L and only diluted during strong flow or flood events, (EPA 1988, Water and Rivers 1997).

Precipitation is lost through surface runoff and evaporation. Stream drainage is generally slow and some stream courses are quite sluggish, with water recharging the shallow alluvial sediments of the valley floor.

Runoff and recharge has increased following land clearing. Currently runoff from storms and heavy rainfall events is a major contributor of fresh water to the streams in the Shire. When dams are placed across drainage lines they tend to be designed to capture a high proportion of the runoff, because overflow is seen as inefficient. This reduces the downstream flows leading to potential loss of water quality through increased salinity and nutrient levels through reduced flushing.

Flooding can be an important issue adjacent to creek lines and rivers. Storm events are able to dump large quantities of water in a short time and, when combined with hard setting soils and loam/clays, can produce flash flooding in even small catchments.

6.6.2 Groundwater

The main groundwater aquifer is the Tertiary Werillup Formation that fills the base of the palaeochannels. Water flows down the sides of the ancient valleys cut into the basement granitic rocks filling the overlying aquifers.

Salinity in the aquifers is high and increases with depth, with values in excess of 7,000 mg/L, and increasing to over 14,000 mg/L in the eastern lake system. The exceptions are small localised recharge areas next to basement or impervious outcrops from which fresh water may be available.

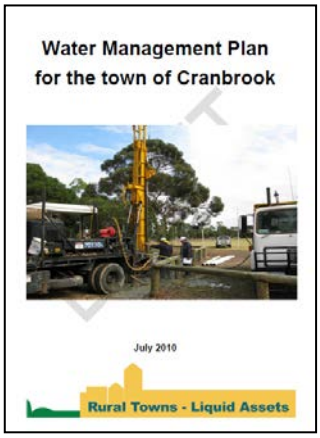
6.6.3 Waterlogging

All the lower valley soils in the Shire are highly susceptible to waterlogging due to sluggish drainage and rising water tables.

The best management for waterlogging is the use of deep rooted agricultural species, retention of remnant vegetation, establishment of wildlife corridors and in suitable locations, the use of deep rooted crops, revegetation and plantations.

Through development of a Draft Water Management Plan the Shire is examining other methods and options for improvements to drainage in the Cranbrook townsite.

6.6.4 Water Management Plan



The Shire has been involved in the Rural Towns – Liquid Assets (RTLA) project for over a decade.

The program aimed to protect infrastructure such as buildings and roads in over 13 selected townsites throughout Western Australia, from rising water tables and salinity.

A Draft Water Management Plan (WMP) has been prepared for the Shire of Cranbrook through the RTLA program.

The Draft WMP summarised the outcomes from all scientific investigations undertaken for the Cranbrook townsite, outlines water management options, a preliminary analysis of those options, priority recommendations and some estimated costs.

The objectives of the Draft WMP are to develop a water management plan that will:

(a) Identify opportunities for ground and surface water resource development, primarily for irrigation;

(b) Reduce salinity and water logging via surface water control;

(c) Identify socio-economic concerns associated with greater water resource availability.

The Draft WMP outlines that there has been visible water damage to roads and buildings in the townsite caused by inundation, water logging or salinity. Inundation and water problems in Cranbrook are largely due to its positioning in the valley floor of a relatively flat catchment.

Seasonal water logging occurs due to the low relief and the poorly drained duplex soils. The Draft Strategy notes that while damage due to saline groundwater is currently low modelling suggests that significant damage due to rising groundwater tables may occur after 2020.

It identifies that groundwater levels in Cranbrook have mostly stabilised however there are shallow water tables at the bowling club. It recommends ground water pumping and examines various potential bore locations.

According to the Draft WMP Cranbrook has a low to medium potential for damage to infrastructure from high water tables and waterlogging with current climate with the exception of land in the centre of town including the railway reserve.

There are a number of potential recharge areas in and adjacent to the main townsite and it is important to alleviate any waterlogging. The Draft Strategy recommends that water be removed from sites subject to inundation, before in-situ recharge occurs.

The Draft WMP also outlines water management options which address water resources, salinity and socio-economic development objectives.

The options for water management are as follows;

Option 1 - Groundwater pumping of bore 08CBP01

Option 2 - Install lined sump and pump system adjacent to CBH to harvest surface water runoff

Option 3 - Integrate new lined sump and pump system into the existing water reuse system at Frederick Square Oval

Option 4 - Upgrade transfer pumps and pipelines between the water reuse system at Frederick Square Oval and Frederick Square Dam

Option 5 - Upgrade the old roaded catchment north of Frederick Square Dam and store the runoff in Frederick Square Dam or in the farmers' dam just east of Frederick Square Dam

Option 6 - Maintain and upgrade existing stormwater infrastructure

The Shire has considered the Draft WMP recommendations and has to prioritise works within budget constraints. Of the 6 recommendations, the Shire has completed Option 1 as a priority.

Option 2 has also been considered by the Shire. A water harvesting project at CBH is being undertaken in the 2013/2014 budget and it is considered that ongoing investigation will be required to ensure a workable solution. The Shire continues to allocate appropriate funds annually into maintenance of existing stormwater infrastructure.

6.7 Catchment Management

The management of catchments is important because an activity on one property may well impact on adjoining properties. Historically, a number of Landcare and community groups that have been active throughout the Shire led on a local scale by farmers concerned with land degradation issues.

These groups have consolidated over time with key natural resource management activity being led by the not for profit group, the Gillamii Centre.

Located in Cranbrook, The Gillamii Centre aims to lead and inspire the local agricultural community and the wider community at large to be involved with sustainable land use through training, education and knowledge.

It was purpose built to encourage and lead in the efficient use of resources across the community while protecting and enhancing the natural environment.

As identified in Section 6.5.1 the Shire of Cranbrook falls under the South Coast NRM region. The accreditation and endorsement of *Southern Prospects 2004-2009: the South Coast Strategy for NRM* and the *NRM Investment Plan for the South Coast of WA* by the Western Australian and Australian Governments, has allowed local NRM activity to be guided by a regional perspective.

Initial natural resource management activities in the 1980's and 1990's focussed on protecting remnant vegetation from livestock and developing revegetation strategies for land affected by salinity. This has grown to the extent that a significant proportion of waterways and remnant vegetation in the shire has been protected for degradation by livestock. The focus shifted to adapting increasingly large areas of saline land into productive agriculture with a focus on salt tolerant perennial pastures and shrubs such as saltbush with the area becoming an industry leader in the South Coast region. Combining these salt tolerant species with other deep rooted perennial pastures such as Lucerne has become an important tool for farmers to manage salinity and rising water tables.

Recently, the nationally significant Gondwana Link project has become a priority for prioritising environmental activities. This project aims to link the major vegetation remnants in South West WA from the western woodlands beyond Kalgoorlie to the wet forests of the South West around Augusta to assist flora and fauna to adapt to the pressures of climate, disease and fire.
The significant section of this vision for Cranbrook is the linking of the Stirling Range National Park with the jarrah forests around Frankland River and Rocky Gully.

6.7.1 Key Land Elements

Key land elements in the Shire are:

- The central drainage of the Gordon River that drains west through a broad valley.
- The Gordon River is brackish to saline and collects saline water from the salt lakes to the east and from Tambellup.
- The broad areas of saline lakes in the Pootenup area have habitat and landform significance that is worthy of preservation.

- Duricrust and gravel soils of the plateau remnants are commonly uncleared but have been grazed.

- The Stirling Ranges National Park has high species richness but is susceptible to spread of dieback disease and inappropriate accidental fire regimes.

- There is potential for groundwater from the Werillup Formation that occupies palaeochannels under much of the Shire. This water is normally saline, but may have potential for saline aquaculture and evaporation products such as salt and related products.

- Groundwater is restricted and normally saline with the exception of small localised flows.

- Most farm water sources will be predominantly from catchment dams.

- There are widespread areas of sand over clay duplex soils that are susceptible to wind erosion.

- The town of Cranbrook is under threat of rising saline groundwater and a Salinity Management Strategy has been prepared and is currently being implemented. A Draft Water Management Strategy has also been prepared and will be implemented by the Shire.

- Steeper sloping soils may require measures such as interceptor or contour banks to reduce the potential for water erosion.

- Expanses of granite, quartzite or rock outcrop increase surface run off.

- Wind erosion risks rise in the eastern half of the Shire as there is a higher percentage of sandy soils.

- Hard setting loam soils are highly susceptible to increased runoff that can be exacerbated by compaction through machinery and stock.

- Runoff and recharge have both increased through reduced evapo-transpiration following land clearing, resulting in rising water tables, increases in water logging and the spread of saline soils, particularly on valley floors.

- Flat or low lying loam/clay soils on valley floors has increased risks of water logging during wetter winters and overall increased risk of salinity.

- Large amounts of salt are stored under the ancient soil profiles of the laterite plateau remnants and the palaeochannels.

- Dense planting of deep rooted species can help reduce the spread of saline soils.

- The control of salinity and waterlogging requires a catchment approach though improvements on a paddock scale are achievable with currently available management tools.

6.8 Biological Environment

6.8.1 Vegetation

The vegetation of south Western Australia has a high species richness and endemism and is listed as one of 25 global biodiversity hotspots. The remnant vegetation plant communities within the Shire are no exception, even though much of the vegetation has been removed. Information presented within the *Memorandum of Understanding between Relevant Government Authorities (1997), for the Protection of Remnant Vegetation on Private Land in the Agricultural Region Of Western Australia* shows that >20% of the Shire is remnant vegetation. However the distribution is uneven with numerous remnants scattered across the Shire and the large 115,661ha Stirling Range National Park in the east.

Generally the uncleared land has the lowest productive agriculture potential is the least capable or held Gastrolobium species which are toxic to livestock. While there is strong State Government legislation to appropriately manage native vegetation clearing, the pressures to clear further vegetation should be resisted particularly in light of the current and potential salinity issues facing land managers within the Shire.

The broad original vegetation systems were identified and studied by J S Beard 1981.

The western edge is occupied by the Jingalup System, with the Kwornicup System in the south west around Frankland River, the Kendenup System running through the central south of the Shire, the Tambellup Type of Avon System occupying the central and northern parts and the Stirling Range System covering the ranges in the east.

The **Kwornicup System** occupies the swampy plain in the Frankland area that forms the interfluve between the Kent and Gordon Rivers. Jarrah Forest is often mixed with Yate *Eucalyptus cornuta*, Swamp Yate *E. occidentalis* and Wandoo *E. wandoo*. The small *E. decipiens* becomes dominant in sandy swampy places and forms mallee communities that border lakes.

Sandy swamps are dominated by Saltwater Paperbark, *Melaleuca cuticularis*. To the east of the Kwornicup System is the transitional vegetation of the **Kendenup System**. The vegetation is typified by that found on the quartzite Geekabee Hill, 15 km west of Cranbrook, where low woodlands of low Jarrah *Eucalyptus marginata* over a medium shrub layer occurs. *E. decurva* and *E. macrocera* occur at the base of the hill.
The west of the Shire is the eastern extension of the **Jingalup System**, with Jarrah Marri Forest on the laterite ridges, with Jarrah and *E. occidentalis* and occasional Flooded Gum *E. rudis* in sandy alluvium. *E astringens* and Jarrah occur on some breakaways. A scattered understorey of sclerophyll shrub underlies the dominant species.

The **Tambellup System** consists of Wandoo *E. wandoo* woodland with Jarrah Woodland on laterite ridges and York Gum *E. loxophleba* in drainage lines and around lakes. Wandoo Woodland is good agricultural country and is predominantly cleared.

The **Stirling Range System** is a highly diverse heathland containing over 1,500 species, representing 37% of the known flora of the south west of Western Australia, (Thomson et al, 1993), of which over 87 are known to be endemic to the ranges.

The protection of remnant vegetation and waterways on private properties has been the priority for environmental activities since the 1990's and the majority of this vegetation throughout the shire has been fenced. No accurate data on the percentage remaining unprotected currently exists.
The establishment of local seed orchards has been generally successful and combined with sustainable harvesting of seeds from reserves, reliable sources of seed for most species for restoration projects currently exists.

6.8.2 Fauna

From the status of remnant vegetation across most of the Shire it is obvious that mammal, amphibian and reptile species richness and density have been greatly affected. Foxes and cats have affected fauna in the remnant vegetation and Reserves whilst other species such as pigs, rabbits, goats and gambusia fish are likely to have indirectly affected fauna. Western Shield fox baiting program undertaken by the Department of Conservation and Land Management has assisted in reducing fox numbers and consequent improvements in the status of a number of small mammals.

The State of Environment Report 1998 shows that up to 7 fauna species are regarded as threatened and perhaps up to 3 are extinct within the Shire. However of the 27 fauna species known from the Stirling Ranges perhaps 12 may be locally extinct. Declines in the fauna were noted even before collections were made in the early 1900s (Thomson et al 1993).
Some species have been advantaged by clearing for farming, for example the Sulphur Crested Cockatoo, Little and Long Billed Corellas and Galahs utilise agricultural grains as a major component of their diet and thus their numbers are likely to increase, perhaps being limited by the availability of nesting sites.

Nature Reserves and remnant vegetation can be too small to be viable habitats for many of the original species. Various studies in Saunders et al *Role of Remnants of Native Vegetation* show that, for example, in a study at Naringal in south western Victoria a reserve of < 2 hectares accounted for only one mammal species with > 50% frequency and even in reserves of 41 - 100 hectares only 10 species were noted.

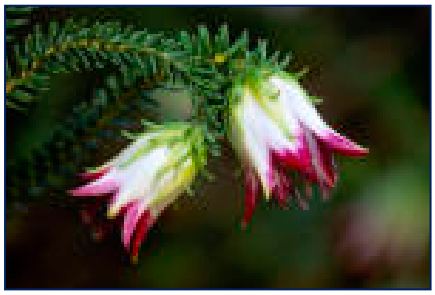
An area of 5,000 hectares was calculated to be required to provide habitat for 100 Numbats and an area of 120 hectares provided habitats for between 15 and 47 species of bird. The success really depends on linkages between remnant and habitat vegetation.

The best management of fauna is to retain and enhance where possible remnant vegetation, control feral animals and invasive plant species as well as link existing remnants to allow fauna movement and genetic flow.

6.8.3 Reserves

The largest and most significant reserve is the Stirling Range National Park. This park has high species richness with high levels of flora species endemism with over 97 species. Whilst the area is protected it is susceptible to the spread of dieback disease, which is present in significant areas of the park, and to unplanned fire events. South Western Australia is one of the Top Ten Biodiversity hot spots in the world.

Many of the larger lakes and swamps are protected by Reserves and there are a number of smaller Reserves scattered across the Shire.


6.8.4 Biodiversity

The flora of the Shire was originally very diverse and in turn was linked to a diverse fauna, both large and small. This particularly applies to the Stirling Ranges.

The National Strategy for the Conservation of Australia's Biodiversity has formulated a number of guidelines including a strategy for local government.

The preservation of biodiversity depends on maintaining and preserving self-sustaining remnant vegetation and habitat in all community types. This can be assisted by a policy of encouragement by the Shire and assistance and education to land owners and persons within the Shire.

The aims of biodiversity management should be directed to habitat maintenance and improvement.

6.8.5 Wetlands

Wetlands (lakes, sumps and soaks) provide habitats for a wide variety and number of fauna, and small soaks may provide an oasis for frogs, fish, water birds, and mammals, reptiles, and a wide range of invertebrates.

Therefore the maintenance of wetlands needs to be carefully considered before any changes are made to farm and stream lines. Farm dams can be designed as wetlands with the construction of various depths of water, the incorporation of vegetated islands or floating platforms, the planting of fringing vegetation, and the use of logs as resting places for birds. Soaks can be deepened to provide a water source with adjoining areas fenced and planted with wetland species.

Many soaks and wetter sites have been cleared for a long time and do not now form natural wetlands, although moist pasture and related areas are likely to be utilised by bird and amphibian species. Alternatively many areas have become saline seepages and soaks because of rises in water tables.

6.8.6 Lakes

There are a number of wetlands and lakes within the Shire. These include the salt lakes of the Pootenup system in the north east of the Shire, together with a number of other swamps and lagoons such as Big Poorrarecup Lagoon, Lake Nunijup, and Murdellup Lagoon in central parts and Pindicup, Noobijup, Unicup, Little Unicup, and Kulunilip Lakes in the west.

High priority wetlands are shown on **Figure 3**.

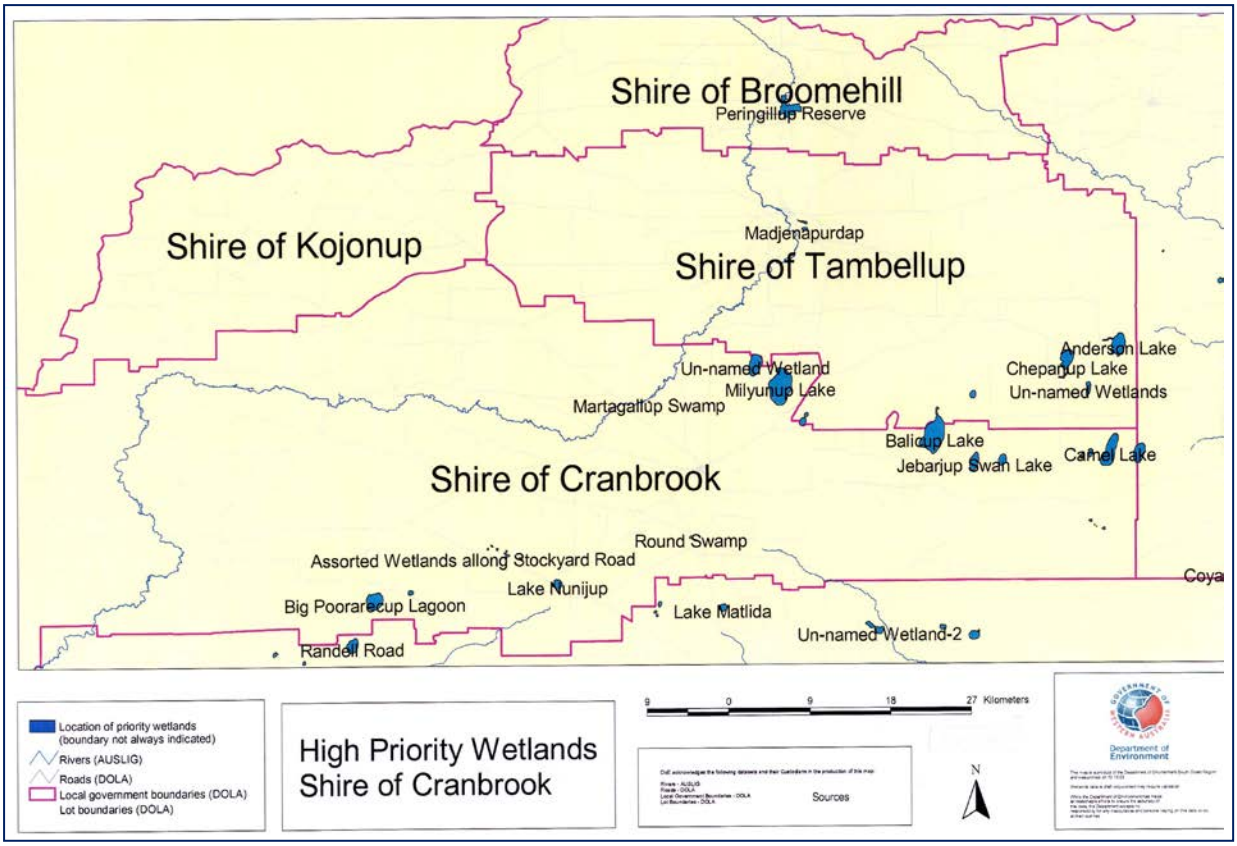


Figure 3

Studies have been carried out in some Reserves such as Unicup Lake which supports a moderate number of water birds with over 1 000 Australian Shellduck being recorded. Depth of the lake varied from 0 to over 1 metres during the 1980s with salinity being greatest when water levels were lowest. Water skiing was not thought to be affecting bird life.

Balicup Lake in the east was noted as holding low numbers of birds in 1984 that included 2824 Banded Stilt. Kulunilup Lake supported low numbers of water birds (Jaensch et al undated).

Lakes and swamps such as these even if protected by Reserve status are susceptible to water level and salinity changes. As soils and lower valley areas become more saline there will be a tendency for wetlands to change in structure and function. The same Landcare actions that help to manage waterlogging and salinity of farmland will in turn assist in the maintenance of these systems. However changes are inevitable due to decreasing rainfall over the past two decades.

6.8.7 Rivers

Many rivers and streams of the Shire are regarded as having fringing vegetation in very poor condition.

Nutrient loads are high in the Gordon and Frankland Rivers with medium levels of sedimentation, (State of the Environment 1998). Land clearing has increased flows in rivers leading to increased soil erosion and the consequent transport of nutrients attached to fine soil particles.

Retention of foreshore zones along rivers, streams and drainage lines is an important part of redressing this process. River restoration and Landcare management will assist in maintenance and improvements of these systems.

6.8.8 Kent River Water reserve (history)

The Kent River Water Reserve was originally proclaimed under the *Country Areas Water Supply Act 1947.* The Kent River was regarded as a potential water supply resource for both the south coastal towns and the Great Southern District.

The salinity of the river had begun to rise noticeably during the 1960s and 1970s. Clearing native vegetation for agriculture was recognised as the cause of the increase in salinity. There were still large areas of private land not cleared and potential for large losses of the water resource value if there was no action to limit increases in salinity.

Clearing Control Legislation was enacted to protect the water resource by limiting salinity increase.

The 1995 Salinity Strategy identified the water reserve as a Recovery Catchment where '*future management will concentrate on high water use farming systems based on integrated catchment plans including actions for ground and surface water management, water management, remnant vegetation protection, farm forestry, improved annual cropping and pasture and conservation plantings next to discharge areas*'.

The Kent River Water Reserve/Recovery Catchment is shown in **Figure 4.** The Kent River Water Reserve was identified in the Shire of Cranbrook Town Planning Scheme No 4 as a Special Control Area.

The Department of Water has made changes to the *Country Areas Water Supply by-laws* 1957 which has removed by-laws with regard to the Kent River Water Reserve. The removal of the by-laws came into force on 8 May 2015.

The by-law changes mean that the various policies that the Department of Water enforces to protect water quality in Public Drinking Water Source Areas will no longer apply to the Kent River Water Reserve. However, the Kent River Water Reserve will not be abolished and will still be proclaimed under the *Country Areas Water Supply Act (CAWS)* 1947. Therefore native vegetation clearing controls in the catchment will remain in place under the Act to assist with salinity mitigation purposes.

The Kent River Water Reserve is no longer regarded as a viable target by the Department of Water, and the Department has advised that the Special Control Area in the Shire's Town Planning Scheme is no longer required.

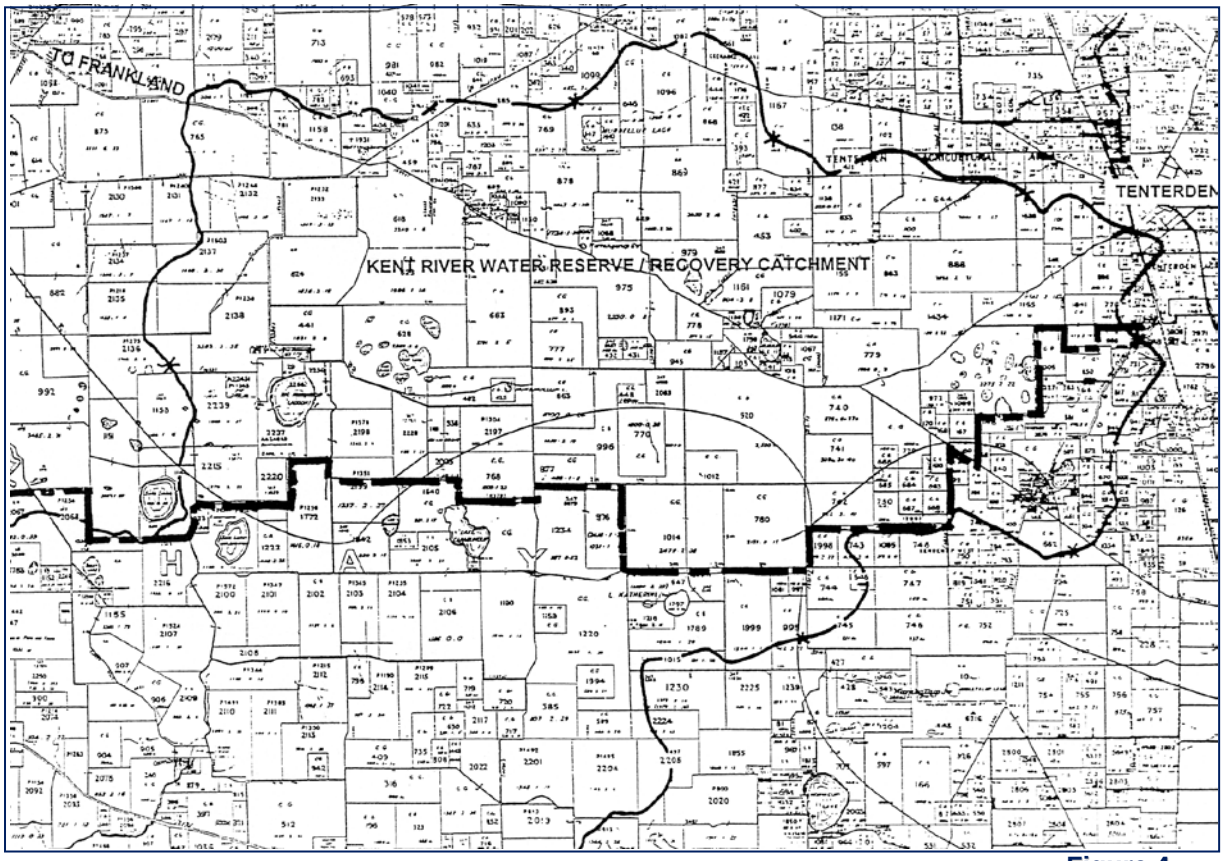


Figure 4

Amendment 5 to the Shire of Cranbrook Town Planning Scheme No 4 removed the Special Control Area for the Kent River Water Reserve/ Recovery Catchment. The Amendment was approved by the Minister for Planning on the 4 May 2015, and was gazetted on the 29 May 2015.

6.9 Biological Threats

6.9.1 Indigenous vegetation

Remnant vegetation is under attack from weeds, dieback diseases, grazing, vermin, rural tree decline, development, and land clearing. Clear, positive, educative guidelines should be instituted to reduce the threat. Frequently the threat is the slow nibbling away of the vegetation instead of one act of clearing which would require approval. The result is however the same. Significant revegetation projects are undertaken by the Gillamii Centre Inc. through the Caring for Country program.

Of the over 500 farm remnants surveyed in the Shire (Griffin 1995), only 9% were fenced in 1995. This figure, is improving although no qualitative figure is available.

The threats to the indigenous flora also affect fauna that are dependent on the various plant species. In some areas the indigenous vegetation remaining on paddocks is sparse or the trees so far apart that little habitat is available. Mature trees provide the only nesting sites for many bird species such as cockatoos.

Roadsides are in some places the only component of the original plant communities remaining, and require protection.

There is increasing community interest and participation in the preservation of remnant vegetation. Each spring the wildflower season is promoted by the Shire of Cranbrook with Orchids being prominent in both Frankland River and Cranbrook.

The Gillamii Centre promotes sustainable land use and provides education to the local community. The Shire is supportive of these groups and encourages others to form similar and friends groups.

6.9.2 Die back

Dieback disease is normally associated with the fungus *Phytophthora cinnamomi.* However, there are other species of Phytophthora and fungus that are implicated in the dieback of indigenous vegetation such as *Armillaria*, stem canker *Cryptodiaporthe,* and rusts. Many of the indigenous species in the Shire are susceptible to these fungal species and if allowed to gain a hold remaining indigenous vegetation will be drastically altered. The plant families Proteaceae, Myrtaceae and Epacridaceae, the dominant families of the area, are particularly susceptible to *Phytophthora*. Fungal diseases are normally spread by vehicles, the movement of soil and plant materials and the public.

Other forms of vegetation decline can occur, for example, when populations of essential insects such as pollinators, fire regimes, predators, water availability, nutrients and grazing pressure are altered. This is often the case where trees are left in cleared land and become the focus for fauna. Predator species are forced to attack the one tree, flocks of birds are drawn to the tree and grazing under the tree prevents the development of seedlings, compacts the ground and leads to increased nutrient input, all of which lead to a decline in the health of the tree.

The protection of remnant vegetation through fencing, seeding, and replanting is to be encouraged. Often simply fencing an area can lead to a recovery of indigenous species long since thought to have been eliminated.

6.9.3 Weeds

Weeds and other exotic species are a great threat to much of the remnant vegetation because they are normally pasture species selected for their suitability to the area. They are spread by wind and the movement of vegetation, soils, vehicles and people, from pasture areas. Many roadsides have already been devastated by weed introduction and most reserves and remnants are subjected to edge impacts. The continued decline of this vegetation through the addition of weed and pasture species has the potential to reduce the effectiveness of wildlife corridors and consequently damage the tourist industry.

7.0 TRAFFIC, TRANSPORT AND INFRASTRUCTURE

7.1 Road Network

Cranbrook is located on the Great Southern Railway, and close to the Great Southern Highway junction with the Albany Highway. The Great Southern and Albany Highway are both under the care and control of Main Roads WA.

The extensive road system throughout the district has been appropriate for the former scale of agricultural development however as property sizes, and equipment increase, elements of it may require attention to accommodate traffic from the extensive new uses in the Frankland River area or planned industrial expansion in Cranbrook.

The Shire has excellent road linkages which provide future opportunities for new large scale transport related industries.

The Shire has identified a need to investigate and forecast new road infrastructure from the North and South of Cranbrook to take into consideration significant increases in grain freight traffic.

With the potential closure of tier 3 railway lines and the planned expansion of the CBH facility in Cranbrook, the Shire has identified that reducing road conflict will be an essential element to future road and safety management. The Shire plans to investigate options to manage potential conflict between heavy haulage traffic and urban traffic within Cranbrook townsite.

7.2 Railway

The Southern Railway is used primarily for the transportation of grain from the Cranbrook Strategic CBH receival depot to the Port in Albany. The Shire has identified that with the planned Southern Link Transport Hub infrastructure requirements will need to be reviewed. New railway crossings may be required near Albany Highway and the existing railway crossing north of Cranbrook may require upgrading.

7.3 Airstrip

An airstrip for light aircraft operations is located about 1 km to the north of Cranbrook. There is sufficient land and area for the possibility of an upgrade to allow for tourism development.

7.4 Sewerage

Reticulated sewerage is provided to parts of Cranbrook townsite. A plan showing the (2010) Water Corporation sewer lines is included in **Figure 5**.

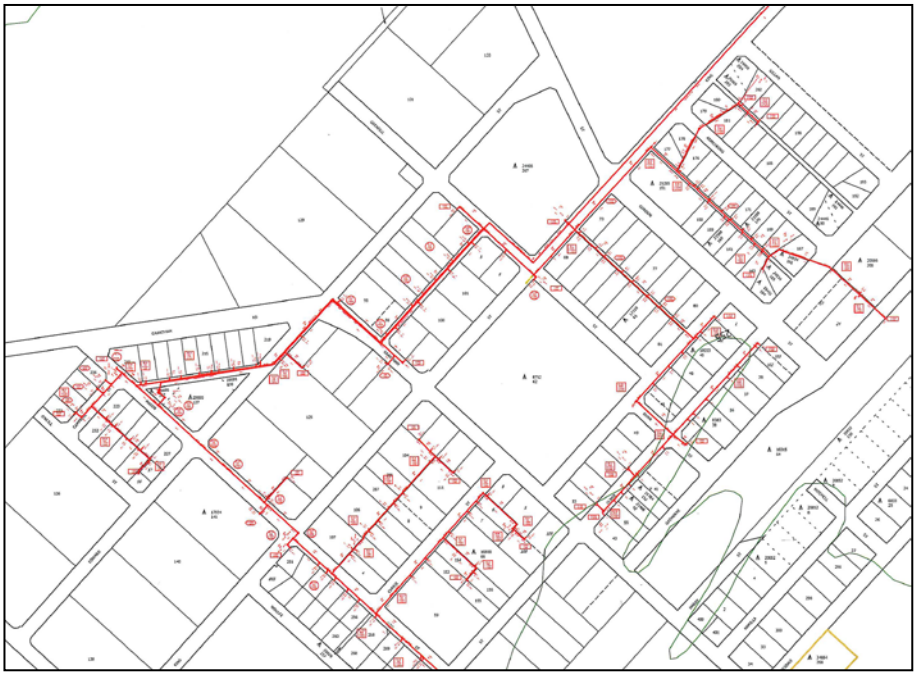


Figure 5 : Source: Water Corporation.
NB: Water Corporation takes no responsibility for inaccuracy of facility, cadastral or other information provided.

The wastewater treatment plant for the sewerage system in Cranbrook is located in the northern section of the town, on a Crown Reserve, and is protected by a buffer shown on the Scheme map. Adjacent land is predominantly Crown Land for Public Purposes and Recreation.

Sewerage service is not available within the Frankland River and Tenterden townsites. The scale of development in those 2 townsites will remain limited to the capacity of each development site to accommodate on-site effluent disposal.

7.5 Water Supply

The Water Corporation provides a water supply in the town of Cranbrook and parts of Frankland River. Tenterden currently does not have a water supply scheme.

The Water Corporation has no short term plans to extend water supply services in Cranbrook, Frankland River or Tenterden. Options for increasing water supply capacity in Cranbrook and Frankland River are being investigated however construction is contingent on funding approvals in a climate of government budgetary constraints.

7.5.1 Cranbrook Townsite

Cranbrook Water Supply is a currently classified as a Water Corporation independent scheme. There are two dams and associated bitumen catchments that provide Cranbrook with potable water. The number of water services is in the order of 180 with annual consumption of approximately 40ML/year - refer Figure 6.

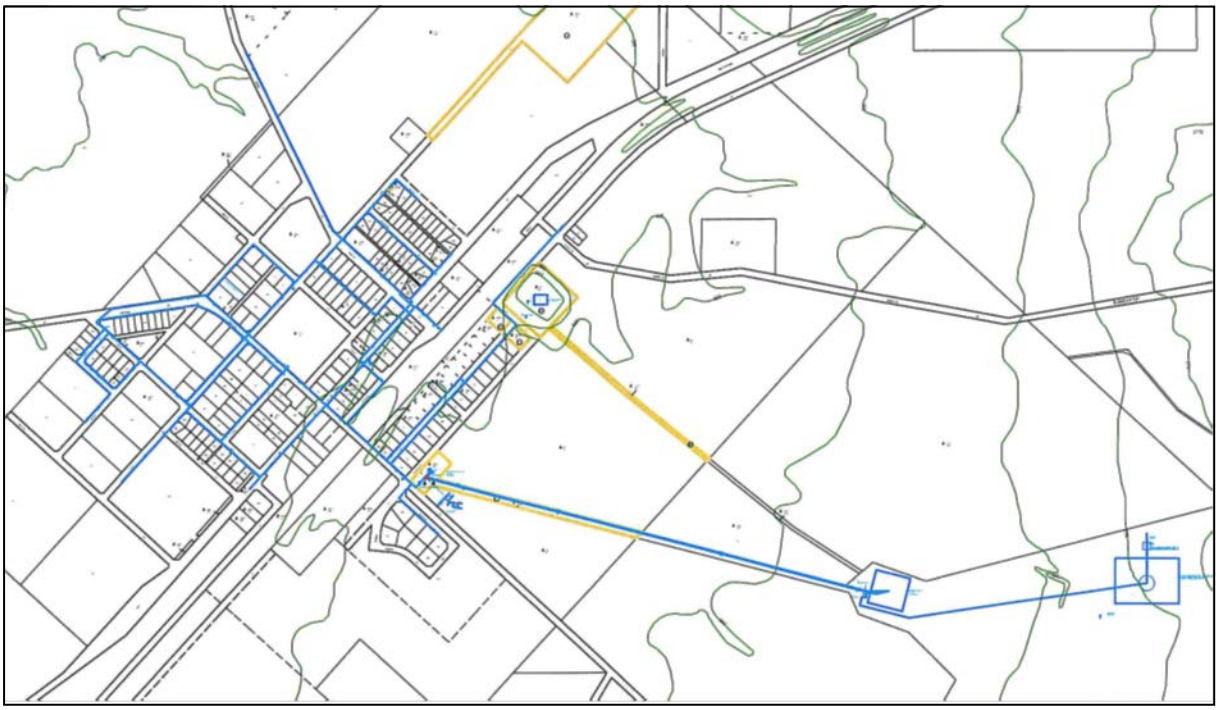


Figure 6 : Water supply Cranbrook townsite (Source: Water Corporation).
NB: Water Corporation takes no responsibility for inaccuracy of facility, cadastral or other information provided.

The existing sources have sufficient capacity during medium annual rainfall events to service the existing town site, however the Water Corporation undertakes water cartage when required to ensure there is water to meet demand within the town site.

The Water Corporation is undertaking preliminary investigation into extending a dedicated water supply main from Mt Barker to Cranbrook, however it is contingent on other upgrading works to the Plantagenet main and subject to budgetary considerations and funding approval.

The Water Corporation are also undertaking short term interim improvements to improve water quality to the supply in Cranbrook including measures such as installation of ground tanks and UV filters.

Under the Water Corporation '*Water Forever – Lower Great Southern'* (June 2010) it is proposed to progress plans for a regional scheme, which would allow for an extension scheme based around extending the existing Lower Great Southern Towns Water Supply to Cranbrook to improve water quality and continuity of supply, however at this stage it is not flagged for completion until 2017/2018, and is dependent of government funding approvals.

The '*Water Forever – Lower Great Southern'* document indicates that an extension from Kendenup to Cranbrook could occur within the next 5 to 10 years as the existing source for Cranbrook reaches its capacity.

Budget and funding approvals will be the major issue influencing timing of extending water supply to Cranbrook. In the interim the Shire is endeavouring to reduce its reliance on scheme water for non-potable uses such as reticulation, as discussed in the Shire's Draft Water Management Plan.

Importantly, the Water Corporation is working closely with the Shire to provide local government access to an existing 21Ml dam in Cranbrook, that once comprised part of the water supply infrastructure, however has now been vested with the Shire, with the aim of maximising water

harvesting and enabling the Shire to access non potable water for maintenance of local open space, recreation areas and verges. This will reduce the draw on potable water supply in Cranbrook.

The existing water reticulation network can adequately service the town site and can be extended to service frontal development as required. The Water Corporation has indicated that the logistics and feasibility (for any new connections) would require consulting engineer design and advice. Potential for extensions and capacity has not been ascertained.

7.5.2 Frankland River Townsite

Frankland Water Supply is a currently classified as a Water Corporation independent scheme. There is one dam and an associated bitumen catchment that provide Frankland with potable water. The number of water services is in the order of 70 with annual consumption of approximately 15ML/year – refer Figure 7.

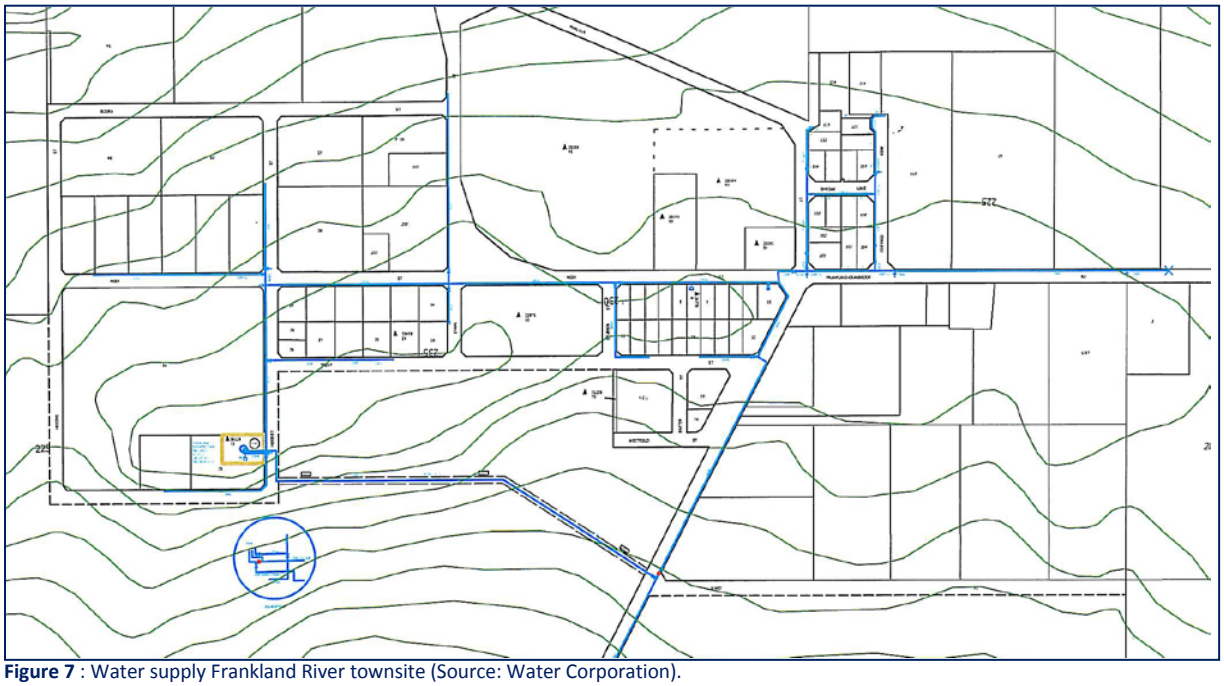


Figure 7 : Water supply Frankland River townsite (Source: Water Corporation).
NB: Water Corporation takes no responsibility for inaccuracy of facility, cadastral or other information provided.

The Water Corporation is investigating an option for an integrated scheme between Rocky Gully catchment located in the Shire of Plantagenet and the Frankland River catchment located in the Shire of Cranbrook.

Frankland River has a large catchment and a small dam. The existing dam sometimes overflows as it is not of a sufficient size to accommodate water from the catchment area, particularly during high rainfall periods. It is not likely to be cost effective to simply increase the size of the Frankland River dam.

Rocky Gully has a large dam and a small catchment area. A pipe connection combined with a new treatment plant at Frankland River would increase water supply capacity for the Frankland River townsite.

The Water Corporation takes a risk based approach and any plan to increase water capacity at Frankland River is contingent on funding approval.

The extension of water services in both Cranbrook and Frankland River is considered a high priority from the Shires perspective, and it will continue to lobby agencies to achieve improvements to allow for future growth and development.

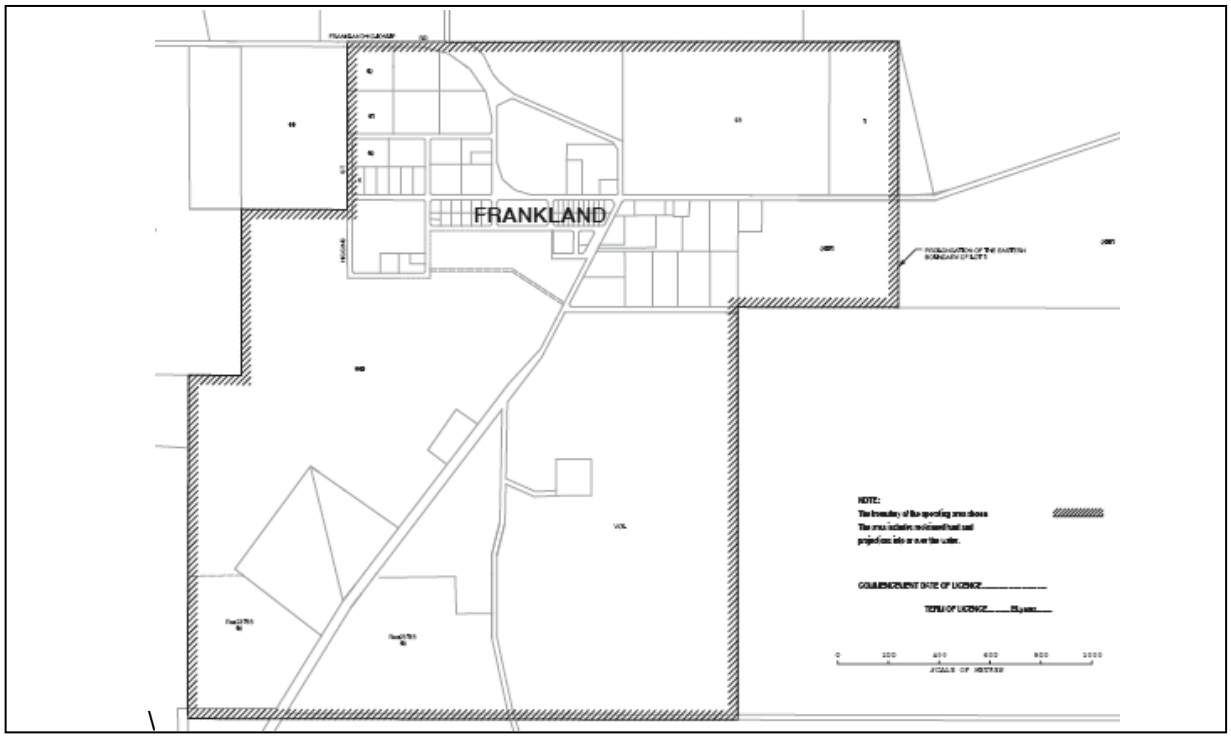


Figure 8 – Superseded Potable Water Licence area (2010). Source: Economic Regulation Authority

It should be noted that in the past for any modifications or changes to licence areas the Water Corporation required specific approval by the Economic Regulation Authority (ERA) – Figure 8.

The Corporation was not able to legally provide services to new development areas outside Operating Licence Areas (OLA) and applications for OLA extensions/new licences had to follow a formal process defined by the ERA, including a public advertising period. This sometimes placed constraints on future subdivision as even the most minor change involved feasibility investigations and business cases to be compiled.

There is now greater flexibility as the ERA has approved a new Water Corporation licence (2011) which extends the Corporations operating areas to match the State's controlled area boundaries for water supply and sewer services. In effect, this modification removes the need for Water Corporation to make separate applications to the ERA for extensions to the old operating licence areas.

There is adequate capacity for water supply to service existing lots in Frankland River, however there is no ability to service any new lots. Water supply will be a constraint to any new subdivision in the short to medium term.

7.5.3 Tenterden

Tenterden is not serviced by a reticulated water supply, and there are no proposals for the service in the Tenterden townsite. Substantial parts of the townsite have been subdivided into lots smaller than 4 hectares and in some places there may be good planning reasons why further subdivision should be allowed.

7.5.4 Water Supply for Rural Residential Lots

The provisions for controlling subdivision and development in Rural-Residential Zones are set out in a Schedule 11 of the Shire of Cranbrook Town Planning Scheme No 4 ('*the Scheme*').

For the majority of existing Rural Residential areas the Scheme requires a plan of subdivision to be certified by the Chief Executive Officer and approved by the Commission (with the minimum lot size for subdivision). Some Rural Residential areas are restricted to their existing lot sizes under the Scheme.

Current State Rural Subdivision Policies generally requires a reticulated water supply be provided to rural residential lots however makes some allowance for rural residential lots to have an alternative potable water supply where remote from water supply infrastructure. The supply must be demonstrated, sustainable and consistent with standards for water and health. In lower annual rainfall areas, less than or equal to 550mm, careful consideration needs to be given to necessary size and potential cost of roof catchment areas and tanks.

Frankland River and Tenterden are in areas of reasonable rainfall for roof catchment for potable water supply. Many existing areas rely on rainwater tanks for water.

The Scheme requires a minimum lot size of 2 hectares for rural residential where a reticulated water supply is not available, such as in Frankland River or Tenterden, due to lack of a service or the prohibitive cost of connection. This would be subject to sufficient justification being provided as to the adequacy of a potable water supply using sources such as bores or rainwater tanks. A minimum size of 90 kilolitres is generally imposed for rain water tanks, however bigger tanks may be required as climate variability impacts rainfall.

For land where a reticulated water supply is available to each lot, the Scheme allows a minimum lot size of 1.0 hectare (which maximises use of infrastructure).

It should be noted that any subdivision application is determined by the Western Australian Planning Commission who will have regard to current state policy requirements.

7.6 Power Supply

The power supply to the Shire of Cranbrook will be a critical element for future growth. The Frankland River area is at the end of the power supply grid and major wineries in the region have invested heavily in both solar and diesel generator power to compensate for the inadequate state supply.

Cranbrook and Tenterden supplies are currently adequate but major industrial growth could be hampered by limitation of the power supply.

Detailed Western Power infrastructure mapping is not included in this Strategy as mapping is regularly updated by Western Power, and is available through a Network Capacity Mapping Tool (NCMT). The NCMT is a geospatial map viewer that has been developed and provided by Western Power, in collaboration with the Department of Planning and the Western Australian Planning Commission.

The NCMT is an information service that provides access to some of Western Power's electricity network planning information, including a 20 year outlook for the annual forecast remaining capacity available from Zone Substations. Detailed mapping for Cranbrook townsite, Frankland River and Tenterden is available.

The location of major infrastructure and any potential for landuse conflict with power infrastructure is an important planning consideration and will be taken into account by the Shire in assessment of any Scheme Amendment, Structure Plan, or development proposal.

7.7 Special Control areas

Special Control Areas (SCA) apply to issues affecting land uses or development that overlap Local Reserves or Zones. They are intended to apply a consistent planning response to that issue across the Local Reserves or Zones. Under the Shire's Scheme, planning approval was required for all development in a SCA including a single house. The SCA associated with the Kent River Water Reserve has been removed under Scheme Amendment No 5.

7.7.1 Waste Water Treatment Plant

A Special Control Area applies under the Scheme within 500 metres of the boundary of the wastewater treatment plant in the Cranbrook townsite – refer **Figure 9**.

The purpose of the Special Control Area is to avoid development of sensitive uses (such as dwellings) that may be affected by odour and/or noise from the treatment plant.

The Council will seek advice from the Water Corporation when determining applications for planning approval and ensure the buffer is maintained.

Figure 9 – Scheme map showing buffer – Cranbrook

7.7.2 Cranbrook Water Supply

Water supply for Cranbrook townsite is from a dam and local catchment. A Special Control Area protects the Cranbrook Water Supply area from use and/or development which may adversely affect public drinking water supplies.

The Water Corporation has advised there is potential for contamination of the natural catchment for the Cranbrook water supply as a result of undesirable land use, particularly development that may cause contamination by aerial drift. The Council will seek advice from the Water Corporation when determining applications for planning approval.

The Shire of Cranbrook has undertaken significant measures to reduce the amount of potable water drawn from the Water Corporation supply including Best Practice water capture, storage, reuse at the Frederick Square Oval. There has also been a significant reduction in water use at the Cranbrook Caravan Park, replacement of Council gardens with Waterwise gardens and a storm water harvesting project at CBH.

7.7.2.1 Kent River Water Reserve / Recovery Catchment

A Special Control Area under the Scheme previously existed for the protection of the Kent River Water Reserve/Recovery Catchment area.

As discussed in section 6.8.8, the Special Control Area is obsolete and the Department of Water has confirmed that the Special Control Area is no longer required. The Special Control Area has been removed through a formal amendment (No 5) to the Shire of Cranbrook Town Planning Scheme No 4.

8.0 THE LOCAL PLANNING STRATEGY

Planning Aspiration

The Shire of Cranbrook is a safe, attractive, healthy, and diverse place to live, or visit. It is well maintained and is proud of its rural character, agricultural activities, history, natural environment, and friendly atmosphere of its towns.

The Shire of Cranbrook is a proactive local government that has a clear vision to actively create and promote broadening of its economic base and to create new business opportunities.

Objectives

The objectives of this Strategy are;

1. To actively engage with the community and provide planning direction for the Shire of Cranbrook for the next 10 years concentrating on the townsites of Cranbrook, Frankland River and Tenterden, in line with the Strategic Community Plan 2013 - 2023

2. Provide the basis for coordinated decision making on future servicing of the local government area by local, state government and any other service agency.

3. Identify the strategic direction for growth and development to all stakeholders building on strategic visions developed by the community and Shire which has a strong leadership role.

4. Identify key components of the long-term direction for the Shire of Cranbrook that are crucial to orderly growth and development of each town and recommend strategies to pursue these.

5. Give direction both to Shire of Cranbrook, Department of Local Government, the Department for Planning, Western Australian Planning Commission, the Minister for Planning and the State Administrative Tribunal in assessment of amendments, subdivision, development, applications for review and provide strategic planning support for this decision making.

6. To ensure that development and the environment can exist in harmony.

8.1 Cranbrook Townsite

A Strategic Plan for the Cranbrook townsite is included as **Figure 10**. The Cranbrook townsite has been divided into areas for ease of reference.

8.1.1 Area 1: Town Centre

The existing Town Centre contains established businesses with shops spread out and fronting Grantham, Climie, Gordon, and Gathorne Streets. These provide a range of day to day convenience goods however it is likely customers travel to Albany or Mount Barker for comparison goods.

In 2008 Council granted planning approval for a new local supermarket (IGA) with a retail floorspace of approximately 600m^2. The supermarket opened in 2012 on the corner of Climie Street and Dunn Street. It has since closed but is being redeveloped as a regional community hub.

When the Town Centre becomes developed to 75 – 80% capacity and if there is evidence that larger areas of land are required to cater for retail or other businesses, the Town Centre area may require review. At this stage it is anticipated that the existing Town Centre zone will be sufficient to cater for future community needs for the next 5-7 years, and there is still available land for new retail outlets.

8.1.2 Area 2: Existing Residential zone

The existing Residential zone in the town of Cranbrook has flexible density codes of 'R12.5/30' and 'R5/12.5/30'.

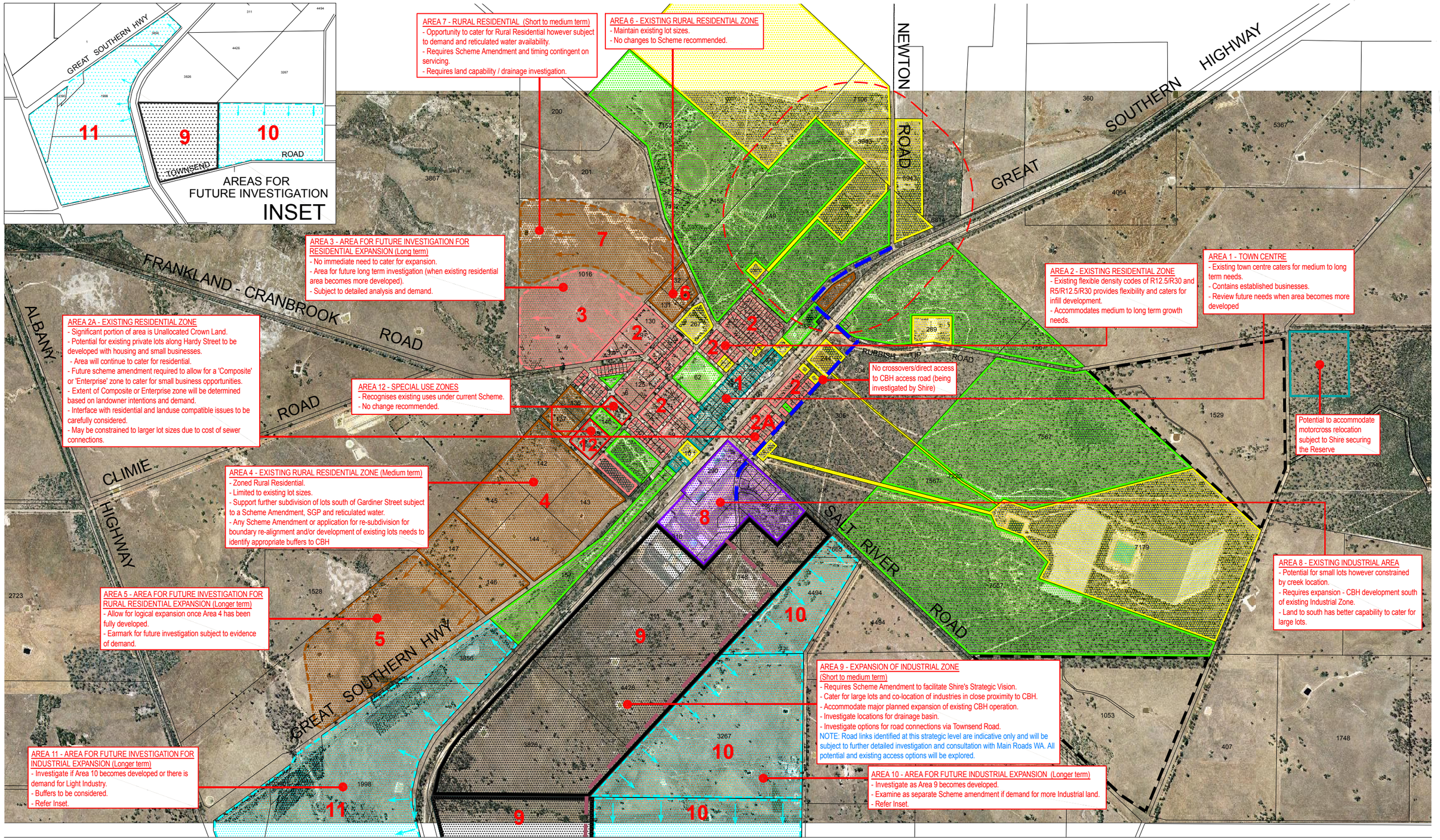
Under the Scheme an increase of density up to the maximum of R30 can be permitted subject to criteria such as adequate connection to reticulated sewer, the design enhancing the amenity of the area and the development being compatible with surrounding landuses.

Although the Scheme has reference to design, the reality is that if a subdivision is approved at an R30 density, there is limited control over the development outcome as single houses only have to comply with the Residential Design Codes.

The Shire's Scheme affords a high level of flexibility to cater for future housing needs and infill subdivision within the existing residential zone. Despite this flexibility the subdivision pattern is dominated by large lots and single houses. There is still a reasonably high supply of vacant privately owned land available for future subdivision in existing street blocks, particularly in the central and North West portion of town.

A summary of general lot sizes and potential for infill in existing street blocks is included in **Figure 11**.

The summary only provides a snapshot in time and will become superseded as land develops, however it adequately demonstrates that the existing residential zone will likely cater for growth needs in the medium to long term. This does not negate a need to identify areas for future expansion which need to be protected from unsuitable uses.



TOWNSITE EXPANSION PLAN

CRANBROOK TOWNSITE
SHIRE OF CRANBROOK

RECREATION AND OPEN SPACE

PUBLIC PURPOSE

BUFFER FOR WWTP (SCA)

CRANBROOK WATER SUPPLY (SCA)

FUTURE ACCESS ROAD TO SERVICE CBH EXPANSION (Under investigation)

POTENTIAL FUTURE ACCESS LINK TO ALBANY HIGHWAY (Under investigation by the Shire)

N

0 500m

SCALE 1:20 000 @ A3

Figure 10

GRAY & LEWIS
LAND USE PLANNERS

Suite 5, 2 Hardy Street
South Perth, WA 6151
T (08) 9474 1722
F (08) 9474 1172
perth@graylewis.com.au

JOB REFERENCE: 100811 DATE: 19th MAY 2016

FIGURE 11 – EXTRACT OF ZONING MAP

Snapshot of infill development potential

Large lots of 9507m^2 – 1.9 hectares developed with single houses. Cleared land with subdivision potential.

Developed 2000m^2 – 3500m^2 lots . Potential infill subdivision as lots have advantage of double road frontage to Oliver Street (laneway).

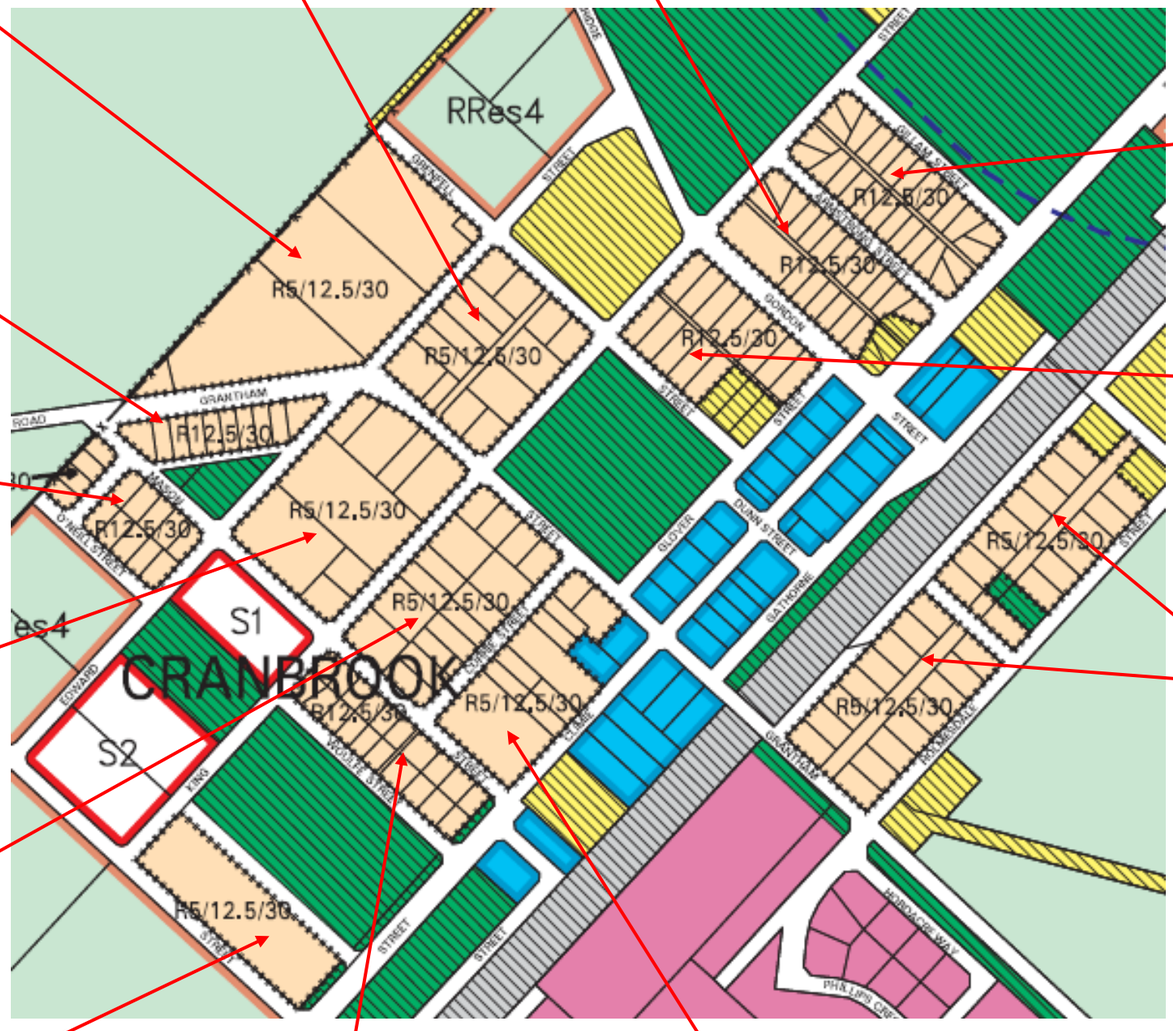
Established 1000m^2 lots with majority developed with single houses. A few scattered UCL vacant lots.

Streetblock largely undeveloped with approximately 20 Unallocated Crown Land lots. A small number of single houses exist.

Established 1000m^2 lots developed with single houses

Established 1600m^2 lots developed with single houses. Some limited R30 development /subdivision has occurred in this streetblock and there is rear laneway access.

Established 1000m^2 lots with housing concentrated along the Mason Steet frontage. Vacant lots front unconstructed road (O'Neile Street)



Large lots between 2000m^2 to 1.3 hectares. Streetblock largely undeveloped. Some houses fronting Grantham Street.

Majority consists of Unallocated Crown Land (UCL) – approximately 24 UCL lots. 4-5 houses on the corner of Hardy Street and Grantham Road.

Large lots between 1400m^2 to 3284m^2. Majority of lots developed with single houses however have subdivision potential.

Undeveloped vacant land.

Large lots between 818m^2 to 1234m^2. Approximately half of the lots developed with single houses fronting Mason Street. Vacant lots fronting Edward Street.

Lots range between 1200m^2 to 1 hectare. Approximately 50% of streetblock undeveloped.

GRAY&LEWIS
LAND USE PLANNERS

8.1.2.1 Area 2A: Existing Residential zone

There is an existing residential zone south east of the railway line and Great Southern Highway, which is somewhat separated from the main established residential area. A substantial number of lots in this area are Unallocated Crown Land with approximately 7 lots in private ownership. Of the lots in private ownership, only 1-2 have been developed with houses.

The Shire has investigated the release of UCL lots through liaison with Department of Regional Development and Lands (RDL) however there is a requirement to connect the UCL lots to sewer which is cost prohibitive. There may be future opportunity for larger lot sizes subject to further liaison with RDL and the Department of Health WA, with adequate demonstration that on site effluent disposal can be accommodated.

The Shire sees future opportunities for some of the lots in this area to be re-zoned to allow for a dwelling unit and a small business to co-locate on the same lot, particularly along Hardy Street which has exposure and strong connections to the existing Industrial area south of Salt River Road. This would cater for small businesses that cannot sustain purchase of a commercial lot, are of a low scale compatible with residential and particularly cater for tradespersons such as plumbers, electricians, handyman, carpenters and the like.

An amendment to the Scheme would be required to implement a new 'Enterprise' or 'Composite' zone. The extent of any amendment area would be dependent on landowner's intentions and demand. Issues such as amenity interface with remaining residential and managing landuse compatibility would need to be carefully addressed.

It is noted that an 'Enterprise' zone allowing for co-location of dwellings and businesses exists in the Shire of Plantagenet. In addition, the WAPC State Planning Policy 2.5 makes allowance for an Enterprise zone which combines light industry and ancillary housing "*provided they are carefully planned close to urban areas, are serviced and have suitable design features and buffers that address amenity issues."*

8.1.3 Area 3: Area for future investigation for residential expansion (longer term)

Although there is currently no immediate need to cater for expansion of the existing residential zone due to the extent of infill development opportunities, it is considered important to ensure that:

(1) Longer term residential expansion is not unduly constrained by the location of proposed/ future rural residential areas and;

(2) Areas for long term residential expansion are protected from the establishment of unsuitable landuses.

In the longer term when land in the existing residential zone becomes more fully developed, expansion to the north - west could be further explored. Area 3 is earmarked for future investigation only and this is not sufficient justification by itself for any scheme amendment.

Investigation would need to include an analysis of demand and evidence of the need for new residential land, detailed assessment of vacant land and infill potential within the existing residential zone, access to services including reticulated water, a water management strategy, and land capability.

It is considered likely that the existing residential zone will sufficiently service long term needs for the next 10 years. Identifying Area 3 in the Strategy simply ensures there is an opportunity for longer term expansion to be earmarked for future examination.

8.1.4 Area 4: Existing Rural Residential zone (medium term)

Area 4 located to the south west of town is zoned 'Rural Residential 4' under the Scheme. The approved 2004 Local Planning Strategy recommended that any lots created be serviced with reticulated water for domestic consumption. It also recommended a minimum lot size of 1 hectare to maximise efficient use of services.

Seemingly contrary to the 2004 Strategy and zoning, the current Scheme wording appears to limit subdivision to existing lot sizes stating *'The local government will not recommend to the Commission support for further subdivision, but this will not preclude the local government recommending support for rationalisation of lot boundaries provided no additional lots are created and the resultant lot sizes and shapes are to the satisfaction of the local government*.'

The portion of Area 4 located south of Gardiner Street (unconstructed) appears to be an ideal location for rural residential lifestyle lots (1 to 4 hectares). The land appears relatively unconstrained as it is in a good location close to town, is gently sloping and contains only scattered trees.

The Shire would support an amendment to the Scheme to allow for further subdivision for the larger lots located south of Gardiner Street, subject to appropriate requirements such as a Subdivision Guide Plan, identification of buffers to CBH, connection to reticulated water and if deemed necessary a Local Water Strategy. Any amendment requires Ministerial approval.

It is important that the identification of buffers to CBH and any expanded Industrial area be addressed as part of any scheme amendment, re-subdivision for boundary re-alignment and / or development of existing lots.

Retention of the existing 'Rural Residential' Scheme provisions are considered appropriate for Lots 136 and 137 located immediate west of Edward Street as both have an approximate lot area of 2 hectares, one is unallocated crown land containing vegetation, and both are traversed by a stream flow (Pinjalup Creek). The two hectare lots provide a suitable transition between residential to the north east and the Rural Residential zone to the south.

8.1.5 Area 5: Area for future investigation for Rural Residential expansion (longer term)

The land in Area 4 south west of town would likely be sufficient to cater for short to medium term Rural Residential demand if subdivided, however it is understood that it is unlikely to be developed as it is substantially in one ownership and being actively farmed. It is anticipated that Area 4 will continue to be utilised for agricultural purposes for the long term, however should be retained as 'rural residential' due to its prime location.

Area 5 has some minor constraints as it accommodates some stream flow areas; however it is earmarked for future investigation for longer term rural residential development. It would allow for logical expansion when Area 4 eventually becomes fully developed. Services from Area 4 would need to be extended to cater for longer term expansion into Area 5.

It should be emphasized that the Strategy is highlighting Area 5 for possible '*future investigation*' only. Re-zoning would not be supported unless Area 4 has been substantially developed and there is strong evidence of further demand, the land can be serviced with reticulated water, land capability demonstrates it is suitable, a water management strategy is provided (if deemed required), creek flows are protected, and any design responds to natural features.

Area 5 is in close proximity to Great Southern Highway, Albany Highway, and the railway line. Accordingly there is a need to consider road / railway noise impacts and protection of freight corridors in accordance with SPP 5.4 or other relevant State Planning Policies.

Area 5 is only included in the Strategy to provide for an extension of Area 4 if fully developed with successful sales evidence.

8.1.6 Area 6: Existing Rural Residential zone

Similar to Area 4 this land is also zoned 'Rural Residential 4' under the Scheme. The Scheme limits subdivision to the existing lot sizes which is appropriate for Area 6 as;

(i) There are only three lots in Area 6 and it is isolated from the remaining existing 'Rural Residential 4' zone located to the south of town.

(ii) The Lots (131-133) have areas of 1.02 – 1.8 hectares so are already at a size typical of rural residential.

No changes to the Scheme are recommended for Area 6.

8.1.7 Area 7: Rural Residential expansion (short to medium term)

As Area 4 is likely to be used for continued farming in the long term, the Shire seeks to broaden the rural living opportunities available to its community to take advantage of the rural atmosphere and create increased lifestyle choice close to town. There is anecdotal evidence of demand for some larger lots through enquiries to the Shire.

Areas available for Rural Residential or Rural Living lots are limited as to the north lies extensive vegetated parks and recreation reserves, industrial exists to the south west, and the Shire seeks to ensure that any longer term urban expansion is not unduly constrained by the location of any lifestyle lots.

This Strategy seeks to allow for an extension of the 'Area 6' Rural Residential area in the short to medium term however it is subject to the ability of the land to be able to be serviced with reticulated water. It is recognised that services may not be extended to this area until adjacent residential zoned is developed south of Grenfell Street.

Given that Area 4 is being used for farming, Area 7 is considered an alternative sound location for Rural Residential in close proximity to town. It should be noted that inclusion of area 7 in this Strategy is not in itself justification for a scheme amendment. The Shire will not support a Scheme Amendment unless reticulated water can be provided, there is evidence provided on demand, and subject to normal requirements such as a land capability assessment.

It is also acknowledged that the Water Corporation generally does not 'forward plan' for subdivision in smaller regional towns, and early consultation with the Water Corporation would be required for planning of an scheme amendment and future servicing requirements.

8.1.8 Area 8: Existing Industrial Area

There is an existing Industrial zone located to the south east of town which contains a portion of CBH and some established small scale industries in Phillips Crescent.

Whilst there is potential to create some additional small industrial lots, the existing Industrial area is not capable of accommodating Industries that have larger land area requirements (which was recognised in the 2004 Local Planning Strategy). The existing Industrial zone also has constraints as Pinjalup Creek is located in the northern portion. Land capability shows that land to the south is better suited for Industrial development.

It is not considered that the existing Industrial area is sufficient to cater for short to medium term needs as the smaller lot sizes limit suitability to smaller scale businesses, and do not provide adequate turnaround areas to cater for businesses with large trucks.

The Shire seeks to actively provide increased business and employment opportunities for new industries. The achievable lot sizes within the existing confined Industrial zone are not conducive to providing flexibility to cater for a diverse range of industrial land requirements.

The cost and limited availability of Industrial land in Perth creates scope for larger industries to locate in regional areas, and Cranbrook has significant location advantages due to proximity to Albany, excellent road and rail networks, and has the ability to fast track local government approvals.

CBH is an established major industry in Cranbrook and has already expanded outside of the Industrial zone, demonstrating that the zone boundary needs to be extended – refer **Figure 12**.

In the CBH 'Shaping the Network of the Future Strategy produced in April 2016, Cranbrook is listed as one of 100 core sites of the future. The Network Strategy provides a clear plan for the future by focusing maintenance and capital investment on the core 100 sites that receive over 90% of the annual crop.

As the last loading point in the Great Southern, the Cranbrook site is the second largest regional receival site in Western Australia and has received the most grain of any site in 2013, 2014 and 2015.

The site capacity has increased from 35,000 tonnes in 2006 to 400,000 tonnes in 2016.

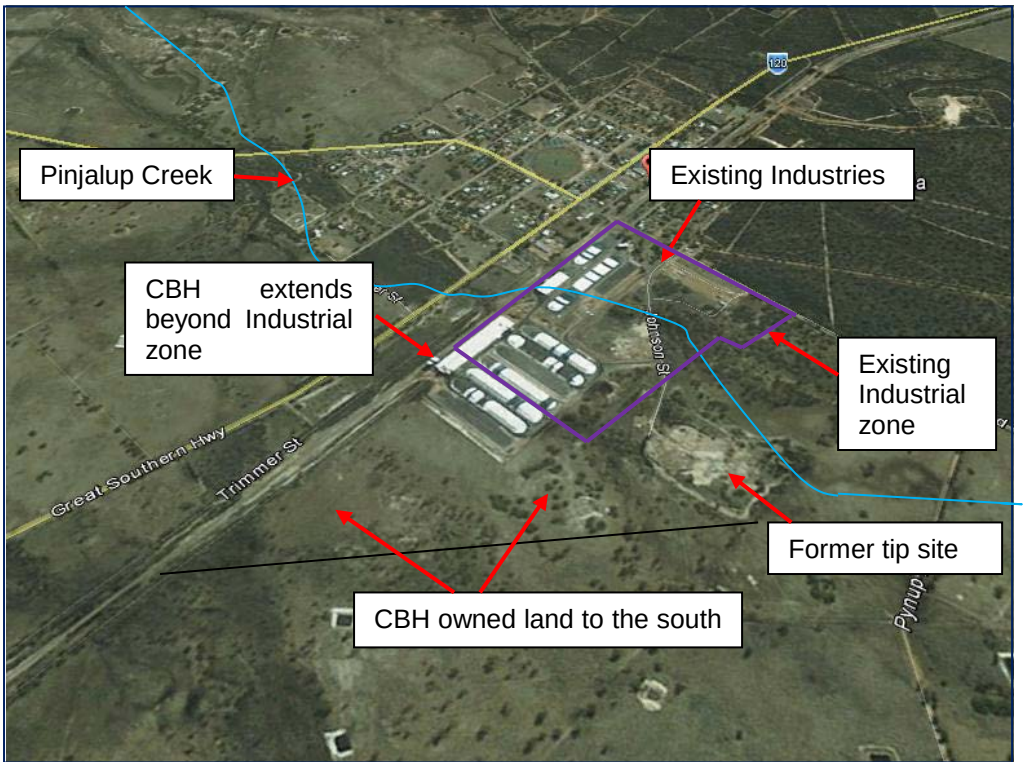


Figure 12 – Enlargement of Area 8 showing extent of CBH and approximate location of Pinjalup Creek

CBH has purchased over 60 hectares of land to the immediate south of their existing operations. CBH and the Shire have had ongoing discussions regarding future expansion of the site.

8.1.9 Area 9: Expansion of Industrial zone (short to medium term)

The Shire has developed a Strategic Vision for expansion of the existing Industrial area as a Southern Link Transport Hub – **Appendix 1.** Whilst the vision is bold and requires infrastructure planning, the extension of the existing Industrial area is justified based on location advantages and sound planning grounds.

This Local Planning Strategy does not seek to support a Scheme Amendment to the extent of the entire Industrial zone proposed in the Shire's 'Strategic Vision' plan, however identifies Area 9 for short to medium term growth, and earmarks future land that can be gradually re-zoned in stages.

The Shire intends to pursue an amendment to the Scheme in the short term to zone Area 9 to Industrial. The Shire has purchased over 18 hectares of land (Reserve 50847) within Area 9 to accommodate future industrial expansion.

The Shire's Strategic Vision recognises that all grain transported to Albany via rail travels through the Cranbrook strategic grain receival point. Cranbrook is traversed by Albany Highway, Great Southern Highway and the railway line.

There is considerable justification for Area 9 based on a number of factors;

(i) Demand

CBH is a strategic grain receival point and has already expanded outside of the existing Industrial zone boundary. Future expansion is planned to continue in a southerly direction and would be better accommodated in an Industrial zone. CBH has purchased land and announced its intention to give the existing Cranbrook site a significant makeover and to significantly increase on site storage capacity.

The Shire has anecdotal evidence of demand for larger industrial lots and support from some businesses interested in future industrial land in the area.

The established CBH facility effectively acts as an anchor industry and is attracting interest from other related businesses seeking to co-locate. The Shire has received wide interest from a number of grain related industries including a grain cleaning business (requiring approximately 8000m^2) and a feed pellets mill (requiring approximately 6 hectares).

Currently opportunities are constrained due to the small lot sizes available and confined Industrial zone boundary. Expansion in Area 9 will cater for new industries and for relocation of businesses that may outgrow the existing smaller lots.

Due to the high per lot costs associated with industrial land development, the Shire needs to strategically plan for stage 1 expansion and achieve economies of scale for future industrial subdivision.

New industrial land supply will only be achieved if it is identified and planned for through the Local Planning Strategy. Endorsement of the Strategy by the Western Australian Planning Commission will also assist the Shire in any future funding opportunities.

It is clear that there is an overall industrial land shortage throughout the Perth Metropolitan Region, as identified in the 'Peel and Perth Industrial Landuse Strategy'. Larger industries (such as those which are transport orientated) associated with transport and grain can locate near CBH.

The Shire will actively promote the business opportunities in the Shire and has identified real opportunity to cater for value adding businesses.

(ii) Diversified Employment

Whilst aimed at Perth's urban areas, State documents such as Directions 2031 have clear aims to improve the relationship between communities and the activities, services and places of employments in their area.

Consistent with this planning objective, there is growing recognition and appreciation by the Shire that the existing community and future residential areas need to be supported by provision of nearby employment opportunities.

The Shire has a number of successful industries throughout its local government boundary including agriculture, viticulture, fertiliser and timber plantations however would like to increase the economic base for industries in Cranbrook townsite.

The Shire has clear aims to improve the relationship between its community and employment, and increase new businesses and places of work that they can access on a daily basis.

It is proposed that an expanded Industrial area will provide for new business opportunities as they arise, and subsequently as the area develops, provide employment to support existing and proposed residential areas.

Support for a new industrial area will stimulate potential for the Shire to cater for new industries, and give the local community associated benefits of living near an employment base such as reduced travel distance, and reduced travel costs.

The lack of large development-ready industrial lots in the Shire is a major constraint, and may have significant potential negative impacts through lack of business opportunity.

The Shires priority is to ensure that there is a steady supply of industrial land which has flexibility to cater for uses that may have larger land requirements, and take advantage of opportunities for support businesses to locate adjacent to CBH.

(iii) Land Capability

As part of the review of the Shire's 2004 Local Planning Strategy and in association with the Shire's objective to facilitate its 'Strategic Vision', a Land Capability Evaluation has been compiled by Land Assessment Pty Ltd and includes Area 9.

Environmental advice was sought to examine any environmental constraints, and ensure that that planned industrial areas would not adversely exacerbate surface water management problems (as new industries will create new hardstand areas).

The findings of the report are not replicated in this Strategy as a full copy is included as **Appendix 2**. The main relevant points are summarised below;

- Pinjalup Creek runs through the northern portion of the existing (Area 8).
- There are sub catchment areas around Pinjalup Creek consisting of Cranbrook town north, Cranbrook town south and Townsend Road.
- The main proportion of Area 9 traverses two sub catchment boundaries to Pinjalup Creek.
- The Draft 2010 Water Management Plan for Cranbrook (DAFWA) concludes that town catchment runoff (Cranbrook town north sub catchment) is responsible for townsite inundation. As Area 9 is not within this sub catchment, it is suggested that runoff from the future industrial areas will have little effect on the townsite waterlogging and sanity issues.
- Land adjacent to Pinjalup Creek forms part of a catchment that contributes to the groundwater flowing under Cranbrook Townsite. The Shire is investigating sites for a production bore and pump as groundwater pumping is an option for lowering water tables. Water from groundwater pumping bores can be used as water source for new industries.
- Information from monitoring bores suggests depth to winter water tables are between 0.5 metres and 1 metre from the surface over much of the existing (Area 8) industrial area.

- Portions of land alongside the railway adjacent to CBH are subject to accumulation of surface water runoff and waterlogging.

  Previous studies recommend that future buildings be constructed on top of 0.5 metres of sand and a lined sump be constructed to collect surface water runoff with possible re-use options or a source of water for industries.

- Further industrial development near the existing Industrial zone needs to avoid direct disposal of surface water runoff into the ground.

- There are no records of flora or fauna species, or ecological communities of particular conservation significance within the study area.

Land to the south (Area 9) of the existing Industrial zone is suitable for Industrial expansion as the there are higher elevations, depth to the water table increases, and is outside of the Cranbrook Town north sub catchment boundary.

It should be noted that the north portion of Area 9 is included to allow for potential future road connection to Salt River Road, however it is anticipated new Industrial lots will be concentrated to the south. Drainage design will be important in planning any new industrial estate and a location for a basin needs to be identified.

The area of land included in Area 9 means that adequate buffers can be incorporated and it will allow flexibility to cater for large land requirements of industries. The Shire will have regard to the generic buffer distances recommended under the EPA Guidance Statement No 3 for different types of industrial land use activities and ensure suitable distances are maintained to sensitive landuses such as residences.

(iii) Traffic

The Shire has identified the need to protect urban areas within Cranbrook townsite from potential increased heavy haulage traffic associated with expanding the Industrial zone. The Shire intends to investigate opportunities for direct road links between the planned intermodal inland port and Great Southern Highway to the north, and an access link to Albany Highway to the south.

Potential road links are shown on the Strategy plan (Figure 10) however are subject to detailed investigation and consultation with Main Roads Western Australia. Traffic flows, management and impact of road network changes are important considerations.

8.1.10 Area 10: Industrial expansion (longer term)

Area 9 is likely sufficient to service the short to medium term need for new industrial development and provides increased flexibility for the Shire to accommodate businesses with large land area requirements. Once Area 9 is subdivided, becomes developed and there is clear evidence of demand, the Shire can further explore possible eastern extensions to implement their long term vision for an inland port facility. Any Scheme Amendment for Area 10 should only be supported when planning and development of Area 9 is sufficiently progressed. Any industrial expansion beyond Area 9 will require a future separate Scheme amendment.

8.1.11 Area 11: Future investigation for Industrial expansion (longer term)

Area 11 is included in this Strategy simply to highlight that it is an area for future and separate investigation. It may be an appropriate area for future expansion once Area 9 is substantially developed, with potential for light industry or industries that do not require substantial buffers.

8.2 Frankland River Townsite

The Frankland River Townsite Expansion plan is included as **Figure 13**.

8.2.1 Area 1 : Town Centre

The Town Centre area was consolidated as part of the 2004 Local Planning Strategy to be contained on the eastern side of Wingebellup and the Frankland Rocky Gully Roads, either side of the Frankland Cranbrook Road.

The Town Centre contains existing small businesses and there is still sufficient vacant land available for commercial expansion to the east on both sides of Frankland Cranbrook Road. There is over 2 hectares of land still available for future commercial development.

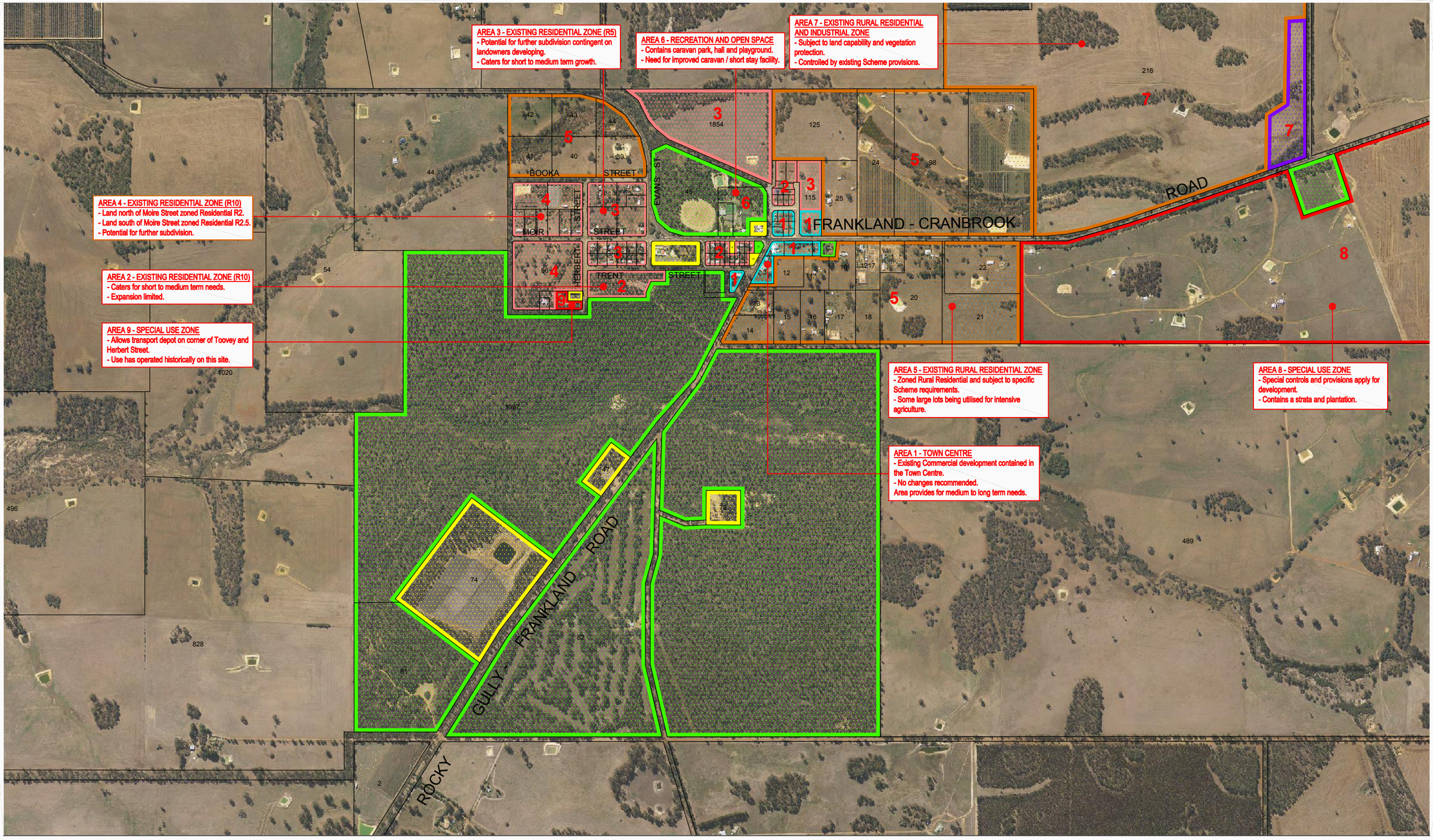
Although zoned 'Town Centre' the majority of lots in the street block bound by Frankland Cranbrook Road, Boronia View, Sheoak Lane and Rocky Gully Frankland Road are around 1000m^2 therefore may be attractive for residential (with the exception of Lot 101 containing the Frankland River Village). If all these lots become developed with houses the Shire may consider a future residential zone to protect housing amenity.

Under the Scheme a single house is a discretionary landuse in the 'Town Centre' zone. The Shire needs to have regard to landuse compatibility when considering residential uses in the Town Centre and potential conflict due to odours, loading areas, noise, and other emissions associated with businesses.

Frankland River main street – view towards Town centre east on Frankland Cranbrook Road

It would be desirable for any new commercial development to be concentrated along Frankland Cranbrook Road to create a traditional 'main street' feel and for exposure.

This Strategy recognises the need to protect the existing Town Centre zone located on the south side of Frankland-Cranbrook Road, to cater for commercial and retail land uses. It is important to ensure that housing development does not jeopardise future 'main street' business development.



TOWNSITE EXPANSION PLAN

FRANKLAND TOWNSITE
SHIRE OF CRANBROOK

RECREATION AND OPEN SPACE
PUBLIC PURPOSE

N
0 500m
SCALE 1:15 000 @ A3

Figure 13

GRAY & LEWIS
LAND USE PLANNERS
Suite 5, 2 Hardy Street
South Perth, WA 6151
T (08) 9474 1722
F (08) 9474 1172
perth@graylewis.com.au

JOB REFERENCE: 100811 DATE: 29th APRIL 2011

The Town Centre is sufficient to cater for medium to long term commercial needs. Once the existing zone becomes substantially developed, then the area may require future review.

8.2.2 Area 2 : Existing Residential zone (R10)

The existing residential zone with a density of R10 is considered sufficient to cater for the short to medium term needs.

The street block generally bound by Wingebellup Road, Stubber Street, Trent Street and Rocky Gully Frankland Road is almost fully developed and is well established.

Newer residential subdivision at the R10 density exists to the immediate north of Sheoak Lane and contains some new houses. There are still limited vacant lots available for building.

The remaining land zoned Residential R10 located on the corner of Herbert and Trent Street remains undeveloped and provides one of the few opportunities for new residential subdivision. Lot sizes may be restricted due to the lack of reticulated sewer. The Shire will continue to lobby relevant agencies such as the Department for Regional Development of Land (State Land Services) and Department for Planning for release of this land to cater for future town expansion needs.

Future urban expansion opportunities for Frankland River townsite are constrained due to extensive areas of Recreation and Open Space to the south and the location of Rural Residential areas. Future release of unallocated Crown land to cater for expansion will become essential in the longer term to cater for growth and any increases in demand.

Any further subdivision will be subject to resolution of current water issues.

8.2.3 Area 3: Existing Residential zone (R5)

There is an established residential area with larger 2000m^2 lots (zoned R5) in the streetblock generally bound by Herbert Street, Moir Street, Evans Street and Trent Street. All of these lots are developed.

Land immediately north is also zoned 'Residential R5' (bound by Herbert Street, Booka Street, Evans Street and Moir Street) however remains largely un-subdivided and has potential for further infill Further subdivision is largely contingent on landowners intentions, cost of services and market demand.

North of Wingebellup Road there is 14 hectares of undeveloped Residential R5 land. The majority of this land is cleared with a northern corridor of vegetation. If subdivided by the owner this land would assist to cater for short to medium term growth. The location is opposite the recreation complex and has good access to facilities.

There is also potential for further R5 subdivision on land north of the Town Centre which could be a natural extension of subdivision in Sheoak Lane.

Any further subdivision will be subject to resolution of current water issues.

8.2.4 Area 4: Existing Residential zone (R2 and R2.5)

Within Area 4 the land north of Moir Street is zoned Residential R2 and land south of Moir Street is zoned Residential R2.5.

Approximately half of the existing R2 area has been subdivided with 5000m^2 lots fronting Moir Street. Lots 49 and 50 (west of Herbert Street) remain un-subdivided with areas of 1.5 hectares each, and are being utilised for intensive agriculture.

The land south of Moir Street contains lots ranging from 1999m^2 to 6.7 hectares so there is potential to further subdivide depending on feasibility and costs. If the area remains un-subdivided in the medium term there is opportunity to pursue a higher density for residential development to maximise use of infrastructure, form a natural extension to the R5 area to the east, result in more efficient landuse and reduce subdivision costs per lot. It would entail an Amendment to the Shire's Town Planning Scheme with some evidence of demand.

Any further subdivision will be subject to resolution of current water issues.

8.2.5 Area 5: Existing Rural Residential zone

The land in Area 5 is zoned 'Rural Residential 1' under the Shire's Scheme however developed rural living lots are mainly concentrated around the Town Centre south of Frankland Cranbrook Road.

Larger lots to the north east of town are zoned 'Rural Residential' however are being utilised for intensive agriculture (vineyards and olives). It is therefore unlikely that further subdivision will occur on some of this land.

There are still vacant Rural Residential lots available within Area 5. Future subdivision largely relies on individual landowners intentions. Some areas are constrained due to creekline areas, vegetated areas and topography.

If owners intend to continue intensive agricultural uses which have become more popular in the region and represent an important industry, then there may be a need to further protect these uses and ensure any new surrounding subdivision provides vegetated buffers.

8.2.6 Area 6: Recreation and Open Space - Caravan Park

Area 6 is zoned 'Recreation and Open Space' under the Shire's Scheme and has an area exceeding 12 hectares.

A caravan park is provided by the Council, located behind the community hall. It has new ablution, laundry and camp kitchen facilities. This site has recently been renovated to satisfy the accommodation needs of increased tourism and seasonal workers engaged in the intensive agricultural uses that have expanded in the district. The Council identified and acted on a need to support development of a caravan park that will accommodate both the seasonal workers as well as travellers through the district.

Expressions of interest have in the past been received by the Council from persons interested in developing the caravan park. To date this has not led to firm proposals due largely to the lack of suitable sites. Options may include some motel accommodation in conjunction with caravan bays to the east of the existing convenience store, but this site appears to have significant limitations to the area that could be made available. Another alternative may be the excision of portion of Unallocated Crown Land south of Ward Place, or private land close to the centre of the town.

At this stage there is no decision as to the preferred site but the Council will pursue suitable options to achieve a resolution, and would support a scheme amendment for suitable short stay or caravan accommodation on a site with good access to services in town. The Council will require that a Land Capability and Environmental Management Assessment be carried out to demonstrate land and on-site effluent disposal capability for the development of a caravan park.

The recreation centre with adjoining club and community hall occupies part of the area, and there is considerable room for expansion. It is anticipated the central area will be adequate for all future recreation needs, as well as such other appropriate but as yet unforeseen community uses which may locate in the town.

8.2.7 Area 7: Existing Rural Residential & Industrial zone

Hay Location 2000 at the corner of the Frankland Cranbrook Road and Shamrock Road has potential for rural-residential development, with provision for industrial lots at the road junction. It is zoned 'Rural Residential 3' and Industrial under the Scheme.

The Scheme requires that any subdivision plan be based on a Land Capability and Environmental Management Assessment and provide for vegetation protection and adequate buffer separation to Industrial lots. The Shire would support any subdivision to separate the Industrial zone and Rural Residential onto individual lots as an interim stage.

The current zoning was supported by the Shire's 2004 Local Planning Strategy which contained a subdivision concept plan for this land. Since that time a Subdivision Guide Plan has been endorsed – refer **Figure 14.**

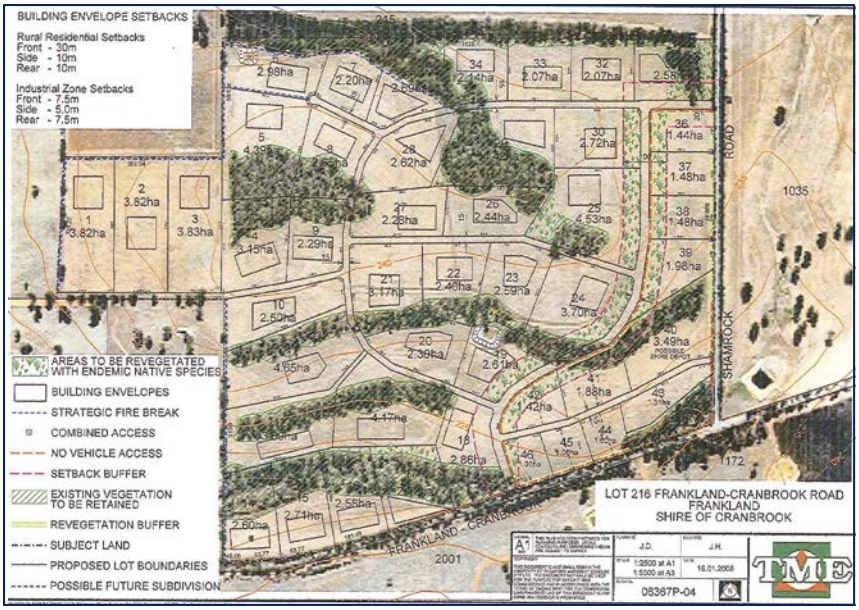


Figure 14 – Subdivision concept plan

Whilst it is not anticipated there will be demand for major industrial undertakings, it is appropriate to provide for industrial lots for light and service industries, particularly with the expansion of intensive agricultural uses in the district.

The town water supply does not extend to this Location, and the cost of extension for the creation of a few industrial lots in the first instance would be so prohibitive as to preclude the subdivision proceeding. The Council anticipates the scale of industrial development will be relatively small, and therefore proposes on-site water supply for the limited needs of those first industries.

The Council seeks to encourage the landowners to initiate development of the industrial lots, subject to appropriate protection of remnant vegetation (to be balanced with the need for adequate fire protection). Council will be conscious of the need to retain an attractive entry to the town which should be addressed in any subdivision design and landscaping.

8.2.8 Area 8: Special Use zone (Residential strata and plantation)

Area 4 is a special use zone that is subject to specific requirements under the Shire's Town Planning Scheme.

The western portion contains a strata lot subdivision and the eastern portion contains a substantial plantation – refer **Figure 15**. The strata lots are serviced by internal access ways which are not public roads and are common property.

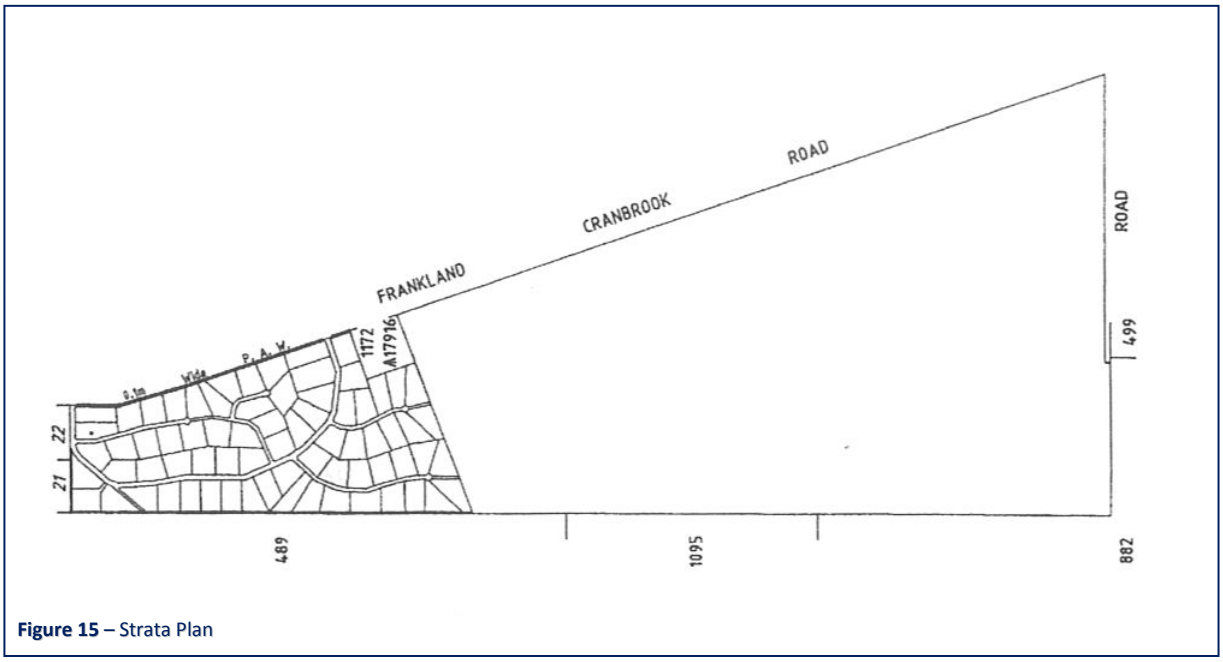


Figure 15 – Strata Plan

Dealing with development in this area has been problematic as current owners do not always comply with the restrictions under the Scheme.

Council supports residential development of these lots in close proximity to the town, however considers that the current form of strata title discourages and inhibits residential development. Council may be prepared to relax some of the development prohibitions under the Scheme if an adequate case and scheme amendment was presented by the strata management.

8.2.9 Area 9 : Special Use zone (Transport depot)

A Transport Depot has operated historically from this site and therefore continuation of the use is allowed for under a Special Use zone.

The Scheme has broad discretion for the Council to determine development requirements for the land. Ultimately it would be desirable for the industrial use to operate outside of town as the land is located immediately adjacent to residential.

Support for extensive expansion may be limited due to the need to maintain a high level of residential amenity, however this has to be balanced with the need to encourage business in the area.

8.2.10 Future Expansion Priorities

The 2004 Local Planning Strategy identified that opportunities exist for future expansion to the west and east of the main Frankland River townsite – refer **Figure 16**.

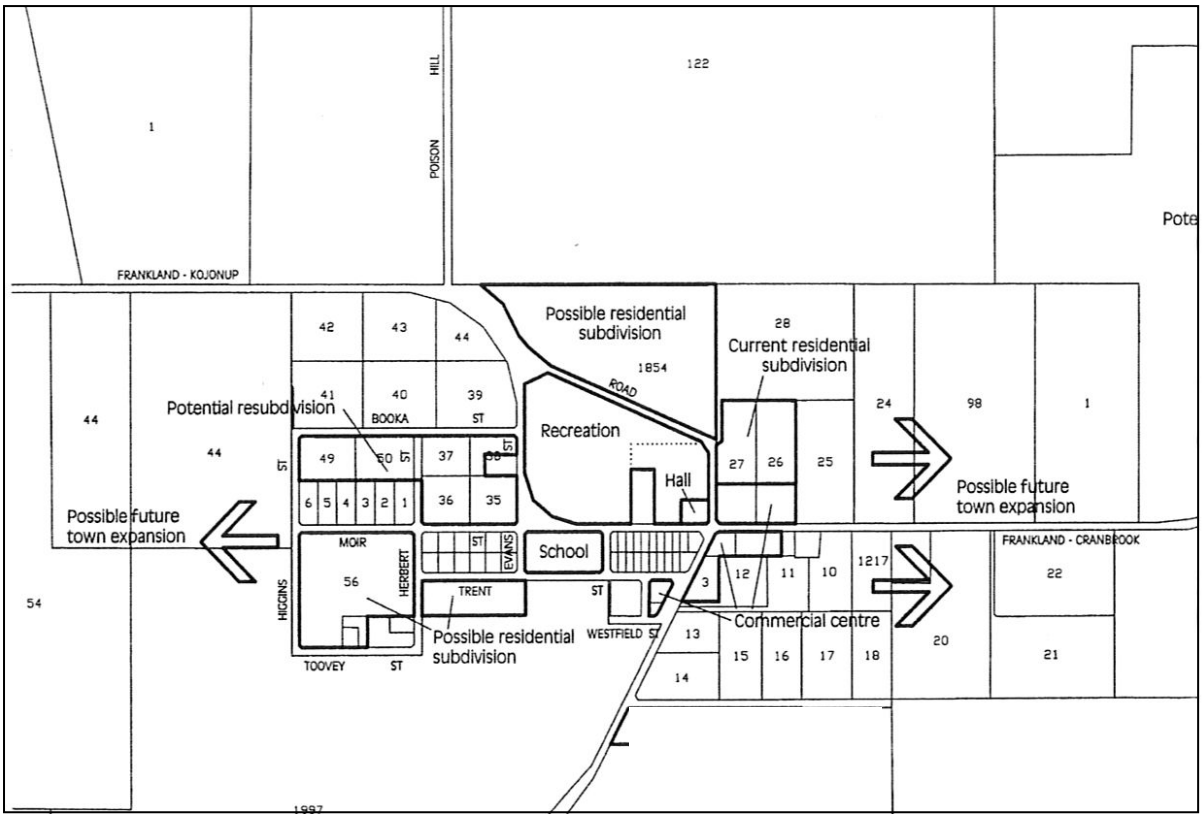


Figure 16 – 2004 Local Planning Strategy map

The recommendations of the 2004 Strategy for Frankland River are still generally supported by Council and have simply been shown on more detailed mapping.

There are still future long term opportunities for further urban expansion as per the above map, however it is considered more likely it will occur in a western direction simply as intensive agriculture has been largely established on larger lots in the east portion of town.

Consistent with the 2004 Strategy Council would still support scheme amendments for residential expansion if there is evidence of demand, the land can be serviced (with reticulated water) and where opportunities for subdivision in existing residential areas have been examined. If it becomes evident that landowners in existing residential zones do not seek to develop, then other alternatives may be required to meet future demand. It is noted that some existing landowners may prefer to retain larger lots for lifestyle reasons.

8.3 Tenterden Townsite

The Tenterden Townsite Expansion plan is included as **Figure 17**. It is divided into areas for ease of reference and discussion.

8.3.1 Area 1 : Existing Residential zone

There is a small core of residential development in Area 1 mainly focused along Fenwick Street. There are areas containing natural vegetation and many houses are on lots where significant vegetation has been retained.

Example of housing in Tenterden

It is quiet peaceful area and has a strong connection to the natural environment.

The area is zoned Residential R2.5 and larger lot sizes are necessary due to lack of reticulated water. There are still vacant lots available for new house construction.

Tenterden has been badly affected by bushfire in the past therefore fire management is an important issue.

The majority of land to the south east of Brooking Street is undeveloped and is Unallocated Crown Land. Existing vacant land will cater for short term needs. In the longer term the Shire may need to approach the State of WA for release of further lots.

8.3.2 Area 2 : Existing Rural Residential zone

Area 2 is an extensive Rural Residential zone which contains existed subdivided lots. There is a good variety of lifestyle choices as some lots are parkland cleared and others still contain significant vegetation and offer a bush lot lifestyle.

Larger land parcels exist adjacent to Albany Highway however are restricted to existing lot sizes under the Scheme. Some of these lots are still being used collectively for continued agriculture.

Some of the old road reserves contain quality vegetation and have been zoned 'Recreation and Open Space' to afford greater protection.

AREA 5 - EXISTING RURAL SMALLHOLDING ZONE
- Undeveloped with subdivision potential.
- Special Scheme requirements apply.

AREA 4 - EXISTING RURAL RESIDENTIAL ZONE
- No changes recommended.

AREA 3 - EXISTING RURAL RESIDENTIAL ZONE
- Zoned Rural Residential and limited to existing lot sizes.
- Established Rural Residential Area.

AREA 1 - EXISTING RESIDENTIAL ZONE
- Zoned R2.5
- Large lots to be maintained due to lack of services infrastructure.
- Meet requirements for short to long term
- No expansion recommended

AREA 8 - SHORT TO MEDIUM TERM INDUSTRIAL
- Potential to expand industrial to north to cater for expansion.
- Subject to landowners aspirations

AREA 6 - EXISTING TOWN CENTRE
- Contains roadhouse.

AREA 7 - EXISTING INDUSTRIAL AREA
- Small but successful Industrail node.
- Businesses continue to expand

AREA 2 - EXISTING RURAL RESIDENTIAL ZONE
- Zoned Rural Residential and limited to existing large lot sizes.
- A wide range of lot sizes available.

Figure 17

TOWNSITE EXPANSION PLAN

TENTERDEN TOWNSITE
SHIRE OF CRANBROOK

RECREATION AND OPEN SPACE
PUBLIC PURPOSE

N
0 500m
SCALE 1:24 000 @ A3

GRAY & LEWIS
LAND USE PLANNERS
Suite 5, 2 Hardy Street
South Perth, WA 6151
T (08) 9474 1722
F (08) 9474 1172
perth@graylewis.com.au

JOB REFERENCE: 100811 DATE: 1st JUNE 2016

Similar to the Residential zone there are still Rural Residential lots available for new housing. The Scheme requires that dwellings be supplied with a potable water through a bore or 90 kilolitre rainwater tank.

8.3.3 Area 3 : Existing Rural Residential zone

Area 3 is an established Rural Residential zone and the majority of lots have been developed. In accordance with the Scheme provisions there is no further subdivision potential and most lots have an area of approximately 2 hectares.

8.3.4 Area 4 : Existing Rural Residential zone

Lot sizes in Area 4 range between 7 to 13 hectares and the land to the north of Reserve 686 remains largely undeveloped. As per the other Rural Residential areas in Tenterden, lots sizes are generally restricted to existing subdivision. Rationalisation of lot boundaries with no increase in the number of lots can be considered.

8.3.5 Area 5 : Existing Rural Small Holdings zone

Locations 980 and 2771 are zoned Rural Smallholding under the Scheme. The land is off Salt River and Ronaldshaw Roads adjacent to the Cranbrook Golf Club. The land has rural views and some mountain views. The zoning was supported having regard for the location, to provide increased lifestyle choice and based on a Landform and Capability Assessment prepared by Ashley Prout & Associates.

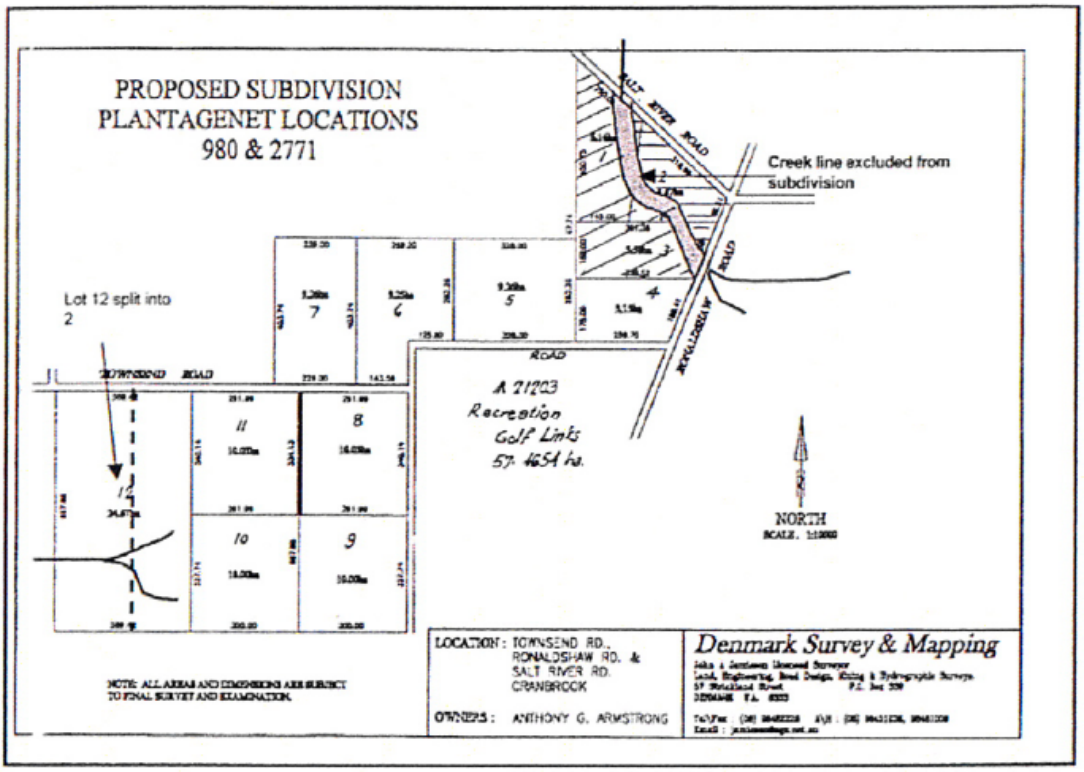


Figure 18 – Indicative subdivision design

The land is situated in the Cranbrook catchment with the Cranbrook Creek draining through the north east corner. Any future subdivision will need to maximise creekline protection and involve revegetation and rehabilitation. Some preliminary concept plans were prepared for this site however subdivision has not proceeded. These plans may require review and have regard for fire management requirements.

8.3.6 Area 6 : Existing Town centre zone

A roadhouse located off the Albany Highway frontage provides the only local shopping in the townsite. It is zoned Town Centre under the Scheme.

For other than immediate daily needs, residents must travel either to Cranbrook or Mount Barker. Tenterden residents have excellent access to a wide range of services and facilities in Cranbrook.

8.3.7 Area 7: Existing Industrial zone

Albany Highway frontage of Industrial area

The land opposite the roadhouse is zoned Industrial under the Shire's Scheme.

It is relatively small however contains a number of successful industries which are agricultural related.

The buildings are well setback from Albany Highway and have a tidy appearance.

No expansion is recommended in the short term however the area may require future review if other industries seek to co-locate and / or to accommodate expansion of existing industries.

8.3.7 Area 8: Future Industrial zone

The Shire approved industrial sheds on Lot 4 Albany Highway for expansion of existing operations of Western Minerals Fertilisers in early 2013.

The existing Industries in Tenterden have successfully operated for some years, and there may be a need to cater for future expansion in a northerly direction.

Expansion of the existing Industrial zone to the north would be a logical extension, and takes advantage of the high level of commercial exposure to Albany Highway and excellent transport links to the surrounding agricultural areas.

Any expansion of the Industrial zone would be subject of a scheme amendment, industrial needs and landowners' aspirations.

8.4 Land Outside of Townsite Boundaries

The majority of land located outside of townsite boundaries is zoned Rural under the Shire of Cranbrook Town Planning Scheme No 4 ('the Scheme'), with the exception of crown land reserved as Public Purpose, State Forrest or Parks and Recreation.

The main principles underlying the Shire's existing Scheme which are supported by this Strategy are:

- To protect rural land from incompatible landuses;
- Protect natural resources; and
- Protect sensitive and significant environmental areas.

It is important for the local community and economy that rural land is maintained for agricultural production. General agriculture is a crucial part of the local economy, and it should be recognised that traditional farming is a valued and main primary industry in the Shire.

Farming is classified as 'Extensive Agriculture' under the Shire's Scheme and is permitted within the Rural zone. Normal farming activities such as raising of stock or crops will remain permitted uses that do not require any planning approval. Rural activities currently include sheep and beef cattle grazing, and cropping.

Extensive vineyards and wineries have established in the region particularly in Frankland River. The Frankland River wine region has become well known with its diverse range of grape varieties. Wines from the Frankland River Region are sold around the world and are increasingly being recognized for producing the state's best Shiraz and Riesling amongst other varieties.

Over time there has been a diversity of other new ventures, including tree plantations, free range poultry and more recently free range pig farming (with low stocking rates per hectare).

These contemporary rural uses, and the more traditional rural activities, should be encouraged throughout the Shire and located according to land capability, suitability and servicing needs.

A wide range of different landuses can be applied for in the Rural zone such as wind farms, feedlots, intensive agriculture, solar panel farms, agroforestry, tree plantations and the like. All of these uses are controlled through the existing Shire of Cranbrook Town Planning Scheme No 4. No changes are proposed in regards to Rural related landuses, and this Strategy focuses on the main townsites within the Shire.

More intensive land uses, such as feedlots, together with any extractive industry or rural industry, require specific Council approval so that issues such as the appropriateness of the location, separation distances and site suitability can be examined.

The Shire seeks to maximise flexibility for a range of rural related industries to establish in appropriate locations within the rural area. All proposals are assessed based on individual merit.

Guidance on land uses such as tree farms and basic raw materials will be provided by State Planning Policy.

The Strategy recognises the need for appropriate buffers/ separation distances and when the need arises, will apply generally in accordance with relevant State Planning Policy guidelines.

No changes are proposed in regards to Rural related landuses, or the existing Rural zone which will continue to be predominantly utilised for broad acre agriculture. Existing State Planning Policies afford a high level of protection to land in Rural zones, and only limited subdivision may occur in accordance with existing State Planning Policies.

9.0 PLANNING STRATEGIES AND ACTIONS

Shire of Cranbrook Aspiration 1

By 2023 the Shire of Cranbrook will be respected for its friendly, vibrant, connected and safe communities.

Planning Strategy 1.1

1.1 Maintain the Shire of Cranbrook as a friendly, vibrant, connected and safe place that fosters a strong sense of community where people can enjoy a quality relaxed living environment with a range of housing opportunities developed on good design principles and enhance existing townsites.

Actions

- Maintain a high level of amenity within existing townsites and actively encourage any new subdivision to be responsive to the natural environment and local characteristics.
- Require any new subdivision to incorporate sound planning design principles and promote water sensitive design.
- Consider opportunities for vegetation retention, creek line protection and rehabilitation as part of any new subdivisions whilst balancing the need to provide a safe environment with adequate fire management.
- Continue to actively promote the attributes of the Shire as a desirable place to live and attract new residents to the area.
- Pursue industrial development in the Shire to give local residents increased access to a broader range of employment opportunities.
- Seek funding opportunities for ongoing marketing and promotion of the area to attract new residents into the Shire.
- Continue to foster a sense of community by promoting local community events, Council services and lifestyle.

Shire of Cranbrook Aspiration 2

By 2023 the Shire of Cranbrook will have an innovative, diverse, prosperous and growing economy.

Planning Strategy 2.1

2.1 To actively promote investment, business and employment opportunities to diversify the Shire's economic base.

Actions

- Provide for further expansion of the existing Cranbrook Industrial area to recognise expansion of CBH and cater for new industries with larger land requirements.
- Seek funding to facilitate the Shire's Strategic Vision for a Southern Link Transport Hub in Cranbrook.
- Promote and plan for co-location of industries around CBH to increase employment opportunities for people to live and work in the same area.
- Liaise with relevant service authorities and lobby for upgrading of existing infrastructure.
- Actively pursue scheme amendments progressively to facilitate future industrial growth in accordance with the Local Planning Strategy.
- Provide a leadership role and actively market and promote the Shire to a wide range of industries.
- Actively recognise existing and new businesses and examine opportunities to conduct annual local business awards, business landscaping competitions, Shire run local business breakfasts and conduct ongoing promotion of investment opportunities.
- Seek any available state or federal funding / grants for continued economic and investment development.
- Progress industrial estate planning in Cranbrook and detailed subdivision design to cater for industrial needs.
- Establish and foster good working relationships with relevant industry groups, key stakeholders and major transport authorities as part of forward planning.
- Consider adequate buffers to minimise potential for landuse conflict.
- Provide for adequate retention basins for new industrial areas in Cranbrook and maximise use of rainwater and stormwater for active use in industrial processes.
- Support existing and new opportunities for intensive agriculture pursuits, especially those which provide tourist attractions or increased services to the local community such as wineries.
- Plan for the possible growth of the Tenterden industrial area, to continue to support business growth in the area.

Planning Strategy 2.2

2.2 Attract tourists to the Shire and for it to be known as a desirable tourist destination offering a variety of attractions, including local heritage.

Actions

- Continue to promote and support tourist related uses.
- Liaise with relevant tourist authorities on available funding opportunities for marketing and promoting the Shire or to develop a tourist strategy.
- Promote local recreational and cultural activities.
- Continue to raise awareness and the profile of the Shire.
- Seek funding opportunities for recreational development and continued streetscape works to further beautify the Shire.
- Continue to actively promote tourist, heritage and natural attractions through publications and the Shire website.
- Continue support the Malaak Eco Tourism project.

Shire of Cranbrook Aspiration 3

By 2023 the Shire of Cranbrook will maintain, protect, enhance and promote its environment.

Planning Strategy 3.1

3.1 Encourage responsible environmental management and enhance environmental attributes in the Shire.

Actions

- Liaise with relevant authorities such as the Environmental Protection Authority and Department for Environment and Conservation as part of planning assessments on an as needs basis.
- Recognition of opportunities as they present themselves to maintain and enhance the environment within a planning framework.
- Provide leadership and support as necessary for salinity and other land management issues.
- Consider the need for the protection and enhancement of habitat and balancing environmental issues with the need to encourage development that is consistent with the objectives of a particular zone.
- Continued encouragement for local groups, catchment groups, individual landholders and citizens who want to preserve or enhance the environment.
- Provide assistance to and work with government authorities where possible on environmental management.
- Continue to implement measures for responsible water management.

Shire of Cranbrook Aspiration 4

By 2023 the Shire of Cranbrook will have enviable, quality infrastructure, roads and facilities.

Planning Strategy 4.1

4.1 Continue to improve, develop and maintain Shire asset infrastructure.

Actions

- Audit existing infrastructure and maintain, improve and increase community services and facilities to meet current and future resident needs.
- Continue to seek funding for upgrading of roads, community facilities and services to ensure the Shire has a sound, stable infrastructure that meets the needs of residents, tourists, visitors and local businesses.
- Continue ongoing improvements to drainage and implementation of the draft Water Management Plan (for Cranbrook townsite).
- Liaise with relevant servicing authorities to ensure future residential areas are catered for in forward planning.
- Provide an increased level of public amenities including public toilets, shaded areas, public art and street furniture.
- Monitor demand for residential and rural residential development and continue to lobby the government for release of unallocated crown land for residential needs, particularly in Frankland River townsite.
- Liaise with Ministers and relevant agencies for the ongoing provision of state services such as power, water and road infrastructure.
- Encourage infill subdivision to maximise efficient use of existing infrastructure.

Shire of Cranbrook Aspiration 5

By 2023 the Shire of Cranbrook will demonstrate strong governance, leadership and organisational growth.

Planning Strategy 5.1

5.1 Maintain and improve the quality of life in the Shire of Cranbrook in accordance with the general principles established in the Shire's Strategic Community Plan.

Actions

- Continue to provide proactive governance and increase opportunities for people to live and work in the same area.
- Ensure policy and procedural development supports development and the environment

APPENDIX 1

Southern Link Transport Hub
Strategic Vision

Shire of Cranbrook
A Range of Opportunities

Cranbrook Industrial Infrastructure Project

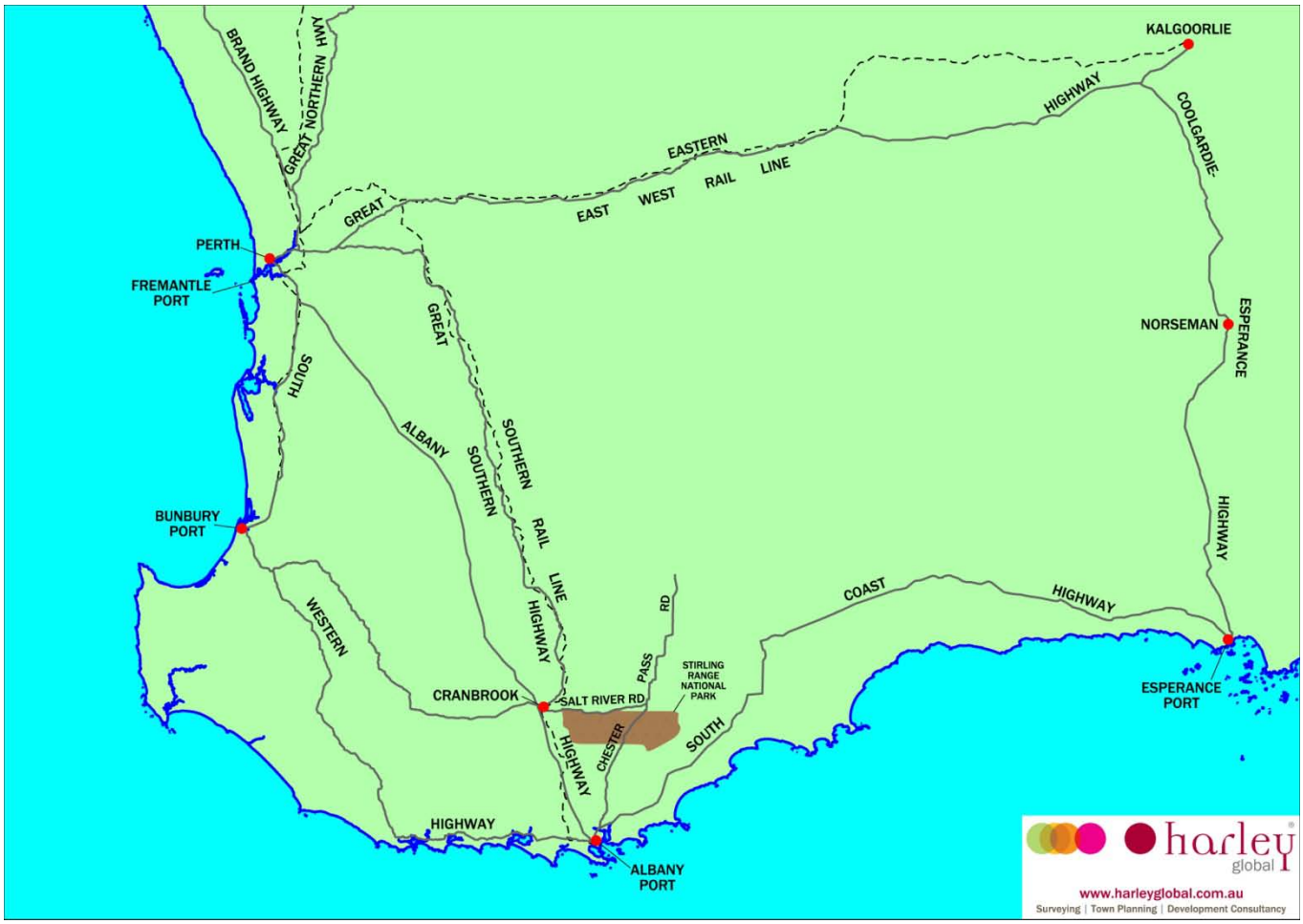
Southern Link Transport Hub

STRATEGIC VISION

There is a fundamental shift occurring in Australia in the way freight is moved from one location to another. “Rail freight is becoming an increasingly significant factor in Australia’s economic and environmental performance” (National Infrastructure Priorities, Commonwealth Government, May 2009). As the carbon debate continues, and the need to reduce our environmental impacts grows, so will the demand for goods to be transported by rail.

The Shire of Cranbrook is located in the Great Southern Region of Western Australia. The Shire has three town sites, Cranbrook, its administrative centre, Frankland River and Tenterden. The area is well known for its agricultural and viticulture products, boasting an exceptional wine industry and large agricultural base. Experiencing a good climate, strategic location, and development focused Council, the Shire is committed to the sustainable development of its economic and social future.

Being traversed by, Albany Highway, Great Southern Highway and the rail line, most road and rail freight entering and exiting the Great Southern region travels directly through the Shire of Cranbrook and all grain transported to Albany via rail travels through the Cranbrook strategic grain receival point.



The Cranbrook town site is located on the two major highways and the Southern railway line. A Strategic Grain Receival Bin is located in the town and has experienced significant growth in the past 10 years, resulting in it being one of the largest strategic grain receival points in the southern hemisphere. There is significant opportunity to value add to the grain product in Cranbrook, cleaning, drying and containerizing on site, reducing handling and increasing value, by shipping direct to Albany Port in containers.

As with most port areas, the land area around the Albany Port is at a premium. Surrounded by the beautiful landscape and historic town, the physical expansion of the Albany Port will be challenged. There is an opportunity for Cranbrook to provide a storage service for the Albany Port activities.

Currently grain is the only freight transported on the Southern rail line and hence the line is greatly under-utilised. There are a number of other products which could be transported on the rail line.

The development of the Southern Link Transport Hub is seen as a long term project that could be considered in the development of a National Freight Network Strategy. This facility would provide regional benefits and would allow the containerization of grain for export as well as the transportation of other goods in and out of the Albany Port for distribution into the Great Southern Regional areas.

This inland port is a strategy to optimize the advantages of relocating large logistics movements out of congested port areas and allowing for growth and expansion into the future. As stated in the National Infrastructure Priorities document, "Road and rail freight networks have a significant role to play in Australia's economy, our environment, and the safety and quality of life of our communities". Cranbrook's location provides easy access to Manjimup, Kojonup, Katanning Wagin, Albany, Denmark, Walpole, and Esperance as can be seen in the transport hub zone map.

The Great Southern Region is poised for continued growth over the next 20 years, with increases in grain, mining resources, woodchips, essential and bio fuel oils as well as the demand for domestic imports for an ever increasing population. Albany and the Great Southern are popular tourist destinations and have recently been included in the National Landscapes campaign, increasing visitor numbers and potential lifestyle moves by tree changers. This will thus continue the growth of the Great Southern region.


TRANSPORT HUB ZONE
135km RADIUS FROM CRANBROOK TOWNSITE
NARROGIN
WAGIN
BUNBURY
WOODANILLING
NYABING
KATANNING
BOYUP BROOK
KOJONUP
BROOMEHILL
GNOWANGERUP
BRIDGETOWN
TAMBELLUP
ONGERUP
JERRAMUNGUP
MANJIMUP
TONEBRIDGE
CRANBROOK
TENTERDEN
FRANKLAND RIVER
WELLSTEAD
MOUNT BARKER
DENMARK
ALBANY
GREAT SOUTHERN HWY
ALBANY HWY
CHESTER PASS RD
JERRAMUNGUP RD
GNOWANGERUP TAMBELLUP RD
GNOW ANG ERUP RD
BOYUP BROOK CRANBROOK RD
CRANBROOK RD
FRANKLAND - CRANBROOK RD
SALT RIVER RD
MUIRS HWY
WESTERN HIGHWAY
SOUTH COAST HIGHWAY
CHESTER PASS SOUTH
HIGHWAY
www.harleyglobal.com.au
Surveying | Town Planning | Development Consultancy

Location

The town site of Cranbrook hosts the Shire office, strategic grain receival point, supermarket, school, police station, residential and industrial land and quality community infrastructure for sport and community activities. It is a vibrant community, alive with activity.

The Shire has a diverse range of business activities and boasts an industrial investment rate of over $500,000 per capita, experiencing significant private investment in the Viticulture, Agriculture, Fertilizer, Timber plantation and Retail sectors. The Shire has large saw log timber plantations and into the future there will be a need to develop a facility to process this product.

Frankland River is an outstanding viticultural area, with major brands such as Alkoomi, Frankland Estate and Ferngrove, as well as Trevelen Farm Wines in Cranbrook. All of these wineries produce award winning wine with a number experiencing success again in 2010.

The Shire of Cranbrook's Council has a development focus, and has an economic development working group, to progress economic growth of the Shire. The Shire is well known for its ability to undertake and complete larger projects on time and budget.

The future and its challenges

This plan requires a large range of crucial partners to be engaged in the value of the project. Partners would include both, the State and Federal Governments, the Albany Port Authority, large logistics companies, grain networks, rail operators, and private investors as well as an array of smaller but vital stakeholders such as environmental groups and service industries.

There is no question that this is a bold vision which forms part of the long term Economic Development strategy for the Shire of Cranbrook. A project such as this will affect and benefit not only the communities in the Shire of Cranbrook, but those located in the Great Southern Region. It could lead to greater freight efficiency and hence lower transport prices, the ability to value add to existing market products, and the development of new support industries and enhancing business competitiveness. It would provide access to a range of employment for residents within the region.

It is expected that the project will face a number of challenges, especially in these early stages. Providing evidence to business that there will be a return on investment, proving to government the need for the project, and the positive social and economic outcomes for the region, will require much research and reporting.

The Shire of Cranbrook, its staff and Councilors understand the scale of such a project, but also understand and are committed to the development of a strategy that will enhance not only their own communities but those of the region. This project has an array of possible environmental, social, community and economic benefits and is worthy of further investigation and feasibility study, to secure the development of this region for future generations.

Sustainable Development

In today's environment, smaller communities are challenged to prove their sustainability and capacity for growth into the future. For many years the Shire of Cranbrook has been focused on their long term development and sustainability and this plan is the culmination of that work. Considering not only the sustainability of communities but also the environment, this project seeks to reduce food miles, narrow the carbon footprint and utilize existing waste materials from renewable sources.

The Cranbrook Infrastructure development project provides real, environmental solutions to the provision of power and water, both of which pose growth challenges for the Shire, the Region and service providers. It reduces waste across the Shire by utilising waste products in the production of power, and using power to desalinate ground water for industry. The development model is based on a waste reduction policy, to utilize waste and by products of existing industries such as straw, timber and animal residues.

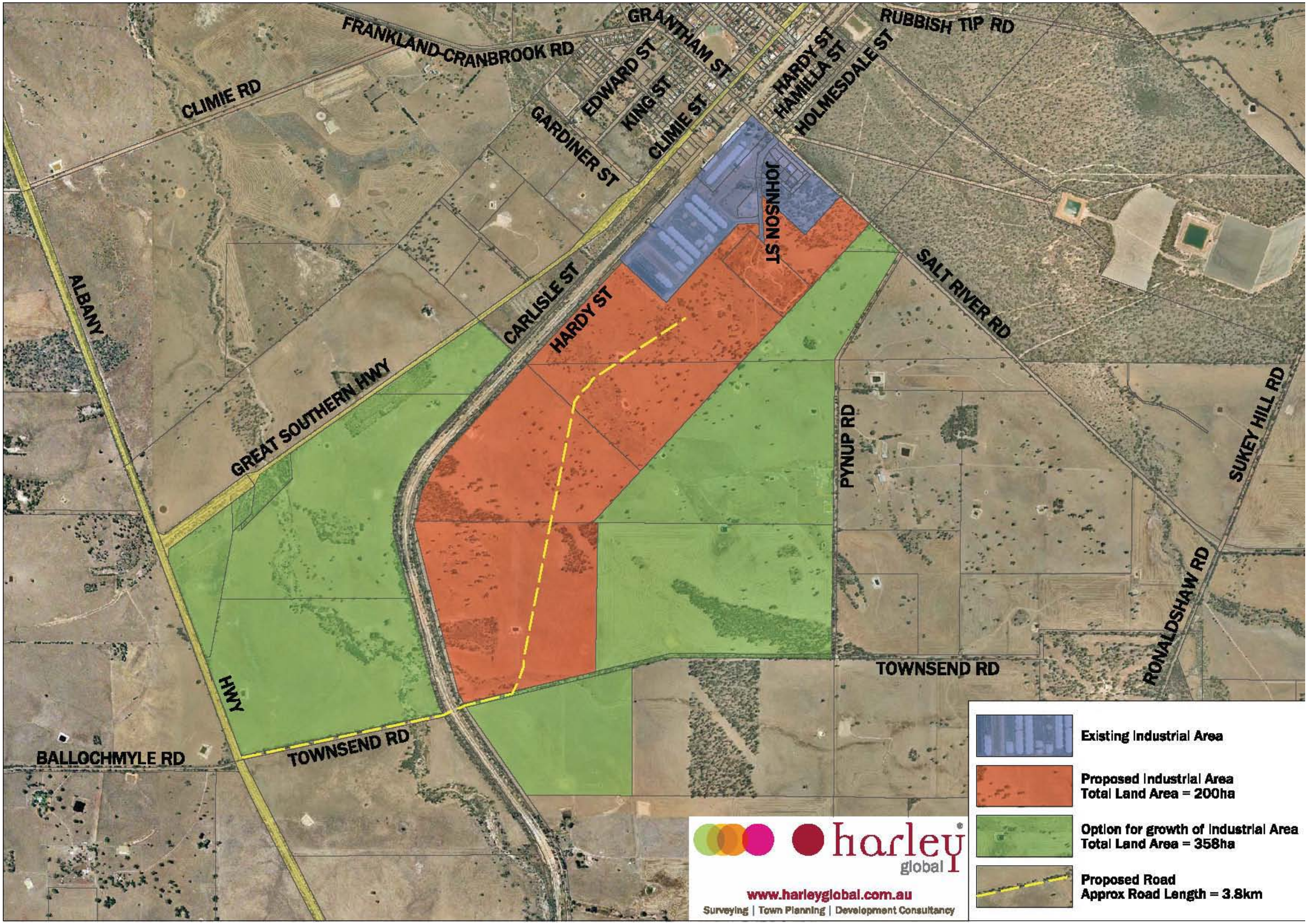
Being an area rich in high quality agricultural and viticultural produce as well as high value fresh meat products, the development of processing and value adding industries is not only possible, but logical and responsible enabling a reduction in food miles, with production being at the heart of the growing area.

A sustainable model, this represents the future for regional developments with a high degree of self sufficiency, support of local industry, value adding, production of export quality produce, and the reduction of environmental pollutants.

The Shire of Cranbrook is highly focused on the future of its economy and community. There is strong commitment across Council and Staff to the continuing development of our regional towns and the leadership shown by small, responsible communities. This is a Shire leading by its own example, strong in planning and in the sustainable development of both industry and community infrastructure.

Structure and commitment, along with fiscal responsibility, an understanding of markets and also the need to allow markets to develop themselves coupled with a positive, approachable, development focused local government willing to facilitate development, makes the choice for developers unmistakably easy.

Land Availability



SHIRE OF CRANBROOK ECONOMIC DEVELOPMENT MODEL

Kiln Dried Timber and other process that can use exhaust air

Exhaust Heat Utilisation

Power income $$

POWER TO GRID

Carbon Credits/Offsets

High Quality GRAIN GROWING

Timber Industry Residues

Agricultural Residue
e.g. Straw

Biomass Crops
Mustard Seed , Mallees both grown on **low productivity farm land**

Other degradable waste
e.g. Waste paper

Waste Utilisation

POWER GENERATION
Infrastructure investment in town, labour requirement.
Outputs -power and heat

Waste Water Utilisation

GRAIN CLEANING / DRYING

Containerised Export Grain

Residues

POWER for Desalination

POWER / Steam

WATER FILTRATION
Desalination of ground water lowers water table and produces potable water

FEEDSTOCK PELLETS

Solid Waste product

INDUSTRIAL WATER

LIVESTOCK PRODUCTION

Waste Water Utilisation

FOOD PROCESSING
Meat product, requires potable water

Other intensive farming industries – organic produce, nuts, berries

High Quality / Organic / Free Range, Food products Sold to market

Internal consumption

Waste conversion

Sold to external markets

Internal Production and Consumption leads to;

- **Reduction of Food Miles**
- **Narrow the Carbon Footprint of the Shire**

INLAND PORT/TRANSPORT HUB

- Bulk Wine Transport
- Cold Store facilities
- Mining processing
- Container manufacturer
- Attraction of services

- 2 Way freight on rail line
- 2nd Line to Albany
- Container Lift at Albany Port
-

Importing of Inputs such as;

- Fertiliser
- Machinery
- Flat Pack Containers for manufacture

Local Benefit Statement

- Value add to existing industry
- Employment growth, diversity and opportunity
- Improved local sustainability
- Best use of geographic location
- Available and affordable land
- Logical extension of existing industries
- Potential for new business
- Growth of services and population
- Advantageous to existing service industries
- Possibility of bulk wine transportation from the hub
- Increased business competiveness
- Utilisation of waste
- Narrowing of the carbon footprint of the Shire

Regional Benefit Statement

- Reduction in food miles
- Central location for the distribution and transportation of goods
- Reduction in transport cost
- Improved regional sustainability
- Narrowing of the regional carbon footprint
- Reduction of regional waste

Action outcomes

In order to progress this project the Shire of Cranbrook plan to;

- Hold Community forums
- Travel to Parkes and Blayney in NSW to gain insight into a similar Intermodal Transport Hubs
- Meet with key industry personnel
- Seek funding to undertake a feasibility study into the development of an Inland Port / Transport Hub
- Progress land rezoning
- Investigate road access to new the industrial area from Albany Highway
- Work with the State and Federal Governments for assistance in upgrading the rail line
- Meet major logistics companies located in Western Australia to discuss their interest in this project
- Formulate an Economic Development strategy for the Shire of Cranbrook and include the regional benefits of this and other projects

The Shire of Cranbrook implores Government and Private enterprise to consider rural communities for long term development projects. Rural communities can provide immense value and skills to industry. They continue to thrive based on support from positive development policies and government agencies. There is the need to continue to invest in public infrastructure, from roads and rail, to the availability of land for housing and industry, a strong education sector and community resourcing. This is not only the role for all governments but that of investors and the community at large.

Acknowledgements

Photographs

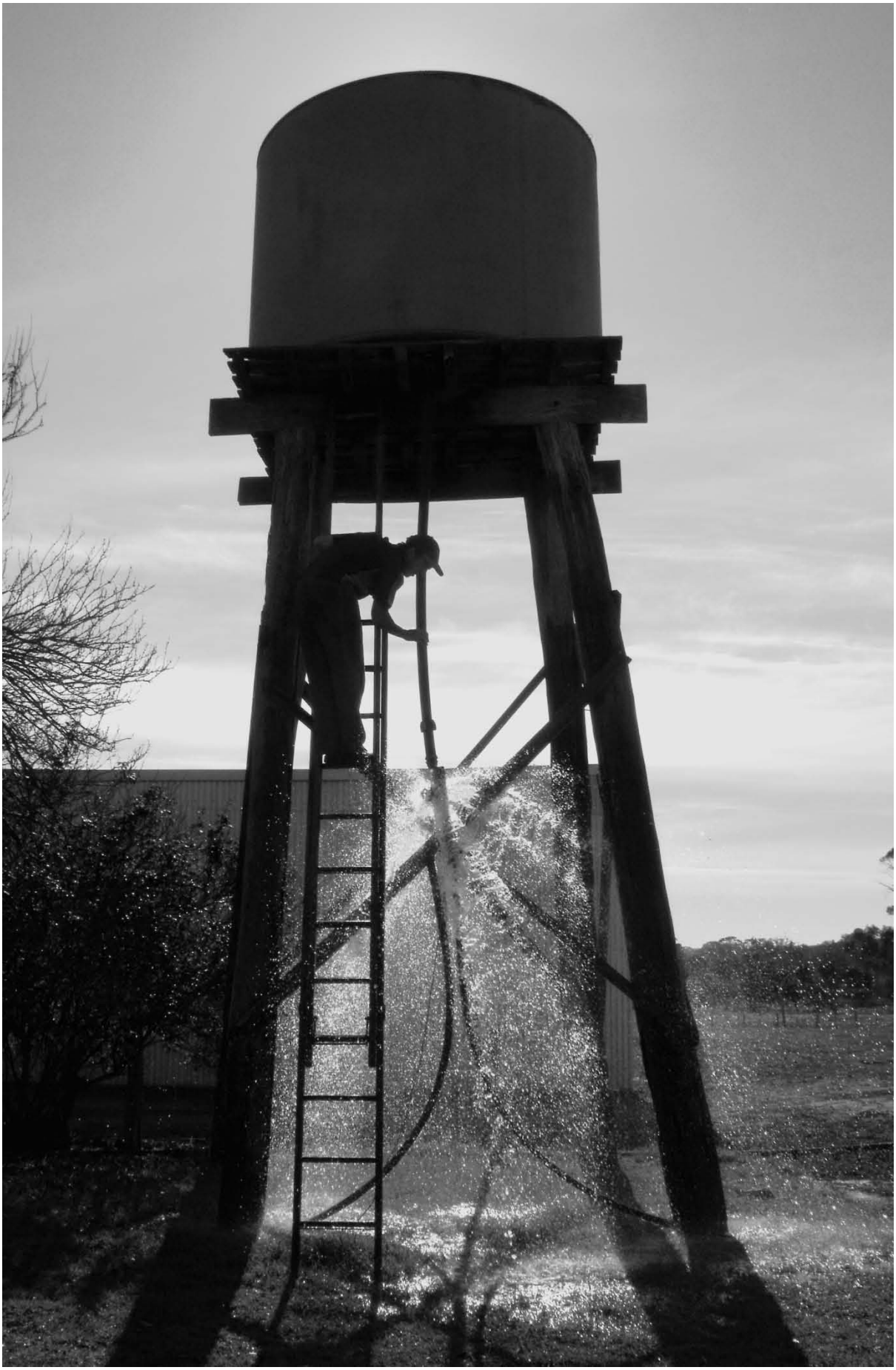
Department of Agriculture and Food WA

Shire of Cranbrook, photo competition entrants

Thanks to the Councilors and Staff of the Shire of Cranbrook.

	Shire of Cranbrook
Shire President	Cr Douglas Forrest
Chief Executive Officer	Mr Anthony Middleton
Manager Business Development	Mrs Cassandra Stipanicev

Telephone: 08 9826 1008 www.cranbrook.wa.gov.au Email:ceo@cranbrook.wa.gov.au



APPENDIX 2

Cranbrook Industrial Infrastructure Project

Land Capability Assessment

CRANBROOK INDUSTRIAL INFRASTRUCTURE PROJECT

Land Capability Evaluation

Stage 1 *Initial Research and Overview Assessment*

prepared for

SHIRE OF CRANBROOK

by

LAND ASSESSMENT PTY LTD
5/27 York Street
SUBIACO WA 6008

Tel: (08) 9388 2427

Report No. 1029/1

JANUARY 2011

CONTENTS

Page

FIGURES

TABLES

1.0 INTRODUCTION

The Shire of Cranbrook is in the process of formally identifying a new industrial area adjacent to the townsite and extending out from the existing CBH Strategic Grain Receival Bin, as an integral part of its vision for Cranbrook as the State's 'Southern Link Transport Hub'.

It is envisaged that future industrial land uses for this area will be associated with its strategic location as a rail and road transport hub for predominantly agricultural produce. These land use activities will be 'dry industries' not requiring significant water resources or effluent disposal areas, and they could include grain cleaning and drying, and subsequent containerization for export, as well as the transportation of other goods in and out of the Albany Port for distribution into the Great Southern Region (Shire of Cranbrook 2010).

As part of an associated review and upgrade of the Shire's Local Planning Strategy to facilitate such development, an environmental opportunities / constraints analysis (land capability study) is needed as a supporting technical document.

This report presents the results of the first part of a proposed two stage Land Capability Evaluation to address that requirement. It is based on a desktop review of reports relating to the nature of the land and environmental planning issues including, but not limited to, drainage and salinity management. It is envisaged that stage 2 of the Land Capability Evaluation will be a soil survey and site drainage investigation to be conducted during winter months.

The subject land is located south of the townsite and east of the intersection of the Albany and Great Southern Highways. It occupies a total area of 558 ha and comprises 200 ha of the actual proposed industrial area and an additional 358 ha identified as an 'Option for Growth' area (Figure 1).

Based on a review of existing site environmental data, the objective of this Stage 1 report is to provide greater clarity on the extent and location of areas potentially suitable to satisfy possible short, or medium to long term, industrial development demand. It aims to provide 'due diligence' confidence to the Shire of Cranbrook and government referral agencies over the presence or otherwise of any significant environmental constraints relating to the site's soils, land capability, drainage conditions and buffer requirements.

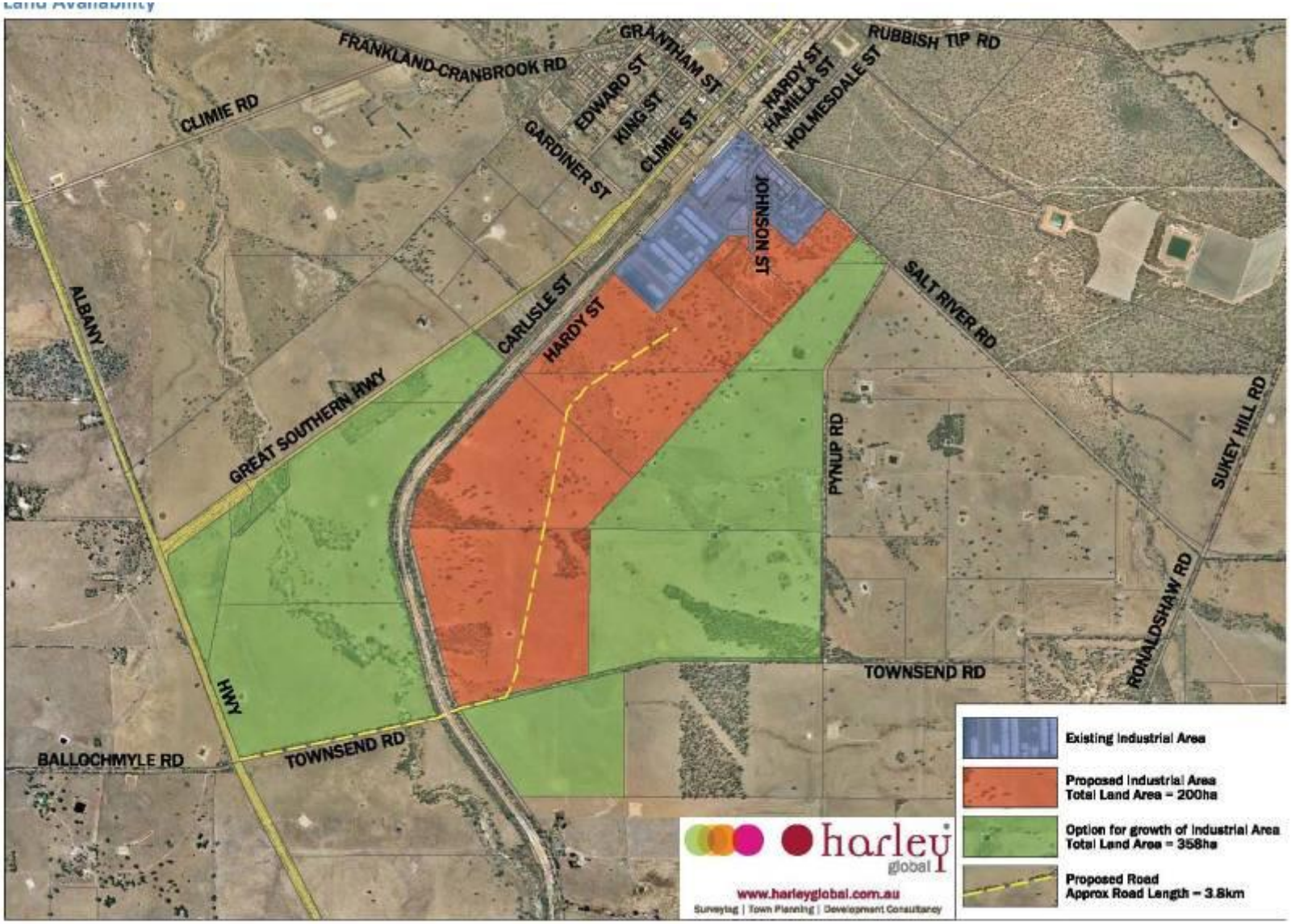


Figure 1. Study Area

2.0 INFORMATION SOURCES

The following sources of information relating to the nature of the land and environmental planning issues form the basis of this report;

2.1 Water Management and Salinity Issues

Water Management Plan for the Town of Cranbrook (DAFWA 2010)

This report summarises the outcomes from investigations undertaken as part of the Rural Towns—Liquid Assets (RT–LA) project. This project aimed to integrate measures to address salinity, waterlogging and flooding control with the development of new water supplies in wheatbelt towns such as Cranbrook. Although focusing on the townsite, the report contains some data and recommendations relevant to the northern portion of the Industrial Infrastructure project area.

The RT-LA project undertook a drilling program to assess the viability of obtaining a groundwater supply from bores within the township that could also lower watertables and help control salinity. Poor drainage was noted in the vicinity of the railway reserve (near the northern edge of the proposed industrial area) which has led to waterlogging and an accumulation of salts in the localised seasonal watertables.

The report's recommended surface water and groundwater management options are outlined in Figure 2. Options specifically relevant to the Industrial Infrastructure project area include;

- **Groundwater pumping from a new bore (08CBPB01)** - located near the northern corner of the study area where there is an aquifer with a small yield of relatively good quality water.

- **Installing a lined sump and pump system adjacent to CBH** – this was to harvest surface water runoff suitable for reticulation and integration into the townsite's existing reuse system at Frederick Square Oval. (*This might be supplemented with additional runoff water generated from nearby parts of the proposed industrial area).*

It is understood these recommendations have yet to be implemented.

The Salinity and Hydrology of Cranbrook (Ferdowsian & Ryder, 1997).

This study was conducted in 1997 in response to concerns over increasing salinity and surface water management problems threatening the existing infrastructure in the townsite. It involved the installation of a network of groundwater bores that have provided important data and interpretations for the more recent Water Management Plan (DAFWA 2010).

The 1997 report identified specific areas susceptible to waterlogging that are relevant to the Industrial Infrastructure project area, being along side the railway line adjacent to the CBH facility, and on both sides of Industrial Tip (Johnson) Road. Recommendations specifically relevant to the Industrial Infrastructure project area include;

- *Constructing a trapezoidal-shaped, shallow channel along stagnant segments of the Pinjalup / Cranbrook Creek*- this was to minimise water spreading out and flooding large areas on both sides of Industrial Tip Road.

- *All future buildings (around Industrial Tip /Johnson Road) be constructed on top of a pad consisting of at least 0.5 m of sand.*

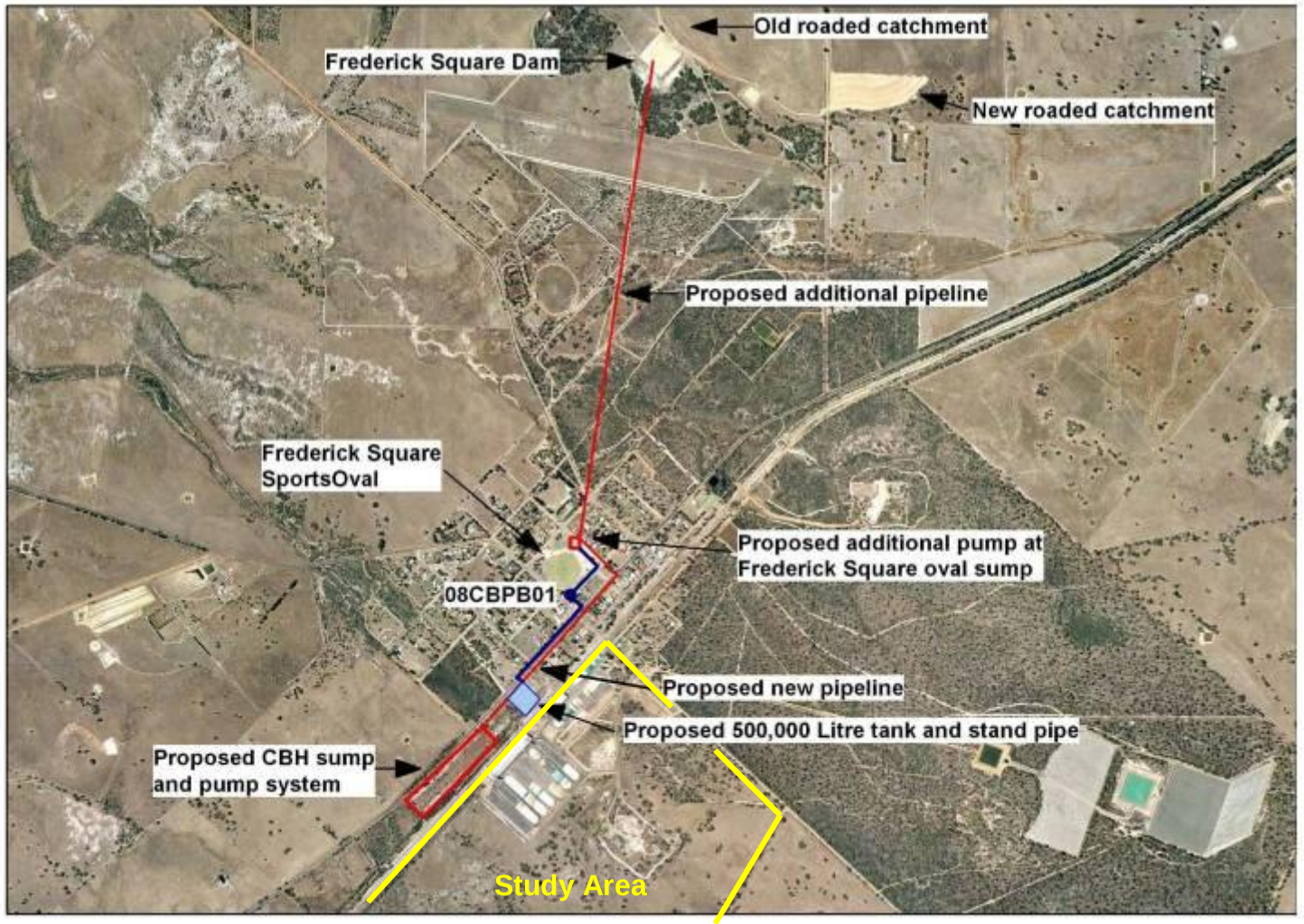


Figure 2. Cranbrook Townsite Water Management Plan - Proposed Surface Water and Groundwater Management Options
*DAFWA (2010)

Cranbrook-Toolbrunup Catchment Appraisal Report (Department of Agriculture 2002)

This is a more regional scale study that provides land and water management recommendations attached to land management units that are generally described for the study area, but not mapped.

2.2 Soil landscape mapping and assessments

Although summarised within the *Cranbrook-Toolbrunup Catchment Appraisal Report* (Department of Agriculture 2002) the original source information is the land resource survey of the Tambellup-Borden Area (Stuart-Street and Marold 2009). Mapping is also provided through SLIP (Shared Land Information Platform) – a portal available through Landgate for accessing data and information productions from State repositories.

2.3 Biodiversity

An on-line search of the Department of Environment and Conservation's NatureMap Flora and Fauna database was used as the primary source of data on biodiversity.

2.4 Indigenous Heritage

An on-line search of the Aboriginal Heritage Inquiry system of the Department of Indigenous Affairs was used as the primary source of data on indigenous heritage. An Aboriginal Heritage Assessment - Work Area Clearance report by de Grand Pty Ltd (2010) was also referred to.

2.5 Separation Distances

The Environmental Protection Authority Guidance Statement No 3 – *Separation Distances between Industrial and Sensitive Land Uses* (EPA 2005) was referred to.

3.0 ENVIRONMENTAL CONSIDERATIONS

3.1 Climate

Cranbrook is located in the low to medium rainfall district with an average annual rainfall of 480 mm and a potential net evaporation loss of approximately 1,650 mm/year (source: Bureau of Meteorology). There has however been a decrease in rainfall of almost 3 per cent over the long term trend since 2000 (Appendix E of Water Management Plan (DAFWA 2010).

3.2 Land use in locality

Agriculture is the main industry in the district. Wheat and sheep farming dominate, with lupins, legumes, barley and canola grown in cropping rotations.

3.3 Geology

Cranbrook townsite is located on the southern end of the Yilgarn Block (Muhling and Brakel, 1985 – Figure 3). The Yilgarn Block's basement rocks of Archaean age (> 2500m million years old) are generally igneous or metamorphic with numerous dolerite dykes that can act as barriers to groundwater flow. The basement rocks around the southern margins of the Yilgarn Block, including the Cranbrook vicinity, are mainly quartzites (metamorphosed sandstone) which are part of the meta-sediments of the Stirling Range Formation.

Regolith (unconsolidated weathered or sedimentary material over basement rocks) around Cranbrook is moderately deep (10 -30 m) and in most of this area the in-situ weathered profiles are covered by sediments of Tertiary age (Pallinup Siltstone) and overlying Quaternary alluvium and colluvium (Department of Agriculture 2002).

Shallow regolith and surface outcrops of basement rocks are most likely within a slightly elevated spur of land extending across the study area from the intersection of Townsend and Pynup Roads westwards towards the curve in the railway line corridor.

3.4 Catchment Position and Salinity

Cranbrook is located to the west of the Stirling Ranges and is situated on the upper eastern edge of the Gordon-Frankland catchment. The Gordon-Frankland catchment area is 5,990 square kilometres (5,990,000 hectares) and extends from the South Coast east of Walpole, in a north-east direction towards Broomehill (DoE, 2004).

The Gordon-Frankland River and its tributaries are brackish to saline, caused by the hinterland salt lakes, saline groundwater and extent of land clearing in the catchment. The land in the upper catchment (including the Cranbrook area) has always had a high salt content caused by geological weathering and poor drainage. Waterlogging is also a problem within the broad flat terrain of the upper catchment where drainage is slow (DoE, 2004).

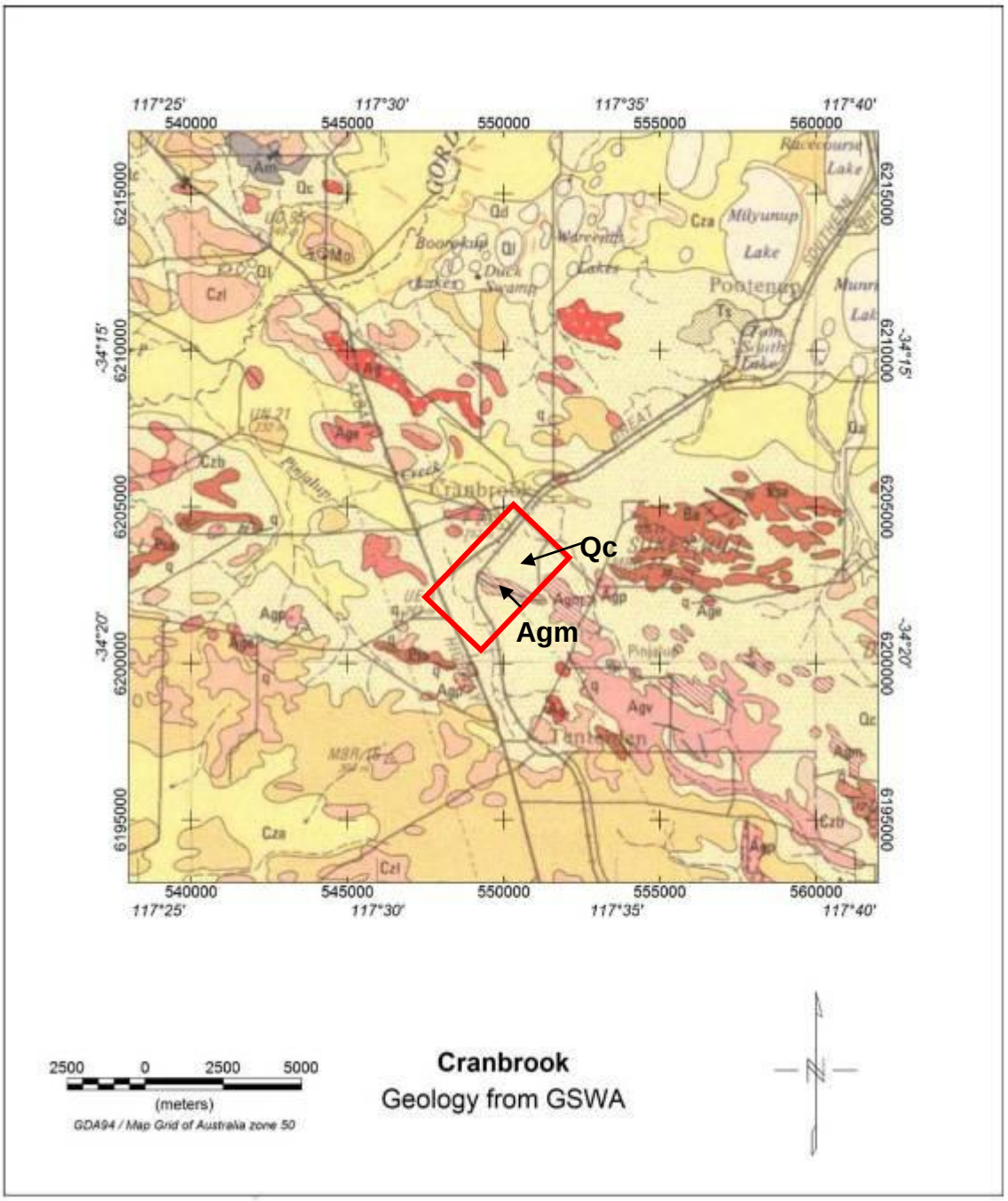


Figure 3. Geology

Source Muhling and Brakel (1985).

Qc = Quaternary colluvium (sand, silt and clay). **Agm** = Archaean ademalite and granite

3.5 Drainage and Topography

Cranbrook is positioned in the valley floor of a relatively flat catchment and much of the town experiences seasonal waterlogging due to low relief and poorly drained duplex soils.

There are several small drainage lines around Cranbrook and these come off the hills to the east and go in a north westerly direction to the Gordon River. Pinjalup Creek, sometimes referred to as Cranbrook Creek, is the most important because of its size and because it recharges the aquifer under the town.

The position of Pinjalup Creek within the northern portion of the Industrial Infrastructure study area is shown in Figure 4. Pinjalup Creek starts in the undulating farming areas south-east Cranbrook and has been diverted near the town water supply dam to avoid flooding the town. Its new water course is a constructed drain (2.5 m wide and 0.5 m deep) which eventually crosses Industrial Tip Road (shown as Johnson Street in Figure 1) and the railway line near Co-operative Bulk Handling (CBH) on the southern edge of town. Pinjalup Creek eventually discharges into the Gordon River 11 km downstream from Cranbrook.

The Pinjalup Creek catchment around Cranbrook and the industrial infrastructure study area consists of four main sub-catchments. Figure 5 shows the sub-catchments that flow into Pinjalup Creek. The names of two of these, Cranbrook Town North, and Cranbrook Town South, are as referred to in the Water Management Plan (DAFWA 2010). The remaining two sub-catchments, Pynup Road South and Townsend Road, have been named here for the purposes of this study.

The proposed new industrial infrastructure areas, including the 'option for growth' areas encompass parts of three of the sub-catchments outside of the Cranbrook Town North sub-catchment. The Cranbrook Town South sub-catchment generates run off which combines with CBH run off and discharges to the north-west on the western boundary of town.

The area of land along side the railway line adjacent to the CBH facility lacks drainage definition and this results in accumulation of surface water runoff and increases the potential for in-situ recharge to the groundwater (Appendix C of Water Management Plan -DAFWA 2010). Ferdowsian & Ryder, (1997) also reported large areas near Industrial Tip (Johnson) Road with severe waterlogging and made recommendations for revitalizing drainage along stagnant segments of the Pinjalup / Cranbrook Creek, and ensuring future buildings within the existing industrial area are constructed on top of a pad consisting of at least 0.5 m of sand.

Among other things, the Water Management Plan (Department of Agriculture and Food 2010) concluded that town catchment runoff (Cranbrook Town North and South sub-catchments) is responsible for townsite inundation, waterlogging and recharging of the local groundwater system. Inflows from the wider catchment or the regional groundwater system were considered to be negligible. *This suggests that runoff from most of the future industrial areas will have little effect on the townsite waterlogging and salinity issues.*

Topographic contours in Figure 6 show surface elevation ranges from approximately 252 m AHD in the north-west near the intersection of Carlisle St and the Great Southern Highway, to a high point of about 278 m AHD near the intersection of Pynup and Townsend Roads in the south-east. The corresponding slope gradients are gentle, ranging from 1 – 5%. There is no indication from the aerial photo of the presence of wetlands within the study area.

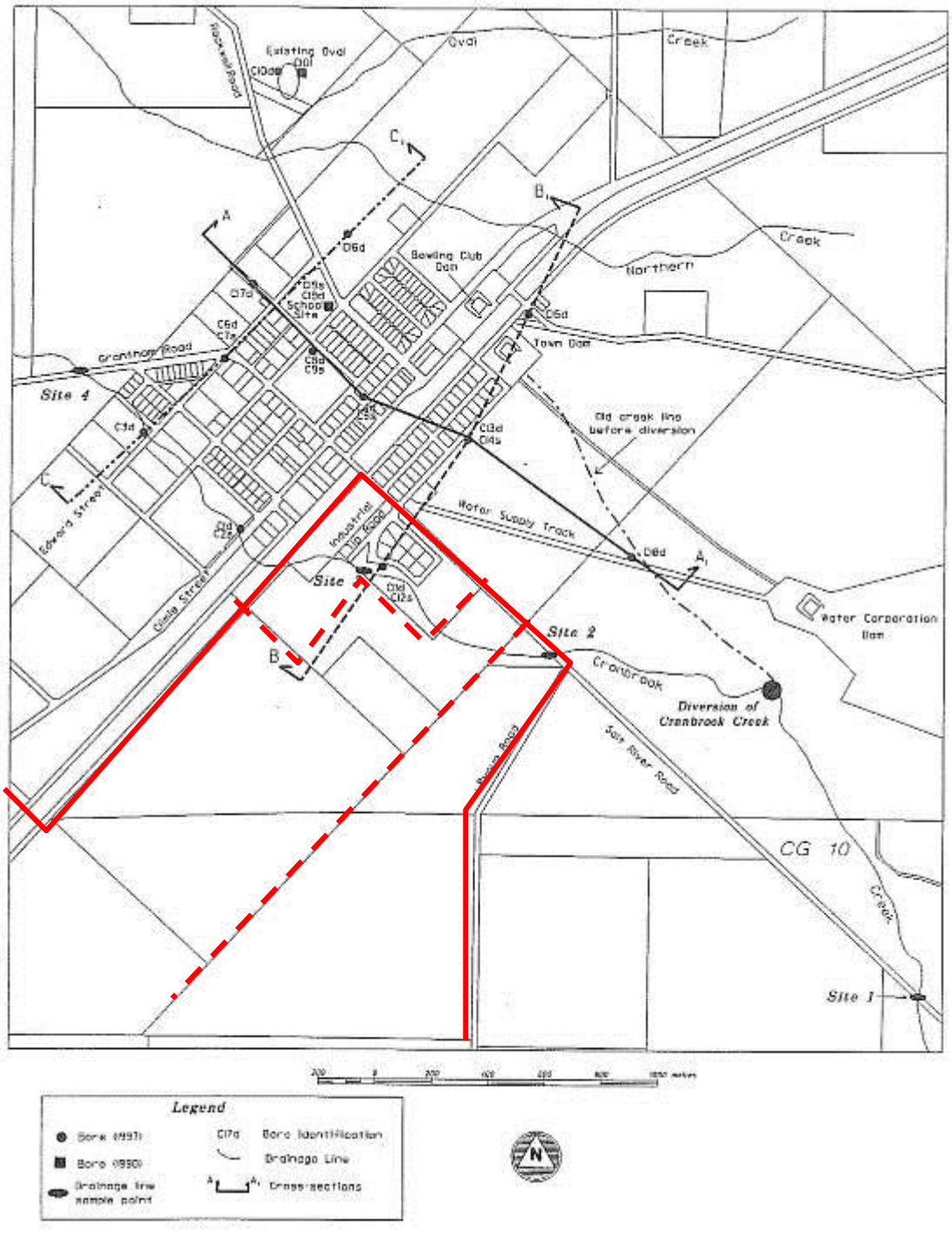


Figure 4. Location of Pinjalup Creek within northern portion of study area

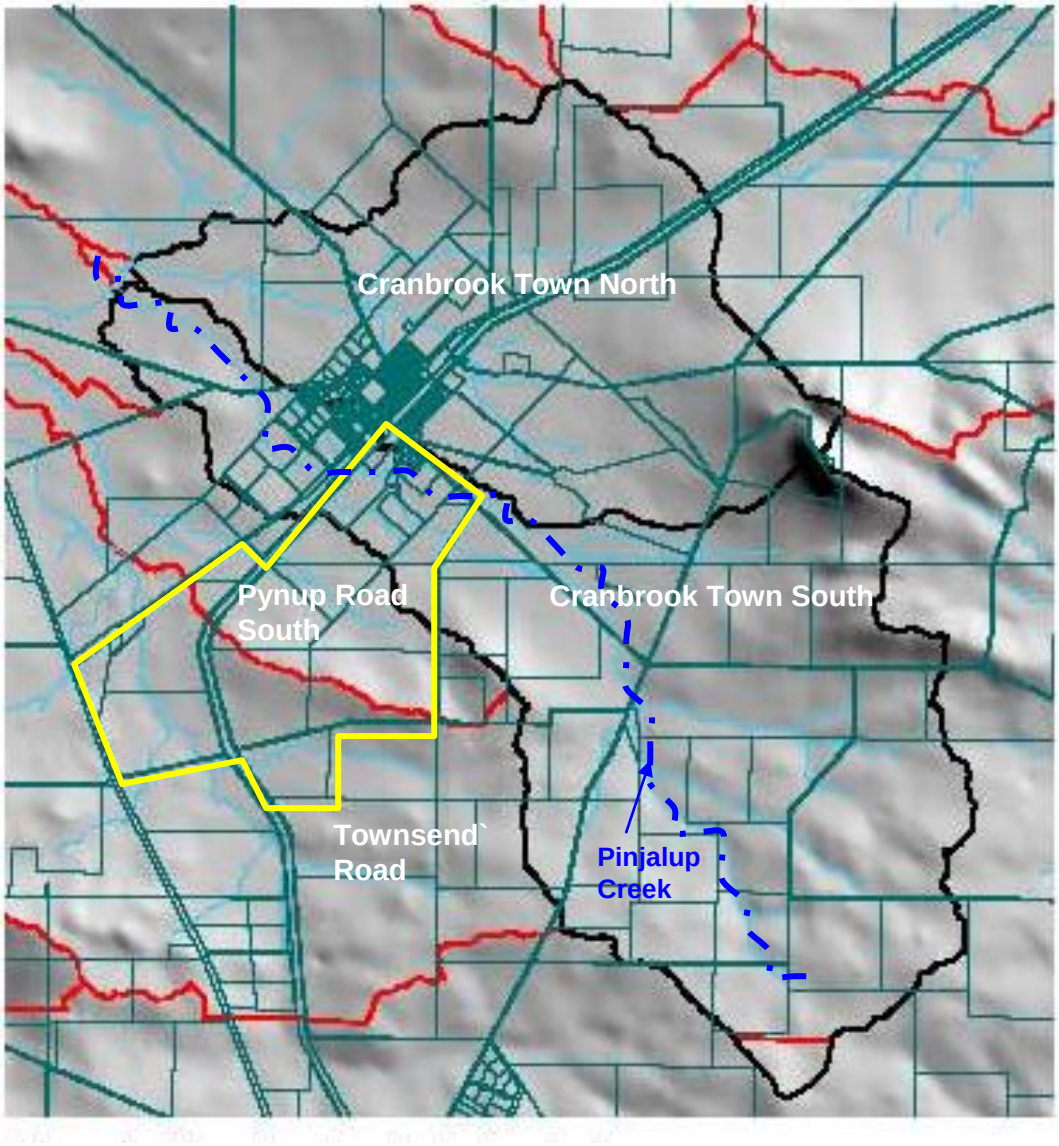


Figure 5. Pinjalup Creek sub-catchment boundaries over shaded relief map

Source: Adapted from Water Management Plan (DAFWA 2010) – Figure 4, Appendix E

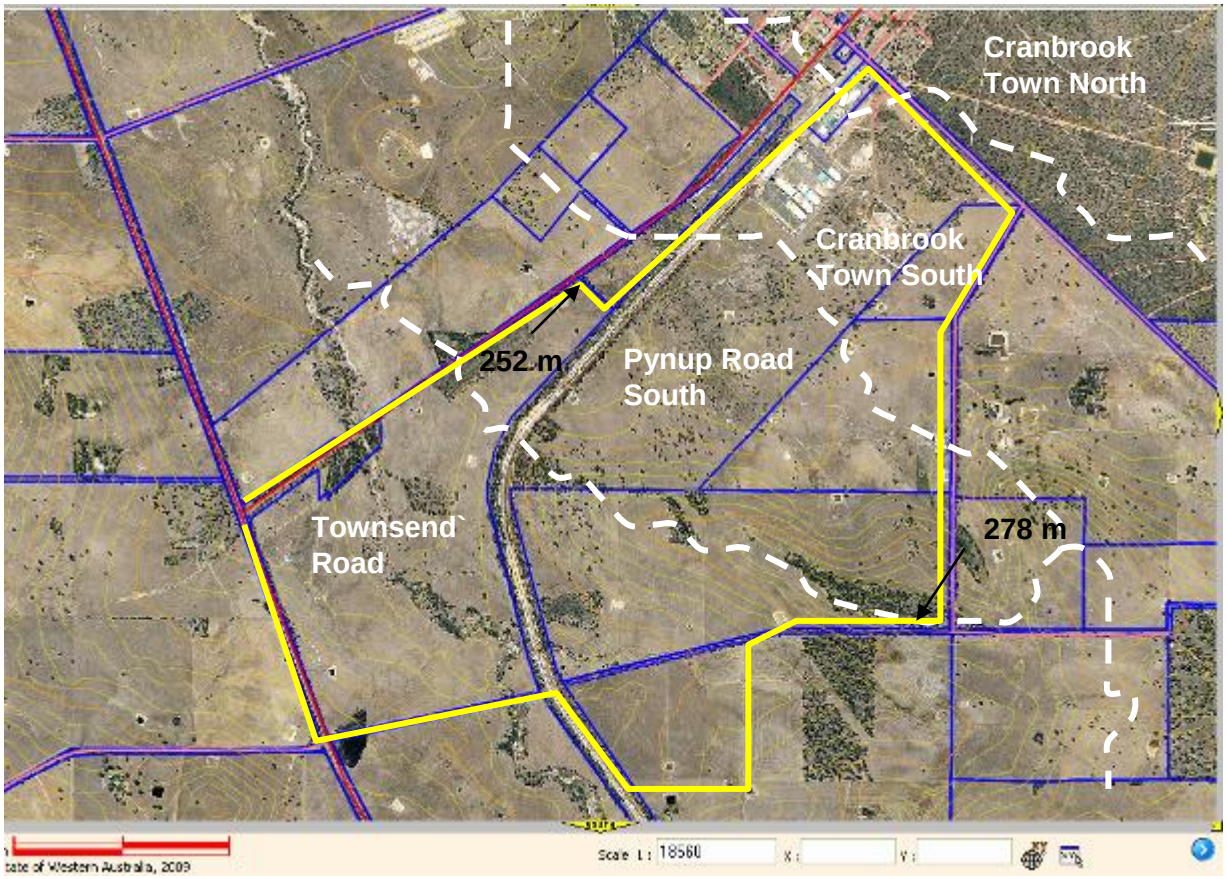


Figure 6. Pinjalup Creek sub-catchment boundaries and contours over aerial image.

Source: Adapted from SLIP NRM Info – Shared Land Information Platform (www.spatial.agric.wa.gov.au/slip) – January 2011.

3.6 Groundwater

3.6.1 Hydrogeology and Existing Salinity

In the Department of Agriculture study of salinity and waterlogging around Cranbrook townsite Ferdowsian & Ryder,(1997) reported;

- Groundwaters which develop in cleared agricultural areas south-west of the Salt River Road and on both sides of Pynup Road (Figure 7) contribute to groundwater that flows under the townsite. *These areas are within the industrial land study area*.

- There is a paleochannel (buried alluvial channel) underlying part of the townsite of Cranbrook. It extends south eastwards and aligned roughly parallel to, and north of, Salt River Road near the northern portion of the industrial infrastructure study area (Figure 8).

- This paleochannel is in-filled by coarse sediments and provides an easier path for groundwater flow compared to adjacent areas with a heavy textured profile*. (This suggests that further industrial development near the paleodrainage channel needs to avoid direct disposal of surface runoff into the ground as it is likely to recharge groundwater and exacerbate the potential for waterlogging and salinity problems within the adjacent townsite).*

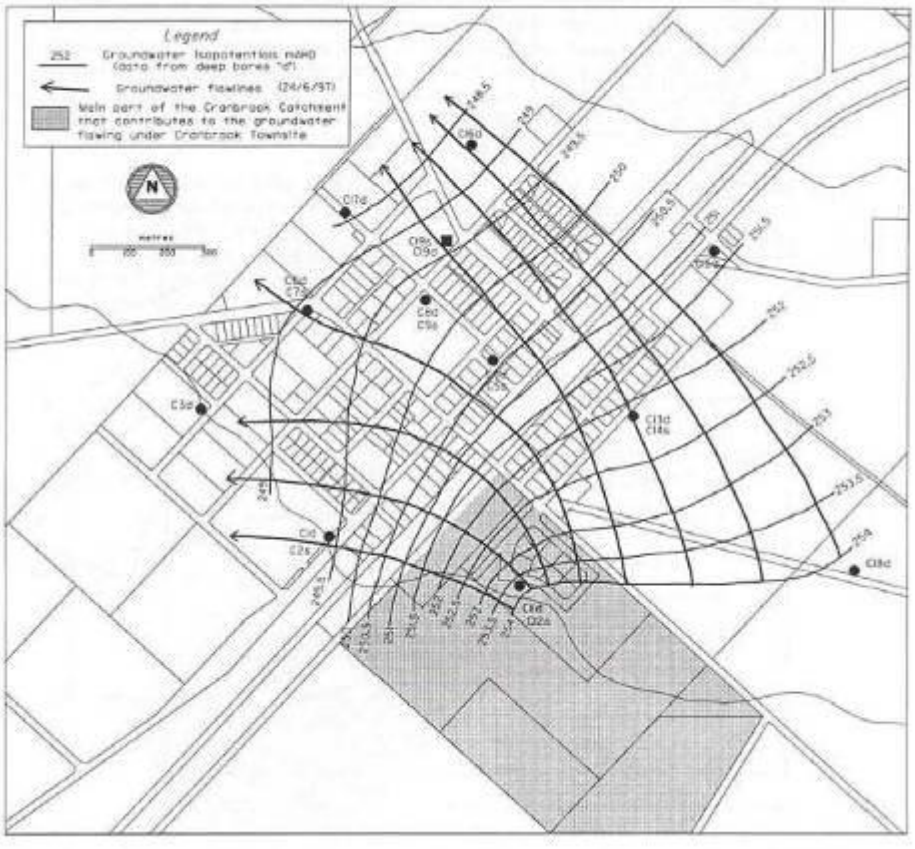


Figure 7. Groundwater flow lines – showing main part of the catchment (shaded area) that contributes to the groundwater flowing under Cranbrook townsite.

Source: Ferdowsian and Ryder (1997)

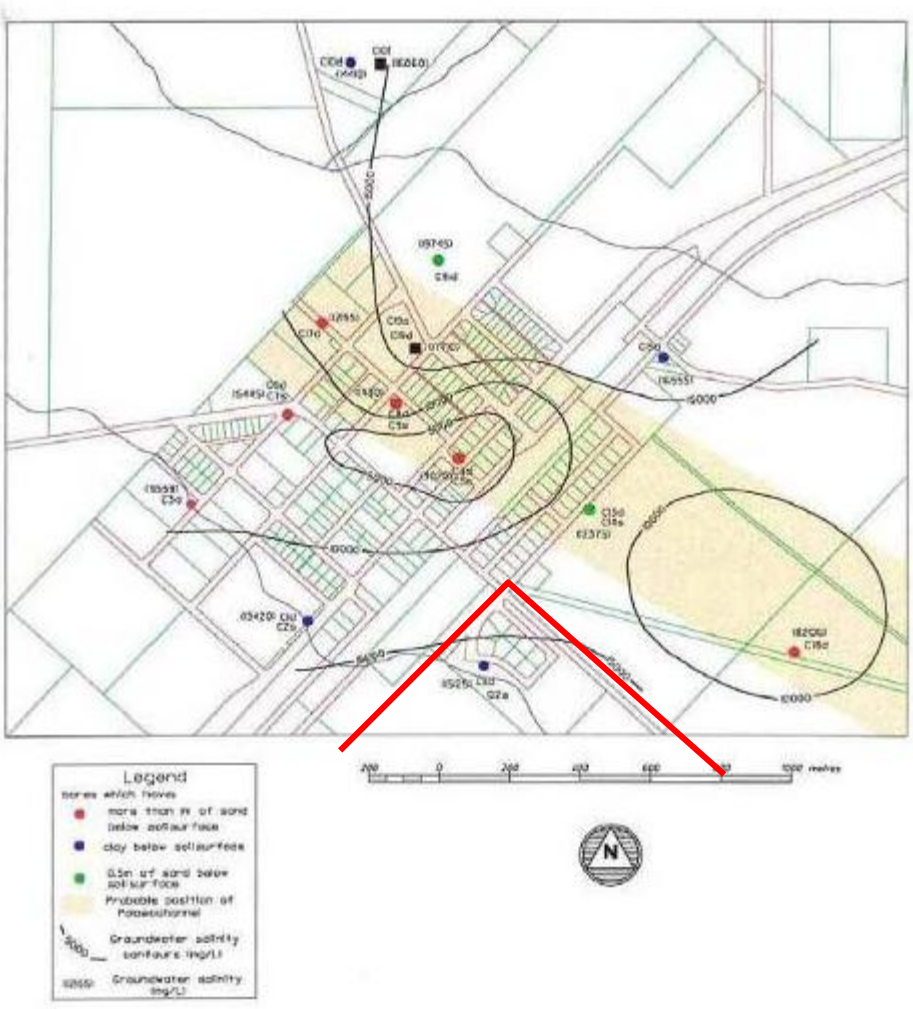


Figure 8. Inferred location of paleodrainage channel

Source: Ferdowsian and Ryder (1997)

As part of the Rural Towns – Liquid Assets Project, a drilling program was undertaken to assess the viability of obtaining a groundwater supply from bores within Cranbrook township that could also lower watertables and help control salinity. Relevant bore locations and depth to groundwater data are shown in Figure 9. The Water Management Plan (Department of Agriculture and Food 2010) reported;

- The average groundwater salinity in the townsite is about 2,200 mS/m (very saline) and monitoring since 1997 shows that in the main, water levels have stabilized.
- There are two main aquifers in the Cranbrook area with potential to lower water tables through groundwater pumping. The first is an aquifer with fresh water that occurs in the sediments and weathered material above the fresh bedrock (Stirling Range quartzite aquifer). This aquifer has low to medium yields and bore 08CBPB01 (refer Figures 2 and 9) is drilled and constructed in this.
- The second aquifer is a brackish paleochannel sand (confirming the 1997 observations) and although groundwater yields are moderate, the water quality is brackish to poor. Bore 08CBPB02 was drilled and constructed in this (refer Figure 9).

- The two main aquifers do not appear to be connected hydraulically.
- Groundwater pumping is an option for lowering watertable and reducing salinity risk within the townsite, with a new production bore, identified as 08CBPB01, being the preferred location for the pump.
- Options for the use of groundwater from this bore include supplying water to industries that require good quality water as well as an additional source of water for irrigation of Frederick Square Oval.

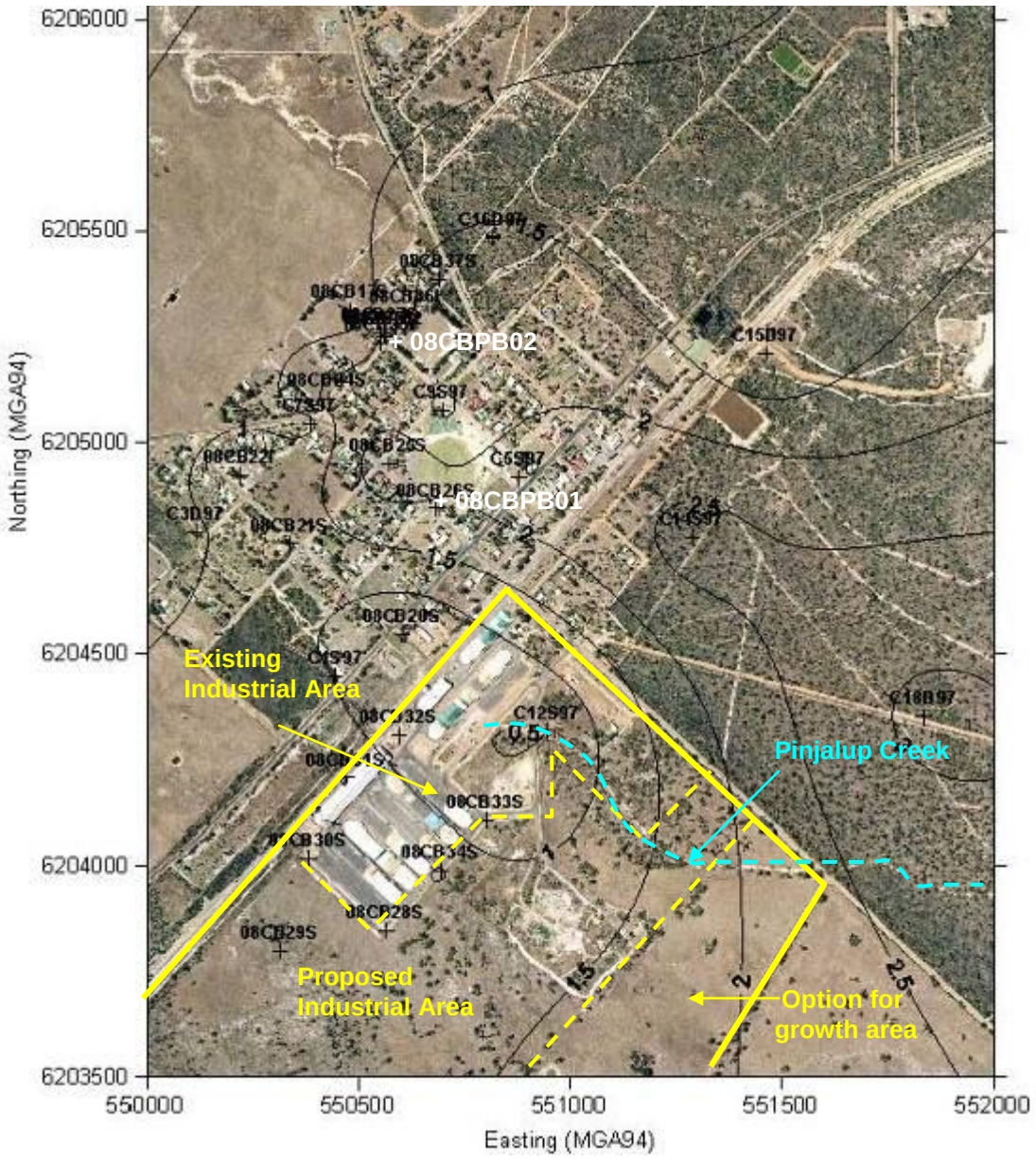


Figure 9. Bore Locations and Depth to Groundwater
(m below ground as at 25/08/2009)

Source: Adapted from Water Management Plan (DAFWA 2010) – Figure 8, Appendix E

3.6.2 Depth to groundwater

Specific information on depth to groundwater is only available within or in proximity to the Cranbrook townsite where 19 monitoring bores were constructed in 1997 and subsequently monitored under the Rural Towns Program project (Ferdowsian and Ryder, 1997).

Figure 9 shows the depth to water and bore locations within the northern portion of the study area as at August 2009. It suggests that depth to winter watertable levels are between 0.5 m and 1 m from the surface over much the existing industrial area.

Within the northern portion of the 'proposed industrial area' the depth increases to between 1 m and 1.5 m, and for the adjacent portion of the 'option for growth area' the depth to winter groundwater increases further to around 1.5 to 2m below the surface.

3.6.3 Future salinity

While damage within Cranbrook townsite due to saline groundwater is currently low, the groundwater model predictions suggest that significant damage due to rising groundwater tables will occur after 2020 (DAFWA 2010).

Ferdowsian and Ryder (1997) assessed salinity risk for three landform based hydrological systems – *Crests, Plains with swampy floors,* and *Swampy terrains*. Most of the townsite and portions of the industrial infrastructure study area were broadly identified as *Swampy terrains* where there is a high risk of groundwater rise and associated soil salinity.

Ferdowsian and Ryder (1997) reported salinity in the upper parts of the Pinjalup / Cranbrook Creek catchment area is mainly confined to creek lines where groundwater is discharging (Figure 10). They report very little or no risk of soil salinity in the undulating areas or *Crests.*

As groundwater levels rise, more of the depressions within the landscape will become saline. Although many of the creek beds in *Plains with swampy floors* are, or will eventually become salt-affected, the extent of soil salinity risk in this landform based hydrological system is much less than in the *Swampy terrains*. In its catchment appraisal of the Cranbrook-Toolbrunup area, the Department of Agriculture (2002) confirms that the main areas at risk of becoming saline are the stagnant flats, creeklines and lakes.

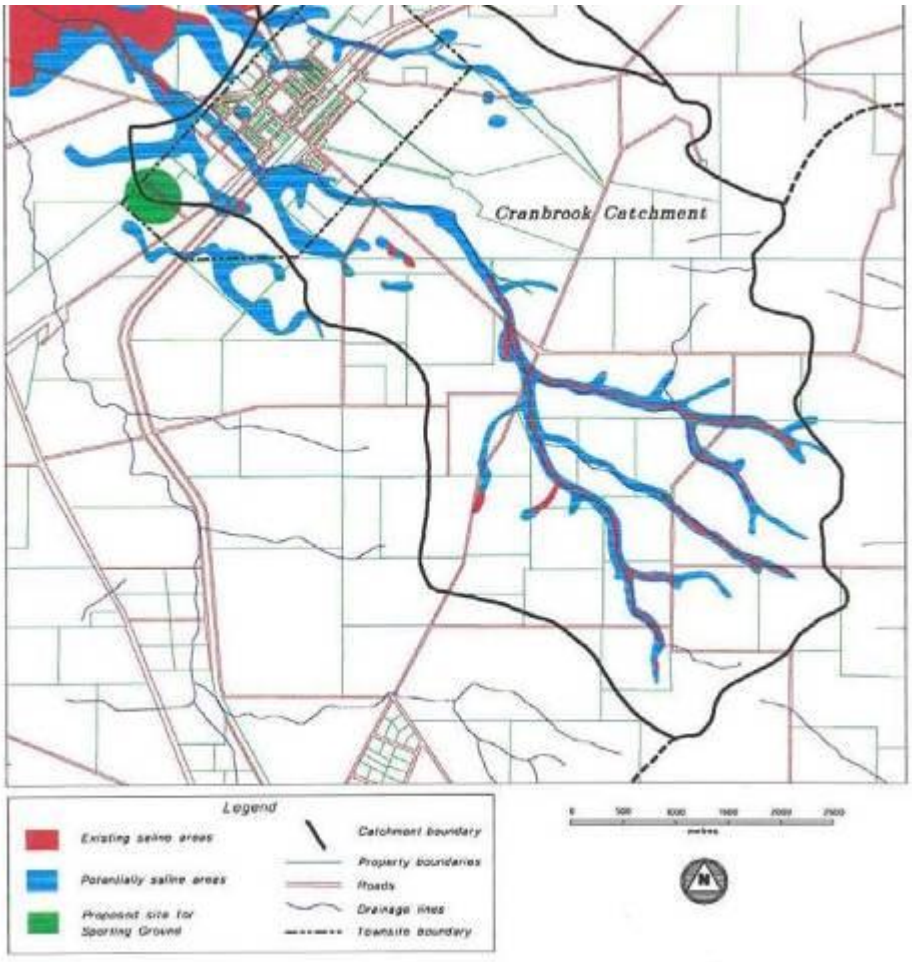


Figure 10. Salinity extent and areas at risk (Ferdowsian and Ryder 1997**)**

3.7 Soil Landscapes

3.7.1 Mapping

The landforms and soils of the Cranbrook area have been surveyed and mapped at broad scale by the Department of Agriculture and Food as part of the *Tambellup Borden Land Resources Survey* (Stuart-Street and Marold 2009). Two soil landscape systems occur over the study area, the North Stirlings and Jaffa systems (Figure 11). The North Stirlings system is a broad internally drained basin floor, and the Jaffa System features undulating topography on adamellite and granitoid geology.

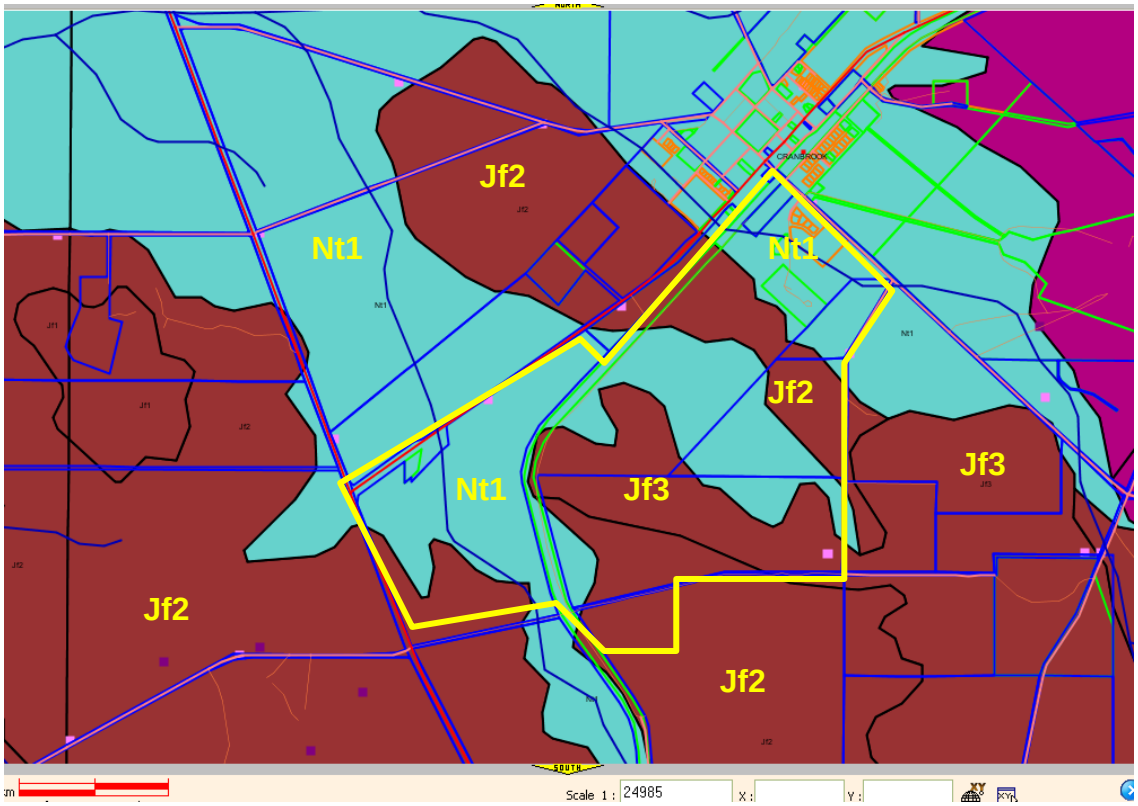


Figure 11. Soil Landscape Mapping

Brown = Jaffa System – *Undulating rises interspersed with undulating broad plains.*

Jf2 Footslopes, gently undulating rises and undulating plains. Grey deep sandy duplex soils are widespread, also with grey shallow sandy duplex and semi-wet soil.

Jf3 Mid to upper slopes and hillcrest areas dominated by rock outcrop. Grey deep sandy duplex, grey shallow loamy duplex, bare rock and shallow gravel soils are common.

Blue = North Stirlings System – *Level to gently undulating broad, internally drained plain abutting the northern boundary of the Stirling Range.*

Nt1 Basin floor including salt lakes, lunettes and saline flats. Saline groundwater close to the surface. Alkaline grey deep sandy duplex and grey deep sandy duplex soil, with saline wet soil, salt lake soil and semi-wet soil.

Source: Department of Agriculture and Food – Regional Soil Landscape Mapping – NRM Info – Shared land Information Platform (www.spatial.agric.wa.gov.au/slip) – data retrieved January 2011.

Due to the broad scale of the original mapping, there is an inherent variability in the landform and soil conditions within the North Stirlings and Jaffa systems as described above. Site assessment will therefore be required to determine actual conditions within the subject land.

3.7.2 Land Degradation Risks and ASS

The DAFWA's assessment of the most common degradation risks related to these soil landscape mapping units are expressed in percentage terms in reflection of their inherent diversity of 'on-ground' conditions. Again, site assessment will be required to determine actual conditions and degradation risks within the subject land, although the generalised assessments presented in Table 1 below indicate a progressively lower probability of land degradation constraints to industrial development on the higher Jf2 and Jf3 terrain. By contrast, further development within the lower-lying Nt1 terrain is likely to be affected by a high risk of land degradation associated with waterlogging and soil salinity.

Table 1. Land Degradation Risks

	Soil Landscape Mapping Unit – Risk Rating*		
Risk Factor	North Stirling - **Nt1**	Jaffa - **Jf2**	Jaffa - **Jf3**
Waterlogging	High	Moderate	Very Low
Soil salinity	High	Moderate – High	Very Low
Wind erosion	Moderate	Low – Moderate	Low – Moderate
Subsurface acidity	Low – Moderate	Very Low	Low – Moderate

*Risk ratings

Very Low	0 – 2 % of mapping unit has a significant risk
Low	2 – 10 % " " "
Low – Moderate	10 – 30 % " " "
Moderate	30 – 50 % " " "
Moderate – High	50 – 70 % " " "
High	> 70 % " " "

Source: SLIP NRM Info – Shared land Information Platform (www.spatial.agric.wa.gov.au/slip) Jan 2011.

The Australian Soil Resource Information System (ASRIS) www.asris.csiro.au indicates the land has a low probability of occurrence of acid sulphate soils (ASS). Any land degradation risk associated with ASS can be expected to arise only if buried and waterlogged sediments containing iron sulfides were to be exposed to oxidation following deep drainage. Even in the absence of ASS deep drainage is unlikely to be approved or be effective around Cranbrook.

3.7.3 Agricultural Capability

The Department's assessment of land use capability for the most common agricultural activities in the Cranbrook locality, dryland cropping and grazing, are presented in Table 2 below. Again, the ratings need to be expressed in percentage terms in reflection of their inherent diversity of 'on-ground' conditions, however the results clearly indicate that industrial development within this area is not taking particularly significant agricultural land out of production.

Table 2. Agricultural Land Use Capability

	Soil Landscape Mapping Unit – Capability Rating*		
Land Use	North Stirling - **Nt1**	Jaffa - **Jf2**	Jaffa - **Jf3**
Dryland Cropping	Poor	Fair - Poor	Poor
Pasture	Poor	Fair - Poor	Fair - Poor

*Capability ratings

Poor	> 70% of mapping unit has a low capability class rating
Fair - Poor	50-70% " " "

3.8 Native Vegetation, Flora and Fauna

Cranbrook and subject land occur within the Tambellup vegetation system of the Avon Botanical District. The original vegetation cover for this area is described by Beard (1979) as medium woodland of Wandoo (*Eucalyptus wandoo*) and Yate (*E occidentalis*). Blue mallee (*E gardneri)* may appear on rises and York gum (*E loxophleba*) occurs in lakes country. River gum (*E rudis*) is present near the Gordon River (approximately 11 km away) but in the upper catchment areas drier and saltier conditions force a change to tea-tree (*Melaleuca viminea*) and Samphire in wetter areas.

As shown in the aerial photo background to Figure 1 and in Figure 12 below, most of the subject land has been cleared for agricultural uses. Apart from scattered individual trees, the main areas of remnant vegetation occur along the spur near the intersection of Townsend and Pynup Roads, and in proximity to the railway reserve. Together, the estimated extent of remnant vegetation is estimated at less than 5 % of the subject land. Given the extent of land nominally available for industrial development within the study area shown in Figure 1 and 12, there should be no need for any clearing of these vegetation remnants, and hence no need for further disturbance of flora and fauna habitat.

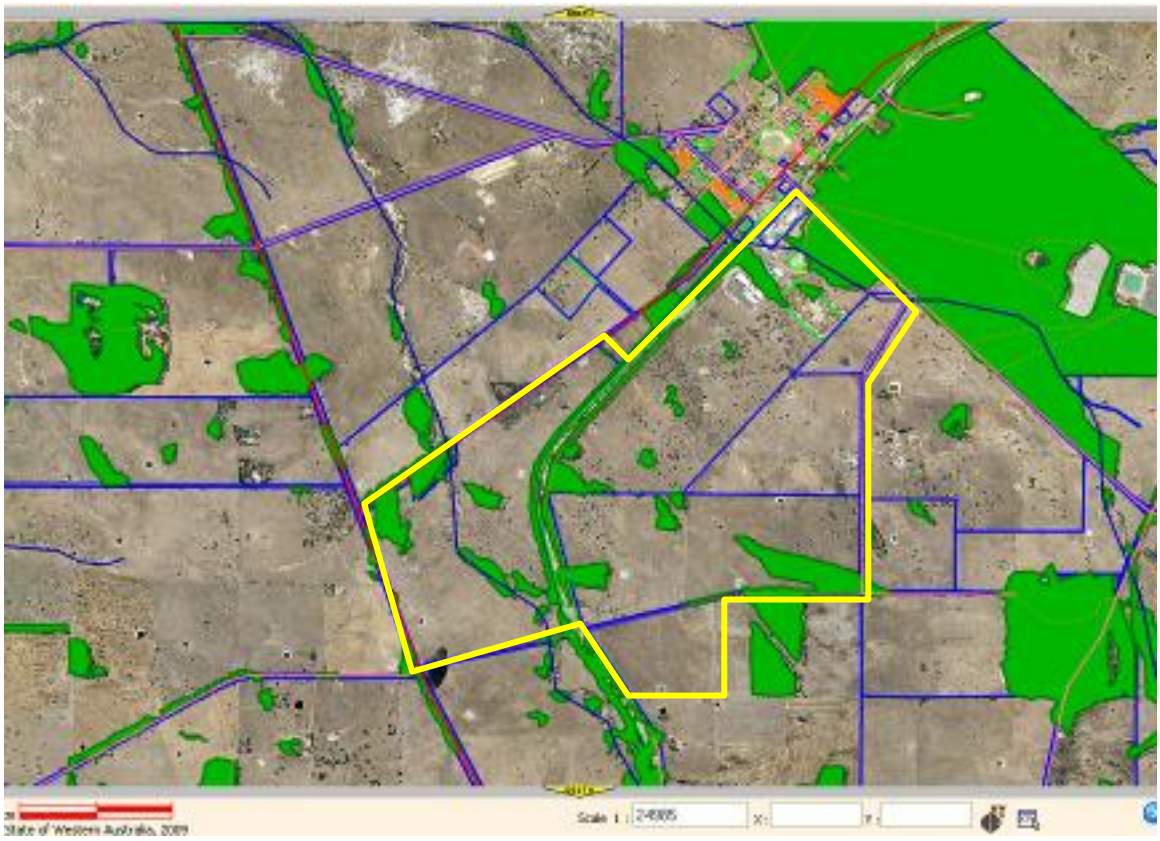


Figure 12. Remnant Vegetation
Source: SLIP NRM Info – Shared land Information Platform (www.spatial.agric.wa.gov.au/slip) 5/1/11.

'NatureMap' is collaborative project of the Department of Environment and Conservation and the Western Australian Museum which provides researchers with a database and mapping associated with Western Australia's biodiversity. A website based search of the NatureMap database on the 5th of January 2010 found a number of records of flora and fauna species within the study area, although none of these were for particular species or ecological communities of conservation significance.

3.9 Indigenous Heritage

In a recent aboriginal heritage assessment conducted for the Shire of Cranbrook on various lots within the existing industrial area (at Johnson St and Hordacre Way), de Gand (2010) determined that there were no previously recorded Aboriginal Sites and no new ethnographic or archaeological sites located on, or near, any of the proposed lots.

A further on-line search of the Aboriginal Heritage Inquiry System within the website of the Department of Indigenous Affairs was conducted on January 5 and showed that there are no actual registered Aboriginal Heritage Sites within the study area (Figure 13). The nearest registered Aboriginal Site (No 5739) occurs near Tenderden and is described as a "modified tree".

There are however two areas (No 4923 – 'Shire holding paddock' and No 4924 – 'Pynup')) identified as 'Other Heritage Places' and both described as "water source" although the position of both is listed as "unreliable". The effect of the presence of these "Other Heritage Places' on the industrial development potential of the land is not known and should therefore be subject to further investigation through the Department for Indigenous Affairs.

De Gand (2010) also recommends that if there is to be any new work programs in the area, then these should be discussed with representatives of the *Wagyl Kaip* Native Title Claim Group (W98/70) and the *South West Land and Sea Council,* with further heritage surveys conducted where subsequently deemed necessary.

Figure 13. Aboriginal Heritage Sites

3.10 Separation from residences

Industrial land uses are generally separated from residential zones (and individual houses within rural areas) in order to protect amenity and prevent adverse impacts associated with factors such as noise, dust and odour. EPA Guidance Statement No 3 (EPA 2005) provides recommended generic separation distances between different types of industrial land use activities and sensitive receptors such as residences.

The following is a list of some industrial land use activities that could conceivably occur within the industrial infrastructure study area, and their associated recommended separation distances from sensitive receptors;

Animal feed manufacture ..... 500 m
Bulk material loading or unloading ..... 1000 – 2000m*
Edible oil or fat processing (vegetable oil production) 500m
Flour mill (grain or seed milling premises) 300-500m*
Grain cleaning (no milling) ..... 300 – 500m*
Grain elevator 500m
Hay processing plant (processing, handling or storage premises) ..... 500 – 1000m*
Livestock saleyard or holding pen ..... at least 1000 m*
Transport vehicles depot 200m
Wool scouring ..... 500 – 1000m**

* depending on size ** depending on wastewater treatment and disposal system, and size

Separation distances will need to be taken into consideration in the design and occupancy of the study area. Figure 1 shows the existing industrial area is adjacent to town and hence possibly constrained for some future potential industrial activities. The proposed industrial area, and the 'option for growth' area, appear relatively unencumbered by proximity to residences apart from one building (house?) located east of Pynup Road.

4.0 CONCLUSIONS

Amount of land

The industrial infrastructure study area encompasses an extensive 200 ha core of 'proposed industrial land' located to the south of the existing industrial area around the CBH facility, and accessed via Townsend Road with direct linkage to Albany Highway. Extending out from three sides of this core are additional 'option for growth' areas covering a further 358 ha.

Although the ultimate extent of demand for industrial (predominantly agriculture and transport related) land associated with the proposed 'Southern Link Transport Hub' is unknown, this amount of land provides a significant degree of flexibility to locate and design new industry premises in response to environmental and land management issues.

Key Issue

The key issue to be considered is the potential effect of new industrial developments, with characteristically large areas of hard surfaces, on the generation of stormwater runoff and groundwater flows, and the possible subsequent impacts on existing waterlogging and salinity issues within the adjacent Cranbrook townsite.

Constraints of the existing industrial area

Within the existing industrial area there are significant portions of land along side the railway line adjacent to the CBH facility, and near both the Industrial Tip (Johnson) Road and Pynup Road that are subject to accumulation of surface water runoff and waterlogging. This situation has resulted in a number of recommendations from previous studies including;

- the need for future buildings to be constructed on top of a pad consisting of at least 0.5 m of sand, and
- the construction of a lined sump to collect surface runoff with possible reuse options such as irrigation of sports ovals or a source of water for industry.

These recommendations are equally applicable to any proposed new industrial developments on similar flat terrain within or in close proximity to the existing industrial area.

The existing industrial zone within the northern portion of the Industrial Infrastructure study area is traversed by Pinjalup Creek / Cranbrook Creek which only sluggishly directs surface runoff and recharges the aquifer under the town. A paleodrainage channel, aligned close to and roughly parallel to Salt River Road, also provides a preferred pathway for groundwater flow to areas beneath the town.

This suggests that further industrial development within or in close proximity to the existing industrial area needs to avoid direct disposal of surface runoff into the ground as it is likely to recharge groundwater and hence exacerbate the potential for waterlogging and salinity problems within the adjacent townsite.

Sub-catchments and proposed new industrial areas

The recent Water Management Plan (DAFWA 2010) concluded that the localised catchment runoff (i.e. within Cranbrook Town North sub-catchment -see Figure 5 and 6) is responsible for townsite inundation, waterlogging and recharging of the local groundwater system. Inflows

from the other sub-catchments, or the regional groundwater system, were considered to be negligible.

This suggests that runoff from the future industrial development will have little effect on the townsite waterlogging and salinity issues *as long as such development is located outside of the Cranbrook Town North sub-catchment (Figure 5 and 6).*

Depth to watertable and proposed new industrial areas

Depth to winter watertable levels are between 0.5 m and 1 m from the land surface over much the existing industrial area. Within the northern part of the 'proposed industrial area' the depth increases to between 1 m and 1.5 m, and for the adjacent portion of the 'option for growth area' the depth to winter groundwater increases further to around 1.5 to 2m below the surface (Figure 9).

Given the desirability of avoiding areas with a high watertable, the most suitable areas for future industry are likely to be within the slightly elevated terrain south of the existing industrial area within parts of the Jaffa Jf3, and to a lesser extent, Jf2, soil landscape subsystems (Figure 11). The spur of land extending (Jf3) across the study area from the intersection of Townsend and Pynup Roads westwards towards the curve in the railway line corridor, has the highest elevation.

Land degradation risks

Salinity in the upper parts of the Pinjalup / Cranbrook Creek catchment area is mainly confined to groundwater discharge sites and the main areas at risk of becoming saline are the stagnant flats and creeklines.

There is a progressively lower probability of land degradation constraints to industrial development on the higher Jf2 and Jf3 terrain. By contrast, further development within the lower-lying Nt1 terrain is likely to be affected by a high risk of land degradation associated with waterlogging and soil salinity.

There is a low probability of constraints caused by any acid sulphate soils (ASS).

Agricultural productivity

Industrial development within the study area would not result in the loss of particularly significant or high productivity agricultural land.

Biodiversity

Given the extent of land nominally available for industrial development, there should be no need for any clearing of the small areas of remaining native vegetation, and hence no need for further disturbance of flora and fauna habitat.

There are no records of flora or fauna species, or ecological communities, of particular conservation significance within the study area.

Indigenous Heritage

The no actual registered Aboriginal Heritage Sites within the study area although there are two areas identified as 'Other Heritage Places'. The effect of these "Other Heritage Places' on the industrial development potential of the land is not known and should be subject to further investigation

Separation from residences

EPA recommended separation distances between industry and sensitive receptors will need to be taken into consideration in the design and occupancy of the study area. The proposed industrial area, and the 'option for growth' area, appear however to be relatively unconstrained in this regard.

5.0 REFERENCES

Beard J. S (1981) *Vegetation Survey of Western Australia - The Vegetation of the Albany and Mount Barker Areas, Western Australia*. Map and Explanatory Memoir 1: 250 000 series. Vegmap Publications, Perth.

de Grand Pty Ltd (2010) *Report of an Aboriginal Heritage Assessment - Work Area Clearance – on Lots 278,279, 284, 285, 286 & 313 at Johnson Street and Hordacre Way, and Lots 160, 165, 166 & 170 at Clime Street in Cranbrook, WA*. Report for Shire of Cranbrook by Daniel de Gand – Anthropologist of de Gand Pty Ltd. May 2010.

Department of Agriculture (2002) *Cranbrook-Toolbrunup Catchment Appraisal Report*

Department of Agriculture and Food (2010) *Water Management Plan for the Town of Cranbrook* - report prepared by Ceidwen Pengelly of the Department of Agriculture and Food, Western Australia for the 'Rural Towns- Liquid Assets' Project July 2010.

Department of Environment, 2004, *Gordon-Frankland catchment,* Department of Environment, Water Resource Management Series, No WRM 44.

Environmental Protection Authority (2005) Guidance for the Assessment of Environmental Factors - *Separation Distances between Industrial and Sensitive Land Uses*. Guidance Statement No 3 June 2005.

Environmental Protection Authority (2008) *Environmental Guidance for Planning and Development*. Guidance Statement No 33 May 2008.

Ferdowsian, R. and Ryder, A. 1997, The Salinity and hydrology of Cranbrook, Resource Management Technical Report 170, October 1997, WA Department of Agriculture.

Muhling, P.C. and Brakel, A.T. 1985 Explanatory notes for Mount Barker - Albany 1:250 000 scale geological map sheet. Geological Survey of Western Australia

Schoknecht, N. (2002) *Soils Groups of Western Australia - a simple guide to the main soils of Western Australia. Edition 3.* Resource Management Technical Report 246. Agriculture Western Australia, Perth. June 2002.

Shire of Cranbrook (2010). *Cranbrook Industrial Infrastructure Project Southern Link Transport Hub Strategic Vision*

Stuart-Street and Marold (2009). "*Tambellup-Borden Area Land Resources Survey*" Land Resources Series No. 21, Department of Agriculture, Western Australia